



TEST REPORT

TEST OF A NON-CATALYTIC WOOD HEATER FOR EMISSIONS AND EFFICIENCY
PER EPA METHODS ALT-125, ASTM E2515, ASTM E3053 and CSA B415.1,

Client:

Wolf Steel Ltd.

24 Napoleon Road, Barrie,
Ont. L4M 0G8
Model Name: 2200

Attention: Rafael Sanchez

TESTED BY:

Services Polytests inc.
695-B Gaudette
St-jean-sur-Richelieu, QC, J3B 7S7

TEST DATES: October 24th and 25th 2018


REPORT DATE: October 31st 2018


Revision 1: April 16th 2019

Revision 2: June 17th 2019

Project number: PI-20178

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SUMMARY

| | | |
|-------|--|----|
| 1 | Introduction | 4 |
| 1.1 | General..... | 4 |
| 1.2 | Test unit information | 4 |
| 1.3 | Results..... | 4 |
| 1.4 | Pretest information..... | 5 |
| 2 | Summary of test results..... | 5 |
| 2.1 | Model identification..... | 5 |
| 2.2 | Laboratory information..... | 5 |
| 2.3 | Test condition Summary | 5 |
| 2.4 | Test run results summary | 7 |
| 2.5 | Weighted average summary | 8 |
| 2.6 | Weighted average Final results..... | 8 |
| 2.7 | Test facility conditions | 8 |
| 2.8 | Dilution tunnel flow rate measurements and sampling data (ASTM E2515)..... | 9 |
| 2.9 | Dilution tunnel dual train precision | 9 |
| 3 | Process description | 10 |
| 3.1 | Discussion | 10 |
| 3.2 | Unit dimensions | 10 |
| 3.3 | Air supply system | 11 |
| 3.4 | operation during test | 12 |
| 3.5 | Start-up operation | 12 |
| 3.6 | Sampling locations | 12 |
| 3.7 | Drawings | 12 |
| 3.8 | Emissions efficiency testing equipment list | 12 |
| 4 | Sampling methods | 13 |
| 4.1 | Particulate sampling | 13 |
| 5 | Quality assurance | 13 |
| 5.1 | Instrument calibration | 13 |
| 5.1.1 | Gas meters..... | 13 |
| 5.1.2 | SCALES | 13 |
| 5.1.3 | Gas analyzers | 13 |
| 5.2 | Test method procedures..... | 13 |
| 5.2.1 | Leak check procedures | 13 |

| | | |
|-------|--|----|
| 5.2.2 | Tunnel velocity flow measurement | 13 |
| 5.2.3 | Pm sampling proportionality (ASTM E2515) | 13 |

List of revisions

Revision 1: April 16th 2019 updated names

Revision 2: inclusion of Operating instruction into the NCBI report

List of appendixes

- APPENDIX 1: Raw data, forms and results
- APPENDIX 2: Proportionality results
- APPENDIX 3: Calibration data
- APPENDIX 4: Unit pre-burn
- APPENDIX 5: Participants
- APPENDIX 6: Drawings and specifications
- APPENDIX 7: Manual & Label
- APPENDIX 8: Photographs of test set up
- APPENDIX 9: Test load photographs
- APPENDIX 10: Laboratory Operating Procedures
- APPENDIX 11: Sample calculations
- APPENDIX 12: Volume calculations
- APPENDIX 13: Operating instruction
- APPENDIX 14: Drawing Air flow pattern
- APPENDIX 15: Application for wood stove program

1 INTRODUCTION

1.1 GENERAL

Laboratory

- Location: Services Polytests Inc., 695-B Gaudette St-jean-sur-Richelieu QC, Canada J3B 7S7
- Elevation: 100 feet above sea level

Test program

- Purpose: unit qualification NSPS 2020 cord wood
- Test dates: October 24th and 25th 2018
- Test methods used:
 - Particulate emissions: ASTM E3053-17 ; ASTM E2515-11 methods ALT-125 as referred into 40 CFR Part 60 Subpart AAA
 - Efficiency: CSA B415.1-10

1.2 TEST UNIT INFORMATION

General

- Manufacturer: Wolf Steel ltd
- Product type: wood heater
- Combustion system: non-catalytic
- Unit tested: 2200

Particularities

- Timberwolf 2200 – Stove with pedestal/legs
- Timberwolf EPI22 - Insert
- Napoleon S20 – Stove with pedestal
- Napoleon S20-i – Insert
- Napoleon 2020-S
- Napoleon 2020-Si

In Summary:

All six models are built from the same firebox configuration. All primary and secondary airflows are exactly the same at that point where they enter the unit. The viewing area and latching mechanism is the same for all door configurations. Optional stove pedestal/leg accessories are provided as are optional blowers.

1.3 RESULTS

Emission results obtained

- Weighted Average Emissions Rate: 2.25 g/hr

- Weighted Average Overall Efficiency: 72 %
- Conformity: NSPS Phase 2020 cord wood.

1.4 PRETEST INFORMATION

Unit condition: The unit was received by carrier in July 2018 in good condition. The 50hrs of aging was made by Polytests Services.

Set up

- Venting system type: diameter 6-inch steel pipe and insulated chimney
- System height from floor: 15 feet
- Particularities: Optional convection fan can be provided with the heater

2 SUMMARY OF TEST RESULTS

2.1 MODEL IDENTIFICATION

| | |
|---|---|
| Model name number | 2200 |
| Manufacturer | Wolf Steel ltd |
| address | 24 Napoleon Road, Barrie, Ont. L4M 0G8 |
| appliance category | wood stove |
| Usable Firebox Volume - ft3 | 1,91 |
| Catalytic/Non-Cat | Non-Cat |
| convection air fan (no, standard, Optional) | optional |

2.2 LABORATORY INFORMATION

| | |
|--------------------------------------|--|
| Testing laboratory | Polytests Services |
| address | 695-B Gaudette, St-jean-sur-richelieu |
| ISO/ Accreditation info | 17025 |
| Dates tested | 24-10-2018 |
| Test Methods / Standard | ALT-125 |
| Dilution Tunnel Inside diameter - in | 8 |
| Filter diameter | 47 |
| Filter material | PTFE Pall |

2.3 TEST CONDITION SUMMARY

| | | | |
|---|----------|-----|-----|
| Model Name(s) / number(s) | 2200 | | |
| Usable firebox Volume-ft3 | 1,91 | | |
| Convection Air Fan (No, Standard, Optional) | optional | | |
| Test runs # | 1,1 | 1,2 | 2.1 |

| | | | |
|---|------------|-------------|-------------|
| Date tested | 24-10-2018 | 24-10-2018 | 25-10-2018 |
| test run category (L,M,H) | H | L | M |
| average barometric pressure - in Hg | 30,00 | 30,00 | 29,90 |
| Max observe Ambient temp. °F | 78,03 | 79,36 | 80,55 |
| Min observe Ambient Temp °F | 73,10 | 76,50 | 75,47 |
| Max observe Filter temp °F | 89,97 | 84,91 | 85,46 |
| Run air settings | | | |
| Primary (measured up from minimum) | full open | full closed | full closed |
| Secondary (measured up from minimum) | fix | fix | fix |
| Convection air setting | on | on | on |
| Test fuel load | | | |
| Cordwood fuel species | Oak | Oak | Oak |
| specific Gravity (from Table 1) | 0,66 | 0,66 | 0,66 |
| Higher heating value - Btu/lb (from Annex A1) | 8690 | 8690 | 8690 |
| Nom. Test fuel piece length - in | 16 | 16 | 16 |
| Number of test fuel pieces | 5 | 5 | 5 |
| Test fuel Weight | | | |
| Kindling - as fired lb. | 3,80 | NA | NA |
| Kindling Wt. - as % of test fuel load | 19,3% | NA | NA |
| Kindling Moisture % Db | 9,0 | NA | NA |
| Kindling Kg DB | 1,58 | NA | NA |
| SU Fuel Wt- as fired lb | 4,90 | NA | NA |
| SU Fuel wt. - as % of test fuel load | 24,9% | NA | NA |
| SU Fuel moisture - % DB | 20,0 | NA | NA |
| SU fuel- Kg DB | 1,85 | NA | NA |
| Test Fuel Load - As Fired lb | 19,69 | 22,14 | 22,20 |
| Ave. Test Fuel Load MC % DB | 20,51 | 21,53 | 21,61 |
| Test Fuel Load - kg DB | 7,41 | 8,26 | 8,28 |
| Test fuel Loading density lb./ft ³ | 10,31 | 11,59 | 11,62 |
| Residual SU fuel wt. - as fired lb. | 3 | NA | NA |
| Residual SU fuel wt.- as % of test fuel load | 15,2% | NA | NA |
| Test run duration - minutes | 123 | 501 | 400 |
| Test run duration - h | 2,05 | 8,35 | 6,67 |
| Test fuel load wt at the end of the test - as fired lb | 1,9 | 0 | 0 |
| total fuel burned kg Db | 8,62 | 8,26 | 8,28 |

| | | | |
|--|------|------|------|
| % test fuel load wt at end of the test | 9,7% | 0,0% | 0,0% |
|--|------|------|------|

2.4 TEST RUN RESULTS SUMMARY

| | | | |
|---|------------|------------|------------|
| Model name / number | 2200 | | |
| Usable Firebox volume | 1,91 | | |
| Convection air Fan (no, Standard, option) | optional | | |
| Test runs nu. | 1,1 | 1,2 | 2,1 |
| Date tested | 24-10-2018 | 24-10-2018 | 25-10-2018 |
| Test run category | H | L | M |
| Burn rate - Kg/hr DB | 4,14 | 0,99 | 1,24 |
| Burn rate as % of low to high Midpoint | NA | 23,9% | 190,8% |
| Burn duration - h | 2,05 | 8,35 | 6,67 |
| Heat output btu/hr | 54 127 | 12 944 | 17 310 |
| Average Dilution Tunnel Flow Rate - dscfm | 285,4 | 301,6 | 302,3 |
| Average Sample Flow Rates - dscfm | | | |
| Train 1 | 0,1563 | 0,1582 | 0,1584 |
| train 2 | 0,1535 | 0,1544 | 0,1547 |
| Total PM Emissions - g | | | |
| Train 1 g | 6,21 | 23,66 | 9,16 |
| train 2 g | 6,51 | 23,07 | 8,01 |
| Average | 6,36 | 23,36 | 8,59 |
| PM emission train precision % | 2,34% | 1,26% | 6,68% |
| PM emission g/kg | 0,74 | 2,83 | 1,04 |
| PM emission rate g/h | 3,10 | 2,80 | 1,29 |
| Total Co Emission g | 156,4 | 1077,3 | 636,2 |
| Co emission Rate g/h | 97,7 | 129,0 | 95,4 |
| 1 st hour emission rate g/h | 4.2 | 11.63 | 4.39 |
| Overall Efficiency - CSA B415,1 | | | |
| % HHV Basis | 71,04% | 71,95% | 72,69% |
| % LHV Basis | 76,44% | 77,42% | 78,21% |

2.5 WEIGHTED AVERAGE SUMMARY

| | | | |
|--|----------|-------|-------|
| Model name / number | 2200 | | |
| Usable Firebox volume | 1,91 | | |
| Convection air Fan (no, Standard, option) | optional | | |
| average for each test run category | L | M | H |
| burn rate kg/h DB | 0,99 | 1,24 | 4,14 |
| PM Emission rate - g/h | 2,80 | 1,29 | 3,10 |
| Co emission rate - g/h | 129,02 | 95,42 | 97,73 |
| Overall Efficiency - CSA B 415,1 | | | |
| % HHV Basis | 72,0% | 72,7% | 71,0% |
| % LHV Basis | 77,4% | 78,2% | 76,4% |
| Heat output - Btu/hr | 12944 | 17310 | 54127 |
| Category weighting | 0,4 | 0,4 | 0,2 |

2.6 WEIGHTED AVERAGE FINAL RESULTS

| | | | |
|---------------------------------|--------|----|-------|
| ASTM E 3053 Weighted averages | | | |
| PM Emission Rate - g/h | 2,25 | | |
| CO Emission Rate g/h | 109,3 | | |
| Overall Efficiency - CSA B415,1 | | | |
| % HHV Basis | 72,06% | | |
| % LHV Basis | 77,54% | | |
| Heat output range - Btu/h | 12 944 | to | 54127 |
| Co Arithmetic average g/min | 1.79 | | |

2.7 TEST FACILITY CONDITIONS

| Run Number | Room Temperature | | Barometric pressure | | Relative humidity | | Air Velocity | |
|------------|------------------|-------|---------------------|---------|-------------------|-------|--------------|----------|
| | Before | After | Before | After | Before | After | Before | After |
| | (F) | (F) | (in.Hg) | (in.Hg) | (%) | (%) | (ft/min) | (ft/min) |
| 1 | 76 | 82 | 30,03 | 29,97 | 31 | 28,4 | 0 | 0 |
| 2 | 79 | 82 | 29,97 | 29,83 | 25,1 | 23 | 0 | 0 |

2.8 DILUTION TUNNEL FLOW RATE MEASUREMENTS AND SAMPLING DATA (ASTM E2515)

| Average dilution tunnel measurements | | | | Sample Data | | | |
|--------------------------------------|-----------------|---------------------------------|-------------------------|-----------------------|--------|------------------------|-------|
| Run Number/ test category | Burn Rate (Min) | Volumetric Flow Rate (dscf/min) | Total Temperatures (°R) | Volume sampled (DSCF) | | Particulate catch (mg) | |
| | | | | 1 | 2 | 1 | 2 |
| high Fire test | 123 | 285,35 | 582,81 | 19,221 | 18,883 | 3,40 | 3,50 |
| Low fire test | 501 | 301,64 | 550,30 | 79,257 | 77,369 | 12,50 | 11,90 |
| medium fire test | 400 | 302,33 | 555,43 | 63,349 | 61,863 | 4,80 | 4,10 |

2.9 DILUTION TUNNEL DUAL TRAIN PRECISION

| Run Number/ test category | Sample Ratio | | Total Emission (g) | | |
|------------------------------|--------------|---------|--------------------|---------|-------------|
| | Train 1 | Train 2 | Train 1 | Train 2 | % Deviation |
| high Fire test | 1826,09 | 1858,74 | 6,21 | 6,51 | 2,34% |
| Low fire test | 1906,71 | 1953,24 | 23,66 | 23,07 | 1,26% |
| medium fire test | 1909,00 | 1954,86 | 9,16 | 8,01 | 6,68% |

3 PROCESS DESCRIPTION

3.1 DISCUSSION

The heater was received in a good shape by a carrier in July 2018. Pre-burn was done as preliminary testing with cord wood at Polytests facility. The side walls of the combustion chamber are lined with Firebricks. The secondary air inlet is fixed and the primary air damper is located at the underneath the firebox. Post combustion is ensured by the secondary 4 tubes located at the top of the firebox. Above the tubes a is a deflector made of Ceramic fiber.

3.2 UNIT DIMENSIONS

Baffle

- Location: between top of combustion chamber and hearth
- Restriction: 2 ¼ X 23 ¼ inches at the front of unit
- Dimensions: covers the hearth area minus the restriction at front
- Material: 1-inch thick Ceramic Fiber

Bricks

- Firebrick 1 ¼ thick lining bottom, back and side of the firebox.

Flue gas exhaust

- Location: top
- Dimensions: 6 in. diameter
- Material: Steel

Gasket

- Door-Outer: ½" Dia. Black Woven Fiberglass Rope
- Door-Inner: 1/4" Black Woven Fiberglass Rope
- Glass: ¾" x 0.062" Black Woven Fiberglass

Overall unit dimension

- Firebox dimensions: W=20.87", D=14.66", H Max=11.63"
- Usable volume: 1.91 cuft
- Overall dimension: 26-inch-wide x 22.5-inch-deep x 29 3/4-inch-high

Convection fan

- Optional Model EPT70

Catalyst

- none

3.3 AIR SUPPLY SYSTEM

Description

- Primary air: Bottom front of the heater
- Secondary air: sides of the heater Refer appendix 6 for drawing details

Characterization

The following table shows the inlet and outlet sections of each system. The air introduction system number is referred to on a set of drawings in Appendix 6.

| AIR INTRODUCTION SYSTEM | | INLET (1) sq. in. | | | OUTLET (sq. in.) |
|-------------------------|-----------|-------------------|-------|------------|---------------------|
| Identification | Type | Imin | Imax | Controlled | |
| A * | Primary | 0.11 | 2.773 | Yes | 8.565 |
| B * | Secondary | 4.12 | 4.12 | Fix | 2.348 |
| C * | Pilot | 0.113 | 0.113 | Fix | 0.028 |

* This section would be filled by measuring and comparing with the manufacturer's drawings included in the test report.

Legend

Identification: Tag name referred to on drawings in Appendix 14, section airflow pattern

Type: Characterization of air intake

Imin: Minimum air intake of a particular air channel

Imax: Maximum air intake of a particular air channel

Controlled: Determines if a provision for air control is present

Outlet: Total air outlet of a particular air channel

3.4 OPERATION DURING TEST

Run #1.1

This run was performed on October 24th 2018. It lasted 123 minutes and a maximum burn rate was obtained at 4.14 kg/hr & emission at 3.1 gr/hr. The air inlet damper was fully open.

Run #1.2

This run was performed on October 24th 2018 as a continuation of the maximum burn rate (run1.1). It lasted 501 minutes and a Minimum burn rate was obtained at 0.99 kg/hr & emission at 2.8 gr/hr. The air inlet damper was at the minimum setting.

Run #21

This run was performed on October 25th 2018. It lasted 400 minutes and a medium burn rate was obtained at 1.24 kg/hr & emission at 1.29 gr/hr. The air inlet damper was at the medium setting.

- Details: Refer to the front page of each test run data sheets found in appendix for the detailed test sequence showing air supply settings and adjustments, fuel bed adjustments and operational specifics of the test unit.

Test fuel cribs

- Type of wood: Red Oak, 18 to 28% dry basis moisture content
- Description: for each test, description of the fuel crib is found on the front page of each test run data sheet together with photograph in appendix.

3.5 START-UP OPERATION

The complete manufacturer's firing procedure of each burn rate category is fully described in appendix 13.

3.6 SAMPLING LOCATIONS

Particulate samples are collected from the dilution tunnel at a point 15 feet from the tunnel entrance. The tunnel has two elbows in the system ahead of the sampling section. The sampling section is a continuous 20-foot section of 8-inch diameter pipe straight over its entire length. Tunnel velocity pressure is determined by a standard pitot tube located 48 inches from the beginning of the sampling section. Thermocouple is installed on the pitot tube to measure the dry bulb temperature. MC is assumed, as allowed, to be 4%. Tunnel samplers are located 56 inches downstream of the pitot tube and 24 inches upstream from the end of this section.

3.7 DRAWINGS

Various drawings of the stack gas sampling train and of dilution tunnel system are found in Appendix 6.

3.8 EMISSIONS EFFICIENCY TESTING EQUIPMENT LIST

The complete test equipment list together with all corresponding calibration data can be found in Appendix 3.

4 SAMPLING METHODS

4.1 PARTICULATE SAMPLING

Particulates were sampled in strict accordance with ASTM E2515. This method uses two identical sampling systems with Gelman A/E 61631 binder free (or equivalent), 47 mm diameter EMFAB TX40H 120-WW Pall filters. The dryers used in the sample systems are filled with "Drierite" before each test run.

5 QUALITY ASSURANCE

5.1 INSTRUMENT CALIBRATION

5.1.1 GAS METERS

At the conclusion of each test program the gas meters are verified using the reference dry gas meter. This process involves sampling the train operation for 1 cubic foot of volume. With readings made to .01 fr', the resolution is 1 %, giving an accuracy higher than the 2% required by the standard.

5.1.2 SCALES

Before each test program, the different scales used are checked with traceable calibration weights to ensure their accuracy.

5.1.3 GAS ANALYZERS

The continuous analyzers are zeroed and spanned before each test with NBS traceable gases. A mid-scale multi-component calibration gas is then analyzed (values are recorded). At the conclusion of a test, the instruments are checked again with zero, span and calibration gases (values are recorded only). The drift in each meter is then calculated and must not exceed 5% of the scale used for the test.

5.2 TEST METHOD PROCEDURES

5.2.1 LEAK CHECK PROCEDURES

Before and after each test, each sample train is tested for leaks. Leakage rates are measured and must not exceed 0.02 CFM or 4% of the sampling rate. Leak checks are performed checking the entire sampling train. Pre-test and post-test leak checks are conducted with a vacuum of 5 inches of mercury. Vacuum is monitored during each test and the highest vacuum reached is then used for the post-test vacuum value. If leakage limits are not met, the test run is rejected. During these tests, the vacuum is typically less than 2 inches of mercury. Thus, leakage rates reported are expected to be much higher than actual leakage during the tests.

5.2.2 TUNNEL VELOCITY FLOW MEASUREMENT

The tunnel velocity is calculated from a center point pitot tube signal multiplied by an adjustment factor. This factor is determined by a traverse of the tunnel as prescribed in EPA Method 1. Final tunnel velocities and flow rates are calculated from EPA Method 2, Equation 6.9 and 6.10. (Tunnel cross sectional area is the average from both lines of traverse.)

Pitot tubes are cleaned before each test and leak checks are conducted after each test.

5.2.3 PM SAMPLING PROPORTIONALITY (ASTM E2515)

Proportionalities were calculated in accordance with ASTM E2515. The data and results are found in appendix.

APPENDIX 1: Raw data, forms and results

Paramètres

Tous les facteurs de corrections et autres paramètres qui peuvent être modifiés par l'utilisateur du fichier sont regroupés ici.

Code verrouillage: WOL

Description du test

| | |
|---------------|------------|
| Test standard | EPA |
| Run # | 1 |
| Date | 24-10-2018 |
| Technicien | m.m |
| Project # | pi-20178 |

Description de l'unité

| | | |
|----------------------------|-----------------|--------|
| Manufacturier | Wolf Steel ltd | |
| Modèle | Timberwolf 2200 | |
| Combustion system | Non-Cat | |
| Appliance type | wood stove | |
| Firebox volume | 1,91 | cu ft. |
| Appliance weight empty | n.a | lbs |
| Fan (no, Standard, Option) | optional | |

Paramètres du test

| | | |
|----------------------------------|-----|---|
| Logging time | 1 | min |
| Manufacturer's rated heat output | n.a | BTU/h Donnée fournie par le manufacturier |
| Targeted category | 1 | |
| Targeted output | n.a | BTU/h |
| Cp steel | n.a | BTU/lb-°F |

Échantillonnage

| | | |
|------------------------------|--------|---------------|
| Blank sampling rate | 0,20 | cuft/min |
| Internal probe diameter | 0,18 | in. |
| Calibration Factor (DGM #1): | 0,988 | Dimensionless |
| Equipment number (DGM #1): | em 178 | |
| Calibration Factor (DGM #2): | 0,991 | Dimensionless |
| Equipment number (DGM #2): | em 179 | |
| Calibration Factor (DGM #3): | 0,996 | Dimensionless |
| Equipment number (DGM #3): | em 070 | Dimensionless |

Tunnel

| | | |
|---------------------------|----------|--|
| Targeted tunnel flow rate | 300 | scfm |
| Tunnel diameter | 8 | in. |
| Molecular weight | 28,78 | May be assumed to be 28,78 (EPA) Si B-415 = 29 |
| Pitot tube type | Standard | |
| Pitot tube coefficient | 0,99 | Dimensionless |

| | |
|-------------|------------|
| Project nu. | pi-20178 |
| Date | 24-10-2018 |
| Technicien | m.m |

Fuel data

| | |
|-------------|---------------|
| Fuel type | Cord |
| Fuel specie | Oak |
| HHV | 20207,0 kJ/kg |
| %C | 49,5 |
| %H | 6,6 |
| %O | 43,7 |
| %Ash | 0,2 |
| HHV | 8689,9 Btu/lb |
| LHV | 7600,4 Btu/lb |

| Default Fuel Values | | |
|---------------------|--------|-----------|
| | D. Fir | Oak/Maple |
| HHV | 19 810 | 20 207 |
| %C | 48,73 | 49,5 |
| %H | 6,87 | 6,62 |
| %O | 43,9 | 43,7 |
| %Ash | 0,5 | 0,2 |
| HHV (Btu/lb) | 8519 | 8690 |
| LHV (Btu/lb) | 7451 | 7600 |

Adjunct to ASTM E XXXX Wood Heater Cordwood Test Method - May 10, 2017 Version

Cordwood Fuel Load Calculators - 10 lb/ft³ Nominal Load Density

Core 45-65% of Total Load Weight, Remainder 35-55% of Total Load Weight

Values to be input manually

| For All Usable Firebox Volumes - High Fire Test Only | | | | | | |
|--|-------|--------------------|--------------------|----------|-----------|--|
| Nominal Required Load Density (wet basis) | 10 | lb/ft ³ | | | | |
| Usable Firebox Volume | 1,91 | ft ³ | | | | |
| Total Nom. Load Wt. Target | 19,10 | lb | | | | |
| Total Load Wt. Allowable Range | 18,10 | to | 20,10 | lb | | |
| Core Target Wt. Allowable Range | 8,60 | to | 12,40 | lb | | |
| Remainder Load Wt. Allowable Range | 6,70 | to | 10,50 | lb | | |
| | | | | | Mid-Point | |
| Core Load Pc. Wt. Allowable Range | 2,90 | to | 4,80 | lb | 3,85 | |
| Remainder Load Pc. Wt. Allowable Range | 1,90 | to | 10,50 | lb | 6,20 | |
| | | Pc. # | | | | |
| Core Load Piece Wt. Actual | 1 | 4,09 | lb | In Range | | |
| | 2 | 4,16 | lb | In Range | | |
| | 3 | 4,02 | lb | In Range | | |
| Core Load Total. Wt. Actual | | 12,27 | lb | In Range | | |
| | | Pc. # | | | | |
| Remainder Load Piece Wt. | 1 | 3,16 | lb | In Range | | |
| (1 to 3 Pcs.) | 2 | 4,26 | lb | In Range | | |
| | 3 | | lb | NA | | |
| Remainder Load Tot. Wt. Act | | 7,42 | lb | In Range | | |
| Total Load Wt. Actual | | 19,69 | lb | In Range | | |
| Core % of Total Wt. | | 62% | | In Range | 45-65% | |
| Remainder % of Total Wt. | | 38% | | In Range | 35-55% | |
| Actual Load % of Nominal Target | | 103% | | In Range | 95-105% | |
| Actual Fuel Load Density | | 10,3 | lb/ft ³ | | | |
| <u>Kindling and Start-up Fuel</u> | | | | | | |
| Maximum Kindling Wt. (20% of Tot. Load Wt.) | | 3,94 | lb | | | |
| Actual Kindling Wt. | | 3,80 | lb | In Range | 19,3% | |
| Maximum Start-up Fuel Wt. (30% of Tot. Load Wt.) | | 5,91 | lb | | | |
| Actual Start-up Fuel Wt. | | 4,90 | lb | In Range | 24,9% | |
| Allowable Residual Start-up Fuel Wt. Range | 2,0 | to | 3,9 | lb | Mid-Point | |
| Actual Residual Start-up Fuel Wt. | | 3 | lb | In Range | 3,0 | |
| Total Wt. All Fuel Added (wet basis) | | 28,39 | lb | | | |
| <u>High Fire Test Run End Point Range</u> | | | | | | |
| | Low | | High | | Mid-Point | |
| Based on Fuel Load Wt. (w/tares) | 1,8 | to | 2,2 | lb | 2,0 | |
| Actual Fuel Load Ending Wt. | | 1,9 | lb | In Range | | |

| Fuel Piece Moisture Reading (%-dry basis) | | | | | | | |
|--|------|------|------|------|----------|-------------------|-------|
| | 1 | 2 | 3 | Ave. | | Pc. Wt. Dry Basis | |
| | 18,9 | 19 | 19,1 | 19,0 | In Range | 3,43 | 1,56 |
| | 19,1 | 19,3 | 19,3 | 19,2 | In Range | 3,49 | 1,58 |
| | 19,2 | 19,8 | 19,1 | 19,4 | In Range | 3,37 | 1,53 |
| | | | | | | | |
| | 27,8 | 27,6 | 27,8 | 27,7 | In Range | 2,47 | 1,12 |
| | 19,3 | 19,2 | 19,3 | 19,3 | In Range | 3,57 | 1,62 |
| | | | | NA | NA | NA | NA |
| Total Load Ave. MC (%-dry basis) | | | | 20,5 | In Range | | |
| Total Load Ave. MC % (wet basis) | | | | 17,0 | | | |
| Total Test Load Weight (dry basis) | | | | | | 16,34 | 7,41 |
| <u>Kindling Moisture (%-dry basis)</u> | | | | | | | |
| | 9 | 9 | 9 | 9,0 | In Range | 3,49 | 1,58 |
| <u>Start-up Fuel Moisture Readings (%-dry basis)</u> | | | | | | | |
| | 20 | 20 | 20 | 20,0 | In Range | 4,08 | 1,85 |
| Total Wt. All Fuel Added (dry basis) | | | | | | 23,91 | 10,84 |
| Total Wt. All Fuel Burned (dry basis) | | | | | | 19,0 | 8,6 |

Load pieces Length in. 16 in.

| For Usable Firebox Volumes up to 3.0 ft ³ - Low and Medium Fire | | | | CONSHOHOCKEN, PA 19428. ALL RIGHTS RESERVED. | | | |
|--|--------|--------------------|--------------------|--|-----------|---------|--|
| Nominal Required Load Density (wet basis) | 12 | lb/ft ³ | | | | | |
| Usable Firebox Volume | 1,91 | ft ³ | | | | | |
| Total Nom. Load Wt. Target | 22,92 | lb | | | | | |
| Total Load Wt. Allowable Range | 21,77 | to | 24,07 | lb | | | |
| Core Target Wt. Allowable Range | 10,314 | to | 14,90 | lb | | | |
| Remainder Load Wt. Allowable Range | 8,02 | to | 12,61 | lb | | | |
| Core Load Fuel Pc. Wt. Allowable Range | 3,44 | to | 5,73 | lb | Mid-Point | 4,58 | |
| Remainder Load Pc. Wt. Allowable Range | 2,29 | to | 6,88 | lb | | 4,58 | |
| Core Load Piece Wt. Actual | Pc. # | | | | | | |
| | 1 | 3,99 | lb | In Range | | | |
| | 2 | 4,20 | lb | In Range | | | |
| | 3 | 4,36 | lb | In Range | | | |
| Core Load Total. Wt. Actual | | 12,55 | lb | In Range | | | |
| Remainder Load Piece Wt. | Pc. # | | | | | | |
| (2 or 3 Pcs.) | 1 | 3,39 | lb | In Range | | | |
| | 2 | 6,20 | lb | In Range | | | |
| | 3 | | lb | NA | | | |
| Remainder Load Piece Weight Ratio - Small/Large | | 55% | | In Range | | ≤ 67% | |
| Remainder Load Tot. Wt. Act | | 9,58 | lb | In Range | | | |
| Total Load Wt. Actual | | 22,14 | lb | In Range | | | |
| Core % of Total Wt. | | 57% | | In Range | | 45-65% | |
| Remainder % of Total Wt. | | 43% | | In Range | | 35-55% | |
| Actual Load % of Nominal Target | | 97% | | In Range | | 95-105% | |
| Actual Fuel Load Density | | 11,6 | lb/ft ³ | | | | |
| Allowable Charcoal Bed Wt. Range (lb) | 2,3 | to | 4,4 | | Mid-Point | | |
| Actual Charcoal Bed Wt. | | 4,0 | lb | In Range | | 3,3 | |
| Actual Fuel Load Ending Wt. | | 0,0 | lb | Valid Test | | ≥ 90% | |
| Total Wt. of Fuel Burned During Test Run lb. | | 22,1 | lb | | | | |
| Load pieces Length in. | | 16 | in. | | | | |

| Fuel Piece Moisture Reading (%-dry basis) | | | | Pc. Wt. Dry Basis | | | | | |
|--|------|------|------|-------------------|----------|-------|------|------|----|
| 1 | 2 | 3 | Ave. | | | | | | |
| 19,2 | 19,3 | 19,2 | 19,2 | In Range | 3,35 | lb | 1,52 | kg | |
| 19,2 | 19,9 | 19,1 | 19,4 | In Range | 3,52 | lb | 1,60 | kg | |
| 19,3 | 19,4 | 19,3 | 19,3 | In Range | 3,65 | lb | 1,66 | kg | |
| | | | | | | | | | |
| 19,2 | 19,1 | 19,2 | 19,2 | In Range | 2,84 | lb | 1,29 | kg | |
| 27,4 | 27,8 | 27,9 | 27,7 | In Range | 4,85 | lb | 2,20 | kg | |
| | | | NA | NA | NA | lb | NA | kg | |
| Total Load Ave. MC % (dry basis) | | | | 21,5 | In Range | | | | |
| Total Load Ave. MC % (wet basis) | | | | 17,7 | | | | | |
| Total Test Load Weight (dry basis) | | | | | | 18,21 | lb | 8,26 | kg |
| Total Fuel Weight Burned During Test Run (dry basis) | | | | | | 18,2 | lb | 8,26 | kg |

| | Start | End |
|-----------------------|-----------|-------------|
| Barometer (kPa): | 101,7 | 101,5 |
| Barometer (in.Hg): | 30,031999 | 29,97293872 |
| Dry Bulb (F): | 76,28 | 82,09 |
| Humidity (%): | 31 | 28,4 |
| Air velocity (ft/min) | 0 | 0 |

| High fire test | | | |
|----------------|----------|----------------|---------------------------|
| DGM #1 | Final: | 28620,755 cuft | Final: 810449,500 Liter |
| | Initial: | 28600,427 cuft | Initial: 809873,880 Liter |
| DGM #2 | Final: | 26935,259 cuft | Final: 762721,580 Liter |
| | Initial: | 26915,364 cuft | Initial: 762158,210 Liter |
| DGM room | | | Final: 465,440 cuft |
| | | | Initial: 419,120 cuft |

| min or med burnrate | | | |
|---------------------|----------|----------------|---------------------------|
| DGM #1 | Final: | 28704,920 cuft | Final: 812832,790 Liter |
| | Initial: | 28620,862 cuft | Initial: 810452,550 Liter |
| DGM #2 | Final: | 27017,094 cuft | Final: 765038,880 Liter |
| | Initial: | 26935,378 cuft | Initial: 762724,960 Liter |
| DGM room | | | Final: 642,800 cuft |
| | | | Initial: 465,440 cuft |

| | |
|--|-----|
| Numéro de la ligne dans "Raw data" à partir duquel les données du test commence | 102 |
| Numéro de la ligne dans "Raw data" à partir duquel les données du highfire test commence | 130 |
| Numéro de la ligne dans "Raw data" à partir duquel les données du min ou medium fire test commence | 244 |

Autres données à rentrer: dans preload data, load data, traverse et filter set weight

| | |
|--------------------|------------|
| Project nu. | pi-20178 |
| Date | 24-10-2018 |
| Technicien | m.m |

Tunnel Traverse Worksheet (for velocity calculations)

Static Pressure: 0,2 in. H2O
 Barometer: 30,032 in. Hg

Pour un tunnel de 12" et plus, prendre 6 lectures

| | TUNNEL VELOCITY | TUNNEL TEMP | SQUARE ROOT |
|----------|--------------------|----------------|----------------|
| | In. wc | °F | |
| A center | | | 0,0000 |
| B center | | | 0,0000 |
| A1 | | | 0,0000 |
| A2 | | | 0,0000 |
| A3 | | | 0,0000 |
| A4 | | | 0,0000 |
| A5 | | | 0,0000 |
| A6 | | | 0,0000 |
| B1 | | | 0,0000 |
| B2 | | | 0,0000 |
| B3 | | | 0,0000 |
| B4 | | | 0,0000 |
| B5 | | | 0,0000 |
| B6 | | | 0,0000 |
| AVERAGE | #DIV/0! | #DIV/0! | 0,0000 |

PITOT CONSTANT=
0,969

Pour un tunnel moins de 12", prendre 4 lectures

| | TUNNEL VELOCITY | TUNNEL TEMP | SQUARE ROOT |
|----------|--------------------|----------------|----------------|
| | In. wc | °F | |
| A center | 0,056 | 91,14 | 0,2366 |
| B center | 0,056 | 90,91 | 0,2366 |
| A1 | 0,048 | 91,34 | 0,2191 |
| A2 | 0,066 | 91,37 | 0,2569 |
| A3 | 0,049 | 91,31 | 0,2214 |
| A4 | 0,043 | 90,99 | 0,2074 |
| B1 | 0,043 | 91,460 | 0,2074 |
| B2 | 0,069 | 91,980 | 0,2627 |
| B3 | 0,054 | 92,330 | 0,2324 |
| B4 | 0,045 | 92,310 | 0,2121 |
| AVERAGE | 0,0529 | 91,5140 | 0,2293 |

| | |
|--------------------|---|
| Project nu. | pi-20178 |
| Date | 24-10-2018 |
| Technicien | m.m |

Filter set weight highfire

| | System 1 (g) 1st hour | | | | System 1 (g) | | | | System 2 (g) | | | | Ambient blank (g) | Date | Heure |
|-------------------|-----------------------|-------------|--------|---------|--------------|-------------|---------|---------|--------------|-------------|--------|---------|-------------------|------------|-------|
| | probe | front | back | gasket | probe | front | back | gasket | probe | front | back | gasket | Filter | | |
| Number | 1 | 308 | 309 | 18 | 20 | 320 | 321 | 20 | 35 | 324 | 332 | 26 | 333 | | |
| Before (1) | | na | | | | na | | | | na | | | | | |
| Before (2) | | | | | | | | | | | | | | | |
| Before (3) | | | | | | | | | | | | | | | |
| Before (4) | | | | | | | | | | | | | | | |
| Before (5) | 61,0691 | | 0,1767 | 34,1659 | 108,8431 | | 0,1756 | 35,4898 | 109,2859 | | 0,1755 | 34,6692 | 0,1266 | 2018-10-23 | 17:00 |
| Before (6) | 61,0691 | | 0,1767 | 34,1660 | 108,8432 | | 0,1756 | 35,4897 | 109,2860 | | 0,1754 | 34,6693 | 0,1267 | 2018-10-24 | 09:00 |
| After (1) | 61,0696 | na | 0,1778 | 34,1692 | 108,8434 | na | 0,1749 | 35,4925 | 109,2867 | na | 0,1765 | 34,6737 | 0,1267 | 2018-10-24 | 13:00 |
| After (2) | 61,0695 | | 0,1778 | 34,1682 | 108,8433 | | 0,1749 | 35,4914 | 109,2867 | | 0,1765 | 34,6720 | 0,1267 | 2018-10-31 | 08:00 |
| After (3) | 61,0691 | | 0,1778 | 34,1672 | 108,8433 | | 0,1749 | 35,4914 | 109,2867 | | 0,1765 | 34,6710 | 0,1267 | 2018-11-01 | 08:00 |
| After (4) | 61,0691 | | 0,1778 | 34,1672 | 108,8433 | | 0,1749 | 35,4914 | 109,2867 | | 0,1765 | 34,6710 | 0,1267 | 2018-11-01 | 17:00 |
| After (5) | | | | | | | | | | | | | | | |
| After (6) | 61,0691 | | 0,1778 | 34,1672 | 108,8433 | | 0,1749 | 35,4914 | 109,2867 | | 0,1765 | 34,6710 | 0,1267 | 2018-11-01 | 17:00 |
| Difference | 0,0000 | 0,0000 | 0,0011 | 0,0012 | 0,0001 | 0,0000 | -0,0007 | 0,0017 | 0,0007 | 0,0000 | 0,0011 | 0,0017 | 0,0000 | | |
| Total (mg) | | 2,3 | | | | 3,4 | | | | 3,5 | | | 0 | | |
| Total ajusté (mg) | | 2,30 | | | | 3,40 | | | | 3,50 | | | | | |

| | |
|--------------------|------------|
| Project nu. | pi-20178 |
| Date | 24-10-2018 |
| Technicien | mm |

Filter set weight Low/ medium fire

| | System 1 (g) 1st hour | | | | System 1 (g) | | | | System 2 (g) | | | | Ambient blank (g) | Date | Heure |
|-------------------|-----------------------|-------------|--------|---------|--------------|--------------|--------|---------|--------------|--------------|--------|---------|-------------------|------------|-------|
| | probe | front | back | gasket | probe | front | back | gasket | probe | front | back | gasket | Filter | | |
| Number | 2 | 301 | 302 | 13 | 34 | 304 | 306 | 29 | 41 | 307 | 334 | 32 | 326 | | |
| Before (1) | | na | | | | na | | | | na | | | | | |
| Before (2) | | | | | | | | | | | | | | | |
| Before (3) | | | | | | | | | | | | | | | |
| Before (4) | | | | | | | | | | | | | | | |
| Before (5) | 61,0996 | | 0,1742 | 34,8651 | 110,1030 | | 0,1735 | 34,3101 | 110,3647 | | 0,1763 | 34,3980 | 0,1293 | 2018-10-23 | 17:00 |
| Before (6) | 61,0997 | | 0,1743 | 34,8652 | 110,1029 | | 0,1736 | 34,3100 | 110,3648 | | 0,1763 | 34,3981 | 0,1294 | 2018-10-24 | 09:00 |
| After (1) | 61,1001 | na | 0,1769 | 34,8691 | 110,103 | na | 0,1799 | 34,3118 | 110,3654 | na | 0,1862 | 34,4019 | 0,1296 | 2018-10-24 | 22:00 |
| After (2) | 61,1001 | | 0,1763 | 34,8689 | 110,1030 | | 0,1793 | 34,3106 | 110,3654 | | 0,1852 | 34,4005 | 0,1296 | 2018-10-31 | 08:00 |
| After (3) | 61,1001 | | 0,1763 | 34,8689 | 110,1030 | | 0,1793 | 34,3106 | 110,3654 | | 0,1852 | 34,4005 | 0,1296 | 2018-11-01 | 08:00 |
| After (4) | | | | | | | | | | | | | | | |
| After (5) | | | | | | | | | | | | | | | |
| After (6) | 61,1001 | | 0,1763 | 34,8689 | 110,1030 | | 0,1793 | 34,3106 | 110,3654 | | 0,1852 | 34,4005 | 0,1296 | 2018-11-01 | 08:00 |
| Difference | 0,0004 | 0,0000 | 0,0020 | 0,0037 | 0,0001 | 0,0000 | 0,0057 | 0,0006 | 0,0006 | 0,0000 | 0,0089 | 0,0024 | 0,0002 | | |
| Total (mg) | | 6,1 | | | | 12,5 | | | | 11,9 | | | 0,2 | | |
| Total ajusté (mg) | | 5,90 | | | | 12,30 | | | | 11,70 | | | | | |

| | |
|--------------------|------------|
| Project nu. | pi-20178 |
| Date | 24-10-2018 |
| Technicien | mm |

SFBA EPA EMISSION RESULTS

RESULTS

Average emission rate: 3,1 g/hr
 Burn Rate : 4,136 Dry kg/hr

Test Duration: 123 min

PRESSURE FACTOR: DGM 1 0,97973
 DGM 2 0,98140
 DGM 3 1,00276

BAROMETRIC PRESSURE
 Average: 30,00246871 in Hg
 Start: 30,0319987 in Hg
 End: 29,97293872 in Hg

TEMPERATURE FACTORS DGM 1 0,97635
 DGM 2 0,97550
 DGM 3 0,98466

DGM CONTROLLER VALUES

DGM 1 Final: 28620,755 Cuft
 Initial: 28600,427 Cuft

VOLUMES SAMPLED DGM 1 19,221 Scft
 DGM 2 18,883 Scft
 DGM 3 45,541 Scft

DGM 2 Final: 26935,259 Cuft
 Initial: 26915,364 Cuft

DGM #3 Final: 465,440 Cuft
 Initial: 419,120 Cuft

TOTAL TUNNEL VOLUME : 35099

TEMPERATURES

SAMPLE RATIOS
 Sample Train 1: 1826,087
 Sample Train 2: 1858,736

DGM 1 540,789 °R
 DGM 2 541,261 °R

CALIBRATION FACTORS

Patriculate concentration
 Sample Train 1 **0,000177** g/dscf
 Sample Train 2 **0,000185** g/dscf
 Room **0,000000** g/dscf

DGM 1 0,9885
 DGM 2 0,9914
 DGM #3 0,9958

TUNNEL FLOW RATE: 285,355 Dscfm

TOTAL EMISSIONS
 Sample Train 1 **6,21** g
 Sample Train 2 **6,51** g

PARTICULATE CATCH
 Total Sample Train 1: 3,40 mg
 Total Sample Train 2: 3,50 mg
 Total Sample Train 1 1st hour: 2,30 mg

EMISSION RATES
 Sample Train 1 **3,03** g/hr
 Sample Train 2 **3,17** g/hr

1st hour emission rate **4,20** g/hr

DEVIATION: 2,34%

Cs Train 1 0,0001769 Train 2 0,00018535

| | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-----|-----|------|-------|------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 82,0 | 184,0 | 8,6 | 0,1 | 11,4 | 575,5 | 77,1 | 121,8 | 742,6 | 301,0 | 578,5 | 622,7 | 310,9 | 0,16 | 82,65 | 80,97 | 86,43 | 0,15 | 82,73 | 82,10 | 84,63 |
| 83,0 | 185,0 | 8,5 | 0,1 | 10,8 | 568,9 | 77,3 | 121,2 | 733,4 | 302,6 | 577,8 | 623,0 | 315,3 | 0,16 | 82,60 | 80,97 | 86,35 | 0,15 | 82,67 | 82,11 | 84,72 |
| 84,0 | 186,0 | 8,3 | 0,1 | 10,5 | 563,2 | 77,4 | 120,1 | 723,6 | 304,4 | 576,4 | 621,3 | 319,7 | 0,16 | 82,46 | 80,97 | 86,25 | 0,15 | 82,57 | 82,09 | 84,81 |
| 85,0 | 187,0 | 8,2 | 0,1 | 10,3 | 558,3 | 77,4 | 119,6 | 713,2 | 306,1 | 576,0 | 620,9 | 324,2 | 0,16 | 82,43 | 80,94 | 86,15 | 0,15 | 82,52 | 82,08 | 84,89 |
| 86,0 | 188,0 | 8,1 | 0,1 | 10,1 | 554,3 | 77,2 | 118,5 | 705,6 | 307,1 | 575,4 | 619,2 | 328,8 | 0,16 | 82,40 | 80,95 | 86,06 | 0,15 | 82,54 | 82,07 | 84,98 |
| 87,0 | 189,0 | 8,0 | 0,1 | 9,9 | 550,5 | 77,8 | 118,6 | 697,5 | 308,3 | 572,4 | 617,7 | 333,3 | 0,16 | 82,39 | 80,94 | 85,99 | 0,15 | 82,52 | 82,09 | 85,06 |
| 88,0 | 190,0 | 7,8 | 0,1 | 9,8 | 546,8 | 77,7 | 118,1 | 689,3 | 309,4 | 571,4 | 615,9 | 337,8 | 0,16 | 82,38 | 80,95 | 85,92 | 0,15 | 82,51 | 82,12 | 85,12 |
| 89,0 | 191,0 | 7,7 | 0,1 | 9,7 | 542,2 | 77,2 | 117,5 | 681,9 | 310,2 | 569,9 | 615,0 | 342,3 | 0,16 | 82,35 | 80,95 | 85,81 | 0,15 | 82,51 | 82,13 | 85,13 |
| 90,0 | 192,0 | 7,6 | 0,1 | 9,6 | 539,2 | 77,0 | 116,7 | 674,1 | 311,0 | 569,2 | 612,0 | 346,5 | 0,16 | 82,33 | 80,94 | 85,70 | 0,15 | 82,49 | 82,14 | 85,18 |
| 91,0 | 193,0 | 7,5 | 0,1 | 9,6 | 535,5 | 77,5 | 116,6 | 667,2 | 312,0 | 566,3 | 610,1 | 350,9 | 0,16 | 82,29 | 80,93 | 85,61 | 0,15 | 82,45 | 82,15 | 85,23 |
| 92,0 | 194,0 | 7,4 | 0,1 | 9,6 | 532,5 | 77,0 | 116,1 | 659,7 | 313,1 | 565,4 | 609,2 | 355,3 | 0,16 | 82,28 | 80,95 | 85,56 | 0,15 | 82,46 | 82,14 | 85,28 |
| 93,0 | 195,0 | 7,2 | 0,1 | 9,5 | 529,0 | 76,9 | 115,6 | 652,3 | 313,8 | 563,5 | 607,8 | 359,5 | 0,16 | 82,20 | 80,96 | 85,44 | 0,15 | 82,38 | 82,15 | 85,29 |
| 94,0 | 196,0 | 7,1 | 0,1 | 9,2 | 524,5 | 77,3 | 114,9 | 643,4 | 313,7 | 562,9 | 604,8 | 363,5 | 0,16 | 82,14 | 80,95 | 85,36 | 0,15 | 82,29 | 82,12 | 85,32 |
| 95,0 | 197,0 | 7,0 | 0,1 | 9,0 | 520,3 | 77,4 | 114,6 | 636,3 | 314,7 | 560,2 | 603,8 | 367,7 | 0,16 | 82,07 | 80,97 | 85,25 | 0,15 | 82,26 | 82,12 | 85,35 |
| 96,0 | 198,0 | 6,9 | 0,1 | 8,9 | 517,1 | 77,4 | 114,5 | 628,1 | 315,7 | 558,5 | 602,5 | 371,7 | 0,16 | 82,00 | 80,97 | 85,17 | 0,15 | 82,22 | 82,12 | 85,37 |
| 97,0 | 199,0 | 6,8 | 0,1 | 8,9 | 513,9 | 77,1 | 114,0 | 622,0 | 316,7 | 556,6 | 600,2 | 375,7 | 0,16 | 81,97 | 80,98 | 85,07 | 0,15 | 82,19 | 82,12 | 85,32 |
| 98,0 | 200,0 | 6,7 | 0,1 | 8,8 | 510,3 | 77,1 | 113,3 | 615,2 | 317,7 | 554,5 | 598,0 | 379,4 | 0,16 | 81,88 | 80,96 | 84,93 | 0,15 | 82,11 | 82,10 | 85,33 |
| 99,0 | 201,0 | 6,6 | 0,1 | 8,7 | 508,0 | 77,0 | 113,4 | 609,4 | 318,7 | 552,5 | 596,3 | 383,2 | 0,16 | 81,83 | 80,96 | 84,88 | 0,15 | 82,07 | 82,09 | 85,34 |
| 100,0 | 202,0 | 6,5 | 0,1 | 8,7 | 506,2 | 77,0 | 112,8 | 603,9 | 319,8 | 550,3 | 594,9 | 387,0 | 0,16 | 81,77 | 80,96 | 84,77 | 0,15 | 82,01 | 82,06 | 85,32 |
| 101,0 | 203,0 | 6,4 | 0,1 | 8,7 | 504,9 | 77,0 | 112,8 | 600,0 | 320,6 | 547,8 | 592,7 | 390,3 | 0,16 | 81,70 | 80,95 | 84,67 | 0,15 | 81,94 | 82,03 | 85,31 |
| 102,0 | 204,0 | 6,4 | 0,1 | 8,6 | 500,7 | 77,1 | 111,8 | 595,4 | 321,6 | 544,6 | 590,6 | 393,7 | 0,16 | 81,62 | 80,94 | 84,56 | 0,15 | 81,88 | 82,03 | 85,29 |
| 103,0 | 205,0 | 6,3 | 0,1 | 8,3 | 496,2 | 76,9 | 111,3 | 590,1 | 322,8 | 541,8 | 588,7 | 397,1 | 0,16 | 81,51 | 80,92 | 84,45 | 0,15 | 81,81 | 82,00 | 85,29 |
| 104,0 | 206,0 | 6,2 | 0,1 | 8,1 | 493,1 | 76,7 | 111,2 | 586,0 | 323,6 | 538,5 | 587,0 | 400,5 | 0,16 | 81,44 | 80,93 | 84,35 | 0,15 | 81,76 | 81,99 | 85,25 |
| 105,0 | 207,0 | 6,1 | 0,1 | 8,0 | 491,1 | 76,9 | 110,3 | 580,8 | 324,2 | 536,2 | 584,6 | 403,7 | 0,16 | 81,29 | 80,89 | 84,24 | 0,15 | 81,65 | 81,97 | 85,22 |
| 106,0 | 208,0 | 6,0 | 0,1 | 8,0 | 487,7 | 77,0 | 110,3 | 576,5 | 324,8 | 533,0 | 581,9 | 406,7 | 0,16 | 81,24 | 80,85 | 84,13 | 0,15 | 81,59 | 81,93 | 85,19 |
| 107,0 | 209,0 | 5,9 | 0,1 | 7,9 | 484,4 | 76,8 | 110,3 | 571,7 | 325,8 | 529,7 | 579,5 | 410,0 | 0,16 | 81,17 | 80,87 | 84,05 | 0,15 | 81,55 | 81,94 | 85,17 |
| 108,0 | 210,0 | 5,9 | 0,2 | 7,8 | 481,6 | 77,1 | 109,4 | 566,8 | 326,4 | 525,8 | 578,0 | 413,3 | 0,16 | 81,13 | 80,84 | 83,92 | 0,15 | 81,50 | 81,92 | 85,11 |
| 109,0 | 211,0 | 5,8 | 0,2 | 7,7 | 478,5 | 76,9 | 109,7 | 562,8 | 327,2 | 522,8 | 574,6 | 416,2 | 0,16 | 81,09 | 80,84 | 83,83 | 0,15 | 81,44 | 81,92 | 85,06 |
| 110,0 | 212,0 | 5,7 | 0,2 | 7,6 | 475,0 | 76,9 | 109,2 | 558,5 | 328,3 | 519,6 | 571,7 | 418,9 | 0,16 | 81,04 | 80,81 | 83,74 | 0,15 | 81,36 | 81,86 | 85,02 |
| 111,0 | 213,0 | 5,6 | 0,2 | 7,5 | 472,9 | 77,0 | 108,6 | 553,0 | 328,6 | 517,4 | 569,0 | 422,0 | 0,16 | 81,00 | 80,79 | 83,65 | 0,15 | 81,30 | 81,86 | 84,97 |
| 112,0 | 214,0 | 5,6 | 0,2 | 7,3 | 467,6 | 76,8 | 108,2 | 547,9 | 329,2 | 514,4 | 565,8 | 424,7 | 0,16 | 80,95 | 80,77 | 83,53 | 0,15 | 81,27 | 81,83 | 84,95 |
| 113,0 | 215,0 | 5,5 | 0,3 | 7,1 | 462,8 | 77,1 | 107,6 | 542,2 | 329,6 | 510,7 | 563,2 | 427,7 | 0,16 | 80,99 | 80,75 | 83,43 | 0,15 | 81,26 | 81,82 | 84,92 |
| 114,0 | 216,0 | 5,4 | 0,3 | 6,8 | 458,1 | 76,7 | 106,7 | 536,3 | 329,9 | 507,0 | 559,7 | 430,3 | 0,16 | 80,94 | 80,73 | 83,31 | 0,15 | 81,22 | 81,78 | 84,85 |
| 115,0 | 217,0 | 5,4 | 0,3 | 6,6 | 452,2 | 76,9 | 106,5 | 529,9 | 329,9 | 505,4 | 555,8 | 432,8 | 0,16 | 80,91 | 80,71 | 83,17 | 0,15 | 81,15 | 81,76 | 84,79 |
| 116,0 | 218,0 | 5,3 | 0,3 | 6,6 | 448,3 | 76,5 | 105,9 | 523,4 | 330,4 | 501,9 | 552,4 | 435,3 | 0,16 | 80,86 | 80,70 | 83,10 | 0,15 | 81,12 | 81,74 | 84,74 |
| 117,0 | 219,0 | 5,3 | 0,3 | 6,5 | 444,5 | 77,0 | 105,6 | 518,4 | 330,7 | 498,4 | 548,8 | 437,8 | 0,16 | 80,90 | 80,70 | 82,95 | 0,15 | 81,14 | 81,73 | 84,67 |
| 118,0 | 220,0 | 5,2 | 0,3 | 6,4 | 440,8 | 76,8 | 105,9 | 512,3 | 330,4 | 495,6 | 544,4 | 440,2 | 0,16 | 80,96 | 80,71 | 82,86 | 0,15 | 81,19 | 81,73 | 84,63 |
| 119,0 | 221,0 | 5,2 | 0,4 | 6,4 | 438,4 | 76,7 | 105,1 | 507,0 | 330,2 | 492,9 | 541,4 | 442,3 | 0,16 | 80,98 | 80,71 | 82,77 | 0,15 | 81,16 | 81,72 | 84,57 |
| 120,0 | 222,0 | 5,1 | 0,4 | 6,4 | 435,4 | 76,5 | 104,9 | 502,3 | 330,2 | 490,1 | 537,2 | 444,7 | 0,16 | 81,01 | 80,69 | 82,65 | 0,15 | 81,17 | 81,71 | 84,51 |
| 121,0 | 223,0 | 5,0 | 0,4 | 6,3 | 431,9 | 76,9 | 105,1 | 497,3 | 329,6 | 487,3 | 533,6 | 446,8 | 0,16 | 81,04 | 80,70 | 82,68 | 0,15 | 81,17 | 81,70 | 84,47 |
| 122,0 | 224,0 | 5,0 | 0,4 | 6,3 | 429,1 | 76,6 | 104,3 | 493,0 | 329,5 | 484,9 | 530,6 | 449,0 | 0,16 | 81,06 | 80,72 | 82,92 | 0,15 | 81,18 | 81,71 | 84,41 |
| 123,0 | 225,0 | 4,9 | 0,4 | 6,1 | 426,2 | 76,4 | 104,1 | 489,0 | 329,1 | 482,5 | 526,8 | 451,0 | 0,16 | 81,14 | 80,74 | 83,16 | 0,15 | 81,26 | 81,73 | 84,34 |

SFBA EPA EMISSION RESULTS

RESULTS

Average emission rate: 2,80 g/hr

Burn Rate : 0,989 Dry kg/hr

Test Duration: 501 min

PRESSURE FACTOR: DGM 1 0,97973
 DGM 2 0,98140
 DGM 3 1,00276

BAROMETRIC PRESSURE
 Average: 30,00246871 in Hg
 Start: 30,0319987 in Hg
 End: 29,97293872 in Hg

TEMPERATURE FACTORS DGM 1 0,97362
 DGM 2 0,97312
 DGM 3 0,98158

DGM CONTROLLER VALUES

DGM 1 Final: 28704,920 Cuft
 Initial: 28620,862 Cuft

VOLUMES SAMPLED DGM 1 79,257 Scft
 DGM 2 77,369 Scft
 DGM 3 173,834 Scft

DGM 2 Final: 27017,094 Cuft
 Initial: 26935,378 Cuft

DGM #3 Final: 642,800 Cuft
 Initial: 465,440 Cuft

TOTAL TUNNEL VOLUME : 151119

TEMPERATURES

SAMPLE RATIOS
 Sample Train 1: 1906,708
 Sample Train 2: 1953,237

DGM 1 542,307 °R
 DGM 2 542,586 °R

Patriculate concentration
 Sample Train 1 **0,000158** g/dscf
 Sample Train 2 **0,000154** g/dscf
 Room **0,000001** g/dscf

CALIBRATION FACTORS

DGM 1 0,9885
 DGM 2 0,9914
 DGM #3 0,9958

TUNNEL FLOW RATE: 301,636 Dscfm

TOTAL EMISSIONS
 Sample Train 1 **23,66** g
 Sample Train 2 **23,07** g

PARTICULATE CATCH
 Total Sample Train 1: 12,50 mg
 Total Sample Train 2: 11,90 mg
 Total Sample Train 1 1st hour: 6,10 mg

EMISSION RATES
 Sample Train 1 **2,83** g/hr
 Sample Train 2 **2,76** g/hr

1st hour emission rate **11,63** g/hr

DEVIATION: 1,26%

Cs Train 1 Train 2
 0,0001577 0,00015381

Manufacturer: Wolf Steel Ltd
 Model: Timberwolf 2200

Run: 1
 Project #: pi-20178
 Test Duration: 501 min

| | HHV | LHV |
|-----------|--------|--------|
| Eff | 71,04% | 76,44% |
| Comb Eff | 98,40% | 98,40% |
| HT Eff | 72,20% | 77,69% |
| Output | 57 059 | kJ/h |
| Burn Rate | 3,97 | kg/h |
| Grams CO | 156 | g |
| Input | 80 316 | kJ/h |
| MC wet | 17,02 | |

Note: In the "Input data", "Calc. % O₂", "Fuel Properties", and "Mass Balance" columns, [e], [d], [g], [a], [b], [c], [h], [u], [w], [j], and [k] refer to their respective variables in Clauses 13.7.3

Ultimate CO₂
 CO_{2-ult} 19,86
 F_o
 1,051

| | Air Fuel Ratio (A/F) |
|-----------------------------|----------------------|
| Overall Heating Efficiency: | 71,04% |
| Combustion Efficiency: | 98,40% |
| Heat Transfer Efficiency: | 72,20% |

| | |
|--|--------|
| Dry Molecular Weight (M _d) | 30,20 |
| Dry Moles Exhaust Gas (N _g): | 322,21 |
| Air Fuel Ratio (A/F) | 9,22 |

| | | |
|----------------|--------------|--------------|
| Heat Output: | 54 127 Btu/h | 57 059 kJ/h |
| Heat Input: | 76 188 Btu/h | 80 316 kJ/h |
| Burn Duration: | 1,60 h | |
| Burn Rate: | 8,76 lb/h | 3,975 kg/h |
| Stack Temp: | 585,6 Deg. F | 307,5 Deg. C |

Manufacturer: Wolf Steel Ltd
 Model: Timberwolf 2200

Run: 1
 Project #: pi-20178
 Test Duration: 501 min

| | HHV | LHV |
|-----------|--------|--------|
| Eff | 71,95% | 77,42% |
| Comb Eff | 90,26% | 90,26% |
| HT Eff | 79,71% | 85,77% |
| Output | 13 645 | kJ/h |
| Burn Rate | 0,94 | kg/h |
| Grams CO | 1 077 | g |
| Input | 18 964 | kJ/h |
| MC wet | 17,72 | |

Note: In the "Input data", "Calc. % O₂", "Fuel Properties", and "Mass Balance" columns, [e], [d], [g], [a], [b], [c], [h], [u], [w], [j], and [k] refer to their respective variables in Clauses 13.7.3

Ultimate CO₂
 CO_{2-ut} 19,86
 F_o
 1,050

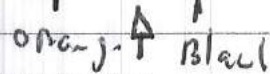
| | Air Fuel Ratio (A/F) |
|-----------------------------|----------------------|
| Overall Heating Efficiency: | 71,95% |
| Combustion Efficiency: | 90,26% |
| Heat Transfer Efficiency: | 79,71% |

| | |
|--|--------|
| Dry Molecular Weight (M _d) | 29,66 |
| Dry Moles Exhaust Gas (N _g): | 427,83 |
| Air Fuel Ratio (A/F) | 12,18 |

| | | |
|----------------|--------------|--------------|
| Heat Output: | 12 944 Btu/h | 13 645 kJ/h |
| Heat Input: | 17 990 Btu/h | 18 964 kJ/h |
| Burn Duration: | 8,35 h | |
| Burn Rate: | 2,07 lb/h | 0,939 kg/h |
| Stack Temp: | 223,2 Deg. F | 106,2 Deg. C |

Date: 2018-10-24 Manufacturer: WolfSteel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: SP

- kindling 86 LBS stack Fine 1 m w torch
- No paper
- Fan ~~Low~~ off
- close Door immediately
- At 300 LBS insert load
- At 683 °F in stack close Door
- At 39 min open Fan low
- At 49 LBS stop pump and stop Fan
- At 400 LBS insert load
- At 5 min close Door
- At 1300 close air gradually
- At 15 min close air net completely between light orange and Black



TEST LOAD CONFIGURATION

Date: 2018-10-24 Manufacturer: wolf steel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: DP

Moisture Meter Calibration Check:

| Equipment # | Time | 12% | 22% |
|-------------|------|-----|-----|
| EM-191 | 7:00 | ok | ok |

Pre-Test

Post-Test

Facility Conditions:

Air Velocity from less than 2 feet
 Smoke Capture Check.....
 Picture.....

| | Pre-Test | Post-Test |
|-------------|----------|-----------|
| (max50 Fpm) | 0 | 0 |
| ok | ok | ok |
| 4 sides | ok | ok |

Wood Heater Conditions:

Date Wood Heater Stack Cleaned.....
 Date Dilution Tunnel Cleaned.....
 Induced Draft Check (max 0.005 H2O).....
 Traverse before ignition.....

| |
|------------|
| 2018-10-24 |
| 2018-10-24 |
| ok |
| ok |

Temperature System:

Ambient (65°-90°F).....

| | |
|----|----|
| ok | °F |
|----|----|

Proportional Checks:

Thermocouple check.....
 Pitot Clean.....
 Pitot verification.....

| |
|----|
| ok |
| ok |
| ok |

Sampling Train ID Numbers:

| | High fire test | | | Medium low fire test | | |
|----------------------------|----------------------|---------|---------|----------------------|---------|---------|
| | 1 st hour | Train 1 | Train 2 | 1 st hour | Train 1 | Train 2 |
| Probe..... | 01 | 20 | 35 | 02 | 34 | 41 |
| Filter Front..... | 308 | 320 | 321 | 301 | 304 | 307 |
| Filter Back..... | 309 | 321 | 332 | 302 | 306 | 334 |
| Filter Thermocouple..... | 11 | 11 | 12 | 11 | 11 | 12 |
| Filter (80°F ≥ <90°F)..... | ok | ok | ok | ok | ok | ok |

SAMPLING EQUIPMENT CHECK OUT

Date: 2018-10-24 Manufacturer: Wolf Steel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: SP

Leakage Checks Tunnel Samplers

| High fire test | System 1 st hour | | System 1 | | System 2 | |
|--|--|-------------------------|--|-------------------------|--|-------------------------|
| | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) |
| Vacuum (inches Hg.) | -15 | -15 | -15 | -15 | -15 | -15 |
| Final 1minute DGM (Liter) | 809872.83 | 80450.56 | 809873.06 | 810450.73 | 762157.08 | 762724.68 |
| Initial 1minute DGM (Liter) | 809872.83 | 80450.55 | 809873.11 | 810450.70 | 762157.08 | 762724.62 |
| Change © (Liter) | ∅ | 0.01 | 809873.11 0.10 | 0.03 | ∅ | 0.06 |
| Allowable leakage .04 x Sample rate or 0.28Lpm CSA B415 (0.56) | | | | | | |
| Check OK | ok | ok | ok | ok | ok | ok |

| Low medium fire test | System 1 st hour | | System 1 | | System 2 | |
|--|--|-------------------------|--|-------------------------|--|-------------------------|
| | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) |
| Vacuum (inches Hg.) | -15 | -15 | -15 | -15 | -15 | -15 |
| Final 1minute DGM (Liter) | 810451.79 | 812833.49 | 810451.95 | 812833.56 | 762724.12 | 765040.08 |
| Initial 1minute DGM (Liter) | 810451.79 | 812833.48 | 810451.93 | 812833.54 | 762724.12 | 765040.06 |
| Change © (Liter) | ∅ | 0.01 | 0.02 | 0.02 | ∅ | 0.02 |
| Allowable leakage .04 x Sample rate or 0.28Lpm CSA B415 (0.56) | | | | | | |
| Check OK | ok | ok | ok | ok | ok | ok |

SAMPLING EQUIPMENT CHECK OUT

Date: 2018-10-24 Manufacturer: Wolf Steel Model: 22
 Project #: PT 20178 Run: 1 Tech: Mr Reviewer: SP

Leakage Checks Flue Gas Sampler

| Plugged Probe | Pre-Test | Post Test |
|-------------------------------|----------|-----------|
| Vacuum (inches Hg.) | - 5 | - 5 |
| Rotameter Reading (mml/min.) | 0 | 0 |
| Flow Rate (lpm) | 1.5 | 1.5 |
| Allowable (.02 x Sample Rate) | 30 | 30 |
| Check OK | OK | OK |

Leakage Checks Pitot

| Plugged Probe | Pre Test 3 H ₂ O static | Pre Test 0.4-0.5 H ₂ O velocity | Post Test 3 H ₂ O Static | Post Test 0.4-0.5 H ₂ O velocity |
|------------------------------------|--|--|---|---|
| Vacuum (inches Hg.) | 3 | .5 | 3 | .4 |
| Check OK (no change after 15 sec.) | OK | OK | OK | OK |

Date: 2018-10-24 Manufacturer: Wolfe Steel Model: 22
 Project #: PT 20178 Run: 1 Tech: MM Reviewer: DP

| Scale Type | Audit | | Measured Weight |
|------------|-------------|-----------------|-----------------|
| | Equipment # | Weight | |
| Platform | EM 090 | 44 lbs, Class F | 44 lbs |
| Wood | EM 090 | 44 lbs, Class F | 44 lbs |
| Analytical | EM 128 | 100 mg, Class S | 100mg |
| Analytical | EM 129 | 200 g, Class S | 200 g |

LIMITS OF WEIGHT RANGES

ANALYTICAL SCALE: 50%-150% of dry filter weight, ± 0.1 mg
PLATFORM SCALE: 20%-80% of ideal test load weight, ± 0.1 lbs or 1%
WOOD SCALE: 20%-80% of ideal test load weight, ± 0.01 lbs or 1%

Date: 2018-10-24 Manufacturer: Wolf Steel Model: 22
 Project #: pI 2018 Run: 1 Tech: M M Reviewer: DP

FOR TUNNELS < 12 in

 Barometric pressure (P_{bar}) 101.7 (KPa.) Static pressure (P_q) 0.20 (inches w.c.)
 Inside diameter: Port A _____ Port B _____
 Tunnel cross sectional area: .1963Ft²
 Pitot tube type: Standard

| Traverse Point | Position (inches) | | | Velocity Head Δ_p (inches H ₂ O) | Tunnel Temperature (°F) |
|----------------|-------------------|------|------|--|-------------------------|
| | 6 po | 7 po | 8 po | | |
| A- Centroid | 3.00 | 3.50 | 4 | 0.056 | 91.14 |
| B - Centroid | 3.00 | 3.50 | 4 | 0.056 0.048 | 91.34 90.91 |
| A-1 | 0.40 | 0.50 | 0.50 | 0.048 0.066 | 91.37 91.34 |
| A-2 | 1.50 | 1.75 | 2 | 0.066 | 91.37 |
| A-3 | 4.50 | 5.25 | 6 | 0.049 | 91.31 |
| A-4 | 5.60 | 6.5 | 7.5 | 0.043 | 90.99 |
| B-1 | 0.40 | 0.50 | 0.50 | 0.043 | 91.46 |
| B-2 | 1.50 | 1.75 | 2 | 0.069 | 91.98 |
| B-3 | 4.50 | 5.25 | 6 | 0.054 | 92.33 |
| B-4 | 5.60 | 6.5 | 7.5 | 0.045 | 92.31 |
| AVERAGE | | | | | |

$$v_s = K_p C_p (\sqrt{\Delta_p})_{avg} \sqrt{\frac{(T_s)_{avg}}{P_s M_s}}$$

Where,

 C_p = pitot tube coefficient, dimension less = 0.99 for standard pitot.

 Δ_p = manometer reading (inches H₂O)

 T_s = average absolute dilution tunnel temperature (°F + 460)

 P_s = absolute dilution tunnel gas pressure or $P_{bar} + P_{qg}$
 P_q = static pressure in. H₂O
 { 13.6 }

 M_s = 28.56, wet molecular weight of stack gas (alternatively, it may be measured)

 K_p = 85.49 pitot tube constant, (conversion factor for English units)

 Δ_p avg. = average of the square roots of the velocity heads (Δ_p) measured at each traverse point.

Date: 2018-10-24 Manufacturer: Wolfsteel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: DP

Pre-Test (Adjust and Record)

| | ZERO | | SPAN | | CAL. (Record Only) | |
|--|--------|-----------|--------|-----------|--------------------|-----------|
| | Actual | Should Be | Actual | Should Be | Actual | Should Be |
| CO | 0 | 0 | 2984 | 3000 | 1008 | 1000 |
| Tolerance CO | | +/- 0.02 | | +/- 0.15 | | +/- 0.05 |
| CO ₂ | 0 | 0 | 1793 | 1800 | 980 | 1000 |
| Tolerance CO ₂ | | +/- 0.02 | | +/- 0.5 | | +/- 0.5 |
| O ₂ informative CSA B415 calculated value | na | na | na | na | na | na |
| | Actual | Should Be | Actual | Should Be | Actual | Should Be |

Post Test (Record Only)

| | Zero | Span | Cal. | Zero Drift | Limit | Span Drift | Limit | Cal. Drift | Limit | OK? | Not OK* |
|-----------------|------|------|------|------------|-------|------------|-------|------------|-------|-----|---------|
| CO | 0 | 2990 | 1003 | 0 | 0.02 | 0.006 | 0.15 | 0.005 | 0.05 | ✓ | |
| CO ₂ | 0 | 1790 | 985 | 0 | 0.02 | 0.07 | 0.5 | 0.05 | 0.5 | ✓ | |

TEST DATA LOG

Date: 2018-10-24 Manufacturer: WolfSteel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: DP

RAW DRY GAS METER READINGS

| | | System 1 | System 2 | Blank |
|----------------------|-----------------|-----------|-----------|---------------------------------------|
| High fire test | Final (Liter) | 810449.50 | 762724.58 | 465.44 |
| | Initial (Liter) | 809873.88 | 762158.21 | 448 ^{mm} , 419.12 |
| Low medium fire test | Final (Liter) | 812832.79 | 765038.88 | 642.80 |
| | Initial (Liter) | 810452.55 | 762724.96 | 465.44 |

AMBIENT CONDITIONS

| | Before | After |
|------------------|--------|-------|
| Barometer (kPa): | 101.7 | 101.5 |
| Dry Bulb (F): | 76.28 | 87.09 |
| Humidity (%): | 31.0 | 28.4 |

FUEL DATA

Date: 2018-10-24 Manufacturer: Wolfsteel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: SP

FUEL DESCRIPTION:

Type of wood:

KINDLING AND START-UP LOAD

| Piece Size | Weight | Meter Moisture Content (% dry) | | |
|--------------------------|-----------|--------------------------------|----|----|
| X X 16 in. ^{pr} | 4086 lbs. | | | |
| X X in. ^{pr} | 4162 lbs. | | | |
| X X in. ^{pr} | 4020 lbs. | | | |
| X X in. | | | | |
| X X 16 in. | 48 lbs. | 20 | 20 | 20 |
| X X in. | | | | |
| X X 16 in. | 38 lbs. | 9 | 9 | 9 |
| X X in. | | | | |
| X X in. | | | | |

HIGHFIRE TEST LOAD

| Piece Size | Weight | Meter Moisture Content (% dry) | | |
|------------|-----------|--------------------------------|-----|-----|
| X X 16 in. | 4086 lbs. | 187 | 190 | 191 |
| X X 16 in. | 4162 lbs. | 191 | 193 | 193 |
| X X 16 in. | 4020 lbs. | 192 | 198 | 191 |
| X X in. | | | | |
| X X 16 in. | 360 lbs. | 278 | 276 | 278 |
| X X 16 in. | 4260 lbs. | 193 | 192 | 193 |
| X X in. | | | | |
| X X in. | | | | |
| X X in. | | | | |

FUEL DATA

Date: 2018-10-24 Manufacturer: WolfSteel Model: 22
 Project #: PI 20178 Run: 1 Tech: MM Reviewer: ND

FUEL DESCRIPTION:

Type of wood:

LOW OR MEDIUM TEST LOAD

| Piece Size | | Weight | Meter Moisture Content (% dry) | | |
|------------|----------|------------|--------------------------------|--------------------|--------------------|
| x | x 16 in. | 3 992 lbs. | 192 | 193 | 192 |
| x | x 16 in. | 4200 lbs. | 192 | 192 | 191 |
| x | x 16 in. | 4360 lbs. | 193 | 194 | 193 |
| x | x in. | lbs. | | | |
| x | x 16 in. | 3852 lbs. | 192 | 191 | 192 |
| x | x 16 in. | 6198 lbs. | 192 192 | 192 192 | 192 192 |
| x | x in. | lbs. | 274 | 278 | 279 |
| x | x in. | lbs. | | | |
| x | x in. | lbs. | | | |
| x | x in. | lbs. | | | |
| x | x in. | lbs. | | | |
| x | x in. | lbs. | | | |
| x | x in. | lbs. | | | |
| x | x in. | lbs. | | | |



DILUTION TUNNEL PARTICULATE SAMPLER DATA

Date: 2018-10-24 Project #: PI 20178 Run: 1 Manufacturer: Wolfsteel Model: ZZ
 Tech: MM Reviewer: _____

| HIGHFIRE TEST FILTERS | | | | | | | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|--------|-------|
| SYSTEM 1 - 1 st hour | | | | | SYSTEM 1 | | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Blanc | |
| Date | Time | 001 | 308 | 309 | 18 | 20 | 320 | 321 | 20 | 333 |
| 2018-10-23 | 17:00 | 610691 | 01767 | 341659 | 1088431 | | | 01756 | 354898 | 01266 |
| 2018-10-24 | 9:00 | 610691 | 01767 | 341660 | 1088432 | | | 01756 | 354897 | 01267 |

| HIGHFIRE TEST FILTERS | | | | | | | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|--------|-------|
| SYSTEM 1 - 1 st hour | | | | | SYSTEM 1 | | | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Blanc | |
| Date | Time | 001 | 308 | 309 | 18 | 20 | 320 | 321 | 20 | 333 |
| 2018-10-24 | 13:00 | 610696 | 01778 | 341692 | 1088434 | | | 01749 | 354925 | 01267 |
| 2018-10-31 | 8:00 | 610695 | 01778 | 341682 | 1088433 | | | 01749 | 354914 | 01267 |
| 2018-11-01 | 8:00 | 610691 | 01778 | 341672 | 1088433 | | | 01749 | 354914 | 01267 |
| 2018-11-01 | 17:00 | 610691 | 01778 | 341672 | 1088433 | | | 01749 | 354914 | 01267 |

Date: 2018-10-24 Model: ZZ

Manufacturer: WolfSteel

Project #: pI 20178 Run: 1 Reviewer: _____

Tech: h m

| HIGH FIRE TEST FILTERS | | | | | |
|------------------------|------------------------|---------------------|--------------------|---------|--|
| SYSTEM 2 | | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | |
| | 35 | 324 | 332 | 26 | |
| 2018-10-23 17:00 | 109 2859 | | 01755 | 346692 | |
| 2018-10-24 9:00 | 109 2860 | | 01754 | 346693 | |

| HIGH FIRE TEST FILTERS | | | | | |
|-------------------------|------------------------|---------------------|--------------------|---------|--|
| SYSTEM 2 | | | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | |
| | 35 | 324 | 332 | 26 | |
| 2018-10-24 13:00 | 109 2867 | | 01765 | 346737 | |
| 2018-10-31 8:00 | 109 2867 | | 01765 | 346720 | |
| 2018-11-01 8:00 | 109 2867 | | 01765 | 346710 | |
| 2018-11-01 17:00 | 109 2867 | | 01765 | 346710 | |



DILUTION TUNNEL PARTICULATE SAMPLER DATA

Date: 2018-10-24 Project #: PI 20178 Run: 1 Manufacturer: Wolf Steel Model: 22
 Tech: MM Reviewer: _____

| LOW OR MEDIUM TEST FILTERS | | | | | | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|--------|
| SYSTEM 1 - 1 st hour | | | | | SYSTEM 1 | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Blanc |
| Date | Time | 02 | 302 | 13 | 34 | 304 | 306 | 29 | 336 |
| 2018-10-23 | 17:00 | 610996 | 01742 | 348651 | 110 1030 | | 01735 | 34 3101 | 0 1293 |
| 2018-10-24 | 9:00 | 610997 | 01743 | 348652 | 110 1029 | | 01736 | 34 3100 | 0 1294 |

| SYSTEM 1 - 1 st hour | | | | | | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|------------------|
| SYSTEM 1 | | | | | SYSTEM 1 | | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Blanc |
| Date | Time | 02 | 302 | 13 | 34 | 304 | 306 | 29 | 336 |
| 2018-10-24 | 22:00 | 611001 | 01769 | 348691 | 110 1030 | | 01799 | 34 3118 | 0 1296 0 1293 |
| 2018-10-31 | 8:00 | 611001 | 01763 | 348689 | 110 1030 | | 01793 | 34 3106 | 0 1296 0 1294 |
| 2018-11-01 | 8:00 | 611001 | 01763 | 348689 | 110 1030 | | 01793 | 34 3106 | 0 1296 |

Date: 2018-10-24 Manufacturer: WolfSteel Model: 22

Project #: PI 20178 Run: 1 Tech: _____ Reviewer: _____

| LOW OR MEDIUM FIRE TEST FILTERS | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|
| SYSTEM 2 | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets |
| Date | Time | 41 | 307 | 334 |
| | | | | 32 |
| 2018-10-23 | 17:00 | 110 3647 | | 01763 |
| | | | | 34 3980 |
| 2018-10-24 | 9:00 | 110 3648 | | 01763 |
| | | | | 34 3981 |

| LOW OR MEDIUM FIRE TEST FILTERS | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|
| SYSTEM 2 | | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets |
| Date | Time | 41 | 307 | 334 |
| | | | | 32 |
| 2018-10-24 | 22:00 | 110 3654 | | 01862 |
| | | | | 34 4019 |
| 2018-10-31 | 8:00 | 110 3654 | | 01852 |
| | | | | 34 4005 |
| 2018-11-01 | 8:00 | 110 3654 | | 01852 |
| | | | | 34 4005 |

Paramètres

Tous les facteurs de corrections et autres paramètres qui peuvent être modifiés par l'utilisateur du fichier sont regroupés ici.

Code verrouillage: WOL

Description du test

| | |
|---------------|------------|
| Test standard | EPA |
| Run # | 2 |
| Date | 25-10-2018 |
| Technicien | M.M |
| Project # | PI 20178 |

Description de l'unité

| | | |
|----------------------------|-----------|--------|
| Manufacturier | WOLFSTEEL | |
| Modèle | 22 | |
| Combustion system | Non-Cat | |
| Appliance type | WOODSTOVE | |
| Firebox volume | 1,91 | cu ft. |
| Appliance weight empty | n.a | lbs |
| Fan (no, Standard, Option) | | |

Paramètres du test

| | | |
|----------------------------------|-----|---|
| Logging time | 1 | min |
| Manufacturer's rated heat output | n.a | BTU/h Donnée fournie par le manufacturier |
| Targeted category | 1 | |
| Targeted output | n.a | BTU/h |
| Cp steel | n.a | BTU/lb-°F |

Échantillonnage

| | | |
|------------------------------|--------|---------------|
| Blank sampling rate | 0,20 | cuft/min |
| Internal probe diameter | 0,18 | in. |
| Calibration Factor (DGM #1): | 0,988 | Dimensionless |
| Equipment number (DGM #1): | EM 178 | |
| Calibration Factor (DGM #2): | 0,991 | Dimensionless |
| Equipment number (DGM #2): | EM 179 | |
| Calibration Factor (DGM #3): | 0,996 | Dimensionless |
| Equipment number (DGM #3): | EM 070 | Dimensionless |

Tunnel

| | | |
|---------------------------|----------|--|
| Targeted tunnel flow rate | 300 | scfm |
| Tunnel diameter | 8 | in. |
| Molecular weight | 28,78 | May be assumed to be 28,78 (EPA) Si B-415 = 29 |
| Pitot tube type | Standard | |
| Pitot tube coefficient | 0,99 | Dimensionless |

| | |
|-------------|---|
| Project nu. | PI 20178 |
| Date | 25-10-2018 |
| Technicien | m.m |

Fuel data

| | |
|-------------|---------------|
| Fuel type | Cord |
| Fuel specie | Oak |
| HHV | 20207,0 kJ/kg |
| %C | 49,5 |
| %H | 6,6 |
| %O | 43,7 |
| %Ash | 0,2 |
| HHV | 8689,9 Btu/lb |
| LHV | 7600,4 Btu/lb |

| Default Fuel Values | | |
|---------------------|--------|-----------|
| | D. Fir | Oak/Maple |
| HHV | 19 810 | 20 207 |
| %C | 48,73 | 49,5 |
| %H | 6,87 | 6,62 |
| %O | 43,9 | 43,7 |
| %Ash | 0,5 | 0,2 |
| HHV (Btu/lb) | 8519 | 8690 |
| LHV (Btu/lb) | 7451 | 7600 |

Adjunct to ASTM E XXXX Wood Heater Cordwood Test Method - May 10, 2017 Version

Cordwood Fuel Load Calculators - 10 lb/ft³ Nominal Load Density

Core 45-65% of Total Load Weight, Remainder 35-55% of Total Load Weight

Values to be input manually

| For All Usable Firebox Volumes - High Fire Test Only | | | | | | |
|--|-------|--------------------|--------------------|----------|-----------|--|
| Nominal Required Load Density (wet basis) | 10 | lb/ft ³ | | | | |
| Usable Firebox Volume | 1,91 | ft ³ | | | | |
| Total Nom. Load Wt. Target | 19,10 | lb | | | | |
| Total Load Wt. Allowable Range | 18,10 | to | 20,10 | lb | | |
| Core Target Wt. Allowable Range | 8,60 | to | 12,40 | lb | | |
| Remainder Load Wt. Allowable Range | 6,70 | to | 10,50 | lb | | |
| | | | | | Mid-Point | |
| Core Load Pc. Wt. Allowable Range | 2,90 | to | 4,80 | lb | 3,85 | |
| Remainder Load Pc. Wt. Allowable Range | 1,90 | to | 10,50 | lb | 6,20 | |
| | | Pc. # | | | | |
| Core Load Piece Wt. Actual | 1 | 3,58 | lb | In Range | | |
| | 2 | 4,05 | lb | In Range | | |
| | 3 | 4,70 | lb | In Range | | |
| Core Load Total. Wt. Actual | | 12,33 | lb | In Range | | |
| | | Pc. # | | | | |
| Remainder Load Piece Wt. | 1 | 4,07 | lb | In Range | | |
| (1 to 3 Pcs.) | 2 | 2,84 | lb | In Range | | |
| | 3 | | lb | NA | | |
| Remainder Load Tot. Wt. Act | | 6,91 | lb | In Range | | |
| Total Load Wt. Actual | | 19,24 | lb | In Range | | |
| Core % of Total Wt. | | 64% | | In Range | 45-65% | |
| Remainder % of Total Wt. | | 36% | | In Range | 35-55% | |
| Actual Load % of Nominal Target | | 101% | | In Range | 95-105% | |
| Actual Fuel Load Density | | 10,1 | lb/ft ³ | | | |
| <u>Kindling and Start-up Fuel</u> | | | | | | |
| Maximum Kindling Wt. (20% of Tot. Load Wt.) | | 3,85 | lb | | | |
| Actual Kindling Wt. | | 3,80 | lb | In Range | 19,8% | |
| Maximum Start-up Fuel Wt. (30% of Tot. Load Wt.) | | 5,77 | lb | | | |
| Actual Start-up Fuel Wt. | | 5,00 | lb | In Range | 26,0% | |
| Allowable Residual Start-up Fuel Wt. Range | 1,9 | to | 3,8 | lb | Mid-Point | |
| Actual Residual Start-up Fuel Wt. | | 3 | lb | In Range | 2,9 | |
| Total Wt. All Fuel Added (wet basis) | | 28,04 | lb | | | |
| <u>High Fire Test Run End Point Range</u> | | | | | | |
| | Low | | High | | Mid-Point | |
| Based on Fuel Load Wt. (w/tares) | 1,7 | to | 2,1 | lb | 1,9 | |
| Actual Fuel Load Ending Wt. | | 1,8 | lb | In Range | | |

| Fuel Piece Moisture Reading (%-dry basis) | | | | | | | |
|--|------|------|------|------|----------|-------------------|-------|
| | 1 | 2 | 3 | Ave. | | Pc. Wt. Dry Basis | |
| | 19,2 | 19,1 | 19,2 | 19,2 | In Range | 3,00 | 1,36 |
| | 19,9 | 19,2 | 19,2 | 19,4 | In Range | 3,39 | 1,54 |
| | 19,8 | 19,6 | 19,8 | 19,7 | In Range | 3,93 | 1,78 |
| | | | | | | | |
| | 27,9 | 27,6 | 27,7 | 27,7 | In Range | 3,18 | 1,44 |
| | 19,1 | 19,3 | 19,3 | 19,2 | In Range | 2,38 | 1,08 |
| | | | | NA | NA | NA | NA |
| Total Load Ave. MC (%-dry basis) | | | | 21,1 | In Range | | |
| Total Load Ave. MC % (wet basis) | | | | 17,4 | | | |
| Total Test Load Weight (dry basis) | | | | | | 15,89 | 7,21 |
| <u>Kindling Moisture (%-dry basis)</u> | | | | | | | |
| | 9 | 9 | 9 | 9,0 | In Range | 3,49 | 1,58 |
| <u>Start-up Fuel Moisture Readings (%-dry basis)</u> | | | | | | | |
| | 20 | 20 | 20 | 20,0 | In Range | 4,17 | 1,89 |
| Total Wt. All Fuel Added (dry basis) | | | | | | 23,54 | 10,68 |
| Total Wt. All Fuel Burned (dry basis) | | | | | | 18,7 | 8,5 |

Load pieces Length in. 16 in.

| For Usable Firebox Volumes up to 3.0 ft ³ - Low and Medium Fire | | | | CONSHOHOCKEN, PA 19428. ALL RIGHTS RESERVED. | | | |
|--|--------|--------------------|--------------------|--|-----------|---------|--|
| Nominal Required Load Density (wet basis) | 12 | lb/ft ³ | | | | | |
| Usable Firebox Volume | 1,91 | ft ³ | | | | | |
| Total Nom. Load Wt. Target | 22,92 | lb | | | | | |
| Total Load Wt. Allowable Range | 21,77 | to | 24,07 | lb | | | |
| Core Target Wt. Allowable Range | 10,314 | to | 14,90 | lb | | | |
| Remainder Load Wt. Allowable Range | 8,02 | to | 12,61 | lb | | | |
| Core Load Fuel Pc. Wt. Allowable Range | 3,44 | to | 5,73 | lb | Mid-Point | 4,58 | |
| Remainder Load Pc. Wt. Allowable Range | 2,29 | to | 6,88 | lb | | 4,58 | |
| Core Load Piece Wt. Actual | Pc. # | | | | | | |
| | 1 | 4,10 | lb | In Range | | | |
| | 2 | 4,04 | lb | In Range | | | |
| | 3 | 3,85 | lb | In Range | | | |
| Core Load Total. Wt. Actual | | 11,99 | lb | In Range | | | |
| Remainder Load Piece Wt. | Pc. # | | | | | | |
| (2 or 3 Pcs.) | 1 | 3,87 | lb | In Range | | | |
| | 2 | 6,34 | lb | In Range | | | |
| | 3 | | lb | NA | | | |
| Remainder Load Piece Weight Ratio - Small/Large | | 61% | | In Range | | ≤ 67% | |
| Remainder Load Tot. Wt. Act | | 10,21 | lb | In Range | | | |
| Total Load Wt. Actual | | 22,20 | lb | In Range | | | |
| Core % of Total Wt. | | 54% | | In Range | | 45-65% | |
| Remainder % of Total Wt. | | 46% | | In Range | | 35-55% | |
| Actual Load % of Nominal Target | | 97% | | In Range | | 95-105% | |
| Actual Fuel Load Density | | 11,6 | lb/ft ³ | | | | |
| Allowable Charcoal Bed Wt. Range (lb) | 2,3 | to | 4,4 | | Mid-Point | | |
| Actual Charcoal Bed Wt. | | 4,0 | lb | In Range | | 3,3 | |
| Actual Fuel Load Ending Wt. | | 0,0 | lb | Valid Test | | ≥ 90% | |
| Total Wt. of Fuel Burned During Test Run lb. | | 22,2 | lb | | | | |
| Load pieces Length in. | | 16 | in. | | | | |

| Fuel Piece Moisture Reading (%-dry basis) | | | | Pc. Wt. Dry Basis | | | | | |
|--|------|------|------|-------------------|----------|-------|------|------|----|
| 1 | 2 | 3 | Ave. | | | | | | |
| 19,6 | 19,3 | 19,3 | 19,4 | In Range | 3,43 | lb | 1,56 | kg | |
| 19,2 | 19,3 | 19,2 | 19,2 | In Range | 3,39 | lb | 1,54 | kg | |
| 19,2 | 19,3 | 19,2 | 19,2 | In Range | 3,23 | lb | 1,46 | kg | |
| | | | | | | | | | |
| 19,1 | 19,6 | 19,5 | 19,4 | In Range | 3,24 | lb | 1,47 | kg | |
| 27,8 | 27,7 | 27,8 | 27,8 | In Range | 4,96 | lb | 2,25 | kg | |
| | | | NA | NA | NA | lb | NA | kg | |
| Total Load Ave. MC % (dry basis) | | | | 21,6 | In Range | | | | |
| Total Load Ave. MC % (wet basis) | | | | 17,8 | | | | | |
| Total Test Load Weight (dry basis) | | | | | | 18,25 | lb | 8,28 | kg |
| Total Fuel Weight Burned During Test Run (dry basis) | | | | | | 18,3 | lb | 8,28 | kg |

| | Start | End |
|-----------------------|-----------|-------------|
| Barometer (kPa): | 101,5 | 101 |
| Barometer (in.Hg): | 29,972939 | 29,82528877 |
| Dry Bulb (F): | 78,98 | 82 |
| Humidity (%): | 25,1 | 23 |
| Air velocity (ft/min) | 0 | 0 |

| High fire test | | | | | | |
|----------------|----------|----------|------|----------|----|-------|
| DGM #1 | Final: | #VALEUR! | cuft | Final: | na | Liter |
| | Initial: | #VALEUR! | cuft | Initial: | na | Liter |
| DGM #2 | Final: | #VALEUR! | cuft | Final: | na | Liter |
| | Initial: | #VALEUR! | cuft | Initial: | na | Liter |
| DGM room | | | | Final: | na | cuft |
| | | | | Initial: | na | cuft |

| min or med burnrate | | | | | | |
|---------------------|----------|-----------|------|----------|------------|-------|
| DGM #1 | Final: | 28772,270 | cuft | Final: | 814739,950 | Liter |
| | Initial: | 28705,043 | cuft | Initial: | 812836,270 | Liter |
| DGM #2 | Final: | 27082,542 | cuft | Final: | 766892,180 | Liter |
| | Initial: | 27017,225 | cuft | Initial: | 765042,600 | Liter |
| DGM room | | | | Final: | 704,650 | cuft |
| | | | | Initial: | 642,800 | cuft |

Numéro de la ligne dans "Raw data" à partir duquel les données du test commence 246

Numéro de la ligne dans "Raw data" à partir duquel les données du highfire test commence

Numéro de la ligne dans "Raw data" à partir duquel les données du min ou medium fire test commence 246

Autres données à rentrer: dans preload data, load data, traverse et filter set weight

| | |
|--------------------|------------|
| Project nu. | PI 20178 |
| Date | 25-10-2018 |
| Technicien | M.M |

Tunnel Traverse Worksheet (for velocity calculations)

Static Pressure: 0,21 in. H2O
 Barometer: 29,973 in. Hg

Pour un tunnel de 12" et plus, prendre 6 lectures

| | TUNNEL VELOCITY | TUNNEL TEMP | SQUARE ROOT |
|----------|-----------------|-------------|-------------|
| | In. wc | °F | |
| A center | | | 0,0000 |
| B center | | | 0,0000 |
| A1 | | | 0,0000 |
| A2 | | | 0,0000 |
| A3 | | | 0,0000 |
| A4 | | | 0,0000 |
| A5 | | | 0,0000 |
| A6 | | | 0,0000 |
| B1 | | | 0,0000 |
| B2 | | | 0,0000 |
| B3 | | | 0,0000 |
| B4 | | | 0,0000 |
| B5 | | | 0,0000 |
| B6 | | | 0,0000 |
| AVERAGE | #DIV/0! | #DIV/0! | 0,0000 |

PITOT CONSTANT=
0,972

Pour un tunnel moins de 12", prendre 4 lectures

| | TUNNEL VELOCITY | TUNNEL TEMP | SQUARE ROOT |
|----------|-----------------|-------------|-------------|
| | In. wc | °F | |
| A center | 0,058 | 90,08 | 0,2408 |
| B center | 0,059 | 87,68 | 0,2429 |
| A1 | 0,053 | 89,9 | 0,2302 |
| A2 | 0,068 | 89,06 | 0,2608 |
| A3 | 0,052 | 88,61 | 0,2280 |
| A4 | 0,046 | 88,01 | 0,2145 |
| B1 | 0,047 | 87,430 | 0,2168 |
| B2 | 0,069 | 86,980 | 0,2627 |
| B3 | 0,056 | 86,500 | 0,2366 |
| B4 | 0,047 | 86,030 | 0,2168 |
| AVERAGE | 0,0555 | 88,0280 | 0,2350 |

| | |
|--------------------|---|
| Project nu. | PI 20178 |
| Date | 25-10-2018 |
| Technicien | M.M |

Filter set weight Low/ medium fire

| | System 1 (g) 1st hour | | | | System 1 (g) | | | | System 2 (g) | | | | Ambient blank (g) | Date | Heure |
|-------------------|-----------------------|-------------|---------|---------|--------------|-------------|--------|---------|--------------|-------------|--------|---------|-------------------|------------|-------|
| | probe | front | back | gasket | probe | front | back | gasket | probe | front | back | gasket | Filter | | |
| Number | 4 | 701 | 703 | 35 | 18 | 705 | 706 | 40 | 30 | 707 | 708 | 42 | 709 | | |
| Before (1) | | na | | | | na | | | | na | | | | | |
| Before (2) | | | | | | | | | | | | | | | |
| Before (3) | | | | | | | | | | | | | | | |
| Before (4) | | | | | | | | | | | | | | | |
| Before (5) | 61,3821 | | 0,1736 | 33,9699 | 108,9481 | | 0,1799 | 34,3251 | 110,2298 | | 0,1800 | 35,3654 | 0,1217 | 2018-10-24 | 18:00 |
| Before (6) | 61,3820 | | 0,1737 | 33,9698 | 108,9480 | | 0,1800 | 34,3250 | 110,2299 | | 0,1800 | 35,3653 | 0,1217 | 2018-10-25 | 08:00 |
| After (1) | 61,3824 | na | 0,1729 | 33,9731 | 108,948 | na | 0,1825 | 34,3264 | 110,2299 | na | 0,1829 | 35,3685 | 0,1217 | 2018-10-25 | 19:00 |
| After (2) | 61,3824 | | 0,1729 | 33,9725 | 108,9480 | | 0,1817 | 34,3258 | 110,2299 | | 0,1824 | 35,3671 | 0,1217 | 2018-10-31 | 08:00 |
| After (3) | 61,3824 | | 0,1729 | 33,9725 | 108,9480 | | 0,1817 | 34,3258 | 110,2299 | | 0,1823 | 35,3671 | 0,1217 | 2018-11-01 | 08:00 |
| After (4) | | | | | | | | | | | | | | | |
| After (5) | | | | | | | | | | | | | | | |
| After (6) | 61,3824 | | 0,1729 | 33,9725 | 108,9480 | | 0,1817 | 34,3258 | 110,2299 | | 0,1823 | 35,3671 | 0,1217 | 2018-11-01 | 08:00 |
| Difference | 0,0004 | 0,0000 | -0,0008 | 0,0027 | 0,0000 | 0,0000 | 0,0017 | 0,0008 | 0,0000 | 0,0000 | 0,0023 | 0,0018 | 0,0000 | | |
| Total (mg) | | 2,3 | | | | 4,8 | | | | 4,1 | | | 0 | | |
| Total ajusté (mg) | | 2,30 | | | | 4,80 | | | | 4,10 | | | | | |

| | |
|--------------------|------------|
| Project nu. | PI 20178 |
| Date | 25-10-2018 |
| Technicien | mm |

SFBA EPA EMISSION RESULTS

RESULTS

Average emission rate: 1,29 g/hr
 Burn Rate : 1,242 Dry kg/hr

Test Duration: 400 min

PRESSURE FACTOR: DGM 1 0,98077
 DGM 2 0,98373
 DGM 3 0,99930

BAROMETRIC PRESSURE
 Average: 29,89911375 in Hg
 Start: 29,97293872 in Hg
 End: 29,82528877 in Hg

TEMPERATURE FACTORS DGM 1 0,97199
 DGM 2 0,97113
 DGM 3 0,98027

DGM CONTROLLER VALUES

DGM 1 Final: 28772,270 Cuft
 Initial: 28705,043 Cuft

VOLUMES SAMPLED DGM 1 63,349 Scft
 DGM 2 61,863 Scft
 DGM 3 60,331 Scft

DGM 2 Final: 27082,542 Cuft
 Initial: 27017,225 Cuft

DGM #3 Final: 704,650 Cuft
 Initial: 642,800 Cuft

TOTAL TUNNEL VOLUME : 120934

TEMPERATURES

SAMPLE RATIOS
 Sample Train 1: 1908,997
 Sample Train 2: 1954,864

DGM 1 543,215 °R
 DGM 2 543,694 °R

CALIBRATION FACTORS

Patriculate concentration
 Sample Train 1 **0,000076** g/dscf
 Sample Train 2 **0,000066** g/dscf
 Room **0,000000** g/dscf

DGM 1 0,9885
 DGM 2 0,9914
 DGM #3 0,9958

TUNNEL FLOW RATE: 302,335 Dscfm

TOTAL EMISSIONS
 Sample Train 1 **9,16** g
 Sample Train 2 **8,01** g

PARTICULATE CATCH
 Total Sample Train 1: 4,80 mg
 Total Sample Train 2: 4,10 mg
 Total Sample Train 1 1st hour: 2,30 mg

EMISSION RATES
 Sample Train 1 **1,37** g/hr
 Sample Train 2 **1,20** g/hr

1st hour emission rate **4,39** g/hr

DEVIATION: 6,68%

Cs Train 1 Train 2
 7,577E-05 6,6275E-05

| * | *1 | *2 | *3 | *4 | *5 | *6 | *7 | *8 | Mass flow 1 | DGM 1 | DGM 1 | Filter 1 | Mass flow 2 | DGM 2 | DGM 2 | Filter 2 | | | | |
|----------|--------------|------------------|-----|-----------------|----------|-----------|-----------------|----------|-------------|-------------|-------------|-------------|-------------|---------|----------|----------|----------|---------|----------|-------|
| Elapsed | Raw data row | Weight Remaining | CO | CO ₂ | Flue Gas | Room Temp | Tunnel Dry Bulb | Unit Top | Unit Back | Unit R.Side | Unit L.Side | Unit Bottom | Reading | Inlet T | Outlet T | Temp | Reading | Inlet T | Outlet T | Temp |
| Time min | lbs | % | % | % | °F | °F | °F | °F | °F | °F | °F | °F | cuft/min | °F | °F | °F | cuft/min | °F | °F | °F |
| 0,00 | 246,00 | 22,2 | 0,3 | 5,7 | 386,8 | 76,9 | 148,2 | 452,0 | 436,1 | 436,9 | 419,4 | 510,3 | 0,16 | 80,75 | 80,96 | 80,83 | 0,15 | 81,15 | 82,05 | 80,76 |
| 1,0 | 247,0 | 21,7 | 0,2 | 2,1 | 456,2 | 76,9 | 145,4 | 436,2 | 436,7 | 436,0 | 419,3 | 513,8 | 0,16 | 80,96 | 81,01 | 80,93 | 0,15 | 81,21 | 82,12 | 80,87 |
| 2,0 | 248,0 | 21,5 | 0,3 | 3,6 | 505,0 | 76,9 | 154,1 | 436,8 | 433,8 | 433,8 | 419,9 | 516,5 | 0,16 | 81,05 | 81,05 | 81,07 | 0,15 | 81,20 | 82,14 | 81,03 |
| 3,0 | 249,0 | 21,1 | 0,3 | 4,1 | 652,0 | 76,8 | 177,0 | 448,3 | 435,9 | 433,4 | 424,0 | 518,0 | 0,16 | 81,07 | 81,05 | 81,35 | 0,15 | 81,17 | 82,17 | 81,36 |
| 4,0 | 250,0 | 20,7 | 0,4 | 8,7 | 654,3 | 76,5 | 146,9 | 435,1 | 433,0 | 432,6 | 428,6 | 518,8 | 0,16 | 81,13 | 81,07 | 81,36 | 0,15 | 81,19 | 82,19 | 81,45 |
| 5,0 | 251,0 | 20,4 | 0,3 | 13,7 | 621,6 | 76,8 | 133,8 | 553,9 | 434,2 | 432,1 | 432,0 | 519,1 | 0,16 | 81,32 | 81,14 | 81,54 | 0,15 | 81,35 | 82,25 | 81,68 |
| 6,0 | 252,0 | 20,2 | 0,2 | 12,9 | 623,2 | 76,7 | 130,5 | 432,8 | 433,2 | 432,6 | 432,6 | 519,2 | 0,16 | 81,44 | 81,19 | 81,69 | 0,15 | 81,45 | 82,28 | 81,86 |
| 7,0 | 253,0 | 19,9 | 0,2 | 13,5 | 637,7 | 76,9 | 129,8 | 628,0 | 431,7 | 435,5 | 443,4 | 518,8 | 0,16 | 81,56 | 81,22 | 81,91 | 0,15 | 81,52 | 82,34 | 82,10 |
| 8,0 | 254,0 | 19,6 | 0,2 | 14,3 | 654,0 | 77,1 | 130,3 | 665,5 | 430,8 | 439,5 | 451,2 | 518,2 | 0,16 | 81,60 | 81,24 | 82,14 | 0,15 | 81,53 | 82,36 | 82,33 |
| 9,0 | 255,0 | 19,3 | 0,3 | 15,1 | 663,0 | 77,0 | 130,9 | 698,5 | 429,1 | 443,7 | 459,0 | 516,9 | 0,16 | 81,70 | 81,27 | 82,31 | 0,15 | 81,62 | 82,40 | 82,59 |
| 10,0 | 256,0 | 19,0 | 0,3 | 15,2 | 663,6 | 78,5 | 131,7 | 727,2 | 428,0 | 448,7 | 466,6 | 515,8 | 0,16 | 81,76 | 81,30 | 82,56 | 0,15 | 81,67 | 82,45 | 82,84 |
| 11,0 | 257,0 | 18,8 | 0,2 | 14,9 | 665,1 | 78,4 | 131,5 | 750,9 | 427,1 | 455,5 | 474,4 | 514,2 | 0,16 | 81,84 | 81,33 | 82,78 | 0,15 | 81,71 | 82,47 | 83,13 |
| 12,0 | 258,0 | 18,5 | 0,2 | 14,7 | 662,5 | 78,0 | 132,1 | 771,6 | 426,1 | 461,4 | 481,3 | 512,6 | 0,16 | 81,99 | 81,39 | 83,00 | 0,15 | 81,84 | 82,54 | 83,40 |
| 13,0 | 259,0 | 18,3 | 0,1 | 14,5 | 626,9 | 77,3 | 128,6 | 785,6 | 425,0 | 467,6 | 487,2 | 510,7 | 0,16 | 82,06 | 81,41 | 83,23 | 0,15 | 81,87 | 82,58 | 83,67 |
| 14,0 | 260,0 | 18,1 | 0,2 | 14,5 | 570,1 | 77,4 | 120,8 | 778,7 | 423,8 | 474,5 | 491,4 | 508,5 | 0,16 | 82,21 | 81,46 | 83,45 | 0,15 | 81,98 | 82,64 | 83,91 |
| 15,0 | 261,0 | 17,9 | 0,3 | 14,4 | 516,4 | 77,0 | 114,2 | 762,7 | 423,0 | 479,9 | 494,8 | 506,4 | 0,16 | 82,38 | 81,50 | 83,66 | 0,15 | 82,09 | 82,67 | 84,16 |
| 16,0 | 262,0 | 17,8 | 0,3 | 13,5 | 484,9 | 78,2 | 110,3 | 744,6 | 421,7 | 482,7 | 495,8 | 503,9 | 0,16 | 82,50 | 81,55 | 83,82 | 0,15 | 82,20 | 82,72 | 84,36 |
| 17,0 | 263,0 | 17,6 | 0,4 | 12,1 | 464,2 | 77,3 | 107,2 | 726,5 | 420,3 | 484,4 | 496,6 | 501,4 | 0,16 | 82,60 | 81,57 | 83,98 | 0,15 | 82,29 | 82,76 | 84,57 |
| 18,0 | 264,0 | 17,5 | 0,4 | 11,5 | 448,2 | 77,7 | 105,2 | 709,6 | 418,6 | 484,6 | 495,8 | 498,9 | 0,16 | 82,69 | 81,57 | 84,10 | 0,15 | 82,34 | 82,75 | 84,73 |
| 19,0 | 265,0 | 17,4 | 0,3 | 11,2 | 435,8 | 78,3 | 104,9 | 694,5 | 416,7 | 484,4 | 493,6 | 496,2 | 0,16 | 82,81 | 81,59 | 84,21 | 0,15 | 82,48 | 82,79 | 84,89 |
| 20,0 | 266,0 | 17,2 | 0,4 | 11,0 | 426,0 | 77,5 | 103,4 | 681,8 | 414,6 | 482,7 | 491,9 | 493,6 | 0,16 | 82,85 | 81,62 | 84,34 | 0,15 | 82,53 | 82,81 | 85,04 |
| 21,0 | 267,0 | 17,1 | 0,5 | 10,8 | 418,5 | 77,4 | 102,5 | 669,9 | 412,2 | 480,4 | 488,7 | 491,0 | 0,16 | 82,90 | 81,66 | 84,43 | 0,15 | 82,60 | 82,82 | 85,16 |
| 22,0 | 268,0 | 17,0 | 0,6 | 10,8 | 413,7 | 78,2 | 102,5 | 660,7 | 409,7 | 477,1 | 485,4 | 488,4 | 0,16 | 82,85 | 81,65 | 84,50 | 0,15 | 82,61 | 82,83 | 85,23 |
| 23,0 | 269,0 | 16,8 | 0,6 | 11,0 | 409,5 | 76,8 | 102,5 | 652,7 | 407,1 | 473,4 | 482,0 | 485,7 | 0,16 | 82,77 | 81,66 | 84,55 | 0,15 | 82,62 | 82,83 | 85,34 |
| 24,0 | 270,0 | 16,7 | 0,5 | 11,1 | 406,1 | 77,4 | 101,8 | 646,2 | 404,4 | 470,7 | 478,8 | 483,1 | 0,16 | 82,63 | 81,64 | 84,60 | 0,15 | 82,55 | 82,81 | 85,41 |
| 25,0 | 271,0 | 16,6 | 0,5 | 11,2 | 403,2 | 77,2 | 101,2 | 644,1 | 402,1 | 466,5 | 475,8 | 480,5 | 0,16 | 82,56 | 81,63 | 84,63 | 0,15 | 82,51 | 82,80 | 85,44 |
| 26,0 | 272,0 | 16,4 | 0,4 | 11,7 | 402,4 | 76,8 | 101,2 | 642,3 | 399,1 | 463,6 | 473,0 | 477,7 | 0,16 | 82,51 | 81,63 | 84,70 | 0,15 | 82,50 | 82,82 | 85,44 |
| 27,0 | 273,0 | 16,3 | 0,5 | 11,7 | 401,4 | 77,8 | 101,4 | 641,4 | 396,3 | 459,5 | 470,1 | 475,0 | 0,16 | 82,43 | 81,62 | 84,70 | 0,15 | 82,39 | 82,78 | 85,46 |
| 28,0 | 274,0 | 16,2 | 0,5 | 11,8 | 400,1 | 77,2 | 100,7 | 640,8 | 393,6 | 455,7 | 467,5 | 472,5 | 0,16 | 82,43 | 81,63 | 84,68 | 0,15 | 82,40 | 82,78 | 85,45 |
| 29,0 | 275,0 | 16,0 | 0,5 | 11,8 | 398,9 | 77,0 | 100,5 | 640,3 | 391,2 | 452,5 | 465,4 | 469,8 | 0,16 | 82,38 | 81,62 | 84,71 | 0,15 | 82,38 | 82,78 | 85,40 |
| 30,0 | 276,0 | 15,9 | 0,6 | 11,7 | 397,5 | 77,4 | 100,1 | 641,8 | 388,6 | 448,9 | 463,9 | 467,1 | 0,16 | 82,39 | 81,63 | 84,71 | 0,15 | 82,38 | 82,78 | 85,41 |
| 31,0 | 277,0 | 15,8 | 0,5 | 11,9 | 395,1 | 77,2 | 100,7 | 642,9 | 386,1 | 446,1 | 462,0 | 464,6 | 0,16 | 82,32 | 81,61 | 84,70 | 0,15 | 82,34 | 82,74 | 85,35 |
| 32,0 | 278,0 | 15,6 | 0,6 | 12,0 | 395,2 | 77,8 | 99,9 | 644,8 | 383,7 | 442,9 | 460,4 | 461,9 | 0,16 | 82,31 | 81,61 | 84,67 | 0,15 | 82,33 | 82,75 | 85,32 |
| 33,0 | 279,0 | 15,5 | 0,6 | 12,2 | 394,0 | 77,5 | 100,6 | 646,6 | 381,6 | 439,9 | 459,5 | 459,5 | 0,16 | 82,28 | 81,59 | 84,68 | 0,15 | 82,30 | 82,73 | 85,28 |
| 34,0 | 280,0 | 15,4 | 0,6 | 12,3 | 393,5 | 76,9 | 100,2 | 648,5 | 379,7 | 436,7 | 459,0 | 457,0 | 0,16 | 82,25 | 81,56 | 84,65 | 0,15 | 82,26 | 82,71 | 85,26 |
| 35,0 | 281,0 | 15,2 | 0,6 | 12,4 | 393,7 | 77,5 | 100,5 | 650,4 | 377,5 | 433,7 | 458,3 | 454,5 | 0,16 | 82,30 | 81,56 | 84,62 | 0,15 | 82,24 | 82,69 | 85,22 |
| 36,0 | 282,0 | 15,1 | 0,6 | 12,5 | 394,5 | 77,4 | 101,1 | 652,7 | 375,4 | 431,0 | 457,9 | 452,0 | 0,16 | 82,35 | 81,57 | 84,60 | 0,15 | 82,26 | 82,68 | 85,19 |
| 37,0 | 283,0 | 15,0 | 0,6 | 12,7 | 395,0 | 77,2 | 99,9 | 655,0 | 374,0 | 428,5 | 457,9 | 449,7 | 0,16 | 82,36 | 81,57 | 84,53 | 0,15 | 82,26 | 82,67 | 85,11 |
| 38,0 | 284,0 | 14,8 | 0,5 | 12,8 | 394,8 | 77,2 | 100,9 | 656,5 | 372,3 | 426,2 | 458,0 | 447,4 | 0,16 | 82,35 | 81,53 | 84,53 | 0,15 | 82,28 | 82,66 | 85,09 |
| 39,0 | 285,0 | 14,7 | 0,5 | 12,9 | 395,3 | 76,8 | 100,9 | 657,9 | 370,8 | 424,0 | 458,2 | 445,1 | 0,16 | 82,31 | 81,52 | 84,47 | 0,15 | 82,24 | 82,64 | 85,02 |
| 40,0 | 286,0 | 14,5 | 0,5 | 13,0 | 395,4 | 78,0 | 99,3 | 658,6 | 369,2 | 421,8 | 458,0 | 443,1 | 0,16 | 82,29 | 81,52 | 84,42 | 0,15 | 82,22 | 82,64 | 84,98 |
| 41,0 | 287,0 | 14,4 | 0,5 | 12,9 | 395,0 | 76,9 | 99,3 | 658,4 | 367,8 | 420,3 | 459,1 | 441,0 | 0,16 | 82,19 | 81,50 | 84,36 | 0,15 | 82,17 | 82,63 | 84,93 |
| 42,0 | 288,0 | 14,3 | 0,6 | 12,8 | 395,5 | 77,5 | 99,6 | 657,7 | 366,9 | 418,5 | 459,9 | 439,0 | 0,16 | 82,15 | 81,49 | 84,34 | 0,15 | 82,15 | 82,61 | 84,87 |
| 43,0 | 289,0 | 14,1 | 0,5 | 12,9 | 395,4 | 78,0 | 99,8 | 657,1 | 365,3 | 417,2 | 460,6 | 436,8 | 0,16 | 82,17 | 81,49 | 84,31 | 0,15 | 82,18 | 82,61 | 84,82 |
| 44,0 | 290,0 | 14,0 | 0,5 | 13,0 | 394,8 | 76,9 | 99,6 | 656,5 | 364,4 | 416,2 | 461,7 | 435,1 | 0,16 | 82,16 | 81,49 | 84,27 | 0,15 | 82,17 | 82,62 | 84,75 |
| 45,0 | 291,0 | 13,9 | 0,7 | 13,0 | 395,2 | 77,8 | 99,4 | 658,4 | 363,9 | 414,4 | 462,8 | 433,0 | 0,16 | 82,16 | 81,48 | 84,23 | 0,15 | 82,16 | 82,63 | 84,70 |
| 46,0 | 292,0 | 13,7 | 0,6 | 13,2 | 396,1 | 77,0 | 99,0 | 657,5 | 363,2 | 413,7 | 463,6 | 431,1 | 0,16 | 82,09 | 81,47 | 84,18 | 0,15 | 82,10 | 82,59 | 84,63 |
| 47,0 | 293,0 | 13,6 | 0,5 | 13,4 | 395,8 | 77,0 | 98,4 | 655,7 | 362,6 | 412,9 | 464,9 | 429,5 | 0,16 | 82,07 | 81,48 | 84,16 | 0,15 | 82,05 | 82,59 | 84,58 |
| 48,0 | 294,0 | 13,4 | 0,6 | 13,4 | 397,0 | 77,8 | 98,5 | 655,0 | 362,3 | 411,6 | 465,9 | 427,7 | 0,16 | 82,09 | 81,47 | 84,15 | 0,15 | 82,06 | 82,58 | 84,55 |
| 49,0 | 295,0 | 13,3 | 0,6 | 13,5 | 399,1 | 77,8 | 99,4 | 654,9 | 362,2 | 411,2 | 467,1 | 426,1 | 0,16 | 82,13 | 81,46 | 84,10 | 0,15 | 82,10 | 82,58 | 84,51 |
| 50,0 | 296,0 | 13,1 | 0,6 | 13,6 | 401,3 | 78,6 | 100,1 | 657,2 | 362,0 | 411,0 | 468,4 | 424,4 | 0,16 | 82,16 | 81,44 | 84,05 | 0,15 | 82,11 | 82,58 | 84,45 |
| 51,0 | 297,0 | 13,0 | 0,7 | 13,9 | 402,3 | 78,2 | 99,8 | 659,7 | 362,0 | 410,5 | 469,7 | 422,9 | 0,16 | 82,19 | 81,44 | 84,02 | 0,15 | 82,13 | 82,56 | 84,43 |
| 52,0 | 298,0 | 12,9 | 0,7 | 13,9 | 399,8 | 78,5 | 99,3 | 658,9 | 361,8 | 410,9 | 471,0 | 421,3 | 0,16 | 82,09 | 81,43 | 83,99 | 0,15 | 82,08 | 82,55 | 84,39 |
| 53,0 | 299,0 | 12,7 | 0,5 | 13,6 | 397,6 | 77,6 | 98,2 | 655,7 | 361,9 | 410,6 | 472,7 | 419,7 | 0,16 | 82,06 | 81,42 | 83,97 | 0,15 | 82,07 | 82,56 | 84,36 |
| 54,0 | 300,0 | 12,6 | 0,4 | 13,2 | 393,1 | 77,1 | 98,9 | 652,3 | 362,1 | 410,9 | 474,1 | 418,3 | 0,16 | 81,98 | 81,40 | 83,91 | 0,15 | 82,01 | 82,52 | 84,31 |
| 55,0 | 301,0 | 12,5 | 0,3 | 12,8 | 390,0 | 77,1 | 98,3 | 650,5 | 362,5 | 410,8 | 474,9 | 417,0 | 0,16 | 82,00 | 81,40 | 83,88 | 0,15 | 82,01 | 82,54 | 84,27 |
| 56,0 | 302,0 | 12,4 | 0,5 | 12,8 | 389,1 | 78,4 | 98,5 | 649,6 | 362,3 | 411,9 | 475,1 | 415,6 | 0,16 | 82,02 | 81,40 | 83,85 | 0,15 | 82,02 | 82,54 | 84,23 |
| 57,0 | 303,0 | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-----|-----|------|-------|------|------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 82,0 | 328,0 | 9,3 | 0,3 | 12,9 | 376,5 | 77,7 | 96,1 | 632,5 | 374,7 | 439,5 | 473,4 | 389,9 | 0,16 | 81,64 | 81,16 | 82,89 | 0,15 | 81,58 | 82,22 | 81,77 |
| 83,0 | 329,0 | 9,2 | 0,3 | 12,5 | 374,4 | 77,2 | 96,7 | 628,5 | 376,2 | 439,9 | 473,7 | 389,3 | 0,16 | 81,54 | 81,14 | 82,85 | 0,15 | 81,52 | 82,19 | 81,84 |
| 84,0 | 330,0 | 9,1 | 0,3 | 12,4 | 372,9 | 76,8 | 96,3 | 623,7 | 376,9 | 440,2 | 474,0 | 388,7 | 0,16 | 81,51 | 81,10 | 82,83 | 0,15 | 81,50 | 82,18 | 81,89 |
| 85,0 | 331,0 | 9,0 | 0,4 | 12,1 | 371,0 | 78,3 | 95,7 | 618,6 | 378,1 | 441,1 | 473,7 | 388,2 | 0,16 | 81,51 | 81,07 | 82,78 | 0,15 | 81,47 | 82,16 | 81,90 |
| 86,0 | 332,0 | 8,9 | 0,4 | 12,2 | 370,1 | 78,5 | 95,8 | 614,9 | 378,9 | 441,9 | 473,3 | 387,4 | 0,16 | 81,54 | 81,07 | 82,76 | 0,15 | 81,45 | 82,16 | 81,95 |
| 87,0 | 333,0 | 8,8 | 0,4 | 12,1 | 368,7 | 78,4 | 95,4 | 611,6 | 380,0 | 442,7 | 473,7 | 386,9 | 0,16 | 81,54 | 81,03 | 82,72 | 0,15 | 81,41 | 82,13 | 82,00 |
| 88,0 | 334,0 | 8,7 | 0,4 | 12,0 | 366,6 | 77,4 | 96,1 | 609,6 | 380,9 | 443,3 | 472,4 | 386,2 | 0,16 | 81,51 | 81,01 | 82,67 | 0,15 | 81,38 | 82,11 | 82,01 |
| 89,0 | 335,0 | 8,6 | 0,3 | 12,1 | 364,0 | 78,3 | 95,8 | 603,7 | 381,8 | 443,8 | 472,2 | 385,9 | 0,16 | 81,54 | 81,02 | 82,68 | 0,15 | 81,42 | 82,11 | 82,06 |
| 90,0 | 336,0 | 8,5 | 0,3 | 11,9 | 361,1 | 78,7 | 94,8 | 598,4 | 382,5 | 444,5 | 471,5 | 385,3 | 0,16 | 81,52 | 81,00 | 82,67 | 0,15 | 81,40 | 82,08 | 82,06 |
| 91,0 | 337,0 | 8,4 | 0,2 | 11,5 | 358,2 | 77,5 | 94,8 | 592,6 | 383,0 | 445,0 | 470,5 | 384,3 | 0,16 | 81,55 | 81,00 | 82,66 | 0,15 | 81,43 | 82,07 | 82,09 |
| 92,0 | 338,0 | 8,3 | 0,2 | 11,2 | 355,5 | 77,7 | 95,4 | 587,8 | 383,4 | 444,5 | 471,1 | 384,0 | 0,16 | 81,48 | 80,99 | 82,62 | 0,15 | 81,41 | 82,06 | 82,10 |
| 93,0 | 339,0 | 8,2 | 0,2 | 11,2 | 354,0 | 77,5 | 94,3 | 582,6 | 384,0 | 444,4 | 470,1 | 383,3 | 0,16 | 81,45 | 80,96 | 82,62 | 0,15 | 81,34 | 82,03 | 82,14 |
| 94,0 | 340,0 | 8,2 | 0,2 | 11,1 | 351,1 | 78,1 | 94,2 | 577,8 | 384,6 | 444,1 | 469,5 | 382,9 | 0,16 | 81,41 | 80,94 | 82,57 | 0,15 | 81,30 | 82,00 | 82,17 |
| 95,0 | 341,0 | 8,1 | 0,2 | 10,9 | 347,3 | 78,7 | 93,9 | 572,2 | 385,1 | 443,6 | 468,8 | 382,3 | 0,16 | 81,42 | 80,92 | 82,56 | 0,15 | 81,29 | 81,99 | 82,20 |
| 96,0 | 342,0 | 8,0 | 0,3 | 10,6 | 344,6 | 78,1 | 93,9 | 565,9 | 385,0 | 443,0 | 468,3 | 381,8 | 0,16 | 81,42 | 80,89 | 82,52 | 0,15 | 81,29 | 81,97 | 82,20 |
| 97,0 | 343,0 | 8,0 | 0,4 | 10,2 | 341,3 | 77,6 | 93,7 | 559,5 | 385,5 | 441,8 | 467,2 | 381,4 | 0,16 | 81,41 | 80,87 | 82,49 | 0,15 | 81,26 | 81,97 | 82,18 |
| 98,0 | 344,0 | 7,9 | 0,4 | 10,0 | 337,6 | 78,2 | 93,5 | 552,7 | 385,8 | 440,5 | 465,9 | 380,9 | 0,16 | 81,33 | 80,86 | 82,47 | 0,15 | 81,21 | 81,93 | 82,17 |
| 99,0 | 345,0 | 7,8 | 0,4 | 9,9 | 335,6 | 78,1 | 93,1 | 545,6 | 386,0 | 439,1 | 464,9 | 380,5 | 0,16 | 81,33 | 80,85 | 82,45 | 0,15 | 81,19 | 81,92 | 82,17 |
| 100,0 | 346,0 | 7,7 | 0,4 | 9,7 | 332,9 | 78,5 | 92,4 | 539,7 | 386,0 | 437,6 | 463,7 | 379,9 | 0,16 | 81,33 | 80,84 | 82,41 | 0,15 | 81,16 | 81,90 | 82,15 |
| 101,0 | 347,0 | 7,7 | 0,5 | 9,7 | 330,2 | 77,5 | 92,9 | 534,1 | 385,8 | 435,9 | 462,5 | 379,8 | 0,16 | 81,23 | 80,80 | 82,38 | 0,15 | 81,10 | 81,88 | 82,13 |
| 102,0 | 348,0 | 7,6 | 0,5 | 9,6 | 327,8 | 77,3 | 92,4 | 528,6 | 386,1 | 434,1 | 460,9 | 379,1 | 0,16 | 81,18 | 80,76 | 82,33 | 0,15 | 81,05 | 81,82 | 82,11 |
| 103,0 | 349,0 | 7,5 | 0,5 | 9,5 | 325,1 | 77,6 | 91,9 | 523,9 | 386,2 | 433,0 | 459,9 | 379,0 | 0,16 | 81,10 | 80,75 | 82,30 | 0,15 | 80,99 | 81,83 | 82,13 |
| 104,0 | 350,0 | 7,5 | 0,5 | 9,3 | 322,4 | 77,9 | 91,9 | 519,1 | 386,2 | 430,3 | 458,7 | 378,8 | 0,16 | 81,11 | 80,75 | 82,30 | 0,15 | 81,05 | 81,82 | 82,14 |
| 105,0 | 351,0 | 7,4 | 0,5 | 9,3 | 320,1 | 77,4 | 92,0 | 514,6 | 385,7 | 428,4 | 457,6 | 378,6 | 0,16 | 81,10 | 80,72 | 82,25 | 0,15 | 81,05 | 81,81 | 82,10 |
| 106,0 | 352,0 | 7,3 | 0,5 | 9,3 | 318,8 | 77,6 | 91,3 | 510,6 | 386,0 | 426,7 | 456,4 | 378,3 | 0,16 | 81,14 | 80,73 | 82,20 | 0,15 | 81,12 | 81,80 | 82,08 |
| 107,0 | 353,0 | 7,3 | 0,5 | 9,3 | 317,0 | 77,0 | 91,8 | 506,7 | 385,8 | 424,5 | 455,3 | 378,1 | 0,16 | 81,15 | 80,75 | 82,17 | 0,15 | 81,14 | 81,81 | 82,05 |
| 108,0 | 354,0 | 7,2 | 0,5 | 9,3 | 314,8 | 77,4 | 91,3 | 502,7 | 386,1 | 423,6 | 454,6 | 378,0 | 0,16 | 81,09 | 80,72 | 82,13 | 0,15 | 81,07 | 81,79 | 82,01 |
| 109,0 | 355,0 | 7,2 | 0,5 | 9,3 | 314,0 | 77,3 | 92,2 | 499,9 | 386,0 | 422,0 | 453,1 | 377,9 | 0,16 | 81,04 | 80,71 | 82,10 | 0,15 | 81,02 | 81,77 | 82,02 |
| 110,0 | 356,0 | 7,1 | 0,5 | 9,3 | 312,2 | 77,2 | 91,7 | 498,3 | 386,4 | 419,5 | 453,0 | 377,9 | 0,16 | 80,96 | 80,72 | 82,04 | 0,15 | 80,99 | 81,75 | 81,98 |
| 111,0 | 357,0 | 7,0 | 0,5 | 9,4 | 311,4 | 77,8 | 91,0 | 495,7 | 386,4 | 417,7 | 452,2 | 377,9 | 0,16 | 80,90 | 80,71 | 82,01 | 0,15 | 80,96 | 81,74 | 81,95 |
| 112,0 | 358,0 | 7,0 | 0,4 | 9,4 | 310,6 | 77,4 | 91,3 | 493,4 | 386,2 | 416,0 | 451,5 | 377,7 | 0,16 | 80,82 | 80,69 | 81,95 | 0,15 | 80,90 | 81,72 | 81,92 |
| 113,0 | 359,0 | 6,9 | 0,4 | 9,4 | 309,3 | 77,7 | 91,0 | 491,2 | 386,2 | 414,7 | 451,3 | 377,8 | 0,16 | 80,80 | 80,67 | 81,90 | 0,15 | 80,89 | 81,71 | 81,93 |
| 114,0 | 360,0 | 6,9 | 0,4 | 9,5 | 309,2 | 77,6 | 91,1 | 488,6 | 386,1 | 413,3 | 450,6 | 377,9 | 0,16 | 80,79 | 80,66 | 81,87 | 0,15 | 80,89 | 81,68 | 81,93 |
| 115,0 | 361,0 | 6,8 | 0,4 | 9,4 | 308,5 | 78,0 | 90,7 | 486,0 | 386,2 | 412,5 | 450,2 | 377,8 | 0,16 | 80,80 | 80,64 | 81,81 | 0,15 | 80,90 | 81,66 | 81,88 |
| 116,0 | 362,0 | 6,8 | 0,4 | 9,4 | 308,0 | 78,1 | 90,4 | 484,5 | 386,2 | 410,8 | 449,2 | 378,1 | 0,16 | 80,78 | 80,62 | 81,79 | 0,15 | 80,88 | 81,65 | 81,84 |
| 117,0 | 363,0 | 6,7 | 0,4 | 9,4 | 306,5 | 77,0 | 90,6 | 482,7 | 386,5 | 409,8 | 448,7 | 378,4 | 0,16 | 80,73 | 80,60 | 81,77 | 0,15 | 80,82 | 81,62 | 81,83 |
| 118,0 | 364,0 | 6,6 | 0,4 | 9,5 | 305,6 | 76,7 | 90,7 | 480,7 | 386,3 | 408,3 | 447,9 | 378,5 | 0,16 | 80,71 | 80,56 | 81,73 | 0,15 | 80,83 | 81,61 | 81,80 |
| 119,0 | 365,0 | 6,6 | 0,4 | 9,4 | 304,5 | 77,7 | 90,2 | 479,2 | 386,7 | 407,4 | 447,5 | 378,2 | 0,16 | 80,63 | 80,54 | 81,68 | 0,15 | 80,75 | 81,59 | 81,79 |
| 120,0 | 366,0 | 6,5 | 0,4 | 9,4 | 304,0 | 77,2 | 90,7 | 476,9 | 386,7 | 406,5 | 447,0 | 378,8 | 0,16 | 80,58 | 80,53 | 81,66 | 0,15 | 80,70 | 81,55 | 81,77 |
| 121,0 | 367,0 | 6,5 | 0,4 | 9,3 | 302,9 | 77,1 | 90,4 | 474,4 | 386,6 | 405,0 | 446,3 | 379,1 | 0,16 | 80,59 | 80,51 | 81,59 | 0,15 | 80,71 | 81,54 | 81,75 |
| 122,0 | 368,0 | 6,4 | 0,4 | 9,3 | 301,2 | 77,3 | 90,5 | 472,1 | 386,9 | 404,8 | 446,0 | 379,4 | 0,16 | 80,64 | 80,51 | 81,56 | 0,15 | 80,73 | 81,51 | 81,70 |
| 123,0 | 369,0 | 6,4 | 0,4 | 9,2 | 300,3 | 77,5 | 90,0 | 470,5 | 386,9 | 403,3 | 445,4 | 379,5 | 0,16 | 80,60 | 80,48 | 81,56 | 0,15 | 80,68 | 81,53 | 81,69 |
| 124,0 | 370,0 | 6,3 | 0,4 | 9,1 | 298,2 | 76,6 | 90,3 | 468,0 | 387,0 | 403,2 | 445,0 | 380,1 | 0,16 | 80,54 | 80,46 | 81,49 | 0,15 | 80,63 | 81,47 | 81,61 |
| 125,0 | 371,0 | 6,3 | 0,4 | 8,8 | 296,8 | 76,8 | 90,1 | 467,1 | 387,4 | 401,3 | 444,3 | 379,9 | 0,16 | 80,57 | 80,48 | 81,45 | 0,15 | 80,68 | 81,49 | 81,61 |
| 126,0 | 372,0 | 6,2 | 0,5 | 8,6 | 294,6 | 76,9 | 90,3 | 463,5 | 387,2 | 400,3 | 443,5 | 380,8 | 0,16 | 80,54 | 80,47 | 81,40 | 0,15 | 80,68 | 81,47 | 81,59 |
| 127,0 | 373,0 | 6,2 | 0,5 | 8,5 | 292,7 | 77,4 | 89,5 | 461,0 | 387,0 | 398,6 | 442,7 | 381,1 | 0,16 | 80,54 | 80,45 | 81,38 | 0,15 | 80,67 | 81,47 | 81,58 |
| 128,0 | 374,0 | 6,1 | 0,5 | 8,4 | 290,9 | 76,3 | 89,2 | 459,1 | 386,9 | 397,5 | 441,8 | 381,5 | 0,16 | 80,50 | 80,44 | 81,33 | 0,15 | 80,65 | 81,46 | 81,56 |
| 129,0 | 375,0 | 6,1 | 0,5 | 8,3 | 289,0 | 76,2 | 89,1 | 456,0 | 386,5 | 396,0 | 440,8 | 382,0 | 0,16 | 80,44 | 80,39 | 81,32 | 0,15 | 80,63 | 81,45 | 81,53 |
| 130,0 | 376,0 | 6,0 | 0,5 | 8,3 | 287,5 | 76,8 | 89,3 | 453,7 | 386,3 | 395,1 | 439,6 | 382,2 | 0,16 | 80,44 | 80,38 | 81,27 | 0,15 | 80,62 | 81,43 | 81,47 |
| 131,0 | 377,0 | 6,0 | 0,5 | 8,2 | 286,2 | 77,1 | 89,3 | 451,2 | 385,8 | 394,5 | 438,4 | 382,2 | 0,16 | 80,39 | 80,36 | 81,21 | 0,15 | 80,57 | 81,40 | 81,43 |
| 132,0 | 378,0 | 5,9 | 0,6 | 8,2 | 284,9 | 76,9 | 89,1 | 448,8 | 385,2 | 393,4 | 437,1 | 382,9 | 0,16 | 80,35 | 80,34 | 81,18 | 0,15 | 80,54 | 81,40 | 81,44 |
| 133,0 | 379,0 | 5,9 | 0,6 | 8,1 | 278,7 | 76,9 | 89,1 | 443,4 | 384,2 | 391,9 | 435,3 | 383,3 | 0,16 | 80,35 | 80,32 | 81,11 | 0,15 | 80,53 | 81,35 | 81,40 |
| 134,0 | 380,0 | 5,8 | 1,4 | 6,8 | 274,7 | 76,7 | 89,0 | 438,3 | 383,7 | 390,6 | 432,8 | 383,5 | 0,16 | 80,40 | 80,34 | 81,09 | 0,15 | 80,58 | 81,38 | 81,35 |
| 135,0 | 381,0 | 5,8 | 1,5 | 6,6 | 271,5 | 76,5 | 88,3 | 434,0 | 383,1 | 389,6 | 430,4 | 383,9 | 0,16 | 80,35 | 80,31 | 81,06 | 0,15 | 80,53 | 81,35 | 81,34 |
| 136,0 | 382,0 | 5,8 | 1,5 | 6,6 | 268,4 | 76,6 | 88,0 | 429,2 | 382,0 | 387,7 | 428,2 | 384,1 | 0,16 | 80,27 | 80,27 | 81,04 | 0,15 | 80,42 | 81,31 | 81,29 |
| 137,0 | 383,0 | 5,7 | 1,5 | 6,6 | 265,3 | 77,1 | 88,2 | 424,4 | 380,9 | 386,2 | 425,4 | 384,4 | 0,16 | 80,19 | 80,26 | 81,01 | 0,15 | 80,40 | 81,29 | 81,25 |
| 138,0 | 384,0 | 5,7 | 1,5 | 6,6 | 263,6 | 76,2 | 87,5 | 419,9 | 379,6 | 384,9 | 423,2 | 384,6 | 0,16 | 80,21 | 80,24 | 80,97 | 0,15 | 80,39 | 81,25 | 81,18 |
| 139,0 | 385,0 | 5,6 | 1,5 | 6,6 | 261,7 | 76,8 | 88,1 | 415,7 | 378,0 | 383,0 | 420,2 | 384,9 | 0,16 | 80,22 | 80,23 | 80,94 | 0,15 | 80,38 | 81,25 | 81,15 |
| 140,0 | 386,0 | 5,6 | 1,5 | 6,7 | 259,6 | 77,1 | 87,5 | 410,9 | 376,6 | 382,5 | 417,6 | 385,1 | 0,16 | 80,25 | 80,22 | 80,88 | 0,15 | 80,40 | 81,23 | 81,10 |
| 141,0 | 387,0 | 5,6 | 1,5 | 6,7 | 257,9 | 76,6 | 87,4 | 407,8 | 375,4 | 380,2 | 415,2 | 385,4 | 0,16 | 80,19 | 80,21 | 80,85 | 0,15 | 80,36 | 81,2 | |

| | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-----|-----|-----|-------|------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 168,0 | 414,0 | 4,5 | 1,7 | 6,7 | 233,5 | 76,1 | 86,3 | 357,5 | 359,0 | 351,4 | 373,7 | 388,5 | 0,16 | 79,55 | 79,73 | 80,23 | 0,15 | 79,63 | 80,56 | 80,07 |
| 169,0 | 415,0 | 4,4 | 1,7 | 6,8 | 232,8 | 76,9 | 88,0 | 356,5 | 359,2 | 350,9 | 372,9 | 388,4 | 0,16 | 79,77 | 79,79 | 80,50 | 0,15 | 79,78 | 80,57 | 80,07 |
| 170,0 | 416,0 | 4,4 | 1,7 | 6,7 | 232,0 | 77,6 | 89,5 | 355,4 | 359,5 | 350,5 | 372,1 | 388,6 | 0,16 | 79,97 | 79,85 | 80,60 | 0,15 | 79,94 | 80,63 | 80,10 |
| 171,0 | 417,0 | 4,4 | 1,7 | 6,7 | 231,7 | 76,9 | 90,1 | 354,9 | 359,9 | 350,1 | 371,3 | 388,7 | 0,16 | 80,16 | 79,92 | 80,80 | 0,15 | 80,08 | 80,68 | 80,11 |
| 172,0 | 418,0 | 4,3 | 1,7 | 6,7 | 231,0 | 77,6 | 90,5 | 353,9 | 360,2 | 349,8 | 371,4 | 388,9 | 0,16 | 80,34 | 79,99 | 80,84 | 0,15 | 80,23 | 80,74 | 80,12 |
| 173,0 | 419,0 | 4,3 | 1,7 | 6,7 | 231,4 | 77,3 | 89,0 | 353,1 | 360,4 | 349,6 | 370,2 | 389,0 | 0,16 | 80,42 | 80,03 | 80,84 | 0,15 | 80,31 | 80,78 | 80,13 |
| 174,0 | 420,0 | 4,2 | 1,7 | 6,8 | 231,5 | 77,9 | 88,4 | 352,3 | 360,6 | 348,9 | 369,9 | 389,0 | 0,16 | 80,41 | 80,08 | 81,18 | 0,15 | 80,35 | 80,83 | 81,19 |
| 175,0 | 421,0 | 4,2 | 1,6 | 6,7 | 231,6 | 78,0 | 88,6 | 351,6 | 360,8 | 348,8 | 369,2 | 389,0 | 0,16 | 80,41 | 80,10 | 82,28 | 0,15 | 80,41 | 80,84 | 82,26 |
| 176,0 | 422,0 | 4,2 | 1,6 | 6,5 | 230,7 | 77,3 | 90,1 | 350,7 | 361,5 | 348,2 | 368,6 | 389,1 | 0,16 | 80,54 | 80,16 | 82,49 | 0,15 | 80,52 | 80,90 | 82,33 |
| 177,0 | 423,0 | 4,1 | 1,7 | 6,4 | 230,4 | 78,4 | 91,1 | 350,3 | 362,1 | 347,8 | 367,8 | 389,2 | 0,16 | 80,73 | 80,24 | 82,47 | 0,15 | 80,67 | 80,95 | 82,34 |
| 178,0 | 424,0 | 4,1 | 1,7 | 6,5 | 230,2 | 77,4 | 91,4 | 349,6 | 362,5 | 347,5 | 367,0 | 389,2 | 0,16 | 80,93 | 80,34 | 82,39 | 0,15 | 80,84 | 81,02 | 82,37 |
| 179,0 | 425,0 | 4,1 | 1,6 | 6,6 | 229,5 | 78,1 | 92,2 | 348,9 | 362,8 | 347,4 | 366,7 | 389,2 | 0,16 | 81,12 | 80,42 | 82,31 | 0,15 | 81,01 | 81,10 | 82,36 |
| 180,0 | 426,0 | 4,0 | 1,6 | 6,6 | 229,5 | 78,0 | 92,6 | 348,6 | 363,2 | 347,1 | 365,8 | 389,4 | 0,16 | 81,33 | 80,53 | 82,22 | 0,15 | 81,19 | 81,19 | 82,36 |
| 181,0 | 427,0 | 4,0 | 1,6 | 6,7 | 229,4 | 78,2 | 93,0 | 348,3 | 363,3 | 347,0 | 365,7 | 389,3 | 0,16 | 81,52 | 80,65 | 82,21 | 0,15 | 81,41 | 81,29 | 82,37 |
| 182,0 | 428,0 | 4,0 | 1,6 | 6,8 | 229,5 | 78,0 | 94,1 | 347,8 | 364,2 | 346,7 | 364,9 | 389,5 | 0,16 | 81,76 | 80,77 | 82,14 | 0,15 | 81,60 | 81,41 | 82,39 |
| 183,0 | 429,0 | 3,9 | 1,5 | 6,8 | 229,6 | 78,7 | 94,5 | 347,9 | 364,5 | 346,6 | 364,2 | 389,6 | 0,16 | 82,02 | 80,91 | 82,12 | 0,15 | 81,85 | 81,54 | 82,42 |
| 184,0 | 430,0 | 3,9 | 1,5 | 6,8 | 229,2 | 78,2 | 95,4 | 347,8 | 365,0 | 346,3 | 364,2 | 389,7 | 0,16 | 82,24 | 81,05 | 82,07 | 0,15 | 82,06 | 81,67 | 82,46 |
| 185,0 | 431,0 | 3,8 | 1,5 | 6,8 | 229,3 | 78,3 | 95,2 | 347,2 | 365,5 | 346,4 | 363,6 | 389,8 | 0,16 | 82,48 | 81,19 | 82,05 | 0,15 | 82,27 | 81,78 | 82,46 |
| 186,0 | 432,0 | 3,8 | 1,5 | 6,8 | 229,1 | 78,7 | 95,8 | 346,6 | 366,1 | 346,5 | 363,3 | 389,9 | 0,16 | 82,68 | 81,34 | 82,06 | 0,15 | 82,52 | 81,91 | 82,51 |
| 187,0 | 433,0 | 3,8 | 1,5 | 6,9 | 228,9 | 78,4 | 96,3 | 346,8 | 366,9 | 346,5 | 363,1 | 390,2 | 0,16 | 82,91 | 81,47 | 82,06 | 0,15 | 82,76 | 82,07 | 82,55 |
| 188,0 | 434,0 | 3,7 | 1,4 | 6,8 | 229,1 | 79,1 | 96,6 | 346,8 | 367,5 | 346,6 | 362,8 | 390,2 | 0,16 | 83,14 | 81,63 | 82,09 | 0,15 | 83,01 | 82,24 | 82,61 |
| 189,0 | 435,0 | 3,7 | 1,4 | 6,9 | 229,4 | 79,1 | 96,9 | 347,2 | 368,4 | 346,8 | 362,3 | 390,3 | 0,16 | 83,34 | 81,78 | 82,11 | 0,15 | 83,22 | 82,39 | 82,64 |
| 190,0 | 436,0 | 3,7 | 1,3 | 6,9 | 229,7 | 78,9 | 96,9 | 346,6 | 369,5 | 347,2 | 362,1 | 390,4 | 0,16 | 83,51 | 81,93 | 82,14 | 0,15 | 83,46 | 82,54 | 82,70 |
| 191,0 | 437,0 | 3,6 | 1,3 | 6,9 | 229,4 | 78,8 | 97,5 | 346,9 | 370,4 | 347,0 | 362,0 | 390,5 | 0,16 | 83,73 | 82,09 | 82,18 | 0,15 | 83,69 | 82,72 | 82,76 |
| 192,0 | 438,0 | 3,6 | 1,3 | 6,9 | 229,5 | 78,8 | 97,9 | 346,9 | 371,4 | 347,2 | 361,7 | 390,7 | 0,16 | 83,91 | 82,23 | 82,25 | 0,15 | 83,86 | 82,84 | 82,84 |
| 193,0 | 439,0 | 3,6 | 1,3 | 6,9 | 229,7 | 78,2 | 98,2 | 347,0 | 372,4 | 347,1 | 361,9 | 390,6 | 0,16 | 84,11 | 82,37 | 82,27 | 0,15 | 84,08 | 82,99 | 82,90 |
| 194,0 | 440,0 | 3,5 | 1,3 | 7,0 | 230,1 | 78,8 | 98,2 | 347,2 | 373,6 | 347,6 | 362,0 | 390,8 | 0,16 | 84,31 | 82,51 | 82,31 | 0,15 | 84,30 | 83,15 | 82,98 |
| 195,0 | 441,0 | 3,5 | 1,2 | 7,1 | 230,7 | 79,4 | 98,8 | 347,4 | 374,4 | 348,0 | 361,6 | 390,7 | 0,16 | 84,52 | 82,69 | 82,40 | 0,15 | 84,54 | 83,30 | 83,05 |
| 196,0 | 442,0 | 3,5 | 1,2 | 7,1 | 231,8 | 79,6 | 98,7 | 347,9 | 375,3 | 348,3 | 361,4 | 390,8 | 0,16 | 84,71 | 82,84 | 82,45 | 0,15 | 84,77 | 83,43 | 83,11 |
| 197,0 | 443,0 | 3,4 | 1,1 | 7,2 | 232,3 | 78,9 | 99,6 | 348,6 | 376,3 | 348,5 | 361,7 | 390,8 | 0,16 | 84,89 | 82,99 | 82,52 | 0,15 | 84,95 | 83,59 | 83,20 |
| 198,0 | 444,0 | 3,4 | 1,1 | 7,3 | 233,6 | 79,7 | 99,7 | 350,0 | 377,7 | 348,8 | 361,7 | 390,9 | 0,16 | 85,05 | 83,13 | 82,58 | 0,15 | 85,13 | 83,72 | 83,28 |
| 199,0 | 445,0 | 3,4 | 1,1 | 7,5 | 235,2 | 79,9 | 100,2 | 351,4 | 378,6 | 349,2 | 361,7 | 390,8 | 0,16 | 85,21 | 83,27 | 82,64 | 0,15 | 85,31 | 83,89 | 83,38 |
| 200,0 | 446,0 | 3,3 | 1,0 | 7,6 | 236,3 | 79,0 | 98,7 | 352,7 | 379,5 | 349,7 | 361,4 | 390,6 | 0,16 | 85,35 | 83,41 | 82,69 | 0,15 | 85,50 | 84,01 | 83,43 |
| 201,0 | 447,0 | 3,3 | 1,0 | 7,6 | 237,9 | 80,0 | 97,4 | 354,7 | 380,8 | 350,3 | 362,4 | 390,6 | 0,16 | 85,42 | 83,51 | 82,77 | 0,15 | 85,61 | 84,12 | 83,53 |
| 202,0 | 448,0 | 3,3 | 0,9 | 7,7 | 239,3 | 79,4 | 95,9 | 356,6 | 382,0 | 351,1 | 361,9 | 390,6 | 0,16 | 85,41 | 83,57 | 82,85 | 0,15 | 85,62 | 84,18 | 83,58 |
| 203,0 | 449,0 | 3,2 | 0,9 | 7,7 | 240,8 | 79,4 | 95,3 | 358,1 | 383,0 | 351,4 | 362,0 | 390,4 | 0,16 | 85,30 | 83,62 | 82,90 | 0,15 | 85,55 | 84,21 | 83,63 |
| 204,0 | 450,0 | 3,2 | 0,9 | 7,7 | 242,7 | 79,1 | 94,4 | 359,9 | 384,3 | 351,8 | 362,3 | 390,5 | 0,16 | 85,13 | 83,61 | 82,94 | 0,15 | 85,48 | 84,20 | 83,69 |
| 205,0 | 451,0 | 3,2 | 0,8 | 7,8 | 244,3 | 78,7 | 93,6 | 361,8 | 385,6 | 352,6 | 362,7 | 390,3 | 0,16 | 84,95 | 83,58 | 82,97 | 0,15 | 85,35 | 84,18 | 83,73 |
| 206,0 | 452,0 | 3,1 | 0,7 | 7,9 | 245,9 | 79,7 | 93,3 | 363,1 | 386,9 | 353,6 | 363,2 | 390,2 | 0,16 | 84,73 | 83,56 | 83,03 | 0,15 | 85,20 | 84,18 | 83,77 |
| 207,0 | 453,0 | 3,1 | 0,7 | 8,0 | 247,2 | 79,0 | 93,0 | 365,6 | 388,1 | 353,7 | 363,4 | 390,1 | 0,16 | 84,52 | 83,51 | 83,04 | 0,15 | 85,04 | 84,13 | 83,78 |
| 208,0 | 454,0 | 3,0 | 0,7 | 8,1 | 248,8 | 79,3 | 92,4 | 368,0 | 389,5 | 354,7 | 364,2 | 389,8 | 0,16 | 84,35 | 83,48 | 83,06 | 0,15 | 84,91 | 84,10 | 83,80 |
| 209,0 | 455,0 | 3,0 | 0,7 | 8,1 | 249,7 | 79,9 | 93,2 | 370,3 | 391,1 | 355,7 | 365,0 | 389,9 | 0,16 | 84,27 | 83,46 | 83,08 | 0,15 | 84,83 | 84,07 | 83,81 |
| 210,0 | 456,0 | 3,0 | 0,6 | 8,2 | 250,6 | 79,6 | 94,1 | 372,4 | 392,4 | 356,6 | 365,2 | 389,8 | 0,16 | 84,26 | 83,46 | 83,09 | 0,15 | 84,82 | 84,07 | 83,82 |
| 211,0 | 457,0 | 2,9 | 0,6 | 8,2 | 251,5 | 80,1 | 95,5 | 374,1 | 393,6 | 357,9 | 366,0 | 389,7 | 0,16 | 84,38 | 83,49 | 83,14 | 0,15 | 84,86 | 84,12 | 83,89 |
| 212,0 | 458,0 | 2,9 | 0,6 | 8,3 | 252,1 | 79,8 | 96,7 | 376,4 | 395,2 | 358,2 | 367,0 | 389,6 | 0,16 | 84,52 | 83,53 | 83,19 | 0,15 | 84,97 | 84,15 | 83,93 |
| 213,0 | 459,0 | 2,9 | 0,6 | 8,3 | 253,4 | 79,0 | 97,6 | 378,4 | 396,4 | 359,3 | 367,6 | 389,4 | 0,16 | 84,69 | 83,61 | 83,23 | 0,15 | 85,08 | 84,22 | 83,99 |
| 214,0 | 460,0 | 2,8 | 0,7 | 8,3 | 254,3 | 79,9 | 98,1 | 380,5 | 397,3 | 360,3 | 368,5 | 389,5 | 0,16 | 84,89 | 83,71 | 83,26 | 0,15 | 85,24 | 84,31 | 84,05 |
| 215,0 | 461,0 | 2,8 | 0,6 | 8,4 | 254,1 | 80,1 | 98,5 | 382,0 | 398,5 | 361,5 | 369,2 | 389,5 | 0,16 | 85,13 | 83,82 | 83,33 | 0,15 | 85,41 | 84,41 | 84,08 |
| 216,0 | 462,0 | 2,8 | 0,6 | 8,1 | 251,8 | 80,4 | 99,6 | 382,5 | 399,4 | 362,5 | 369,7 | 389,4 | 0,16 | 85,25 | 83,93 | 83,36 | 0,15 | 85,57 | 84,50 | 84,12 |
| 217,0 | 463,0 | 2,7 | 0,7 | 7,5 | 248,4 | 80,5 | 100,0 | 380,8 | 400,4 | 363,3 | 369,6 | 389,4 | 0,16 | 85,59 | 84,03 | 83,43 | 0,15 | 85,78 | 84,63 | 84,22 |
| 218,0 | 464,0 | 2,7 | 0,8 | 6,9 | 245,6 | 80,3 | 100,5 | 378,6 | 401,1 | 364,0 | 369,8 | 389,3 | 0,16 | 85,83 | 84,18 | 83,49 | 0,15 | 85,97 | 84,75 | 84,27 |
| 219,0 | 465,0 | 2,7 | 0,9 | 6,5 | 243,1 | 79,5 | 101,5 | 376,2 | 401,7 | 364,3 | 369,4 | 389,3 | 0,16 | 86,03 | 84,30 | 83,55 | 0,15 | 86,17 | 84,88 | 84,34 |
| 220,0 | 466,0 | 2,7 | 0,9 | 6,4 | 241,3 | 80,0 | 101,0 | 373,9 | 401,9 | 364,7 | 369,3 | 389,0 | 0,16 | 86,22 | 84,44 | 83,62 | 0,15 | 86,35 | 85,00 | 84,39 |
| 221,0 | 467,0 | 2,7 | 0,9 | 6,4 | 239,5 | 79,2 | 99,5 | 371,2 | 402,1 | 365,0 | 368,4 | 389,2 | 0,16 | 86,42 | 84,57 | 83,67 | 0,15 | 86,54 | 85,11 | 84,47 |
| 222,0 | 468,0 | 2,7 | 0,9 | 6,3 | 238,8 | 79,6 | 97,9 | 369,6 | 402,0 | 364,9 | 368,3 | 389,0 | 0,16 | 86,51 | 84,68 | 83,72 | 0,15 | 86,63 | 85,22 | 84,51 |
| 223,0 | 469,0 | 2,6 | 0,9 | 6,3 | 237,9 | 78,5 | 96,7 | 366,8 | 402,0 | 364,7 | 367,5 | 389,0 | 0,16 | 86,49 | 84,73 | 83,77 | 0,15 | 86,66 | 85,26 | 84,56 |
| 224,0 | 470,0 | 2,6 | 1,0 | 6,3 | 237,2 | 79,8 | 95,9 | 365,2 | 401,7 | 364,5 | 366,9 | 389,0 | 0,16 | 86,34 | 84,75 | 83,81 | 0,15 | 86,60 | 85,28 | 84,60 |
| 225,0 | 471,0 | 2,6 | 1,0 | 6,3 | 236,3 | 79,8 | 94,8 | 362,9 | 401,3 | 364,0 | 365,9 | 389,1 | 0,16 | 86,14 | 84,74 | 83,86 | 0,15 | 86,49 | 85,30 | 84,62 |
| 226,0 | 472,0 | 2,6 | 1,0 | 6,2 | 235,7 | 79,8 | 94,4 | 361,1 | 400,6 | 363,5 | 364,9 | 389,2 | 0,16 | 85,94 | 84,73 | 83,85 | 0,15 | 86,35 | 85,29 | 84,64 |
| 227,0 | 473,0 | 2,6 | 1,0 | 6,2 | 234,7 | 79,8 | 94,1 | 359,0 | 399,7 | 363,1 | 364,2 | 389,2 | 0,16 | 85,75 | 84,70 | 83,87 | 0,15 | 86,22 | | |

| | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-----|-----|-----|-------|------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 254,0 | 500,0 | 2,1 | 1,0 | 6,1 | 219,7 | 79,3 | 91,9 | 328,0 | 384,8 | 349,7 | 346,2 | 391,6 | 0,16 | 84,95 | 85,12 | 84,05 | 0,15 | 85,57 | 85,72 | 84,78 |
| 255,0 | 501,0 | 2,1 | 1,0 | 6,1 | 219,4 | 79,5 | 91,4 | 328,1 | 384,8 | 349,3 | 345,9 | 391,6 | 0,16 | 84,83 | 85,08 | 84,03 | 0,15 | 85,46 | 85,68 | 84,72 |
| 256,0 | 502,0 | 2,1 | 1,0 | 6,1 | 219,1 | 79,8 | 91,4 | 327,5 | 384,4 | 349,1 | 345,6 | 391,7 | 0,16 | 84,73 | 85,04 | 84,00 | 0,15 | 85,34 | 85,65 | 84,71 |
| 257,0 | 503,0 | 2,0 | 1,0 | 6,2 | 219,1 | 79,3 | 91,3 | 326,8 | 384,7 | 349,0 | 344,8 | 391,9 | 0,16 | 84,60 | 85,00 | 83,99 | 0,15 | 85,23 | 85,62 | 84,67 |
| 258,0 | 504,0 | 2,0 | 1,0 | 6,1 | 218,7 | 79,7 | 91,8 | 326,3 | 384,5 | 349,0 | 344,8 | 392,0 | 0,16 | 84,59 | 84,96 | 83,97 | 0,15 | 85,21 | 85,60 | 84,63 |
| 259,0 | 505,0 | 2,0 | 1,0 | 6,1 | 218,1 | 79,1 | 93,5 | 326,3 | 384,7 | 348,4 | 344,0 | 392,0 | 0,16 | 84,66 | 84,99 | 83,94 | 0,15 | 85,24 | 85,59 | 84,61 |
| 260,0 | 506,0 | 2,0 | 1,0 | 6,1 | 217,4 | 80,0 | 94,3 | 325,8 | 384,7 | 348,3 | 343,5 | 392,1 | 0,16 | 84,81 | 85,04 | 83,96 | 0,15 | 85,31 | 85,61 | 84,63 |
| 261,0 | 507,0 | 2,0 | 1,0 | 6,2 | 217,1 | 79,9 | 95,8 | 325,5 | 385,0 | 348,2 | 343,4 | 392,4 | 0,16 | 85,00 | 85,09 | 83,98 | 0,15 | 85,43 | 85,65 | 84,63 |
| 262,0 | 508,0 | 2,0 | 1,0 | 6,2 | 216,8 | 79,3 | 97,3 | 324,6 | 384,5 | 348,0 | 342,8 | 392,4 | 0,16 | 85,21 | 85,14 | 83,98 | 0,15 | 85,58 | 85,71 | 84,64 |
| 263,0 | 509,0 | 1,9 | 1,0 | 6,2 | 216,2 | 80,0 | 97,7 | 324,0 | 384,5 | 348,0 | 342,6 | 392,4 | 0,16 | 85,46 | 85,24 | 84,00 | 0,15 | 85,77 | 85,78 | 84,68 |
| 264,0 | 510,0 | 1,9 | 1,0 | 6,2 | 215,9 | 80,1 | 99,4 | 323,7 | 384,7 | 347,9 | 342,7 | 392,6 | 0,16 | 85,67 | 85,33 | 84,03 | 0,15 | 85,94 | 85,86 | 84,70 |
| 265,0 | 511,0 | 1,9 | 1,0 | 6,2 | 215,8 | 80,2 | 100,4 | 323,1 | 384,9 | 347,6 | 342,2 | 392,9 | 0,16 | 85,95 | 85,48 | 84,07 | 0,15 | 86,19 | 85,98 | 84,72 |
| 266,0 | 512,0 | 1,9 | 1,0 | 6,2 | 215,5 | 79,8 | 98,9 | 322,8 | 384,8 | 347,5 | 341,6 | 393,0 | 0,16 | 86,20 | 85,61 | 84,09 | 0,15 | 86,40 | 86,10 | 84,76 |
| 267,0 | 513,0 | 1,9 | 1,0 | 6,2 | 215,4 | 80,5 | 97,4 | 321,7 | 385,1 | 347,3 | 341,6 | 393,1 | 0,16 | 86,36 | 85,71 | 84,14 | 0,15 | 86,55 | 86,20 | 84,78 |
| 268,0 | 514,0 | 1,9 | 0,9 | 6,2 | 215,9 | 79,9 | 96,0 | 321,7 | 385,1 | 347,0 | 341,4 | 393,4 | 0,16 | 86,35 | 85,78 | 84,17 | 0,15 | 86,56 | 86,24 | 84,79 |
| 269,0 | 517,0 | 1,8 | 0,9 | 6,2 | 213,0 | 80,0 | 95,1 | 321,7 | 385,4 | 347,0 | 340,9 | 393,6 | 0,16 | 86,26 | 85,78 | 84,19 | 0,15 | 86,53 | 86,27 | 84,82 |
| 270,0 | 516,0 | 1,8 | 0,9 | 6,2 | 216,1 | 80,1 | 94,2 | 321,4 | 385,5 | 347,0 | 340,9 | 393,7 | 0,16 | 86,15 | 85,79 | 84,18 | 0,15 | 86,48 | 86,27 | 84,84 |
| 271,0 | 517,0 | 1,8 | 0,9 | 6,2 | 216,4 | 80,0 | 93,5 | 321,1 | 385,9 | 347,1 | 340,3 | 393,8 | 0,16 | 86,03 | 85,78 | 84,17 | 0,15 | 86,41 | 86,28 | 84,84 |
| 272,0 | 518,0 | 1,8 | 0,9 | 6,2 | 215,9 | 79,3 | 92,9 | 321,0 | 386,3 | 346,7 | 340,1 | 394,0 | 0,16 | 85,86 | 85,77 | 84,16 | 0,15 | 86,29 | 86,25 | 84,82 |
| 273,0 | 519,0 | 1,8 | 0,9 | 6,1 | 215,7 | 80,0 | 93,1 | 320,8 | 386,9 | 346,5 | 339,7 | 394,1 | 0,16 | 85,70 | 85,73 | 84,14 | 0,15 | 86,20 | 86,25 | 84,80 |
| 274,0 | 520,0 | 1,7 | 0,9 | 6,1 | 215,9 | 80,1 | 92,3 | 320,2 | 387,4 | 346,5 | 339,3 | 394,2 | 0,16 | 85,54 | 85,69 | 84,14 | 0,15 | 86,08 | 86,20 | 84,80 |
| 275,0 | 521,0 | 1,7 | 0,9 | 6,1 | 215,9 | 79,9 | 92,2 | 319,6 | 388,0 | 346,3 | 338,8 | 394,5 | 0,16 | 85,38 | 85,66 | 84,12 | 0,15 | 85,96 | 86,19 | 84,82 |
| 276,0 | 522,0 | 1,7 | 0,9 | 6,1 | 215,9 | 80,1 | 91,8 | 318,4 | 388,9 | 346,6 | 338,9 | 394,7 | 0,16 | 85,20 | 85,61 | 84,10 | 0,15 | 85,83 | 86,15 | 84,77 |
| 277,0 | 523,0 | 1,7 | 1,0 | 6,1 | 216,3 | 79,7 | 91,6 | 318,2 | 389,9 | 346,0 | 338,6 | 394,8 | 0,16 | 85,00 | 85,57 | 84,09 | 0,15 | 85,67 | 86,11 | 84,75 |
| 278,0 | 524,0 | 1,7 | 1,0 | 6,1 | 215,7 | 79,7 | 91,4 | 317,7 | 390,6 | 346,0 | 338,3 | 395,0 | 0,16 | 84,85 | 85,53 | 84,05 | 0,15 | 85,54 | 86,07 | 84,71 |
| 279,0 | 525,0 | 1,7 | 1,0 | 6,1 | 216,1 | 79,6 | 90,9 | 317,4 | 391,4 | 345,6 | 338,2 | 395,2 | 0,16 | 84,73 | 85,47 | 84,01 | 0,15 | 85,44 | 86,03 | 84,69 |
| 280,0 | 526,0 | 1,6 | 1,0 | 6,0 | 215,9 | 78,8 | 91,2 | 316,9 | 392,1 | 345,6 | 337,7 | 395,4 | 0,16 | 84,64 | 85,44 | 84,00 | 0,15 | 85,34 | 85,98 | 84,67 |
| 281,0 | 527,0 | 1,6 | 1,0 | 6,0 | 215,8 | 79,4 | 91,3 | 316,7 | 392,7 | 345,3 | 337,8 | 395,5 | 0,16 | 84,57 | 85,41 | 83,98 | 0,15 | 85,26 | 85,95 | 84,63 |
| 282,0 | 528,0 | 1,6 | 1,0 | 6,0 | 215,7 | 79,8 | 90,9 | 316,1 | 393,4 | 344,9 | 337,5 | 395,7 | 0,16 | 84,51 | 85,37 | 83,95 | 0,15 | 85,20 | 85,91 | 84,60 |
| 283,0 | 529,0 | 1,6 | 1,0 | 6,0 | 215,4 | 80,5 | 91,5 | 315,8 | 394,1 | 345,1 | 337,0 | 395,8 | 0,16 | 84,51 | 85,36 | 83,93 | 0,15 | 85,19 | 85,87 | 84,56 |
| 284,0 | 530,0 | 1,6 | 1,0 | 6,0 | 214,7 | 79,3 | 93,3 | 315,4 | 394,6 | 344,4 | 336,8 | 395,9 | 0,16 | 84,56 | 85,36 | 83,90 | 0,15 | 85,17 | 85,86 | 84,52 |
| 285,0 | 531,0 | 1,6 | 1,0 | 6,0 | 214,0 | 80,1 | 94,2 | 315,0 | 394,8 | 343,9 | 337,0 | 396,2 | 0,16 | 84,72 | 85,39 | 83,91 | 0,15 | 85,26 | 85,87 | 84,53 |
| 286,0 | 532,0 | 1,5 | 1,0 | 6,0 | 213,9 | 79,9 | 95,4 | 314,5 | 395,6 | 343,6 | 336,6 | 396,4 | 0,16 | 84,93 | 85,43 | 83,89 | 0,15 | 85,40 | 85,91 | 84,53 |
| 287,0 | 533,0 | 1,5 | 1,0 | 6,0 | 213,2 | 79,3 | 97,5 | 314,2 | 395,8 | 343,6 | 336,6 | 396,4 | 0,16 | 85,19 | 85,52 | 83,93 | 0,15 | 85,57 | 85,99 | 84,57 |
| 288,0 | 534,0 | 1,5 | 1,0 | 6,1 | 212,8 | 79,8 | 98,4 | 313,6 | 396,3 | 343,1 | 336,1 | 396,4 | 0,16 | 85,45 | 85,60 | 83,95 | 0,15 | 85,77 | 86,06 | 84,58 |
| 289,0 | 535,0 | 1,5 | 1,0 | 6,1 | 212,4 | 79,9 | 99,5 | 313,2 | 396,6 | 342,9 | 336,1 | 396,6 | 0,16 | 85,75 | 85,72 | 84,00 | 0,15 | 85,98 | 86,17 | 84,63 |
| 290,0 | 536,0 | 1,5 | 0,9 | 6,1 | 212,3 | 79,8 | 99,3 | 312,4 | 397,2 | 342,5 | 335,7 | 396,8 | 0,16 | 85,99 | 85,82 | 84,04 | 0,15 | 86,21 | 86,28 | 84,65 |
| 291,0 | 537,0 | 1,5 | 0,9 | 6,1 | 212,6 | 79,9 | 97,8 | 312,4 | 397,3 | 342,1 | 335,6 | 396,9 | 0,16 | 86,21 | 85,94 | 84,07 | 0,15 | 86,40 | 86,38 | 84,67 |
| 292,0 | 538,0 | 1,4 | 0,9 | 6,1 | 212,6 | 79,9 | 96,6 | 311,9 | 397,8 | 341,9 | 335,3 | 396,8 | 0,16 | 86,28 | 86,01 | 84,08 | 0,15 | 86,48 | 86,46 | 84,67 |
| 293,0 | 539,0 | 1,4 | 0,9 | 6,1 | 212,6 | 80,0 | 95,5 | 311,8 | 398,5 | 341,8 | 335,4 | 396,8 | 0,16 | 86,24 | 86,02 | 84,09 | 0,15 | 86,49 | 86,48 | 84,68 |
| 294,0 | 540,0 | 1,4 | 0,9 | 6,1 | 212,5 | 79,8 | 94,5 | 311,3 | 399,1 | 341,4 | 334,9 | 397,1 | 0,16 | 86,13 | 86,05 | 84,09 | 0,15 | 86,45 | 86,49 | 84,69 |
| 295,0 | 541,0 | 1,4 | 0,9 | 6,1 | 212,6 | 79,3 | 93,8 | 311,1 | 399,5 | 340,9 | 334,6 | 397,1 | 0,16 | 86,03 | 86,06 | 84,12 | 0,15 | 86,41 | 86,49 | 84,69 |
| 296,0 | 542,0 | 1,4 | 0,9 | 6,1 | 212,7 | 80,0 | 93,3 | 310,7 | 399,9 | 340,6 | 334,4 | 397,1 | 0,16 | 85,90 | 86,03 | 84,09 | 0,15 | 86,32 | 86,49 | 84,70 |
| 297,0 | 543,0 | 1,4 | 0,9 | 6,1 | 212,5 | 79,6 | 92,9 | 310,4 | 400,5 | 340,2 | 333,7 | 397,1 | 0,16 | 85,79 | 86,03 | 84,11 | 0,15 | 86,26 | 86,48 | 84,72 |
| 298,0 | 544,0 | 1,3 | 0,9 | 6,1 | 212,4 | 79,8 | 92,5 | 310,1 | 401,2 | 339,8 | 333,7 | 397,2 | 0,16 | 85,68 | 85,99 | 84,09 | 0,15 | 86,17 | 86,46 | 84,70 |
| 299,0 | 545,0 | 1,3 | 0,9 | 6,1 | 212,5 | 79,7 | 92,1 | 309,9 | 402,0 | 339,3 | 333,5 | 397,3 | 0,16 | 85,54 | 85,98 | 84,08 | 0,15 | 86,06 | 86,43 | 84,70 |
| 300,0 | 546,0 | 1,3 | 0,8 | 6,2 | 212,5 | 79,9 | 92,0 | 309,7 | 402,7 | 338,8 | 333,2 | 397,3 | 0,16 | 85,40 | 85,93 | 84,09 | 0,15 | 85,96 | 86,39 | 84,71 |
| 301,0 | 547,0 | 1,3 | 0,8 | 6,3 | 212,4 | 80,1 | 91,7 | 309,6 | 403,3 | 338,6 | 333,0 | 397,3 | 0,16 | 85,28 | 85,90 | 84,09 | 0,15 | 85,85 | 86,36 | 84,71 |
| 302,0 | 548,0 | 1,3 | 0,7 | 6,3 | 213,2 | 80,1 | 91,7 | 310,7 | 403,9 | 338,2 | 333,1 | 397,3 | 0,16 | 85,18 | 85,85 | 84,06 | 0,15 | 85,74 | 86,37 | 84,67 |
| 303,0 | 549,0 | 1,3 | 0,7 | 6,3 | 213,4 | 79,8 | 91,3 | 309,9 | 404,5 | 337,9 | 333,3 | 397,4 | 0,16 | 85,10 | 85,82 | 84,04 | 0,15 | 85,64 | 86,31 | 84,67 |
| 304,0 | 550,0 | 1,2 | 0,7 | 6,4 | 213,8 | 79,7 | 91,1 | 309,9 | 405,1 | 337,7 | 333,0 | 397,4 | 0,16 | 85,02 | 85,78 | 84,05 | 0,15 | 85,55 | 86,27 | 84,65 |
| 305,0 | 551,0 | 1,2 | 0,7 | 6,4 | 213,8 | 79,5 | 91,1 | 310,0 | 406,3 | 337,5 | 333,1 | 397,6 | 0,16 | 84,94 | 85,73 | 84,02 | 0,15 | 85,48 | 86,23 | 84,64 |
| 306,0 | 552,0 | 1,2 | 0,6 | 6,4 | 214,2 | 79,7 | 91,1 | 310,6 | 407,4 | 337,3 | 333,2 | 397,8 | 0,16 | 84,89 | 85,70 | 84,01 | 0,15 | 85,40 | 86,20 | 84,60 |
| 307,0 | 553,0 | 1,2 | 0,6 | 6,4 | 214,4 | 79,4 | 90,8 | 310,6 | 408,1 | 337,1 | 333,1 | 397,9 | 0,16 | 84,79 | 85,65 | 83,98 | 0,15 | 85,31 | 86,17 | 84,59 |
| 308,0 | 554,0 | 1,2 | 0,6 | 6,4 | 214,4 | 79,9 | 90,9 | 310,9 | 409,1 | 337,1 | 333,4 | 398,1 | 0,16 | 84,74 | 85,62 | 83,98 | 0,15 | 85,25 | 86,15 | 84,57 |
| 309,0 | 555,0 | 1,1 | 0,6 | 6,4 | 214,6 | 80,0 | 90,8 | 310,9 | 409,9 | 336,9 | 333,5 | 398,2 | 0,16 | 84,67 | 85,58 | 83,94 | 0,15 | 85,18 | 86,10 | 84,55 |
| 310,0 | 556,0 | 1,1 | 0,7 | 6,4 | 214,8 | 79,8 | 90,6 | 311,0 | 411,0 | 336,9 | 333,8 | 398,6 | 0,16 | 84,60 | 85,54 | 83,92 | 0,15 | 85,11 | 86,07 | 84,50 |
| 311,0 | 557,0 | 1,1 | 0,7 | 6,3 | 214,9 | 80,0 | 90,7 | 310,9 | 412,2 | 336,8 | 334,1 | 398,8 | 0,16 | 84,53 | 85,51 | 83,88 | 0,15 | 85,04 | 86,04 | 84,48 |
| 312,0 | 558,0 | 1,1 | 0,7 | 6,4 | 214,7 | 80,2 | 91,0 | 311,4 | 413,1 | 337,1 | 334,1 | 399,1 | 0,16 | 84,46 | 85,48 | 83,84 | 0,15 | 84,96 | 86,01 | 84,42 |
| 313,0 | 559,0 | 1,1 | 0,7 | 6,4 | 215,0 | 80,3 | 92,0 | 311,5 | 414,2 | 336,8 | 334,2 | 399,4 | 0,16 | 84,51 | 85,50 | 83,83 | 0,15 | 85,01 | 86,02 | 84,43 |
| 314,0 | 560,0 | 1,1 | 0,7 | 6,4 | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-----|-----|-----|-------|------|------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 340,0 | 586,0 | 0,7 | 0,9 | 5,2 | 208,3 | 79,8 | 90,5 | 303,4 | 418,1 | 328,7 | 326,5 | 401,9 | 0,16 | 84,58 | 85,57 | 83,84 | 0,15 | 85,03 | 86,09 | 84,40 |
| 341,0 | 587,0 | 0,7 | 0,9 | 5,2 | 207,8 | 79,7 | 90,4 | 302,7 | 417,5 | 328,1 | 325,9 | 401,6 | 0,16 | 84,50 | 85,53 | 83,82 | 0,15 | 84,98 | 86,08 | 84,33 |
| 342,0 | 588,0 | 0,7 | 0,9 | 5,2 | 207,4 | 78,9 | 90,3 | 301,9 | 416,7 | 327,4 | 325,2 | 400,8 | 0,16 | 84,43 | 85,50 | 83,80 | 0,15 | 84,91 | 86,04 | 84,31 |
| 343,0 | 589,0 | 0,6 | 0,9 | 5,2 | 207,2 | 79,3 | 90,4 | 301,2 | 415,4 | 326,8 | 324,4 | 400,3 | 0,16 | 84,37 | 85,45 | 83,75 | 0,15 | 84,86 | 86,01 | 84,27 |
| 344,0 | 590,0 | 0,6 | 0,9 | 5,1 | 206,3 | 80,2 | 90,7 | 300,8 | 415,0 | 326,2 | 323,8 | 399,7 | 0,16 | 84,34 | 85,43 | 83,74 | 0,15 | 84,84 | 85,99 | 84,24 |
| 345,0 | 591,0 | 0,6 | 0,9 | 5,1 | 206,0 | 79,7 | 91,6 | 299,6 | 414,0 | 325,3 | 323,2 | 399,3 | 0,16 | 84,42 | 85,45 | 83,72 | 0,15 | 84,90 | 85,99 | 84,25 |
| 346,0 | 592,0 | 0,6 | 0,9 | 5,1 | 205,0 | 79,9 | 92,8 | 299,5 | 413,3 | 324,9 | 323,0 | 398,8 | 0,16 | 84,56 | 85,48 | 83,72 | 0,15 | 84,97 | 85,99 | 84,24 |
| 347,0 | 593,0 | 0,6 | 0,9 | 5,1 | 204,3 | 80,0 | 94,5 | 298,5 | 412,4 | 324,2 | 322,4 | 398,2 | 0,16 | 84,75 | 85,53 | 83,75 | 0,15 | 85,11 | 86,03 | 84,26 |
| 348,0 | 594,0 | 0,6 | 0,9 | 5,1 | 203,8 | 79,4 | 95,5 | 298,0 | 411,6 | 323,4 | 321,9 | 397,5 | 0,16 | 84,97 | 85,58 | 83,79 | 0,15 | 85,26 | 86,07 | 84,25 |
| 349,0 | 595,0 | 0,6 | 0,9 | 5,1 | 203,2 | 79,9 | 96,7 | 297,4 | 410,4 | 322,8 | 321,2 | 397,0 | 0,16 | 85,24 | 85,68 | 83,81 | 0,15 | 85,49 | 86,15 | 84,31 |
| 350,0 | 596,0 | 0,6 | 0,9 | 5,1 | 202,3 | 79,5 | 95,9 | 296,5 | 409,5 | 322,1 | 320,5 | 396,4 | 0,16 | 85,50 | 85,77 | 83,84 | 0,15 | 85,68 | 86,23 | 84,34 |
| 351,0 | 597,0 | 0,6 | 0,9 | 5,1 | 202,1 | 80,4 | 94,9 | 295,8 | 408,3 | 321,4 | 319,9 | 395,8 | 0,16 | 85,71 | 85,85 | 83,87 | 0,15 | 85,85 | 86,31 | 84,35 |
| 352,0 | 598,0 | 0,5 | 0,9 | 5,1 | 202,3 | 79,9 | 94,1 | 295,4 | 407,8 | 320,7 | 319,5 | 395,3 | 0,16 | 85,78 | 85,90 | 83,91 | 0,15 | 85,95 | 86,36 | 84,36 |
| 353,0 | 599,0 | 0,5 | 0,9 | 5,1 | 202,0 | 79,8 | 93,4 | 294,6 | 406,6 | 320,1 | 318,8 | 394,6 | 0,16 | 85,78 | 85,93 | 83,91 | 0,15 | 85,96 | 86,37 | 84,41 |
| 354,0 | 600,0 | 0,5 | 0,9 | 5,1 | 202,1 | 79,6 | 92,9 | 294,0 | 405,7 | 319,4 | 318,3 | 394,0 | 0,16 | 85,71 | 85,93 | 83,92 | 0,15 | 85,94 | 86,37 | 84,39 |
| 355,0 | 601,0 | 0,5 | 0,9 | 5,0 | 202,0 | 79,6 | 92,4 | 293,2 | 404,8 | 318,6 | 317,3 | 393,4 | 0,16 | 85,61 | 85,93 | 83,91 | 0,15 | 85,87 | 86,36 | 84,39 |
| 356,0 | 602,0 | 0,5 | 0,9 | 5,0 | 201,4 | 80,0 | 92,0 | 292,5 | 403,9 | 317,9 | 316,7 | 392,7 | 0,16 | 85,49 | 85,90 | 83,93 | 0,15 | 85,80 | 86,35 | 84,40 |
| 357,0 | 603,0 | 0,5 | 0,9 | 5,0 | 201,4 | 79,8 | 91,6 | 292,0 | 402,9 | 317,3 | 316,0 | 392,1 | 0,16 | 85,36 | 85,89 | 83,92 | 0,15 | 85,71 | 86,34 | 84,39 |
| 358,0 | 604,0 | 0,5 | 0,9 | 5,0 | 201,0 | 80,0 | 91,3 | 291,3 | 402,4 | 316,5 | 315,5 | 391,5 | 0,16 | 85,22 | 85,85 | 83,93 | 0,15 | 85,64 | 86,31 | 84,38 |
| 359,0 | 605,0 | 0,4 | 0,9 | 5,0 | 200,8 | 79,9 | 91,1 | 290,8 | 401,7 | 315,9 | 315,1 | 391,0 | 0,16 | 85,11 | 85,83 | 83,91 | 0,15 | 85,53 | 86,30 | 84,38 |
| 360,0 | 606,0 | 0,4 | 0,9 | 5,0 | 200,5 | 80,0 | 90,8 | 290,2 | 400,9 | 315,2 | 314,4 | 390,4 | 0,16 | 85,02 | 85,79 | 83,89 | 0,15 | 85,43 | 86,25 | 84,36 |
| 361,0 | 607,0 | 0,4 | 0,9 | 5,0 | 200,0 | 80,1 | 90,5 | 289,7 | 400,0 | 314,5 | 313,8 | 389,8 | 0,16 | 84,92 | 85,76 | 83,89 | 0,15 | 85,36 | 86,23 | 84,36 |
| 362,0 | 608,0 | 0,4 | 0,9 | 4,9 | 200,0 | 79,9 | 90,6 | 289,5 | 399,2 | 313,9 | 313,3 | 389,2 | 0,16 | 84,85 | 85,73 | 83,89 | 0,15 | 85,28 | 86,21 | 84,36 |
| 363,0 | 609,0 | 0,4 | 0,9 | 4,9 | 199,4 | 79,9 | 90,3 | 288,9 | 398,6 | 313,1 | 312,8 | 388,6 | 0,16 | 84,79 | 85,70 | 83,88 | 0,15 | 85,21 | 86,17 | 84,33 |
| 364,0 | 610,0 | 0,4 | 0,9 | 4,9 | 199,5 | 79,8 | 90,1 | 288,1 | 398,0 | 312,5 | 312,4 | 388,1 | 0,16 | 84,72 | 85,67 | 83,84 | 0,15 | 85,14 | 86,13 | 84,28 |
| 365,0 | 611,0 | 0,4 | 0,9 | 4,9 | 199,3 | 79,7 | 90,0 | 287,6 | 397,4 | 312,0 | 311,6 | 387,6 | 0,16 | 84,64 | 85,64 | 83,82 | 0,15 | 85,09 | 86,13 | 84,27 |
| 366,0 | 612,0 | 0,3 | 0,9 | 4,9 | 198,8 | 79,9 | 89,9 | 287,3 | 396,1 | 311,0 | 310,9 | 386,9 | 0,16 | 84,54 | 85,58 | 83,76 | 0,15 | 85,00 | 86,08 | 84,23 |
| 367,0 | 613,0 | 0,3 | 0,9 | 4,9 | 198,7 | 79,9 | 89,8 | 286,6 | 395,7 | 310,5 | 310,4 | 386,4 | 0,16 | 84,46 | 85,55 | 83,74 | 0,15 | 84,92 | 86,05 | 84,21 |
| 368,0 | 614,0 | 0,3 | 0,9 | 4,9 | 198,1 | 79,8 | 89,6 | 285,6 | 395,1 | 309,8 | 309,8 | 385,8 | 0,16 | 84,39 | 85,53 | 83,71 | 0,15 | 84,87 | 86,03 | 84,18 |
| 369,0 | 615,0 | 0,3 | 0,9 | 4,7 | 197,8 | 79,7 | 89,5 | 284,9 | 394,1 | 309,2 | 309,5 | 385,1 | 0,16 | 84,33 | 85,47 | 83,66 | 0,15 | 84,77 | 85,99 | 84,16 |
| 370,0 | 616,0 | 0,3 | 0,9 | 4,7 | 197,4 | 80,1 | 89,3 | 284,1 | 393,8 | 308,7 | 308,6 | 384,6 | 0,16 | 84,27 | 85,45 | 83,63 | 0,15 | 84,73 | 85,94 | 84,11 |
| 371,0 | 617,0 | 0,3 | 0,9 | 4,7 | 197,2 | 79,9 | 89,4 | 283,4 | 393,1 | 308,1 | 308,4 | 384,1 | 0,16 | 84,20 | 85,40 | 83,62 | 0,15 | 84,66 | 85,91 | 84,07 |
| 372,0 | 618,0 | 0,3 | 0,9 | 4,7 | 196,9 | 79,7 | 89,3 | 282,6 | 392,3 | 307,4 | 307,8 | 383,6 | 0,16 | 84,16 | 85,36 | 83,59 | 0,15 | 84,61 | 85,88 | 84,04 |
| 373,0 | 619,0 | 0,3 | 0,9 | 4,6 | 196,4 | 79,8 | 89,2 | 281,9 | 391,9 | 306,6 | 307,2 | 383,1 | 0,16 | 84,09 | 85,32 | 83,55 | 0,15 | 84,56 | 85,82 | 83,99 |
| 374,0 | 620,0 | 0,3 | 0,9 | 4,6 | 195,9 | 79,6 | 89,1 | 281,3 | 390,8 | 306,0 | 306,9 | 382,5 | 0,16 | 84,04 | 85,30 | 83,51 | 0,15 | 84,50 | 85,80 | 83,93 |
| 375,0 | 621,0 | 0,2 | 0,9 | 4,6 | 195,5 | 80,0 | 89,4 | 280,7 | 390,4 | 305,7 | 306,0 | 381,9 | 0,16 | 83,97 | 85,27 | 83,46 | 0,15 | 84,46 | 85,77 | 83,89 |
| 376,0 | 622,0 | 0,2 | 0,8 | 4,6 | 194,7 | 80,3 | 89,9 | 280,2 | 389,9 | 304,9 | 305,2 | 381,5 | 0,16 | 84,03 | 85,26 | 83,43 | 0,15 | 84,50 | 85,72 | 83,87 |
| 377,0 | 623,0 | 0,2 | 0,8 | 4,6 | 194,0 | 79,7 | 91,4 | 279,2 | 389,4 | 304,3 | 304,7 | 380,9 | 0,16 | 84,12 | 85,28 | 83,44 | 0,15 | 84,57 | 85,74 | 83,86 |
| 378,0 | 624,0 | 0,2 | 0,8 | 4,6 | 193,3 | 80,3 | 92,7 | 278,5 | 388,7 | 303,7 | 304,1 | 380,3 | 0,16 | 84,29 | 85,31 | 83,45 | 0,15 | 84,68 | 85,77 | 83,85 |
| 379,0 | 625,0 | 0,2 | 0,8 | 4,6 | 192,5 | 80,1 | 94,3 | 278,0 | 388,1 | 302,9 | 303,5 | 379,8 | 0,16 | 84,52 | 85,36 | 83,45 | 0,15 | 84,83 | 85,82 | 83,88 |
| 380,0 | 626,0 | 0,2 | 0,8 | 4,6 | 192,1 | 80,2 | 95,9 | 277,4 | 387,6 | 302,5 | 302,9 | 379,2 | 0,16 | 84,74 | 85,42 | 83,48 | 0,15 | 84,99 | 85,85 | 83,89 |
| 381,0 | 627,0 | 0,2 | 0,8 | 4,6 | 191,4 | 80,0 | 96,5 | 276,7 | 387,1 | 301,9 | 302,2 | 378,5 | 0,16 | 85,00 | 85,51 | 83,50 | 0,15 | 85,20 | 85,92 | 83,92 |
| 382,0 | 628,0 | 0,2 | 0,8 | 4,6 | 190,9 | 79,2 | 95,4 | 276,0 | 386,5 | 301,6 | 301,7 | 378,1 | 0,16 | 85,22 | 85,58 | 83,52 | 0,15 | 85,38 | 86,00 | 83,87 |
| 383,0 | 629,0 | 0,2 | 0,8 | 4,6 | 190,7 | 79,6 | 94,1 | 275,7 | 386,1 | 300,4 | 300,8 | 377,7 | 0,16 | 85,34 | 85,66 | 83,74 | 0,15 | 85,47 | 86,07 | 83,74 |
| 384,0 | 630,0 | 0,1 | 0,8 | 4,6 | 190,8 | 79,7 | 93,3 | 275,2 | 385,4 | 300,1 | 300,1 | 377,0 | 0,16 | 85,36 | 85,68 | 83,71 | 0,15 | 85,53 | 86,11 | 83,71 |
| 385,0 | 631,0 | 0,1 | 0,8 | 4,6 | 190,7 | 80,0 | 92,2 | 274,5 | 384,7 | 299,5 | 299,3 | 376,5 | 0,16 | 85,31 | 85,69 | 83,74 | 0,15 | 85,51 | 86,11 | 83,66 |
| 386,0 | 632,0 | 0,1 | 0,8 | 4,5 | 190,6 | 79,6 | 91,8 | 274,2 | 384,0 | 299,0 | 298,5 | 375,9 | 0,16 | 85,21 | 85,67 | 83,74 | 0,15 | 85,47 | 86,11 | 83,63 |
| 387,0 | 633,0 | 0,1 | 0,8 | 4,5 | 190,2 | 79,4 | 91,3 | 273,5 | 383,7 | 298,4 | 297,8 | 375,3 | 0,16 | 85,10 | 85,66 | 83,71 | 0,15 | 85,41 | 86,09 | 83,62 |
| 388,0 | 634,0 | 0,1 | 0,8 | 4,5 | 190,1 | 79,6 | 90,7 | 272,8 | 383,2 | 297,7 | 297,1 | 374,7 | 0,16 | 84,99 | 85,63 | 83,66 | 0,15 | 85,34 | 86,07 | 83,59 |
| 389,0 | 635,0 | 0,1 | 0,8 | 4,5 | 190,1 | 79,5 | 90,6 | 272,4 | 382,8 | 297,0 | 296,4 | 374,2 | 0,16 | 84,85 | 85,60 | 83,63 | 0,15 | 85,24 | 86,04 | 83,74 |
| 390,0 | 636,0 | 0,1 | 0,8 | 4,5 | 189,8 | 79,4 | 90,3 | 271,7 | 382,3 | 296,4 | 295,7 | 373,7 | 0,16 | 84,74 | 85,57 | 83,62 | 0,15 | 85,16 | 86,01 | 83,71 |
| 391,0 | 637,0 | 0,1 | 0,8 | 4,5 | 189,6 | 79,7 | 90,0 | 271,0 | 381,8 | 295,7 | 294,9 | 373,1 | 0,16 | 84,66 | 85,53 | 83,59 | 0,15 | 85,07 | 85,98 | 83,66 |
| 392,0 | 638,0 | 0,1 | 0,8 | 4,5 | 189,2 | 79,0 | 89,7 | 270,6 | 381,7 | 295,2 | 294,4 | 372,6 | 0,16 | 84,56 | 85,48 | 83,55 | 0,15 | 85,00 | 85,95 | 83,63 |
| 393,0 | 639,0 | 0,1 | 0,8 | 4,5 | 189,3 | 79,5 | 89,5 | 270,2 | 381,2 | 294,7 | 294,0 | 372,0 | 0,16 | 84,49 | 85,47 | 83,51 | 0,15 | 84,95 | 85,93 | 83,62 |
| 394,0 | 640,0 | 0,1 | 0,8 | 4,5 | 188,6 | 79,4 | 89,4 | 269,6 | 381,2 | 294,0 | 293,1 | 371,5 | 0,16 | 84,39 | 85,40 | 83,46 | 0,15 | 84,85 | 85,88 | 83,59 |
| 395,0 | 641,0 | 0,1 | 0,8 | 4,5 | 188,4 | 79,4 | 89,2 | 268,8 | 380,7 | 293,5 | 292,5 | 371,0 | 0,16 | 84,30 | 85,38 | 83,43 | 0,15 | 84,78 | 85,85 | 83,55 |
| 396,0 | 642,0 | 0,1 | 0,8 | 4,5 | 188,1 | 79,5 | 89,0 | 268,2 | 380,1 | 292,9 | 292,0 | 370,4 | 0,16 | 84,22 | 85,35 | 83,44 | 0,15 | 84,73 | 85,81 | 83,51 |
| 397,0 | 643,0 | 0,1 | 0,8 | 4,5 | 188,3 | 79,5 | 89,1 | 267,8 | 380,0 | 292,2 | 291,8 | 369,9 | 0,16 | 84,14 | 85,27 | 83,45 | 0,15 | 84,65 | 85,78 | 83,46 |
| 398,0 | 644,0 | 0,1 | 0,8 | 4,5 | 188,0 | 79,5 | 88,6 | 267,3 | 379,7 | 291,7 | 291,2 | 369,4 | 0,16 | 84,08 | 85,26 | 83,45 | 0,15 | 84,58 | 85,75 | 83,43 |
| 399,0 | 645,0 | 0,1 | 0,8 | 4,5 | 187,8 | 79,6 | 88,6 | 266,7 | 379,2 | 291,1 | 290,3 | 368,8 | 0,16 | 83,99 | 85,20 | 83,48 | 0,15 | 84,51 | 85, | |

Manufacturer: WOLFSTEEL
 Model: 22

Run: 2
 Project #: PI 20178
 Test Duration: 400 min

| | HHV | LHV |
|-----------|--------|--------|
| Eff | 72,69% | 78,21% |
| Comb Eff | 94,79% | 94,79% |
| HT Eff | 76,69% | 82,52% |
| Output | 18 248 | kJ/h |
| Burn Rate | 1,24 | kg/h |
| Grams CO | 636 | g |
| Input | 25 104 | kJ/h |
| MC wet | 17,77 | |

Note: In the "Input data", "Calc. % O₂", "Fuel Properties", and "Mass Balance" columns, [e], [d], [g], [a], [b], [c], [h], [u], [w], [j], and [k] refer to their respective variables in Clauses 13.7.3

Ultimate CO₂
 CO_{2-ut} 19,86
 F_o
 1,050

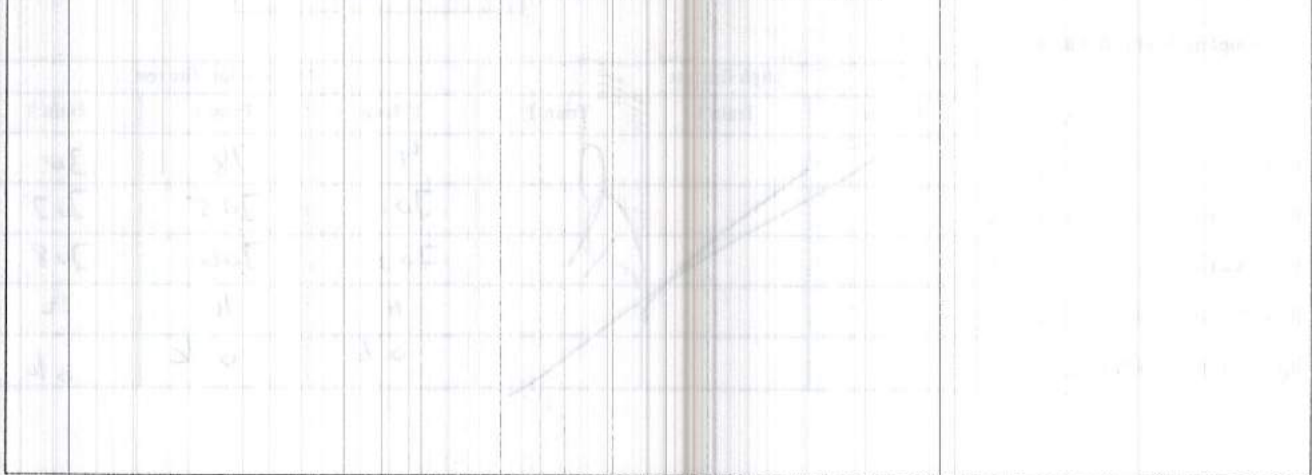
| | Air Fuel Ratio (A/F) | |
|-----------------------------|----------------------|---|
| Overall Heating Efficiency: | 72,69% | Dry Molecular Weight (M _d) 29,75 |
| Combustion Efficiency: | 94,79% | Dry Moles Exhaust Gas (N _g): 423,82 |
| Heat Transfer Efficiency: | 76,69% | Air Fuel Ratio (A/F) 12,10 |

| | | |
|----------------|--------------|--------------|
| Heat Output: | 17 310 Btu/h | 18 248 kJ/h |
| Heat Input: | 23 814 Btu/h | 25 104 kJ/h |
| Burn Duration: | 6,67 h | |
| Burn Rate: | 2,74 lb/h | 1,242 kg/h |
| Stack Temp: | 277,8 Deg. F | 136,6 Deg. C |

Date: 2018-10-25 Manufacturer: WOLF Steel Model: 22
 Project #: PI 20178 Run: 2 Tech: Mm Reviewer: DP

- landing 88 LBS SIBAL 1st flr
 - 1 min torch
 - close Door immediately
 No Fan
 At 300 LBS instat load
 After 2 min close Door
 At 400 LBS instat load
 After 4,00 mins close Door
 At 13 min close air into gradually
 At 15 min close air into complement ligne Green

TEST LOAD CONFIGURATION



PRE / POST CHECKS

Date: 2018-10-25 Manufacturer: Wolf Steel Model: 22
 Project #: PT 20178 Run: 2 Tech: MR Reviewer: JS

Moisture Meter Calibration Check:

| Equipment # | Time | 12% | 22% |
|-------------|------|-----|-----|
| Em-191 | 7:00 | ok | ok |

Facility Conditions:

Air Velocity from less than 2 feet
 Smoke Capture Check.....
 Picture.....

| | Pre-Test | Post-Test |
|---------|---------------|-------------|
| | 0 (max50 Fpm) | (max50 Fpm) |
| | ok | ok |
| 4 sides | ok | ok |

Wood Heater Conditions:

Date Wood Heater Stack Cleaned.....
 Date Dilution Tunnel Cleaned.....
 Induced Draft Check (max 0.005 H2O).....
 Traverse before ignition.....

| |
|------------|
| 2018-10-24 |
| 2018-10-24 |
| ok |
| ok |

Temperature System:

Ambient (65°-90°F).....

ok °F

Proportional Checks:

Thermocouple check.....
 Pitot Clean.....
 Pitot verification.....

| |
|----|
| ok |
| ok |
| ok |

Sampling Train ID Numbers:

Probe.....
 Filter Front.....
 Filter Back.....
 Filter Thermocouple.....
 Filter (80°F ≥ <90°F).....

| | High fire test | | Medium low fire test | | | |
|-----------------------|----------------------|---------|----------------------|----------------------|---------|---------|
| | 1 st hour | Train 1 | Train 2 | 1 st hour | Train 1 | Train 2 |
| Probe | | | | 4 | 18 | 30 |
| Filter Front | | | | 701 | 705 | 707 |
| Filter Back | | | | 703 | 706 | 708 |
| Filter Thermocouple | | | | n | 11 | 12 |
| Filter (80°F ≥ <90°F) | | | | ok | ok | ok |

SAMPLING EQUIPMENT CHECK OUT

Date: 2018-10-25 Manufacturer: Wolf Steel Model: 26
 Project #: PT 20178 Run: 2 Tech: mm Reviewer: SP

Leakage Checks Tunnel Samplers

| High fire test | System 1 st hour | | System 1 | | System 2 | |
|--|--|-------------------------|--|-------------------------|--|-------------------------|
| Unplugged Flow Rate = .25cfm | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) |
| Vacuum (inches Hg.) | / | | | | | |
| Final 1minute DGM (Liter) | / | | | | | |
| Initial 1minute DGM (Liter) | / | | | | | |
| Change © (Liter) | / | | | | | |
| Allowable leakage .04 x Sample rate or 0.28Lpm CSA B415 (0.56) | / | | | | | |
| Check OK | / | | | | | |

| Low medium fire test | System 1 st hour | | System 1 | | System 2 | |
|--|--|-------------------------|--|-------------------------|--|-------------------------|
| Unplugged Flow Rate = .25cfm | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) | Pre-Test ASTM (-15) CSA B415 (-5) | Post-Test (Max test) |
| Vacuum (inches Hg.) | -15 | -15 | -15 | -15 | -15 | -15 |
| Final 1minute DGM (Liter) | 812835.45 | 81474.28 | 812835.90 | 81474.37 | 765041.58 | 766893.24 |
| Initial 1minute DGM (Liter) | 812835.46 | 81474.26 | 812835.85 | 81474.38 | 765041.58 | 766893.21 |
| Change © (Liter) | 0.02 | 0.02 | 0.05 | 0.01 | 0 | 0.03 |
| Allowable leakage .04 x Sample rate or 0.28Lpm CSA B415 (0.56) | | | | | | |
| Check OK | OK | OK | OK | OK | OK | OK |

SAMPLING EQUIPMENT CHECK OUT

Date: 2018-10-25 Manufacturer: Wolfe Steel Model: 22
 Project #: PT 20178 Run: 2 Tech: MM Reviewer: SP

Leakage Checks Flue Gas Sampler

| Plugged Probe | Pre-Test | Post Test |
|-------------------------------|----------|-----------|
| Vacuum (inches Hg.) | - 5 | - 5 |
| Rotameter Reading (mml/min.) | 0 | 0 |
| Flow Rate (lpm) | 1.5 | 1.5 |
| Allowable (.02 x Sample Rate) | 30 | 30 |
| Check OK | OK | OK |

Leakage Checks Pitot

| Plugged Probe | Pre Test | Pre Test | Post Test | Post Test |
|------------------------------------|------------------------------|--------------------------------------|------------------------------|--------------------------------------|
| | 3 H ₂ O static | 0.4-0.5 H ₂ O velocity | 3 H ₂ O Static | 0.4-0.5 H ₂ O velocity |
| Vacuum (inches Hg.) | 3 | .5 | 3 | .5 |
| Check OK (no change after 15 sec.) | OK | OK | OK | OK |

Date: 2018-10-25 Manufacturer: Wolff Steel Model: 22
 Project #: PT 20178 Run: 2 Tech: MM Reviewer: JP

| Scale Type | Audit | | Measured Weight |
|------------|-------------|-----------------|-----------------|
| | Equipment # | Weight | |
| Platform | EM-090 | 44 lbs, Class F | 44 lbs |
| Wood | EM-090 | 44 lbs, Class F | 44 lbs |
| Analytical | EM-128 | 100 mg, Class S | 100mg |
| Analytical | EM-129 | 200 g, Class S | 200 g |

LIMITS OF WEIGHT RANGES

ANALYTICAL SCALE: 50%-150% of dry filter weight, ± 0.1 mg
PLATFORM SCALE: 20%-80% of ideal test load weight, ± 0.1 lbs or 1%
WOOD SCALE: 20%-80% of ideal test load weight, ± 0.01 lbs or 1%

Date: 2018-10-25 Manufacturer: Wolf Steel Model: 22
 Project #: PJ 20178 Run: 2 Tech: MA Reviewer: DP

FOR TUNNELS < 12 in

Barometric pressure (P_{bar}) 101.5 (KPa.) Static pressure (P_q) 0.21 (inches w.c.)
 Inside diameter: Port A _____ Port B _____
 Tunnel cross sectional area: .1963Ft²
 Pitot tube type: Standard

| Traverse Point | Position (inches) | | | Velocity Head Δ_p (inches H ₂ O) | Tunnel Temperature (°F) |
|----------------|-------------------|------|------|--|-------------------------|
| | 6 po | 7 po | 8 po | | |
| A- Centroid | 3.00 | 3.50 | 4 | 0058 | 9008 |
| B - Centroid | 3.00 | 3.50 | 4 | 0059 | 8768 |
| A-1 | 0.40 | 0.50 | 0.50 | 0053 | 8990 |
| A-2 | 1.50 | 1.75 | 2 | 0068 | 8906 |
| A-3 | 4.50 | 5.25 | 6 | 0052 | 8861 |
| A-4 | 5.60 | 6.5 | 7.5 | 0046 | 8801 |
| B-1 | 0.40 | 0.50 | 0.50 | 0047 | 8743 |
| B-2 | 1.50 | 1.75 | 2 | 0069 | 8698 |
| B-3 | 4.50 | 5.25 | 6 | 0056 | 8650 |
| B-4 | 5.60 | 6.5 | 7.5 | 0047 | 8603 |
| | | | | AVERAGE | |

$$v_s = K_p C_p (\sqrt{\Delta p})_{avg} \sqrt{\frac{(T_s)_{avg}}{P_s M_s}}$$

Where,

C_p = pitot tube coefficient, dimension less = 0.99 for standard pitot.

Δ_p = manometer reading (inches H₂O)

T_s = average absolute dilution tunnel temperature (°F + 460)

P_s = absolute dilution tunnel gas pressure or $P_{bar} + P_{qg}$

P_q = static pressure in. H₂O
 { 13.6 }

M_s = 28.56, wet molecular weight of stack gas (alternatively, it may be measured)

K_p = 85.49 pitot tube constant, (conversion factor for English units)

Δ_p avg. = average of the square roots of the velocity heads (Δ_p) measured at each traverse point.

Date: 2018-10-25 Manufacturer: Wolf Steel Model: 22
 Project #: PI 2178 Run: 2 Tech: MR Reviewer: DP

Pre-Test (Adjust and Record)

| | ZERO | | SPAN | | CAL. (Record Only) | |
|--|--------------------|-----------|--------|-----------|--------------------|-----------|
| | Actual | Should Be | Actual | Should Be | Actual | Should Be |
| CO | 1.009 0 | 0 | 2.993 | 3.000 | 1.009 | 1.00 |
| Tolerance CO | | +/- 0.02 | | +/- 0.15 | | +/- 0.05 |
| CO ₂ | 9.73 0 | 0 | 17.96 | 18.00 | 9.73 | 10.00 |
| Tolerance CO ₂ | | +/- 0.02 | | +/- 0.5 | | +/- 0.5 |
| O ₂ informative CSA B415 calculated value | na | na | na | na | na | na |
| | Actual | Should Be | Actual | Should Be | Actual | Should Be |

Post Test (Record Only)

| | Zero | Span | Cal. | Zero Drift | Limit | Span Drift | Limit | Cal. Drift | Limit | OK? | Not OK* |
|-----------------|------|-------|-------|------------|-------|------------|-------|------------|-------|-----|---------|
| CO | 0 | 2.990 | 1.002 | 0 | 0.02 | 0.003 | 0.15 | 0.007 | 0.05 | ✓ | |
| CO ₂ | 0 | 17.92 | 9.77 | 0 | 0.02 | 0.04 | 0.5 | 0.04 | 0.5 | ✓ | |

TEST DATA LOG

Date: 2018-10-25 Manufacturer: Wolff Steel Model: 22
 Project #: PT 6178 Run: 2 Tech: mm Reviewer: [Signature]

RAW DRY GAS METER READINGS

| | | System 1 | System 2 | Blank |
|----------------------|-----------------|-----------|-----------|--------|
| High fire test | Final (Liter) | | | |
| | Initial (Liter) | | | |
| Low medium fire test | Final (Liter) | 814738,96 | 766892,18 | 794,65 |
| | Initial (Liter) | 812836,27 | 765042,60 | 642,80 |

AMBIENT CONDITIONS

| | Before | After |
|------------------|--------|-------|
| Barometer (kPa): | 101,5 | 101,1 |
| Dry Bulb (F): | 78,98 | 80,61 |
| Humidity (%): | 25,1 | 23,4 |

FUEL DATA

Date: 2018-10-25 Manufacturer: Wolff Steel Model: 22
 Project #: PI 20178 Run: 2 Tech: MA Reviewer: DO

FUEL DESCRIPTION:

Type of wood:

KINDLING AND START-UP LOAD

| Piece Size | Weight | Meter Moisture Content (% dry) | | |
|-------------|----------|--------------------------------|----|----|
| X X 1/2 in. | 380 lbs. | 9 | 9 | 9 |
| X X 1/2 in. | 500 lbs. | 20 | 20 | 20 |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |

HIGHFIRE TEST LOAD

| Piece Size | Weight | Meter Moisture Content (% dry) | | |
|-------------|-----------|--------------------------------|-----|-----|
| X X 1/2 in. | 3578 lbs. | 192 | 191 | 192 |
| X X 1/2 in. | 4054 lbs. | 192 | 192 | 192 |
| X X 1/2 in. | 470 lbs. | 198 | 196 | 198 |
| X X in. | lbs. | | | |
| X X 1/2 in. | 284 lbs. | 279 | 276 | 273 |
| X X 1/2 in. | 4066 lbs. | 191 | 193 | 193 |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |
| X X in. | lbs. | | | |

FUEL DATA

Date: 2018-10-25 Manufacturer: Wolf Steel Model: 22
 Project #: PT 20178 Run: 2 Tech: mn Reviewer: [Signature]

FUEL DESCRIPTION:

Type of wood:

LOW OR MEDIUM TEST LOAD

| Piece Size | | Weight | Meter Moisture Content (% dry) | | | |
|------------|----------|-----------|--------------------------------|--|-----|-----|
| x | x 16 in. | 410 lbs. | 196 | | 193 | 191 |
| x | x 16 in. | 4048 lbs. | 172 | | 193 | 172 |
| x | x 16 in. | 3850 lbs. | 192 | | 193 | 192 |
| x | x in. | | | | | |
| x | x 16 in. | 387 lbs. | 191 | | 196 | 195 |
| x | x 16 in. | 634 lbs. | 278 | | 277 | 278 |
| x | x in. | | | | | |
| x | x in. | | | | | |
| x | x in. | | | | | |
| x | x in. | | | | | |
| x | x in. | | | | | |
| x | x in. | | | | | |
| x | x in. | | | | | |
| x | x in. | | | | | |



DILUTION TUNNEL PARTICULATE SAMPLER DATA

Date: _____ Manufacturer: _____ Model: _____

Project #: _____ Run: _____ Tech: _____ Reviewer: _____

| HIGHFIRE TEST FILTERS | | | | | | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|--------|
| SYSTEM 1 - 1 st hour | | | | | SYSTEM 1 | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Blanck |
| Date | Time | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| SYSTEM 1 | | | | | | | | | |
|-------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|--------|
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Blanck |
| Date | Time | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

No High

Date: _____ Manufacturer: _____ Model: _____

Project #: _____ Run: _____ Tech: _____ Reviewer: _____

| HIGH FIRE TEST FILTERS | | | |
|-------------------------|------------------------|---------------------|--------------------|
| SYSTEM 2 | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number |
| | | | gaskets |
| Date | Time | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| SYSTEM 2 | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number |
| | | | gaskets |
| Date | Time | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

No High

DILUTION TUNNEL PARTICULATE SAMPLER DATA

Date: 2018-10-25 Project #: PJ 20178 Run: 2 Manufacturer: WWS/Steel Model: Z2
 Tech: MM Reviewer: _____

| LOW OR MEDIUM TEST FILTERS | | | | | | | | | | |
|---------------------------------|------------------------|---------------------|--------------------|---------|------------------------|---------------------|--------------------|---------|--------------------|-------|
| SYSTEM 1 - 1 st hour | | | | | SYSTEM 1 | | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Back Filter Number | Blanc |
| Date | Time | 409 | 703 | 35 | 18 | 705 | 706 | 40 | | 709 |
| 2018-10-24 | 18:00 | 613821 | 01736 | 33 9699 | 108 9481 | | 01799 | 34 3251 | | 01217 |
| 2018-10-25 | 8:00 | 613820 | 01737 | 33 9698 | 108 9480 | | 01800 | 34 3250 | | 01217 |
| SYSTEM 1 - 1 st hour | | | | | | | | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets | Back Filter Number | Blanc |
| Date | Time | 04 | 703 | 35 | 18 | 705 | 706 | 40 | | 01217 |
| 2018-10-25 | 19:00 | 613824 | 01729 | 33 9731 | 108 9480 | | 01825 | 34 3264 | | 01217 |
| 2018-10-31 | 8:00 | 613824 | 01729 | 33 9725 | 108 9480 | | 01817 | 34 3258 | | 01217 |
| 2018-11-01 | 8:00 | 613824 | 01729 | 33 9725 | 108 9480 | | 01817 | 34 3258 | | 01217 |

Date: 2018-10-25 Manufacturer: Wolff Steel Model: 22

Project #: PI 20178 Run: 2 Tech: MM Reviewer: _____

| LOW OR MEDIUM FIRE TEST FILTERS | | | | |
|---------------------------------|---------------------------------|---------------------|--------------------|---------|
| SYSTEM 2 | | | | |
| Pre-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets |
| | 30 | 707 | 708 | 42 |
| 2018-10-24 18:00 | 110 2299 110 2298 | | 01800 | 35 3654 |
| 2018-10-25 8:00 | 110 2299 | | 01800 | 35 3653 |

| LOW OR MEDIUM FIRE TEST FILTERS | | | | |
|---------------------------------|---------------------------------|---------------------|--------------------|---------|
| SYSTEM 2 | | | | |
| Post-test Weight Record | Probe & Housing Number | Front Filter Number | Back Filter Number | gaskets |
| | 30 | 707 | 708 | 42 |
| 2018-10-25 19:00 | 110 2299 110 2298 | | 01829 | 35 3685 |
| 2018-10-31 8:00 | 110 2299 | | 01824 | 35 3671 |
| 2018-11-01 8:00 | 110 2299 | | 01823 | 35 3671 |

APPENDIX 2: Proportionality results

| | Outlet | Outlet | Average | Average | #1 | #2 | | |
|----------|---------|---------|--------------------|---------|----------|----------|------|-----------|
| Tunnel | Temp. | Temp. | 99,27 | 99,02 | System 1 | System 2 | | SQRT |
| Velocity | Meter 1 | Meter 2 | Proportional Rates | | Vol.Std. | Vol.Std. | | Delta-P |
| | | | PR1 | PR2 | | | Time | |
| Ft/Sec | Deg. R | Deg. R | % | % | (ft3) | (ft3) | min | (in H2O)2 |
| 15,278 | 538,6 | 538,8 | | | 0,149 | 0,147 | 0 | 0,2337469 |
| 15,155 | 538,5 | 538,7 | 93,67 | 93,48 | 0,149 | 0,147 | 1 | 0,2320037 |
| 15,063 | 538,3 | 538,6 | 94,56 | 94,31 | 0,149 | 0,147 | 2 | 0,2300028 |
| 15,218 | 538,2 | 538,5 | 94,61 | 94,20 | 0,149 | 0,146 | 3 | 0,2315655 |
| 15,294 | 538,1 | 538,4 | 94,86 | 94,62 | 0,149 | 0,147 | 4 | 0,2315656 |
| 15,370 | 538,0 | 538,3 | 95,14 | 94,82 | 0,149 | 0,147 | 5 | 0,2320038 |
| 15,344 | 538,0 | 538,3 | 95,64 | 95,32 | 0,149 | 0,147 | 6 | 0,2311272 |
| 15,350 | 538,0 | 538,3 | 96,21 | 96,00 | 0,149 | 0,147 | 7 | 0,2304673 |
| 15,327 | 538,0 | 538,3 | 97,08 | 96,80 | 0,149 | 0,147 | 8 | 0,2293644 |
| 15,250 | 538,0 | 538,3 | 97,77 | 97,73 | 0,149 | 0,147 | 9 | 0,2278107 |
| 15,252 | 538,0 | 538,3 | 98,30 | 98,34 | 0,149 | 0,147 | 10 | 0,2273654 |
| 15,336 | 538,1 | 538,3 | 97,78 | 97,62 | 0,149 | 0,147 | 11 | 0,2284781 |
| 15,300 | 538,2 | 538,4 | 98,16 | 97,98 | 0,149 | 0,147 | 12 | 0,2278106 |
| 15,434 | 538,3 | 538,5 | 97,47 | 97,64 | 0,149 | 0,147 | 13 | 0,2293648 |
| 15,274 | 538,5 | 538,7 | 98,96 | 98,79 | 0,149 | 0,147 | 14 | 0,2266947 |
| 15,283 | 538,7 | 538,9 | 98,90 | 98,65 | 0,149 | 0,147 | 15 | 0,2266946 |
| 15,254 | 539,0 | 539,1 | 99,00 | 98,89 | 0,149 | 0,147 | 16 | 0,2262467 |
| 15,266 | 539,3 | 539,4 | 99,12 | 99,07 | 0,149 | 0,147 | 17 | 0,2262471 |
| 15,334 | 539,6 | 539,6 | 98,72 | 98,30 | 0,149 | 0,147 | 18 | 0,227366 |
| 15,138 | 539,9 | 539,9 | 99,70 | 99,44 | 0,149 | 0,146 | 19 | 0,2246729 |
| 15,310 | 540,0 | 540,0 | 98,60 | 98,51 | 0,149 | 0,147 | 20 | 0,2273669 |
| 15,254 | 540,1 | 540,1 | 98,70 | 98,51 | 0,149 | 0,147 | 21 | 0,2266957 |
| 15,290 | 540,1 | 540,2 | 98,52 | 98,20 | 0,149 | 0,147 | 22 | 0,2273667 |
| 15,171 | 540,1 | 540,3 | 98,89 | 98,92 | 0,149 | 0,147 | 23 | 0,2257996 |
| 15,407 | 540,1 | 540,3 | 97,34 | 96,95 | 0,149 | 0,147 | 24 | 0,2293657 |
| 15,187 | 540,1 | 540,3 | 98,65 | 98,43 | 0,149 | 0,146 | 25 | 0,2262474 |
| 15,332 | 540,0 | 540,3 | 97,68 | 97,46 | 0,149 | 0,147 | 26 | 0,2284792 |
| 15,575 | 540,0 | 540,3 | 99,23 | 98,91 | 0,149 | 0,147 | 27 | 0,2284789 |
| 16,321 | 540,0 | 540,3 | 104,77 | 104,61 | 0,149 | 0,146 | 28 | 0,2274732 |
| 15,616 | 540,1 | 540,4 | 105,38 | 105,17 | 0,149 | 0,147 | 29 | 0,2219477 |
| 15,184 | 540,1 | 540,5 | 104,72 | 104,31 | 0,149 | 0,146 | 30 | 0,21965 |
| 15,330 | 540,2 | 540,6 | 102,38 | 102,17 | 0,149 | 0,146 | 31 | 0,2230875 |
| 15,291 | 540,3 | 540,6 | 102,26 | 101,94 | 0,149 | 0,147 | 32 | 0,2230874 |
| 15,274 | 540,3 | 540,7 | 102,22 | 102,13 | 0,149 | 0,147 | 33 | 0,2230876 |
| 15,356 | 540,4 | 540,8 | 101,33 | 100,94 | 0,149 | 0,147 | 34 | 0,2246736 |
| 15,267 | 540,5 | 540,9 | 101,80 | 101,49 | 0,149 | 0,147 | 35 | 0,2235417 |
| 15,299 | 540,6 | 541,0 | 101,50 | 101,17 | 0,149 | 0,147 | 36 | 0,2239957 |
| 15,199 | 540,7 | 541,1 | 102,23 | 102,02 | 0,149 | 0,147 | 37 | 0,2225802 |
| 15,238 | 540,8 | 541,2 | 101,98 | 101,96 | 0,149 | 0,147 | 38 | 0,2230878 |
| 15,257 | 540,9 | 541,3 | 101,79 | 101,46 | 0,150 | 0,147 | 39 | 0,2235418 |
| 15,293 | 540,9 | 541,3 | 101,70 | 101,35 | 0,150 | 0,147 | 40 | 0,2239957 |
| 15,230 | 541,0 | 541,4 | 102,00 | 101,79 | 0,150 | 0,147 | 41 | 0,2230879 |
| 15,367 | 541,0 | 541,4 | 100,94 | 100,81 | 0,149 | 0,147 | 42 | 0,225125 |
| 15,326 | 541,1 | 541,5 | 101,19 | 101,03 | 0,149 | 0,147 | 43 | 0,2246743 |
| 15,250 | 541,1 | 541,6 | 101,85 | 101,64 | 0,150 | 0,147 | 44 | 0,2235421 |
| 15,271 | 541,1 | 541,6 | 101,61 | 101,36 | 0,150 | 0,147 | 45 | 0,2239959 |
| 15,321 | 541,2 | 541,7 | 101,41 | 101,39 | 0,150 | 0,147 | 46 | 0,2246747 |
| 15,425 | 541,3 | 541,7 | 100,92 | 100,61 | 0,150 | 0,148 | 47 | 0,2262491 |
| 15,290 | 541,4 | 541,8 | 101,41 | 101,34 | 0,150 | 0,147 | 48 | 0,2242958 |
| 15,331 | 541,5 | 541,9 | 101,08 | 100,95 | 0,150 | 0,147 | 49 | 0,2251245 |
| 15,471 | 541,5 | 542,0 | 100,13 | 99,95 | 0,150 | 0,147 | 50 | 0,2273679 |
| 15,212 | 541,6 | 542,0 | 101,65 | 101,24 | 0,150 | 0,147 | 51 | 0,2236291 |
| 15,362 | 541,6 | 542,0 | 100,76 | 100,52 | 0,150 | 0,147 | 52 | 0,2258005 |
| 15,202 | 541,6 | 542,1 | 102,08 | 101,89 | 0,150 | 0,148 | 53 | 0,2235427 |
| 15,357 | 541,7 | 542,1 | 100,91 | 100,67 | 0,150 | 0,148 | 54 | 0,2258003 |
| 15,307 | 541,7 | 542,2 | 101,18 | 100,97 | 0,150 | 0,148 | 55 | 0,225125 |
| 15,277 | 541,8 | 542,2 | 101,39 | 100,94 | 0,150 | 0,147 | 56 | 0,2246748 |
| 15,451 | 541,8 | 542,3 | 100,15 | 99,60 | 0,150 | 0,147 | 57 | 0,2273683 |
| 15,188 | 541,8 | 542,3 | 101,76 | 101,43 | 0,150 | 0,147 | 58 | 0,2235397 |
| 15,400 | 541,8 | 542,3 | 100,31 | 99,99 | 0,150 | 0,147 | 59 | 0,2266975 |
| 15,397 | 541,9 | 542,4 | 100,35 | 100,04 | 0,150 | 0,147 | 60 | 0,226698 |
| 15,341 | 541,9 | 542,4 | 100,85 | 100,56 | 0,150 | 0,148 | 61 | 0,2258018 |
| 15,339 | 541,9 | 542,4 | 100,70 | 100,42 | 0,150 | 0,148 | 62 | 0,2258013 |

| | | | | | | | | |
|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 15,328 | 542,0 | 542,5 | 100,62 | 100,20 | 0,150 | 0,147 | 63 | 0,2258012 |
| 15,325 | 542,0 | 542,5 | 100,53 | 100,44 | 0,150 | 0,147 | 64 | 0,2258013 |
| 15,273 | 541,9 | 542,5 | 100,76 | 100,52 | 0,150 | 0,147 | 65 | 0,225126 |
| 15,243 | 541,9 | 542,5 | 101,03 | 100,75 | 0,150 | 0,147 | 66 | 0,2246749 |
| 15,258 | 541,9 | 542,5 | 100,73 | 100,60 | 0,150 | 0,147 | 67 | 0,2251251 |
| 15,336 | 542,0 | 542,5 | 100,22 | 99,99 | 0,150 | 0,148 | 68 | 0,2262493 |
| 15,330 | 542,0 | 542,5 | 99,94 | 99,96 | 0,150 | 0,147 | 69 | 0,2262494 |
| 15,354 | 542,0 | 542,6 | 100,00 | 99,53 | 0,150 | 0,147 | 70 | 0,226698 |
| 15,243 | 542,0 | 542,6 | 100,65 | 100,39 | 0,150 | 0,147 | 71 | 0,2251261 |
| 15,389 | 542,0 | 542,5 | 99,51 | 99,39 | 0,150 | 0,147 | 72 | 0,2273683 |
| 15,447 | 541,9 | 542,5 | 99,09 | 98,90 | 0,150 | 0,148 | 73 | 0,2284811 |
| 15,326 | 541,9 | 542,5 | 99,80 | 99,57 | 0,150 | 0,148 | 74 | 0,2266979 |
| 15,321 | 541,8 | 542,4 | 99,81 | 99,67 | 0,150 | 0,148 | 75 | 0,2266979 |
| 15,288 | 541,8 | 542,4 | 99,96 | 99,74 | 0,150 | 0,148 | 76 | 0,2262499 |
| 15,204 | 541,8 | 542,4 | 100,47 | 100,10 | 0,150 | 0,147 | 77 | 0,2251256 |
| 15,244 | 541,8 | 542,4 | 100,06 | 99,88 | 0,150 | 0,147 | 78 | 0,2258018 |
| 15,153 | 541,8 | 542,4 | 100,71 | 99,94 | 0,150 | 0,147 | 79 | 0,2246752 |
| 15,284 | 541,8 | 542,4 | 99,68 | 99,16 | 0,150 | 0,147 | 80 | 0,2266975 |
| 15,277 | 541,9 | 542,4 | 99,62 | 99,42 | 0,150 | 0,147 | 81 | 0,2266981 |
| 15,201 | 541,8 | 542,4 | 99,93 | 99,72 | 0,150 | 0,148 | 82 | 0,2258011 |
| 15,253 | 541,8 | 542,4 | 99,64 | 99,25 | 0,151 | 0,148 | 83 | 0,226698 |
| 15,284 | 541,7 | 542,3 | 99,13 | 98,94 | 0,151 | 0,148 | 84 | 0,2273677 |
| 15,307 | 541,7 | 542,3 | 98,87 | 98,57 | 0,150 | 0,148 | 85 | 0,2278132 |
| 15,338 | 541,7 | 542,3 | 98,60 | 98,10 | 0,150 | 0,148 | 86 | 0,2284808 |
| 15,295 | 541,7 | 542,3 | 98,73 | 98,44 | 0,150 | 0,148 | 87 | 0,2278139 |
| 15,332 | 541,7 | 542,3 | 98,43 | 98,34 | 0,150 | 0,148 | 88 | 0,228481 |
| 15,384 | 541,7 | 542,3 | 98,01 | 97,81 | 0,150 | 0,148 | 89 | 0,2293679 |
| 15,269 | 541,6 | 542,3 | 98,54 | 98,33 | 0,150 | 0,148 | 90 | 0,2278135 |
| 15,164 | 541,6 | 542,3 | 99,35 | 99,03 | 0,150 | 0,148 | 91 | 0,2262491 |
| 15,306 | 541,6 | 542,3 | 98,43 | 98,11 | 0,151 | 0,148 | 92 | 0,2284813 |
| 15,299 | 541,6 | 542,3 | 98,32 | 98,01 | 0,151 | 0,148 | 93 | 0,2284821 |
| 15,349 | 541,5 | 542,2 | 97,92 | 97,35 | 0,151 | 0,148 | 94 | 0,2293679 |
| 15,286 | 541,5 | 542,2 | 98,17 | 98,03 | 0,151 | 0,148 | 95 | 0,2284813 |
| 15,239 | 541,5 | 542,2 | 98,49 | 98,29 | 0,150 | 0,148 | 96 | 0,2278139 |
| 15,203 | 541,5 | 542,2 | 98,76 | 98,66 | 0,151 | 0,148 | 97 | 0,2273682 |
| 15,268 | 541,4 | 542,1 | 98,12 | 97,85 | 0,151 | 0,148 | 98 | 0,2284818 |
| 15,329 | 541,4 | 542,1 | 97,86 | 97,51 | 0,151 | 0,148 | 99 | 0,2293678 |
| 15,218 | 541,4 | 542,0 | 98,33 | 98,09 | 0,151 | 0,148 | 100 | 0,2278135 |
| 15,084 | 541,3 | 542,0 | 99,25 | 98,81 | 0,151 | 0,148 | 101 | 0,2258007 |
| 15,308 | 541,3 | 542,0 | 97,71 | 97,33 | 0,151 | 0,148 | 102 | 0,2293675 |
| 15,242 | 541,2 | 541,9 | 97,98 | 97,75 | 0,151 | 0,148 | 103 | 0,2284809 |
| 15,091 | 541,2 | 541,9 | 98,90 | 98,50 | 0,151 | 0,148 | 104 | 0,2262497 |
| 15,288 | 541,1 | 541,8 | 97,51 | 97,19 | 0,151 | 0,148 | 105 | 0,2293675 |
| 15,154 | 541,0 | 541,8 | 98,29 | 98,32 | 0,151 | 0,148 | 106 | 0,2273676 |
| 15,109 | 541,0 | 541,7 | 98,70 | 98,34 | 0,151 | 0,148 | 107 | 0,2266975 |
| 15,349 | 541,0 | 541,7 | 97,06 | 96,78 | 0,151 | 0,148 | 108 | 0,230471 |
| 15,324 | 541,0 | 541,7 | 97,25 | 97,09 | 0,151 | 0,148 | 109 | 0,2300302 |
| 15,390 | 540,9 | 541,6 | 96,81 | 96,61 | 0,151 | 0,148 | 110 | 0,2311304 |
| 15,162 | 540,9 | 541,6 | 98,03 | 97,64 | 0,151 | 0,148 | 111 | 0,2278135 |
| 15,200 | 540,9 | 541,5 | 97,82 | 97,63 | 0,151 | 0,148 | 112 | 0,2284815 |
| 15,295 | 540,9 | 541,5 | 96,97 | 96,95 | 0,151 | 0,148 | 113 | 0,2300298 |
| 15,107 | 540,8 | 541,5 | 98,07 | 97,49 | 0,151 | 0,148 | 114 | 0,2273679 |
| 15,133 | 540,8 | 541,5 | 97,85 | 97,56 | 0,151 | 0,148 | 115 | 0,2278132 |
| 15,273 | 540,8 | 541,4 | 96,83 | 96,47 | 0,151 | 0,148 | 116 | 0,2300295 |
| 15,342 | 540,8 | 541,4 | 96,57 | 95,96 | 0,151 | 0,148 | 117 | 0,23113 |
| 15,301 | 540,8 | 541,5 | 96,55 | 96,58 | 0,151 | 0,148 | 118 | 0,2304695 |
| 15,262 | 540,8 | 541,4 | 96,95 | 96,50 | 0,151 | 0,148 | 119 | 0,2300302 |
| 15,391 | 540,8 | 541,4 | 96,03 | 95,69 | 0,151 | 0,148 | 120 | 0,2320064 |
| 15,335 | 540,9 | 541,4 | 96,35 | 96,12 | 0,151 | 0,148 | 121 | 0,2311298 |
| 15,281 | 540,9 | 541,4 | 96,62 | 96,49 | 0,151 | 0,148 | 122 | 0,2304703 |
| 15,146 | 540,9 | 541,5 | 97,42 | 96,92 | 0,151 | 0,148 | 123 | 0,2284808 |

| | Outlet | Outlet | Average | Average | #1 | #2 | | |
|----------|---------|---------|--------------------|---------|----------|----------|------|-----------|
| Tunnel | Temp. | Temp. | 98,57 | 98,94 | System 1 | System 2 | | SQRT |
| Velocity | Meter 1 | Meter 2 | Proportional Rates | | Vol.Std. | Vol.Std. | | Delta-P |
| | | | PR1 | PR2 | | | Time | |
| Ft/Sec | Deg. R | Deg. R | % | % | (ft3) | (ft3) | min | (in H2O)2 |
| 15,713 | 541,0 | 541,6 | | | 0,151 | 0,148 | 0 | 0,2315681 |
| 15,519 | 541,1 | 541,6 | 103,54 | 103,84 | 0,151 | 0,148 | 1 | 0,2293681 |
| 15,622 | 541,2 | 541,6 | 104,23 | 104,58 | 0,150 | 0,148 | 2 | 0,2293679 |
| 15,539 | 541,3 | 541,7 | 105,50 | 105,87 | 0,150 | 0,148 | 3 | 0,2273687 |
| 15,605 | 541,4 | 541,7 | 107,56 | 107,59 | 0,150 | 0,148 | 4 | 0,2258016 |
| 15,421 | 541,5 | 541,8 | 106,23 | 106,42 | 0,151 | 0,147 | 5 | 0,2258019 |
| 15,422 | 541,5 | 541,9 | 105,18 | 105,62 | 0,150 | 0,148 | 6 | 0,2266983 |
| 15,415 | 541,6 | 542,0 | 105,24 | 105,87 | 0,150 | 0,148 | 7 | 0,2265174 |
| 15,479 | 541,7 | 542,1 | 104,89 | 105,46 | 0,150 | 0,148 | 8 | 0,2273689 |
| 15,414 | 541,9 | 542,2 | 105,67 | 106,18 | 0,150 | 0,148 | 9 | 0,2262499 |
| 15,526 | 542,1 | 542,3 | 104,76 | 105,29 | 0,150 | 0,148 | 10 | 0,2278143 |
| 15,683 | 542,2 | 542,5 | 103,92 | 104,33 | 0,150 | 0,148 | 11 | 0,2300314 |
| 15,426 | 542,3 | 542,6 | 105,75 | 106,17 | 0,150 | 0,148 | 12 | 0,2262517 |
| 15,455 | 542,4 | 542,7 | 104,49 | 104,81 | 0,150 | 0,148 | 13 | 0,2278152 |
| 15,275 | 542,6 | 542,8 | 104,20 | 104,44 | 0,150 | 0,147 | 14 | 0,2266994 |
| 15,284 | 542,7 | 542,9 | 102,59 | 103,05 | 0,150 | 0,147 | 15 | 0,2284827 |
| 15,362 | 542,7 | 543,0 | 101,37 | 101,86 | 0,150 | 0,148 | 16 | 0,2304722 |
| 15,326 | 542,8 | 543,1 | 101,00 | 101,52 | 0,150 | 0,148 | 17 | 0,2304718 |
| 15,405 | 542,9 | 543,1 | 100,26 | 100,59 | 0,150 | 0,147 | 18 | 0,2320081 |
| 15,351 | 542,9 | 543,2 | 100,12 | 100,37 | 0,150 | 0,147 | 19 | 0,2315697 |
| 15,328 | 542,9 | 543,2 | 100,09 | 100,37 | 0,150 | 0,147 | 20 | 0,2315703 |
| 15,339 | 543,0 | 543,3 | 99,89 | 100,12 | 0,150 | 0,147 | 21 | 0,2320088 |
| 15,243 | 543,0 | 543,3 | 100,58 | 100,73 | 0,150 | 0,147 | 22 | 0,2304721 |
| 15,322 | 542,9 | 543,3 | 99,59 | 100,27 | 0,150 | 0,147 | 23 | 0,2320087 |
| 15,396 | 542,9 | 543,3 | 99,08 | 99,68 | 0,150 | 0,148 | 24 | 0,2330987 |
| 15,292 | 542,8 | 543,3 | 99,90 | 100,41 | 0,150 | 0,148 | 25 | 0,2315703 |
| 15,424 | 542,8 | 543,2 | 98,94 | 99,30 | 0,150 | 0,148 | 26 | 0,233753 |
| 15,194 | 542,8 | 543,2 | 100,33 | 100,58 | 0,150 | 0,147 | 27 | 0,2304725 |
| 15,340 | 542,8 | 543,2 | 99,47 | 99,64 | 0,150 | 0,147 | 28 | 0,2326641 |
| 15,292 | 542,8 | 543,2 | 99,49 | 100,17 | 0,150 | 0,148 | 29 | 0,2320089 |
| 15,330 | 542,8 | 543,2 | 99,33 | 99,45 | 0,150 | 0,148 | 30 | 0,232664 |
| 15,274 | 542,8 | 543,3 | 99,59 | 100,00 | 0,150 | 0,147 | 31 | 0,2318726 |
| 15,287 | 542,9 | 543,3 | 99,56 | 99,55 | 0,150 | 0,147 | 32 | 0,2320094 |
| 15,300 | 542,9 | 543,3 | 99,57 | 99,89 | 0,150 | 0,147 | 33 | 0,2322716 |
| 15,278 | 543,0 | 543,3 | 99,54 | 99,82 | 0,150 | 0,148 | 34 | 0,232009 |
| 15,248 | 543,0 | 543,3 | 99,68 | 100,02 | 0,150 | 0,147 | 35 | 0,2315707 |
| 15,267 | 542,9 | 543,3 | 99,44 | 99,69 | 0,150 | 0,147 | 36 | 0,2320095 |
| 15,264 | 542,9 | 543,3 | 99,35 | 99,77 | 0,150 | 0,147 | 37 | 0,2320094 |
| 15,270 | 542,9 | 543,3 | 99,61 | 99,96 | 0,150 | 0,148 | 38 | 0,2320097 |
| 15,232 | 542,9 | 543,3 | 99,50 | 100,00 | 0,150 | 0,148 | 39 | 0,2315722 |
| 15,268 | 542,9 | 543,3 | 99,41 | 99,76 | 0,150 | 0,148 | 40 | 0,2320093 |
| 15,238 | 542,9 | 543,3 | 99,72 | 100,06 | 0,150 | 0,148 | 41 | 0,2315712 |
| 15,233 | 542,9 | 543,2 | 99,59 | 99,96 | 0,150 | 0,148 | 42 | 0,2315707 |
| 15,230 | 542,9 | 543,3 | 99,54 | 100,02 | 0,150 | 0,148 | 43 | 0,231571 |
| 15,341 | 543,0 | 543,3 | 99,09 | 99,52 | 0,150 | 0,148 | 44 | 0,2330993 |
| 15,256 | 542,9 | 543,2 | 99,37 | 99,86 | 0,150 | 0,148 | 45 | 0,2320096 |
| 15,282 | 542,9 | 543,2 | 99,23 | 99,91 | 0,150 | 0,148 | 46 | 0,232398 |
| 15,265 | 542,9 | 543,2 | 99,55 | 99,82 | 0,150 | 0,148 | 47 | 0,2320095 |
| 15,263 | 542,9 | 543,2 | 99,43 | 99,80 | 0,150 | 0,148 | 48 | 0,2320094 |
| 15,263 | 542,8 | 543,1 | 99,30 | 99,74 | 0,150 | 0,148 | 49 | 0,2320095 |
| 15,265 | 542,8 | 543,1 | 99,25 | 99,81 | 0,150 | 0,148 | 50 | 0,2320097 |
| 15,236 | 542,8 | 543,1 | 99,43 | 100,03 | 0,150 | 0,148 | 51 | 0,231571 |
| 15,260 | 542,8 | 543,1 | 99,30 | 99,45 | 0,150 | 0,147 | 52 | 0,2320094 |
| 15,221 | 542,8 | 543,1 | 99,47 | 99,88 | 0,150 | 0,147 | 53 | 0,2315733 |
| 15,298 | 542,8 | 543,1 | 98,96 | 99,25 | 0,150 | 0,147 | 54 | 0,2326649 |
| 15,304 | 542,8 | 543,1 | 99,04 | 99,40 | 0,150 | 0,147 | 55 | 0,2326645 |
| 15,333 | 542,8 | 543,1 | 99,00 | 99,38 | 0,150 | 0,148 | 56 | 0,2330998 |
| 15,234 | 542,8 | 543,1 | 99,51 | 99,87 | 0,150 | 0,148 | 57 | 0,2315717 |
| 15,302 | 542,8 | 543,1 | 99,16 | 99,53 | 0,150 | 0,147 | 58 | 0,2325753 |
| 15,196 | 542,8 | 543,1 | 99,62 | 100,11 | 0,150 | 0,148 | 59 | 0,2311333 |
| 15,309 | 542,8 | 543,1 | 99,08 | 99,45 | 0,150 | 0,148 | 60 | 0,2326646 |
| 15,305 | 542,8 | 543,1 | 99,15 | 99,53 | 0,150 | 0,148 | 61 | 0,2326418 |
| 15,244 | 542,8 | 543,1 | 99,63 | 99,79 | 0,150 | 0,147 | 62 | 0,2315713 |
| 15,239 | 542,8 | 543,1 | 99,77 | 99,78 | 0,150 | 0,147 | 63 | 0,2315715 |

| | | | | | | | | |
|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 15,230 | 542,8 | 543,1 | 99,62 | 99,87 | 0,150 | 0,147 | 64 | 0,2315714 |
| 15,267 | 542,8 | 543,0 | 99,60 | 99,76 | 0,150 | 0,147 | 65 | 0,2320065 |
| 15,230 | 542,8 | 543,0 | 99,54 | 99,85 | 0,150 | 0,147 | 66 | 0,2315716 |
| 15,327 | 542,7 | 543,0 | 98,85 | 99,25 | 0,150 | 0,147 | 67 | 0,2331002 |
| 15,189 | 542,7 | 543,0 | 99,74 | 100,15 | 0,150 | 0,148 | 68 | 0,231133 |
| 15,246 | 542,7 | 543,0 | 99,30 | 99,51 | 0,150 | 0,148 | 69 | 0,2320093 |
| 15,256 | 542,7 | 543,0 | 99,36 | 99,72 | 0,150 | 0,147 | 70 | 0,2320094 |
| 15,329 | 542,7 | 542,9 | 98,99 | 99,21 | 0,150 | 0,148 | 71 | 0,2330996 |
| 15,226 | 542,6 | 542,9 | 99,62 | 99,99 | 0,150 | 0,148 | 72 | 0,2315714 |
| 15,153 | 542,6 | 542,9 | 100,06 | 100,62 | 0,150 | 0,148 | 73 | 0,230473 |
| 15,250 | 542,6 | 542,9 | 99,40 | 99,69 | 0,150 | 0,148 | 74 | 0,2320097 |
| 15,122 | 542,6 | 542,9 | 100,35 | 100,59 | 0,150 | 0,148 | 75 | 0,2300329 |
| 15,254 | 542,6 | 542,8 | 99,38 | 99,63 | 0,150 | 0,148 | 76 | 0,2320094 |
| 15,371 | 542,6 | 542,9 | 98,53 | 98,89 | 0,150 | 0,147 | 77 | 0,2337528 |
| 15,257 | 542,6 | 542,9 | 99,33 | 99,84 | 0,150 | 0,148 | 78 | 0,2320094 |
| 15,234 | 542,6 | 542,9 | 99,67 | 100,12 | 0,150 | 0,148 | 79 | 0,2315712 |
| 15,233 | 542,6 | 542,9 | 99,60 | 100,09 | 0,150 | 0,148 | 80 | 0,2315733 |
| 15,236 | 542,6 | 542,9 | 99,62 | 99,93 | 0,150 | 0,148 | 81 | 0,2315714 |
| 15,229 | 542,6 | 542,9 | 99,66 | 99,91 | 0,150 | 0,148 | 82 | 0,2315712 |
| 15,261 | 542,7 | 542,9 | 99,39 | 99,70 | 0,150 | 0,147 | 83 | 0,2320093 |
| 15,251 | 542,7 | 542,9 | 99,33 | 99,99 | 0,150 | 0,148 | 84 | 0,232009 |
| 15,198 | 542,7 | 542,9 | 99,75 | 100,10 | 0,150 | 0,148 | 85 | 0,2311331 |
| 15,262 | 542,7 | 542,9 | 99,47 | 99,92 | 0,150 | 0,148 | 86 | 0,2320087 |
| 15,296 | 542,7 | 543,0 | 99,05 | 99,56 | 0,150 | 0,148 | 87 | 0,2326645 |
| 15,223 | 542,8 | 543,0 | 99,42 | 99,93 | 0,150 | 0,148 | 88 | 0,2315709 |
| 15,111 | 542,8 | 543,0 | 100,11 | 100,51 | 0,150 | 0,148 | 89 | 0,230033 |
| 15,247 | 542,8 | 543,0 | 99,22 | 99,76 | 0,150 | 0,148 | 90 | 0,2320093 |
| 15,225 | 542,8 | 543,0 | 99,52 | 99,92 | 0,150 | 0,148 | 91 | 0,2315712 |
| 15,249 | 542,9 | 543,1 | 99,35 | 99,70 | 0,150 | 0,148 | 92 | 0,2320098 |
| 15,254 | 542,9 | 543,1 | 99,21 | 99,72 | 0,150 | 0,148 | 93 | 0,2320096 |
| 15,247 | 542,9 | 543,1 | 99,27 | 99,79 | 0,150 | 0,148 | 94 | 0,2320094 |
| 15,317 | 542,9 | 543,1 | 98,97 | 99,23 | 0,150 | 0,148 | 95 | 0,2330998 |
| 15,183 | 542,9 | 543,1 | 99,59 | 99,79 | 0,150 | 0,147 | 96 | 0,2311329 |
| 15,235 | 542,8 | 543,1 | 99,23 | 99,72 | 0,150 | 0,147 | 97 | 0,2320096 |
| 15,168 | 542,8 | 543,1 | 99,63 | 100,03 | 0,150 | 0,148 | 98 | 0,2311335 |
| 15,234 | 542,8 | 543,1 | 99,14 | 99,61 | 0,150 | 0,148 | 99 | 0,2320098 |
| 15,210 | 542,8 | 543,1 | 99,54 | 99,69 | 0,150 | 0,147 | 100 | 0,231571 |
| 15,198 | 542,7 | 543,0 | 99,60 | 99,68 | 0,150 | 0,147 | 101 | 0,2315707 |
| 15,294 | 542,7 | 543,0 | 98,71 | 99,01 | 0,150 | 0,147 | 102 | 0,2330996 |
| 15,220 | 542,6 | 542,9 | 99,09 | 99,46 | 0,150 | 0,148 | 103 | 0,2320093 |
| 15,119 | 542,6 | 542,9 | 99,92 | 100,24 | 0,150 | 0,148 | 104 | 0,2304732 |
| 15,190 | 542,6 | 542,9 | 99,48 | 99,63 | 0,150 | 0,148 | 105 | 0,2315717 |
| 15,261 | 542,6 | 542,9 | 98,85 | 99,20 | 0,150 | 0,148 | 106 | 0,2326641 |
| 15,190 | 542,6 | 542,9 | 99,31 | 99,79 | 0,150 | 0,148 | 107 | 0,2315712 |
| 15,184 | 542,5 | 542,9 | 99,38 | 99,54 | 0,150 | 0,148 | 108 | 0,2315707 |
| 15,174 | 542,5 | 542,8 | 99,32 | 99,56 | 0,150 | 0,147 | 109 | 0,2315748 |
| 15,247 | 542,5 | 542,8 | 98,74 | 99,22 | 0,150 | 0,148 | 110 | 0,2326641 |
| 15,198 | 542,5 | 542,8 | 99,15 | 99,41 | 0,150 | 0,148 | 111 | 0,2320093 |
| 15,195 | 542,5 | 542,8 | 99,17 | 99,52 | 0,151 | 0,148 | 112 | 0,2320095 |
| 15,188 | 542,5 | 542,8 | 99,02 | 99,39 | 0,150 | 0,148 | 113 | 0,232009 |
| 15,188 | 542,4 | 542,7 | 99,03 | 99,26 | 0,150 | 0,148 | 114 | 0,2320091 |
| 15,139 | 542,4 | 542,7 | 99,44 | 99,78 | 0,150 | 0,148 | 115 | 0,231133 |
| 15,192 | 542,4 | 542,7 | 99,04 | 99,47 | 0,150 | 0,148 | 116 | 0,2320094 |
| 15,156 | 542,3 | 542,6 | 99,30 | 99,85 | 0,150 | 0,148 | 117 | 0,2315711 |
| 15,190 | 542,3 | 542,6 | 99,21 | 99,39 | 0,151 | 0,148 | 118 | 0,2320111 |
| 15,158 | 542,2 | 542,5 | 99,23 | 99,78 | 0,151 | 0,148 | 119 | 0,2315707 |
| 15,173 | 542,2 | 542,5 | 99,03 | 99,44 | 0,150 | 0,148 | 120 | 0,2320086 |
| 15,175 | 542,2 | 542,5 | 99,17 | 99,23 | 0,151 | 0,148 | 121 | 0,2320087 |
| 15,215 | 542,1 | 542,4 | 98,73 | 99,12 | 0,151 | 0,148 | 122 | 0,2326638 |
| 15,208 | 542,1 | 542,4 | 98,71 | 98,98 | 0,151 | 0,148 | 123 | 0,2326638 |
| 15,283 | 542,0 | 542,4 | 98,17 | 98,38 | 0,150 | 0,148 | 124 | 0,2337514 |
| 15,232 | 542,1 | 542,4 | 98,44 | 98,70 | 0,150 | 0,148 | 125 | 0,233099 |
| 15,205 | 542,1 | 542,4 | 98,74 | 99,10 | 0,151 | 0,148 | 126 | 0,2326634 |
| 15,202 | 542,0 | 542,3 | 98,51 | 98,92 | 0,150 | 0,148 | 127 | 0,2326637 |
| 15,159 | 542,0 | 542,3 | 98,82 | 99,38 | 0,150 | 0,148 | 128 | 0,2320085 |
| 15,127 | 541,9 | 542,3 | 99,09 | 99,57 | 0,150 | 0,148 | 129 | 0,2315701 |
| 15,367 | 541,8 | 542,2 | 97,58 | 98,09 | 0,151 | 0,148 | 130 | 0,2352783 |
| 15,144 | 541,8 | 542,2 | 98,82 | 99,22 | 0,151 | 0,148 | 131 | 0,2320083 |
| 15,184 | 541,7 | 542,1 | 98,54 | 99,04 | 0,151 | 0,148 | 132 | 0,2326638 |

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|--------|-------|-------|-------|--------|-------|-------|-----|-----------|
| 15,212 | 541,7 | 542,1 | 98,48 | 98,80 | 0,151 | 0,148 | 133 | 0,2330985 |
| 15,212 | 541,6 | 542,1 | 98,51 | 98,69 | 0,151 | 0,148 | 134 | 0,233099 |
| 15,263 | 541,6 | 542,0 | 98,23 | 98,47 | 0,151 | 0,148 | 135 | 0,2337515 |
| 15,378 | 541,5 | 541,9 | 97,37 | 97,70 | 0,151 | 0,148 | 136 | 0,2356963 |
| 15,209 | 541,4 | 541,9 | 98,46 | 98,93 | 0,151 | 0,148 | 137 | 0,2330986 |
| 15,321 | 541,4 | 541,8 | 97,68 | 97,88 | 0,151 | 0,148 | 138 | 0,2348335 |
| 15,175 | 541,3 | 541,8 | 98,40 | 99,08 | 0,151 | 0,148 | 139 | 0,2326639 |
| 15,129 | 541,3 | 541,7 | 98,77 | 99,15 | 0,151 | 0,148 | 140 | 0,232008 |
| 15,210 | 541,3 | 541,7 | 98,32 | 98,84 | 0,151 | 0,148 | 141 | 0,2330984 |
| 15,350 | 541,3 | 541,6 | 97,57 | 97,79 | 0,151 | 0,148 | 142 | 0,2352653 |
| 15,374 | 541,3 | 541,6 | 97,32 | 97,63 | 0,151 | 0,148 | 143 | 0,2356961 |
| 15,318 | 541,3 | 541,6 | 97,43 | 98,07 | 0,150 | 0,148 | 144 | 0,2348336 |
| 15,202 | 541,2 | 541,6 | 98,50 | 98,88 | 0,151 | 0,148 | 145 | 0,2330989 |
| 15,362 | 541,2 | 541,6 | 97,36 | 97,60 | 0,151 | 0,148 | 146 | 0,235696 |
| 15,238 | 541,2 | 541,6 | 98,06 | 98,53 | 0,151 | 0,148 | 147 | 0,2337512 |
| 15,233 | 541,1 | 541,5 | 97,99 | 98,49 | 0,151 | 0,148 | 148 | 0,2337507 |
| 15,332 | 541,2 | 541,5 | 97,46 | 97,83 | 0,151 | 0,148 | 149 | 0,235265 |
| 15,245 | 541,2 | 541,6 | 98,20 | 98,41 | 0,151 | 0,148 | 150 | 0,2337427 |
| 15,149 | 541,3 | 541,6 | 99,05 | 99,58 | 0,151 | 0,148 | 151 | 0,2320068 |
| 15,214 | 541,4 | 541,7 | 98,90 | 99,05 | 0,151 | 0,148 | 152 | 0,2326628 |
| 15,226 | 541,5 | 541,7 | 98,94 | 99,17 | 0,151 | 0,148 | 153 | 0,2326636 |
| 15,410 | 541,7 | 541,9 | 97,86 | 98,22 | 0,151 | 0,148 | 154 | 0,2352655 |
| 15,216 | 541,8 | 542,0 | 99,43 | 99,52 | 0,151 | 0,148 | 155 | 0,2320079 |
| 15,228 | 542,0 | 542,1 | 99,28 | 99,76 | 0,151 | 0,148 | 156 | 0,2320088 |
| 15,351 | 542,2 | 542,3 | 98,72 | 99,20 | 0,150 | 0,148 | 157 | 0,2337514 |
| 15,289 | 542,3 | 542,4 | 99,22 | 99,56 | 0,151 | 0,148 | 158 | 0,2326634 |
| 15,323 | 542,5 | 542,6 | 98,98 | 99,36 | 0,150 | 0,148 | 159 | 0,2330986 |
| 15,265 | 542,7 | 542,8 | 99,62 | 99,84 | 0,150 | 0,148 | 160 | 0,2320086 |
| 15,274 | 542,9 | 543,0 | 99,51 | 99,85 | 0,150 | 0,148 | 161 | 0,2320089 |
| 15,341 | 543,1 | 543,1 | 99,19 | 99,47 | 0,150 | 0,148 | 162 | 0,2330992 |
| 15,428 | 543,2 | 543,3 | 98,16 | 98,52 | 0,150 | 0,148 | 163 | 0,2348344 |
| 15,468 | 543,3 | 543,4 | 97,54 | 97,86 | 0,150 | 0,148 | 164 | 0,235697 |
| 15,282 | 543,4 | 543,5 | 98,70 | 98,93 | 0,150 | 0,147 | 165 | 0,2330995 |
| 15,412 | 543,3 | 543,5 | 97,69 | 98,09 | 0,150 | 0,148 | 166 | 0,2352672 |
| 15,471 | 543,3 | 543,5 | 97,23 | 97,55 | 0,150 | 0,148 | 167 | 0,2363433 |
| 15,180 | 543,2 | 543,4 | 98,97 | 99,23 | 0,150 | 0,148 | 168 | 0,23201 |
| 15,358 | 543,1 | 543,4 | 97,88 | 98,11 | 0,151 | 0,148 | 169 | 0,2348347 |
| 15,409 | 543,1 | 543,4 | 97,39 | 97,80 | 0,151 | 0,148 | 170 | 0,2356899 |
| 15,237 | 543,0 | 543,3 | 98,50 | 98,74 | 0,150 | 0,148 | 171 | 0,2331 |
| 15,275 | 543,0 | 543,3 | 98,31 | 98,45 | 0,151 | 0,148 | 172 | 0,2337526 |
| 15,230 | 542,9 | 543,2 | 98,27 | 98,85 | 0,150 | 0,148 | 173 | 0,2331013 |
| 15,247 | 542,9 | 543,2 | 98,26 | 98,67 | 0,150 | 0,148 | 174 | 0,233409 |
| 15,340 | 542,8 | 543,1 | 97,80 | 98,12 | 0,151 | 0,148 | 175 | 0,2348348 |
| 15,360 | 542,8 | 543,1 | 97,46 | 97,75 | 0,151 | 0,148 | 176 | 0,2352672 |
| 15,224 | 542,8 | 543,1 | 98,36 | 98,34 | 0,150 | 0,147 | 177 | 0,2331002 |
| 15,226 | 542,7 | 543,1 | 98,46 | 98,85 | 0,151 | 0,148 | 178 | 0,2331001 |
| 15,198 | 542,7 | 543,1 | 98,40 | 98,98 | 0,150 | 0,148 | 179 | 0,2325958 |
| 15,251 | 542,8 | 543,1 | 98,59 | 98,79 | 0,150 | 0,148 | 180 | 0,2330997 |
| 15,314 | 542,9 | 543,2 | 98,50 | 98,68 | 0,151 | 0,148 | 181 | 0,2337526 |
| 15,404 | 543,0 | 543,3 | 98,14 | 98,66 | 0,151 | 0,148 | 182 | 0,2348347 |
| 15,209 | 543,1 | 543,4 | 99,54 | 99,95 | 0,150 | 0,148 | 183 | 0,2315722 |
| 15,304 | 543,3 | 543,5 | 99,13 | 99,73 | 0,150 | 0,148 | 184 | 0,232674 |
| 15,231 | 543,5 | 543,7 | 99,65 | 100,10 | 0,150 | 0,148 | 185 | 0,2315721 |
| 15,447 | 543,7 | 543,8 | 97,92 | 98,22 | 0,150 | 0,148 | 186 | 0,2352676 |
| 15,404 | 543,8 | 543,9 | 97,94 | 98,65 | 0,150 | 0,148 | 187 | 0,2348355 |
| 15,418 | 543,8 | 544,0 | 97,78 | 98,15 | 0,150 | 0,148 | 188 | 0,2352684 |
| 15,309 | 543,8 | 544,0 | 98,38 | 98,57 | 0,150 | 0,148 | 189 | 0,2337534 |
| 15,186 | 543,7 | 544,0 | 99,01 | 99,31 | 0,150 | 0,148 | 190 | 0,2320182 |
| 15,294 | 543,7 | 543,9 | 98,17 | 98,70 | 0,150 | 0,148 | 191 | 0,2337539 |
| 15,291 | 543,6 | 543,9 | 98,20 | 98,49 | 0,150 | 0,148 | 192 | 0,2337533 |
| 15,412 | 543,6 | 543,8 | 97,38 | 97,75 | 0,150 | 0,148 | 193 | 0,2356987 |
| 15,353 | 543,5 | 543,8 | 97,57 | 97,96 | 0,150 | 0,148 | 194 | 0,2348357 |
| 15,236 | 543,5 | 543,8 | 98,26 | 98,77 | 0,150 | 0,148 | 195 | 0,2331011 |
| 15,402 | 543,5 | 543,7 | 97,34 | 97,67 | 0,150 | 0,148 | 196 | 0,235551 |
| 15,237 | 543,4 | 543,7 | 98,31 | 98,69 | 0,150 | 0,148 | 197 | 0,2331019 |
| 15,272 | 543,4 | 543,7 | 97,93 | 98,39 | 0,150 | 0,148 | 198 | 0,2337538 |
| 15,137 | 543,4 | 543,7 | 98,90 | 99,09 | 0,150 | 0,148 | 199 | 0,2317057 |
| 15,199 | 543,3 | 543,6 | 98,33 | 98,56 | 0,150 | 0,147 | 200 | 0,2326662 |
| 15,256 | 543,3 | 543,6 | 98,07 | 98,58 | 0,150 | 0,147 | 201 | 0,2335446 |

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|--------|-------|-------|-------|-------|-------|-------|-----|-----------|
| 15,227 | 543,3 | 543,6 | 98,07 | 98,32 | 0,150 | 0,147 | 202 | 0,2331087 |
| 15,395 | 543,2 | 543,6 | 97,11 | 97,46 | 0,150 | 0,147 | 203 | 0,2356985 |
| 15,333 | 543,2 | 543,5 | 97,33 | 97,73 | 0,150 | 0,147 | 204 | 0,2348362 |
| 15,219 | 543,2 | 543,5 | 98,19 | 98,49 | 0,150 | 0,147 | 205 | 0,2331005 |
| 15,206 | 543,2 | 543,5 | 98,25 | 98,49 | 0,150 | 0,147 | 206 | 0,2328966 |
| 15,218 | 543,1 | 543,4 | 98,20 | 98,43 | 0,150 | 0,147 | 207 | 0,233101 |
| 15,191 | 543,1 | 543,4 | 98,29 | 98,67 | 0,150 | 0,147 | 208 | 0,2326656 |
| 15,194 | 543,1 | 543,4 | 98,32 | 98,75 | 0,150 | 0,148 | 209 | 0,2326977 |
| 15,262 | 543,0 | 543,4 | 97,81 | 98,28 | 0,150 | 0,148 | 210 | 0,2337531 |
| 15,257 | 543,0 | 543,3 | 97,91 | 98,27 | 0,150 | 0,148 | 211 | 0,2337535 |
| 15,256 | 543,0 | 543,3 | 97,97 | 98,35 | 0,150 | 0,148 | 212 | 0,2337534 |
| 15,212 | 543,0 | 543,3 | 98,26 | 98,54 | 0,150 | 0,148 | 213 | 0,2331006 |
| 15,384 | 543,0 | 543,3 | 97,21 | 97,33 | 0,150 | 0,147 | 214 | 0,2356983 |
| 15,349 | 543,0 | 543,3 | 97,23 | 97,69 | 0,150 | 0,147 | 215 | 0,2351779 |
| 15,235 | 542,9 | 543,2 | 97,91 | 98,33 | 0,150 | 0,148 | 216 | 0,2334601 |
| 15,352 | 542,9 | 543,2 | 97,11 | 97,45 | 0,150 | 0,147 | 217 | 0,2352676 |
| 15,256 | 542,9 | 543,2 | 97,97 | 98,33 | 0,150 | 0,148 | 218 | 0,2337528 |
| 15,325 | 542,9 | 543,2 | 97,34 | 97,80 | 0,150 | 0,148 | 219 | 0,2348355 |
| 15,253 | 542,9 | 543,1 | 97,82 | 98,18 | 0,150 | 0,148 | 220 | 0,2337531 |
| 15,379 | 542,8 | 543,1 | 97,10 | 97,49 | 0,150 | 0,148 | 221 | 0,2356983 |
| 15,424 | 542,8 | 543,1 | 96,87 | 97,07 | 0,150 | 0,148 | 222 | 0,2363441 |
| 15,135 | 542,8 | 543,1 | 98,75 | 99,10 | 0,150 | 0,148 | 223 | 0,231949 |
| 15,332 | 542,8 | 543,1 | 97,45 | 98,07 | 0,150 | 0,148 | 224 | 0,2348355 |
| 15,372 | 542,9 | 543,2 | 97,43 | 97,68 | 0,150 | 0,148 | 225 | 0,2352672 |
| 15,227 | 542,9 | 543,2 | 98,60 | 99,00 | 0,150 | 0,148 | 226 | 0,2326651 |
| 15,176 | 543,1 | 543,3 | 99,28 | 99,56 | 0,150 | 0,148 | 227 | 0,2315711 |
| 15,296 | 543,2 | 543,4 | 98,60 | 99,13 | 0,150 | 0,148 | 228 | 0,2331004 |
| 15,435 | 543,4 | 543,5 | 97,64 | 98,12 | 0,150 | 0,148 | 229 | 0,2352677 |
| 15,324 | 543,6 | 543,7 | 98,32 | 98,57 | 0,150 | 0,147 | 230 | 0,233753 |
| 15,415 | 543,7 | 543,8 | 97,43 | 97,67 | 0,150 | 0,147 | 231 | 0,235268 |
| 15,263 | 543,7 | 543,8 | 98,29 | 98,67 | 0,150 | 0,147 | 232 | 0,2331009 |
| 15,364 | 543,8 | 543,9 | 97,65 | 98,08 | 0,150 | 0,147 | 233 | 0,2348358 |
| 15,415 | 543,8 | 543,9 | 97,33 | 97,55 | 0,150 | 0,148 | 234 | 0,2356988 |
| 15,241 | 543,7 | 543,9 | 98,25 | 98,68 | 0,150 | 0,147 | 235 | 0,2331011 |
| 15,382 | 543,7 | 543,8 | 97,32 | 97,43 | 0,150 | 0,147 | 236 | 0,235268 |
| 15,349 | 543,6 | 543,8 | 97,47 | 97,84 | 0,150 | 0,147 | 237 | 0,2348355 |
| 15,273 | 543,6 | 543,8 | 97,81 | 98,36 | 0,150 | 0,147 | 238 | 0,2337534 |
| 15,368 | 543,6 | 543,8 | 97,31 | 97,35 | 0,150 | 0,147 | 239 | 0,2352684 |
| 15,367 | 543,6 | 543,8 | 97,30 | 97,45 | 0,150 | 0,147 | 240 | 0,235268 |
| 15,154 | 543,5 | 543,7 | 98,69 | 99,31 | 0,150 | 0,148 | 241 | 0,2320103 |
| 15,396 | 543,5 | 543,7 | 97,18 | 97,51 | 0,150 | 0,148 | 242 | 0,2356981 |
| 15,193 | 543,5 | 543,7 | 98,29 | 98,88 | 0,150 | 0,148 | 243 | 0,2326633 |
| 15,149 | 543,4 | 543,7 | 98,75 | 99,14 | 0,150 | 0,148 | 244 | 0,2320103 |
| 15,119 | 543,4 | 543,6 | 98,78 | 99,29 | 0,150 | 0,148 | 245 | 0,231572 |
| 15,212 | 543,3 | 543,6 | 98,15 | 98,46 | 0,150 | 0,148 | 246 | 0,2331006 |
| 15,186 | 543,3 | 543,6 | 98,40 | 98,38 | 0,150 | 0,147 | 247 | 0,2326655 |
| 15,328 | 543,2 | 543,5 | 97,49 | 97,81 | 0,150 | 0,147 | 248 | 0,2348353 |
| 15,213 | 543,2 | 543,5 | 98,27 | 98,47 | 0,150 | 0,148 | 249 | 0,2331008 |
| 15,140 | 543,2 | 543,4 | 98,56 | 98,96 | 0,150 | 0,148 | 250 | 0,2320101 |
| 15,324 | 543,1 | 543,4 | 97,69 | 97,88 | 0,150 | 0,148 | 251 | 0,2348354 |
| 15,254 | 543,1 | 543,4 | 97,81 | 98,05 | 0,150 | 0,147 | 252 | 0,2337528 |
| 15,381 | 543,1 | 543,4 | 97,09 | 97,35 | 0,150 | 0,147 | 253 | 0,235698 |
| 15,349 | 543,1 | 543,4 | 97,42 | 97,76 | 0,150 | 0,148 | 254 | 0,2352094 |
| 15,351 | 543,1 | 543,3 | 97,18 | 97,71 | 0,150 | 0,148 | 255 | 0,2352673 |
| 15,208 | 543,0 | 543,3 | 98,16 | 98,29 | 0,150 | 0,147 | 256 | 0,2330714 |
| 15,349 | 543,0 | 543,3 | 97,23 | 97,50 | 0,150 | 0,147 | 257 | 0,2352667 |
| 15,251 | 543,0 | 543,3 | 97,75 | 98,38 | 0,150 | 0,148 | 258 | 0,2337529 |
| 15,318 | 542,9 | 543,2 | 97,49 | 97,70 | 0,150 | 0,148 | 259 | 0,2348352 |
| 15,317 | 542,9 | 543,2 | 97,38 | 97,80 | 0,150 | 0,148 | 260 | 0,2348347 |
| 15,247 | 542,9 | 543,2 | 97,85 | 98,20 | 0,150 | 0,148 | 261 | 0,2337529 |
| 15,175 | 542,9 | 543,2 | 98,24 | 98,68 | 0,150 | 0,148 | 262 | 0,2326648 |
| 15,178 | 542,9 | 543,2 | 98,28 | 98,61 | 0,150 | 0,148 | 263 | 0,232665 |
| 15,318 | 542,9 | 543,2 | 97,38 | 97,63 | 0,150 | 0,147 | 264 | 0,234835 |
| 15,139 | 542,9 | 543,2 | 98,49 | 98,93 | 0,150 | 0,147 | 265 | 0,2320101 |
| 15,352 | 542,8 | 543,1 | 97,26 | 97,44 | 0,150 | 0,147 | 266 | 0,2352674 |
| 15,327 | 542,8 | 543,1 | 97,47 | 97,72 | 0,150 | 0,147 | 267 | 0,2348348 |
| 15,142 | 542,8 | 543,1 | 98,81 | 98,93 | 0,150 | 0,147 | 268 | 0,2320195 |
| 15,322 | 542,8 | 543,1 | 97,57 | 97,88 | 0,151 | 0,148 | 269 | 0,234835 |
| 15,349 | 542,8 | 543,1 | 97,24 | 97,74 | 0,150 | 0,148 | 270 | 0,2352676 |

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|--------|-------|-------|-------|-------|-------|-------|-----|-----------|
| 15,136 | 542,8 | 543,1 | 98,65 | 98,87 | 0,150 | 0,148 | 271 | 0,2320097 |
| 15,376 | 542,8 | 543,1 | 97,13 | 97,40 | 0,150 | 0,148 | 272 | 0,2356978 |
| 15,180 | 542,8 | 543,1 | 98,35 | 98,60 | 0,150 | 0,148 | 273 | 0,2326665 |
| 15,346 | 542,8 | 543,1 | 97,25 | 97,64 | 0,150 | 0,148 | 274 | 0,2352664 |
| 15,250 | 542,8 | 543,0 | 97,91 | 98,40 | 0,150 | 0,148 | 275 | 0,2337527 |
| 15,132 | 542,7 | 543,0 | 98,61 | 99,24 | 0,150 | 0,148 | 276 | 0,2320098 |
| 15,205 | 542,7 | 543,0 | 98,20 | 98,31 | 0,150 | 0,148 | 277 | 0,2331004 |
| 15,374 | 542,7 | 542,9 | 97,04 | 97,68 | 0,150 | 0,148 | 278 | 0,2356977 |
| 15,107 | 542,7 | 542,9 | 98,71 | 98,99 | 0,150 | 0,148 | 279 | 0,2315715 |
| 15,320 | 542,6 | 542,9 | 97,46 | 98,00 | 0,150 | 0,148 | 280 | 0,2348348 |
| 15,345 | 542,6 | 542,9 | 97,42 | 97,87 | 0,150 | 0,148 | 281 | 0,2352674 |
| 15,136 | 542,6 | 542,9 | 98,52 | 98,95 | 0,150 | 0,148 | 282 | 0,2320096 |
| 15,318 | 542,6 | 542,9 | 97,44 | 97,98 | 0,150 | 0,148 | 283 | 0,2348349 |
| 15,418 | 542,6 | 542,8 | 96,84 | 97,16 | 0,150 | 0,148 | 284 | 0,236343 |
| 15,133 | 542,6 | 542,8 | 98,63 | 98,82 | 0,150 | 0,147 | 285 | 0,2320096 |
| 15,349 | 542,6 | 542,8 | 97,21 | 97,88 | 0,150 | 0,148 | 286 | 0,2352667 |
| 15,373 | 542,6 | 542,8 | 97,11 | 97,58 | 0,150 | 0,148 | 287 | 0,2356965 |
| 15,349 | 542,6 | 542,8 | 97,19 | 97,80 | 0,150 | 0,148 | 288 | 0,2352669 |
| 15,487 | 542,5 | 542,8 | 96,45 | 96,79 | 0,150 | 0,148 | 289 | 0,2374133 |
| 15,104 | 542,5 | 542,8 | 99,09 | 99,34 | 0,151 | 0,148 | 290 | 0,2315714 |
| 15,320 | 542,5 | 542,8 | 97,53 | 97,83 | 0,151 | 0,148 | 291 | 0,2348347 |
| 15,247 | 542,5 | 542,7 | 97,84 | 98,10 | 0,150 | 0,148 | 292 | 0,2337523 |
| 15,206 | 542,5 | 542,7 | 98,15 | 98,56 | 0,150 | 0,148 | 293 | 0,2330996 |
| 15,375 | 542,5 | 542,7 | 97,05 | 97,47 | 0,150 | 0,148 | 294 | 0,2356975 |
| 15,202 | 542,5 | 542,7 | 98,17 | 98,58 | 0,150 | 0,148 | 295 | 0,2330998 |
| 15,314 | 542,4 | 542,7 | 97,32 | 97,66 | 0,150 | 0,148 | 296 | 0,2348346 |
| 15,129 | 542,4 | 542,7 | 98,68 | 98,93 | 0,150 | 0,148 | 297 | 0,2320094 |
| 15,416 | 542,4 | 542,7 | 97,02 | 97,14 | 0,151 | 0,148 | 298 | 0,2363426 |
| 15,179 | 542,4 | 542,7 | 98,33 | 98,72 | 0,150 | 0,148 | 299 | 0,2326647 |
| 15,318 | 542,4 | 542,6 | 97,51 | 98,20 | 0,150 | 0,148 | 300 | 0,2348346 |
| 15,197 | 542,3 | 542,6 | 98,27 | 98,83 | 0,150 | 0,148 | 301 | 0,2330974 |
| 15,200 | 542,3 | 542,6 | 98,12 | 98,51 | 0,150 | 0,148 | 302 | 0,2330995 |
| 15,344 | 542,2 | 542,5 | 97,19 | 97,91 | 0,150 | 0,148 | 303 | 0,2352658 |
| 15,320 | 542,3 | 542,5 | 97,45 | 97,91 | 0,150 | 0,148 | 304 | 0,234835 |
| 15,390 | 542,3 | 542,6 | 97,15 | 97,55 | 0,150 | 0,148 | 305 | 0,2356971 |
| 15,239 | 542,4 | 542,7 | 98,46 | 98,73 | 0,150 | 0,148 | 306 | 0,2330991 |
| 15,435 | 542,6 | 542,7 | 97,49 | 97,88 | 0,150 | 0,148 | 307 | 0,235697 |
| 15,252 | 542,7 | 542,8 | 98,84 | 99,39 | 0,150 | 0,148 | 308 | 0,2326645 |
| 15,481 | 542,8 | 543,0 | 97,21 | 97,44 | 0,150 | 0,148 | 309 | 0,2363432 |
| 15,473 | 543,0 | 543,1 | 97,14 | 97,53 | 0,150 | 0,148 | 310 | 0,2363429 |
| 15,354 | 543,0 | 543,1 | 97,77 | 98,08 | 0,150 | 0,148 | 311 | 0,2346538 |
| 15,358 | 543,1 | 543,2 | 97,43 | 98,02 | 0,150 | 0,148 | 312 | 0,2348347 |
| 15,238 | 543,1 | 543,2 | 98,39 | 98,60 | 0,150 | 0,148 | 313 | 0,2330831 |
| 15,377 | 543,1 | 543,2 | 97,40 | 97,82 | 0,150 | 0,148 | 314 | 0,2352669 |
| 15,468 | 543,1 | 543,2 | 96,89 | 96,99 | 0,150 | 0,148 | 315 | 0,2367714 |
| 15,369 | 543,0 | 543,2 | 97,40 | 97,57 | 0,150 | 0,147 | 316 | 0,2352681 |
| 15,366 | 543,0 | 543,1 | 97,40 | 97,64 | 0,150 | 0,147 | 317 | 0,2352675 |
| 15,362 | 542,9 | 543,1 | 97,21 | 97,90 | 0,150 | 0,148 | 318 | 0,2352668 |
| 15,148 | 542,9 | 543,1 | 98,64 | 98,91 | 0,150 | 0,148 | 319 | 0,232009 |
| 15,261 | 542,8 | 543,0 | 98,08 | 98,61 | 0,150 | 0,148 | 320 | 0,2337526 |
| 15,357 | 542,7 | 543,0 | 97,25 | 98,05 | 0,150 | 0,148 | 321 | 0,2352672 |
| 15,386 | 542,7 | 543,0 | 97,19 | 97,31 | 0,150 | 0,148 | 322 | 0,2357072 |
| 15,115 | 542,7 | 542,9 | 99,06 | 99,32 | 0,151 | 0,148 | 323 | 0,2315706 |
| 15,353 | 542,6 | 542,9 | 97,44 | 97,80 | 0,151 | 0,148 | 324 | 0,2352668 |
| 15,381 | 542,6 | 542,9 | 97,17 | 97,20 | 0,150 | 0,148 | 325 | 0,2356972 |
| 15,254 | 542,5 | 542,8 | 97,97 | 98,43 | 0,150 | 0,148 | 326 | 0,2337517 |
| 15,355 | 542,5 | 542,8 | 97,33 | 97,71 | 0,150 | 0,148 | 327 | 0,2352667 |
| 15,182 | 542,4 | 542,7 | 98,29 | 98,56 | 0,150 | 0,148 | 328 | 0,2326642 |
| 15,380 | 542,4 | 542,7 | 97,07 | 97,41 | 0,150 | 0,147 | 329 | 0,2356969 |
| 15,139 | 542,3 | 542,7 | 98,71 | 99,16 | 0,150 | 0,148 | 330 | 0,2320089 |
| 15,208 | 542,3 | 542,6 | 98,29 | 98,64 | 0,150 | 0,148 | 331 | 0,2330995 |
| 15,323 | 542,3 | 542,6 | 97,51 | 98,15 | 0,150 | 0,148 | 332 | 0,2348339 |
| 15,350 | 542,2 | 542,6 | 97,43 | 97,80 | 0,150 | 0,148 | 333 | 0,235259 |
| 15,349 | 542,2 | 542,5 | 97,13 | 97,75 | 0,150 | 0,148 | 334 | 0,2352661 |
| 15,350 | 542,2 | 542,5 | 97,40 | 97,87 | 0,150 | 0,148 | 335 | 0,2352659 |
| 15,348 | 542,2 | 542,5 | 97,33 | 97,79 | 0,150 | 0,148 | 336 | 0,2352662 |
| 15,207 | 542,1 | 542,4 | 98,24 | 98,81 | 0,150 | 0,148 | 337 | 0,2330743 |
| 15,180 | 542,1 | 542,4 | 98,37 | 98,93 | 0,150 | 0,148 | 338 | 0,2326635 |
| 15,005 | 542,1 | 542,4 | 99,57 | 99,89 | 0,150 | 0,148 | 339 | 0,2300321 |

| | | | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|-----|-----------|
| 15,374 | 542,0 | 542,3 | 97,18 | 97,68 | 0,150 | 0,148 | 340 | 0,2356962 |
| 15,243 | 542,0 | 542,3 | 97,88 | 98,45 | 0,150 | 0,148 | 341 | 0,2337511 |
| 15,134 | 542,0 | 542,3 | 98,82 | 99,10 | 0,150 | 0,148 | 342 | 0,2320082 |
| 15,343 | 542,0 | 542,3 | 97,35 | 97,67 | 0,151 | 0,148 | 343 | 0,2352655 |
| 15,245 | 541,9 | 542,2 | 98,09 | 98,28 | 0,151 | 0,148 | 344 | 0,2337506 |
| 15,203 | 541,9 | 542,2 | 98,37 | 98,72 | 0,151 | 0,148 | 345 | 0,2330983 |
| 15,131 | 541,9 | 542,2 | 98,72 | 99,08 | 0,151 | 0,148 | 346 | 0,2320075 |
| 15,341 | 541,8 | 542,2 | 97,46 | 97,72 | 0,151 | 0,148 | 347 | 0,2352654 |
| 15,342 | 541,8 | 542,1 | 97,22 | 97,92 | 0,150 | 0,148 | 348 | 0,2352651 |
| 15,311 | 541,8 | 542,1 | 97,63 | 97,88 | 0,150 | 0,148 | 349 | 0,2348327 |
| 15,310 | 541,8 | 542,1 | 97,56 | 97,83 | 0,151 | 0,148 | 350 | 0,2348327 |
| 15,125 | 541,8 | 542,1 | 98,59 | 99,15 | 0,150 | 0,148 | 351 | 0,2320071 |
| 15,312 | 541,7 | 542,0 | 97,57 | 97,98 | 0,150 | 0,148 | 352 | 0,2348376 |
| 15,311 | 541,7 | 542,0 | 97,72 | 98,06 | 0,151 | 0,148 | 353 | 0,2348329 |
| 15,337 | 541,7 | 542,0 | 97,21 | 97,76 | 0,151 | 0,148 | 354 | 0,2352654 |
| 15,307 | 541,7 | 541,9 | 97,57 | 97,98 | 0,150 | 0,148 | 355 | 0,2348329 |
| 15,336 | 541,6 | 541,9 | 97,28 | 97,85 | 0,151 | 0,148 | 356 | 0,2352654 |
| 15,408 | 541,6 | 541,9 | 96,74 | 97,21 | 0,150 | 0,148 | 357 | 0,236341 |
| 15,338 | 541,6 | 541,9 | 97,29 | 97,76 | 0,150 | 0,148 | 358 | 0,2352652 |
| 15,338 | 541,6 | 541,9 | 97,49 | 97,73 | 0,151 | 0,148 | 359 | 0,2352647 |
| 15,167 | 541,5 | 541,8 | 98,55 | 99,03 | 0,151 | 0,148 | 360 | 0,2326625 |
| 15,121 | 541,5 | 541,8 | 98,94 | 99,09 | 0,151 | 0,148 | 361 | 0,2320079 |
| 15,335 | 541,5 | 541,8 | 97,35 | 97,90 | 0,151 | 0,148 | 362 | 0,2352647 |
| 15,336 | 541,5 | 541,7 | 97,49 | 97,67 | 0,151 | 0,148 | 363 | 0,2352654 |
| 15,179 | 541,5 | 541,8 | 98,53 | 99,23 | 0,151 | 0,148 | 364 | 0,2327077 |
| 15,223 | 541,6 | 541,9 | 98,59 | 98,87 | 0,151 | 0,148 | 365 | 0,2330987 |
| 15,451 | 541,7 | 541,9 | 97,05 | 97,55 | 0,151 | 0,148 | 366 | 0,2363406 |
| 15,377 | 541,9 | 542,0 | 97,84 | 98,37 | 0,150 | 0,148 | 367 | 0,234843 |
| 15,257 | 542,0 | 542,2 | 98,49 | 98,96 | 0,150 | 0,148 | 368 | 0,2330982 |
| 15,359 | 542,2 | 542,3 | 97,80 | 98,24 | 0,150 | 0,148 | 369 | 0,2348331 |
| 15,381 | 542,3 | 542,4 | 97,55 | 97,93 | 0,150 | 0,148 | 370 | 0,2352657 |
| 15,401 | 542,3 | 542,4 | 97,33 | 97,79 | 0,150 | 0,148 | 371 | 0,2356958 |
| 15,225 | 542,3 | 542,4 | 98,32 | 98,53 | 0,150 | 0,148 | 372 | 0,2330982 |
| 15,264 | 542,3 | 542,5 | 98,16 | 98,44 | 0,150 | 0,148 | 373 | 0,2337505 |
| 15,327 | 542,3 | 542,5 | 97,57 | 98,25 | 0,151 | 0,148 | 374 | 0,2348332 |
| 15,383 | 542,2 | 542,4 | 97,18 | 97,77 | 0,150 | 0,148 | 375 | 0,2356962 |
| 15,353 | 542,2 | 542,4 | 97,46 | 97,87 | 0,150 | 0,148 | 376 | 0,2352651 |
| 15,320 | 542,2 | 542,4 | 97,71 | 97,91 | 0,151 | 0,148 | 377 | 0,2348331 |
| 15,318 | 542,1 | 542,4 | 97,66 | 98,03 | 0,151 | 0,148 | 378 | 0,2348333 |
| 15,373 | 542,0 | 542,3 | 97,33 | 97,62 | 0,151 | 0,148 | 379 | 0,2356961 |
| 15,173 | 542,0 | 542,3 | 98,56 | 99,04 | 0,151 | 0,148 | 380 | 0,232663 |
| 15,314 | 542,0 | 542,3 | 97,50 | 98,09 | 0,151 | 0,148 | 381 | 0,2348333 |
| 15,368 | 541,9 | 542,2 | 97,21 | 97,65 | 0,151 | 0,148 | 382 | 0,2356959 |
| 15,368 | 541,9 | 542,2 | 97,34 | 97,52 | 0,151 | 0,148 | 383 | 0,2356961 |
| 15,310 | 541,8 | 542,1 | 97,55 | 97,95 | 0,151 | 0,148 | 384 | 0,2348333 |
| 15,338 | 541,8 | 542,1 | 97,52 | 97,85 | 0,151 | 0,148 | 385 | 0,2352656 |
| 15,309 | 541,8 | 542,1 | 97,51 | 97,94 | 0,151 | 0,148 | 386 | 0,2348331 |
| 15,336 | 541,8 | 542,1 | 97,44 | 97,78 | 0,151 | 0,148 | 387 | 0,2352652 |
| 15,119 | 541,7 | 542,0 | 98,88 | 99,17 | 0,151 | 0,148 | 388 | 0,2319436 |
| 15,362 | 541,7 | 542,0 | 97,27 | 97,61 | 0,151 | 0,148 | 389 | 0,2356959 |
| 15,192 | 541,7 | 542,0 | 98,26 | 98,71 | 0,151 | 0,148 | 390 | 0,2330978 |
| 15,306 | 541,6 | 541,9 | 97,65 | 97,86 | 0,151 | 0,148 | 391 | 0,2348327 |
| 15,361 | 541,6 | 541,9 | 97,32 | 97,45 | 0,151 | 0,148 | 392 | 0,2356954 |
| 15,426 | 541,5 | 541,9 | 96,82 | 97,01 | 0,151 | 0,148 | 393 | 0,2367697 |
| 15,330 | 541,5 | 541,8 | 97,27 | 97,69 | 0,151 | 0,148 | 394 | 0,2352651 |
| 15,331 | 541,5 | 541,8 | 97,33 | 97,53 | 0,151 | 0,148 | 395 | 0,2352686 |
| 15,191 | 541,5 | 541,8 | 98,21 | 98,73 | 0,151 | 0,148 | 396 | 0,2330982 |
| 15,297 | 541,4 | 541,8 | 97,64 | 97,80 | 0,151 | 0,148 | 397 | 0,2348328 |
| 15,227 | 541,4 | 541,7 | 97,91 | 98,11 | 0,151 | 0,148 | 398 | 0,2337497 |
| 15,297 | 541,4 | 541,7 | 97,48 | 97,84 | 0,151 | 0,148 | 399 | 0,2348324 |
| 15,324 | 541,4 | 541,7 | 97,32 | 97,73 | 0,151 | 0,148 | 400 | 0,235264 |
| 15,355 | 541,3 | 541,7 | 97,19 | 97,47 | 0,151 | 0,148 | 401 | 0,2356955 |
| 15,186 | 541,3 | 541,6 | 98,32 | 98,59 | 0,151 | 0,148 | 402 | 0,233098 |
| 15,297 | 541,3 | 541,6 | 97,58 | 97,93 | 0,151 | 0,148 | 403 | 0,2348323 |
| 15,297 | 541,2 | 541,6 | 97,64 | 97,72 | 0,151 | 0,148 | 404 | 0,2348321 |
| 15,226 | 541,2 | 541,5 | 98,07 | 98,29 | 0,151 | 0,148 | 405 | 0,2337498 |
| 15,322 | 541,2 | 541,5 | 97,37 | 97,63 | 0,151 | 0,148 | 406 | 0,2352648 |
| 15,352 | 541,2 | 541,5 | 97,24 | 97,46 | 0,151 | 0,148 | 407 | 0,2356951 |
| 15,297 | 541,1 | 541,4 | 97,47 | 97,92 | 0,151 | 0,148 | 408 | 0,2348322 |

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|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 15,300 | 541,2 | 541,5 | 97,45 | 97,83 | 0,151 | 0,148 | 409 | 0,2348321 |
| 15,245 | 541,2 | 541,5 | 98,41 | 98,63 | 0,151 | 0,148 | 410 | 0,2337492 |
| 15,267 | 541,3 | 541,6 | 98,25 | 98,60 | 0,151 | 0,148 | 411 | 0,2337496 |
| 15,286 | 541,4 | 541,7 | 98,39 | 98,73 | 0,151 | 0,148 | 412 | 0,2337496 |
| 15,185 | 541,6 | 541,8 | 99,30 | 99,58 | 0,151 | 0,148 | 413 | 0,2320073 |
| 15,369 | 541,7 | 541,9 | 97,81 | 98,49 | 0,151 | 0,148 | 414 | 0,2348328 |
| 15,387 | 541,9 | 542,0 | 97,72 | 98,26 | 0,150 | 0,148 | 415 | 0,2352651 |
| 15,407 | 542,0 | 542,1 | 97,51 | 97,78 | 0,151 | 0,148 | 416 | 0,2356951 |
| 15,344 | 542,0 | 542,2 | 97,67 | 98,18 | 0,151 | 0,148 | 417 | 0,2348327 |
| 15,461 | 542,0 | 542,2 | 96,83 | 97,06 | 0,150 | 0,148 | 418 | 0,2367689 |
| 15,428 | 542,0 | 542,2 | 97,09 | 97,51 | 0,151 | 0,148 | 419 | 0,2363406 |
| 15,328 | 542,0 | 542,2 | 97,67 | 98,02 | 0,151 | 0,148 | 420 | 0,2348326 |
| 15,379 | 542,0 | 542,2 | 97,10 | 97,70 | 0,150 | 0,148 | 421 | 0,235696 |
| 15,373 | 541,9 | 542,2 | 97,32 | 97,50 | 0,151 | 0,148 | 422 | 0,2356959 |
| 15,341 | 541,9 | 542,1 | 97,27 | 97,65 | 0,151 | 0,148 | 423 | 0,235265 |
| 15,440 | 541,8 | 542,1 | 96,82 | 97,23 | 0,151 | 0,148 | 424 | 0,2367697 |
| 15,423 | 541,8 | 542,0 | 96,87 | 97,28 | 0,151 | 0,148 | 425 | 0,2365733 |
| 15,337 | 541,7 | 542,0 | 97,28 | 97,83 | 0,151 | 0,148 | 426 | 0,235265 |
| 15,362 | 541,7 | 542,0 | 97,16 | 97,63 | 0,151 | 0,148 | 427 | 0,2356956 |
| 15,360 | 541,6 | 542,0 | 97,25 | 97,62 | 0,151 | 0,148 | 428 | 0,2356953 |
| 15,232 | 541,6 | 541,9 | 98,15 | 98,45 | 0,151 | 0,148 | 429 | 0,23375 |
| 15,401 | 541,5 | 541,9 | 96,96 | 97,37 | 0,151 | 0,148 | 430 | 0,2363407 |
| 15,360 | 541,5 | 541,8 | 97,29 | 97,51 | 0,151 | 0,148 | 431 | 0,2356952 |
| 15,357 | 541,5 | 541,8 | 97,32 | 97,70 | 0,151 | 0,148 | 432 | 0,2356954 |
| 15,230 | 541,4 | 541,8 | 97,94 | 98,18 | 0,151 | 0,148 | 433 | 0,23375 |
| 15,397 | 541,4 | 541,7 | 96,84 | 97,46 | 0,151 | 0,148 | 434 | 0,2363409 |
| 15,299 | 541,3 | 541,7 | 97,52 | 97,88 | 0,151 | 0,148 | 435 | 0,2348326 |
| 15,349 | 541,3 | 541,6 | 97,25 | 97,64 | 0,151 | 0,148 | 436 | 0,2356097 |
| 15,296 | 541,3 | 541,6 | 97,59 | 98,00 | 0,151 | 0,148 | 437 | 0,2348324 |
| 15,224 | 541,2 | 541,6 | 98,03 | 98,37 | 0,151 | 0,148 | 438 | 0,2337414 |
| 15,226 | 541,2 | 541,5 | 97,94 | 98,50 | 0,151 | 0,148 | 439 | 0,2337496 |
| 15,323 | 541,2 | 541,5 | 97,43 | 97,81 | 0,151 | 0,148 | 440 | 0,2352643 |
| 15,321 | 541,2 | 541,5 | 97,28 | 97,69 | 0,151 | 0,148 | 441 | 0,2352639 |
| 15,292 | 541,1 | 541,5 | 97,59 | 97,80 | 0,151 | 0,148 | 442 | 0,2348326 |
| 15,222 | 541,1 | 541,4 | 98,00 | 98,26 | 0,151 | 0,148 | 443 | 0,2337416 |
| 15,319 | 541,1 | 541,4 | 97,37 | 97,93 | 0,151 | 0,148 | 444 | 0,2352646 |
| 15,107 | 541,0 | 541,4 | 98,77 | 99,17 | 0,151 | 0,148 | 445 | 0,2320066 |
| 15,150 | 541,0 | 541,3 | 98,47 | 98,95 | 0,151 | 0,148 | 446 | 0,2326522 |
| 15,390 | 541,0 | 541,3 | 96,97 | 97,40 | 0,151 | 0,148 | 447 | 0,2363399 |
| 15,149 | 540,9 | 541,3 | 98,59 | 99,07 | 0,151 | 0,148 | 448 | 0,2326613 |
| 15,147 | 540,9 | 541,2 | 98,47 | 98,80 | 0,151 | 0,148 | 449 | 0,2326622 |
| 15,335 | 540,9 | 541,2 | 97,32 | 97,52 | 0,151 | 0,148 | 450 | 0,2355715 |
| 15,461 | 540,9 | 541,2 | 96,70 | 96,82 | 0,151 | 0,148 | 451 | 0,2374106 |
| 15,241 | 540,9 | 541,2 | 98,17 | 98,74 | 0,151 | 0,148 | 452 | 0,2337493 |
| 15,335 | 541,0 | 541,3 | 97,92 | 98,22 | 0,151 | 0,148 | 453 | 0,2348316 |
| 15,350 | 541,2 | 541,4 | 97,90 | 98,39 | 0,151 | 0,148 | 454 | 0,2348326 |
| 15,400 | 541,3 | 541,5 | 97,85 | 98,23 | 0,151 | 0,148 | 455 | 0,2352642 |
| 15,424 | 541,5 | 541,6 | 97,55 | 97,93 | 0,151 | 0,148 | 456 | 0,2356951 |
| 15,382 | 541,6 | 541,8 | 97,70 | 98,06 | 0,151 | 0,148 | 457 | 0,2352641 |
| 15,345 | 541,7 | 541,8 | 97,78 | 98,12 | 0,151 | 0,148 | 458 | 0,2348324 |
| 15,364 | 541,8 | 541,9 | 97,69 | 97,75 | 0,151 | 0,148 | 459 | 0,2352648 |
| 15,256 | 541,8 | 541,9 | 98,12 | 98,21 | 0,151 | 0,148 | 460 | 0,2337501 |
| 15,252 | 541,7 | 541,9 | 98,09 | 98,40 | 0,151 | 0,148 | 461 | 0,2337504 |
| 15,344 | 541,7 | 541,9 | 97,36 | 98,06 | 0,151 | 0,148 | 462 | 0,235265 |
| 15,341 | 541,7 | 541,9 | 97,42 | 97,67 | 0,151 | 0,148 | 463 | 0,2352646 |
| 15,195 | 541,6 | 541,9 | 98,41 | 98,80 | 0,151 | 0,148 | 464 | 0,233097 |
| 15,350 | 541,6 | 541,8 | 97,30 | 97,54 | 0,151 | 0,148 | 465 | 0,2354921 |
| 15,401 | 541,5 | 541,8 | 97,14 | 97,32 | 0,151 | 0,148 | 466 | 0,2363396 |
| 15,161 | 541,5 | 541,8 | 98,41 | 98,85 | 0,151 | 0,148 | 467 | 0,2326623 |
| 15,328 | 541,4 | 541,7 | 97,23 | 97,74 | 0,151 | 0,148 | 468 | 0,2352645 |
| 15,326 | 541,3 | 541,7 | 97,34 | 97,76 | 0,151 | 0,148 | 469 | 0,2352645 |
| 15,185 | 541,3 | 541,6 | 98,25 | 98,73 | 0,151 | 0,148 | 470 | 0,2331188 |
| 15,181 | 541,3 | 541,6 | 98,20 | 98,56 | 0,151 | 0,148 | 471 | 0,2330968 |
| 15,353 | 541,2 | 541,6 | 97,36 | 97,71 | 0,151 | 0,148 | 472 | 0,2356952 |
| 15,322 | 541,2 | 541,6 | 97,27 | 97,85 | 0,151 | 0,148 | 473 | 0,2352642 |
| 14,806 | 541,2 | 541,5 | 100,78 | 101,23 | 0,151 | 0,148 | 474 | 0,227368 |
| 14,837 | 541,2 | 541,5 | 100,47 | 100,85 | 0,151 | 0,148 | 475 | 0,2278135 |
| 14,812 | 541,1 | 541,5 | 100,82 | 101,02 | 0,151 | 0,148 | 476 | 0,2273682 |
| 14,838 | 541,1 | 541,5 | 100,77 | 100,97 | 0,151 | 0,148 | 477 | 0,2278133 |

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|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 14,733 | 541,1 | 541,4 | 101,17 | 101,83 | 0,151 | 0,148 | 478 | 0,2262495 |
| 14,806 | 541,1 | 541,4 | 100,80 | 101,09 | 0,151 | 0,148 | 479 | 0,2273679 |
| 14,934 | 541,1 | 541,4 | 99,92 | 100,10 | 0,151 | 0,148 | 480 | 0,2293676 |
| 14,834 | 541,0 | 541,4 | 100,47 | 101,13 | 0,151 | 0,148 | 481 | 0,2278134 |
| 14,974 | 541,0 | 541,3 | 99,49 | 99,89 | 0,151 | 0,148 | 482 | 0,23003 |
| 14,973 | 541,0 | 541,3 | 99,67 | 99,94 | 0,151 | 0,148 | 483 | 0,2300302 |
| 14,827 | 540,9 | 541,3 | 100,60 | 101,10 | 0,151 | 0,148 | 484 | 0,2278133 |
| 14,871 | 540,9 | 541,2 | 100,16 | 100,73 | 0,151 | 0,148 | 485 | 0,2284813 |
| 14,826 | 540,9 | 541,2 | 100,65 | 100,96 | 0,151 | 0,148 | 486 | 0,2278133 |
| 14,999 | 540,9 | 541,2 | 99,51 | 99,84 | 0,151 | 0,148 | 487 | 0,2304705 |
| 14,998 | 540,8 | 541,2 | 99,41 | 99,67 | 0,151 | 0,148 | 488 | 0,2304705 |
| 14,721 | 540,9 | 541,2 | 101,32 | 101,77 | 0,151 | 0,148 | 489 | 0,2261029 |
| 14,823 | 540,9 | 541,2 | 100,84 | 101,40 | 0,151 | 0,148 | 490 | 0,2273682 |
| 14,921 | 541,0 | 541,3 | 100,68 | 100,84 | 0,151 | 0,148 | 491 | 0,2284807 |
| 14,893 | 541,1 | 541,3 | 101,01 | 101,37 | 0,151 | 0,148 | 492 | 0,2278132 |
| 14,907 | 541,2 | 541,4 | 101,09 | 101,18 | 0,151 | 0,148 | 493 | 0,2278137 |
| 14,805 | 541,3 | 541,6 | 101,70 | 102,17 | 0,151 | 0,148 | 494 | 0,2262497 |
| 14,894 | 541,5 | 541,7 | 100,95 | 100,96 | 0,151 | 0,148 | 495 | 0,2278137 |
| 14,782 | 541,5 | 541,8 | 101,30 | 101,80 | 0,151 | 0,148 | 496 | 0,226265 |
| 14,917 | 541,6 | 541,8 | 100,40 | 100,77 | 0,150 | 0,148 | 497 | 0,2284812 |
| 14,821 | 541,6 | 541,8 | 100,83 | 101,34 | 0,150 | 0,148 | 498 | 0,2271113 |
| 14,832 | 541,6 | 541,8 | 100,92 | 101,21 | 0,151 | 0,148 | 499 | 0,2273691 |
| 15,030 | 541,6 | 541,8 | 99,63 | 99,73 | 0,151 | 0,148 | 500 | 0,2304705 |
| 15,027 | 541,5 | 541,8 | 99,45 | 99,95 | 0,151 | 0,148 | 501 | 0,2304706 |

| | Outlet | Outlet | Average | Average | #1 | #2 | | |
|----------|---------|---------|--------------------|---------|----------|----------|------|-----------|
| Tunnel | Temp. | Temp. | 98,76 | 99,09 | System 1 | System 2 | | SQRT |
| Velocity | Meter 1 | Meter 2 | Proportional Rates | | Vol.Std. | Vol.Std. | | Delta-P |
| | | | PR1 | PR2 | | | Time | |
| Ft/Sec | Deg. R | Deg. R | % | % | (ft3) | (ft3) | min | (in H2O)2 |
| 16,165 | 540,9 | 541,6 | | | 0,151 | 0,148 | 0 | 0,2337495 |
| 15,826 | 541,0 | 541,7 | 105,69 | 105,71 | 0,151 | 0,147 | 1 | 0,2293668 |
| 16,016 | 541,1 | 541,7 | 105,95 | 106,43 | 0,151 | 0,148 | 2 | 0,2304696 |
| 15,981 | 541,1 | 541,7 | 109,94 | 110,31 | 0,150 | 0,148 | 3 | 0,2258001 |
| 15,707 | 541,1 | 541,7 | 106,64 | 107,17 | 0,150 | 0,148 | 4 | 0,2273672 |
| 15,613 | 541,2 | 541,8 | 104,87 | 105,51 | 0,150 | 0,148 | 5 | 0,2284802 |
| 15,705 | 541,3 | 541,9 | 103,71 | 104,05 | 0,150 | 0,148 | 6 | 0,2304697 |
| 15,800 | 541,4 | 541,9 | 102,94 | 103,34 | 0,150 | 0,148 | 7 | 0,232006 |
| 15,807 | 541,4 | 541,9 | 103,14 | 103,41 | 0,150 | 0,148 | 8 | 0,232006 |
| 15,860 | 541,5 | 542,0 | 103,03 | 103,05 | 0,151 | 0,148 | 9 | 0,2326612 |
| 15,871 | 541,5 | 542,1 | 102,93 | 103,19 | 0,151 | 0,147 | 10 | 0,2326609 |
| 15,643 | 541,6 | 542,1 | 104,27 | 104,69 | 0,150 | 0,148 | 11 | 0,229367 |
| 15,831 | 541,7 | 542,2 | 103,26 | 103,43 | 0,150 | 0,147 | 12 | 0,2320065 |
| 15,785 | 541,7 | 542,2 | 102,88 | 103,03 | 0,150 | 0,147 | 13 | 0,2320069 |
| 15,899 | 541,8 | 542,3 | 100,78 | 101,05 | 0,150 | 0,147 | 14 | 0,2352639 |
| 15,780 | 541,9 | 542,4 | 100,40 | 100,74 | 0,150 | 0,148 | 15 | 0,234831 |
| 15,580 | 542,0 | 542,5 | 100,92 | 101,56 | 0,150 | 0,148 | 16 | 0,2326615 |
| 15,813 | 542,1 | 542,5 | 98,99 | 99,46 | 0,150 | 0,148 | 17 | 0,2367678 |
| 15,656 | 542,1 | 542,5 | 99,48 | 100,20 | 0,150 | 0,148 | 18 | 0,2348313 |
| 15,579 | 542,2 | 542,6 | 100,08 | 100,44 | 0,150 | 0,148 | 19 | 0,2337492 |
| 15,731 | 542,2 | 542,7 | 98,73 | 99,06 | 0,150 | 0,148 | 20 | 0,2363391 |
| 15,676 | 542,3 | 542,7 | 98,92 | 99,38 | 0,150 | 0,148 | 21 | 0,2356937 |
| 15,547 | 542,3 | 542,7 | 99,80 | 100,08 | 0,150 | 0,148 | 22 | 0,2337487 |
| 15,546 | 542,2 | 542,7 | 99,77 | 100,46 | 0,150 | 0,148 | 23 | 0,2337487 |
| 15,562 | 542,1 | 542,7 | 99,48 | 99,77 | 0,150 | 0,148 | 24 | 0,2341389 |
| 15,629 | 542,1 | 542,7 | 98,96 | 99,19 | 0,150 | 0,147 | 25 | 0,2352631 |
| 15,629 | 542,1 | 542,7 | 98,98 | 99,50 | 0,150 | 0,147 | 26 | 0,2352638 |
| 15,603 | 542,0 | 542,6 | 99,44 | 99,42 | 0,150 | 0,148 | 27 | 0,2348308 |
| 15,621 | 542,0 | 542,6 | 99,13 | 99,48 | 0,151 | 0,148 | 28 | 0,2352639 |
| 15,619 | 542,0 | 542,6 | 98,93 | 99,32 | 0,150 | 0,148 | 29 | 0,2352635 |
| 15,614 | 542,0 | 542,6 | 98,93 | 99,23 | 0,150 | 0,147 | 30 | 0,2352632 |
| 15,405 | 542,0 | 542,5 | 100,44 | 100,61 | 0,150 | 0,147 | 31 | 0,2320063 |
| 15,466 | 542,0 | 542,5 | 99,77 | 100,44 | 0,150 | 0,148 | 32 | 0,2330959 |
| 15,374 | 541,9 | 542,5 | 100,56 | 101,10 | 0,150 | 0,148 | 33 | 0,2315672 |
| 15,398 | 541,9 | 542,5 | 100,28 | 100,53 | 0,150 | 0,148 | 34 | 0,2320053 |
| 15,590 | 541,9 | 542,5 | 99,12 | 99,52 | 0,150 | 0,147 | 35 | 0,2348312 |
| 15,526 | 542,0 | 542,5 | 99,72 | 100,17 | 0,150 | 0,148 | 36 | 0,2337486 |
| 15,610 | 542,0 | 542,5 | 98,89 | 99,07 | 0,150 | 0,148 | 37 | 0,2352627 |
| 15,384 | 541,9 | 542,5 | 100,60 | 101,00 | 0,150 | 0,147 | 38 | 0,2316403 |
| 15,524 | 541,9 | 542,4 | 99,68 | 99,89 | 0,150 | 0,148 | 39 | 0,2337487 |
| 15,603 | 541,9 | 542,4 | 99,08 | 99,39 | 0,150 | 0,148 | 40 | 0,2352632 |
| 15,576 | 541,8 | 542,4 | 99,18 | 99,44 | 0,150 | 0,148 | 41 | 0,2348301 |
| 15,332 | 541,8 | 542,4 | 100,76 | 101,12 | 0,150 | 0,148 | 42 | 0,2311292 |
| 15,609 | 541,8 | 542,4 | 98,90 | 99,11 | 0,150 | 0,148 | 43 | 0,2352631 |
| 15,462 | 541,8 | 542,4 | 99,80 | 100,02 | 0,150 | 0,147 | 44 | 0,233096 |
| 15,388 | 541,8 | 542,4 | 100,22 | 100,67 | 0,150 | 0,147 | 45 | 0,2320056 |
| 15,569 | 541,8 | 542,3 | 98,94 | 99,41 | 0,150 | 0,148 | 46 | 0,2348306 |
| 15,374 | 541,8 | 542,3 | 100,17 | 100,37 | 0,150 | 0,147 | 47 | 0,2320052 |
| 15,376 | 541,8 | 542,3 | 100,08 | 100,43 | 0,150 | 0,147 | 48 | 0,2320052 |
| 15,430 | 541,8 | 542,3 | 99,97 | 100,39 | 0,150 | 0,148 | 49 | 0,2326608 |
| 15,470 | 541,8 | 542,3 | 100,04 | 100,12 | 0,150 | 0,148 | 50 | 0,2330955 |
| 15,566 | 541,8 | 542,3 | 99,12 | 99,37 | 0,150 | 0,147 | 51 | 0,2348304 |
| 15,459 | 541,8 | 542,3 | 99,86 | 100,06 | 0,150 | 0,148 | 52 | 0,2330958 |
| 15,487 | 541,7 | 542,3 | 99,43 | 99,92 | 0,150 | 0,148 | 53 | 0,2337482 |
| 15,381 | 541,7 | 542,3 | 100,23 | 100,40 | 0,150 | 0,148 | 54 | 0,2320057 |
| 15,372 | 541,7 | 542,3 | 100,15 | 100,69 | 0,150 | 0,148 | 55 | 0,2320055 |
| 15,447 | 541,7 | 542,3 | 99,96 | 100,03 | 0,150 | 0,148 | 56 | 0,233096 |
| 15,438 | 541,7 | 542,3 | 99,69 | 100,11 | 0,150 | 0,148 | 57 | 0,2330959 |
| 15,366 | 541,7 | 542,2 | 100,02 | 100,53 | 0,150 | 0,148 | 58 | 0,2320481 |
| 15,639 | 541,7 | 542,2 | 98,15 | 98,49 | 0,150 | 0,148 | 59 | 0,2363387 |
| 15,542 | 541,7 | 542,2 | 98,89 | 98,85 | 0,150 | 0,147 | 60 | 0,2348304 |
| 15,311 | 541,7 | 542,2 | 100,25 | 100,41 | 0,150 | 0,147 | 61 | 0,2315668 |
| 15,565 | 541,7 | 542,2 | 98,65 | 99,03 | 0,150 | 0,148 | 62 | 0,2352626 |
| 15,476 | 541,7 | 542,2 | 99,48 | 99,83 | 0,150 | 0,148 | 63 | 0,233749 |

| | | | | | | | | |
|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 15,360 | 541,7 | 542,2 | 100,15 | 100,46 | 0,150 | 0,148 | 64 | 0,232052 |
| 15,400 | 541,7 | 542,2 | 99,82 | 100,17 | 0,150 | 0,148 | 65 | 0,2326606 |
| 15,573 | 541,7 | 542,1 | 98,79 | 99,16 | 0,150 | 0,148 | 66 | 0,2352625 |
| 15,538 | 541,7 | 542,1 | 98,91 | 99,31 | 0,150 | 0,148 | 67 | 0,2348298 |
| 15,330 | 541,6 | 542,1 | 100,46 | 100,65 | 0,150 | 0,148 | 68 | 0,2315675 |
| 15,423 | 541,6 | 542,1 | 99,62 | 99,95 | 0,150 | 0,148 | 69 | 0,233095 |
| 15,466 | 541,6 | 542,1 | 99,22 | 99,66 | 0,150 | 0,148 | 70 | 0,2337476 |
| 15,581 | 541,6 | 542,1 | 98,68 | 98,76 | 0,150 | 0,148 | 71 | 0,2355946 |
| 15,564 | 541,6 | 542,0 | 98,85 | 99,12 | 0,151 | 0,148 | 72 | 0,2352622 |
| 15,414 | 541,6 | 542,0 | 99,50 | 99,76 | 0,150 | 0,148 | 73 | 0,233095 |
| 15,288 | 541,5 | 542,0 | 100,44 | 100,69 | 0,150 | 0,147 | 74 | 0,2311279 |
| 15,456 | 541,5 | 542,0 | 99,26 | 99,67 | 0,150 | 0,148 | 75 | 0,2337472 |
| 15,530 | 541,5 | 542,0 | 98,73 | 99,34 | 0,150 | 0,148 | 76 | 0,2349054 |
| 15,529 | 541,5 | 542,0 | 99,10 | 99,12 | 0,151 | 0,148 | 77 | 0,2348297 |
| 15,453 | 541,5 | 541,9 | 99,23 | 99,79 | 0,151 | 0,148 | 78 | 0,2337472 |
| 15,536 | 541,5 | 541,9 | 98,97 | 99,17 | 0,150 | 0,148 | 79 | 0,2348292 |
| 15,439 | 541,5 | 541,9 | 99,62 | 99,94 | 0,151 | 0,148 | 80 | 0,2333624 |
| 15,528 | 541,5 | 541,9 | 98,70 | 99,19 | 0,150 | 0,148 | 81 | 0,2348295 |
| 15,558 | 541,4 | 541,9 | 98,71 | 98,87 | 0,150 | 0,148 | 82 | 0,2352618 |
| 15,396 | 541,3 | 541,9 | 99,81 | 100,18 | 0,150 | 0,148 | 83 | 0,2327027 |
| 15,416 | 541,3 | 541,8 | 99,84 | 100,13 | 0,151 | 0,148 | 84 | 0,2330954 |
| 15,383 | 541,3 | 541,8 | 99,78 | 100,32 | 0,151 | 0,148 | 85 | 0,2327092 |
| 15,433 | 541,3 | 541,8 | 99,56 | 99,72 | 0,151 | 0,148 | 86 | 0,2334467 |
| 15,518 | 541,3 | 541,8 | 98,74 | 99,11 | 0,150 | 0,148 | 87 | 0,2348298 |
| 15,316 | 541,3 | 541,7 | 100,23 | 100,79 | 0,150 | 0,148 | 88 | 0,2315962 |
| 15,553 | 541,3 | 541,8 | 98,80 | 99,11 | 0,150 | 0,148 | 89 | 0,2352619 |
| 15,539 | 541,3 | 541,7 | 98,57 | 99,25 | 0,151 | 0,148 | 90 | 0,2352622 |
| 15,539 | 541,3 | 541,8 | 98,58 | 98,81 | 0,150 | 0,148 | 91 | 0,2352621 |
| 15,405 | 541,2 | 541,7 | 99,62 | 99,84 | 0,150 | 0,148 | 92 | 0,2330951 |
| 15,388 | 541,2 | 541,7 | 99,46 | 99,70 | 0,150 | 0,148 | 93 | 0,2330943 |
| 15,559 | 541,2 | 541,7 | 98,35 | 99,00 | 0,150 | 0,148 | 94 | 0,2356919 |
| 15,426 | 541,2 | 541,6 | 99,18 | 99,52 | 0,150 | 0,148 | 95 | 0,2337466 |
| 15,598 | 541,2 | 541,6 | 98,14 | 98,53 | 0,151 | 0,148 | 96 | 0,2363372 |
| 15,381 | 541,1 | 541,6 | 99,54 | 99,69 | 0,151 | 0,148 | 97 | 0,2330937 |
| 15,421 | 541,1 | 541,6 | 99,21 | 99,34 | 0,151 | 0,148 | 98 | 0,2337467 |
| 15,415 | 541,1 | 541,6 | 99,25 | 99,70 | 0,151 | 0,148 | 99 | 0,2337469 |
| 15,506 | 541,1 | 541,5 | 98,55 | 98,72 | 0,151 | 0,148 | 100 | 0,2352612 |
| 15,341 | 541,0 | 541,5 | 99,61 | 99,84 | 0,151 | 0,148 | 101 | 0,2326587 |
| 15,505 | 541,0 | 541,4 | 98,49 | 98,70 | 0,151 | 0,148 | 102 | 0,2352621 |
| 15,355 | 540,9 | 541,4 | 99,27 | 99,65 | 0,151 | 0,148 | 103 | 0,233095 |
| 15,569 | 540,9 | 541,4 | 98,02 | 98,22 | 0,151 | 0,148 | 104 | 0,2363377 |
| 15,500 | 540,9 | 541,4 | 98,37 | 98,75 | 0,151 | 0,148 | 105 | 0,2352621 |
| 15,462 | 540,9 | 541,5 | 98,51 | 98,98 | 0,150 | 0,148 | 106 | 0,2348294 |
| 15,497 | 540,9 | 541,5 | 98,13 | 98,78 | 0,150 | 0,148 | 107 | 0,2352618 |
| 15,348 | 540,9 | 541,4 | 99,27 | 99,52 | 0,150 | 0,148 | 108 | 0,2330949 |
| 15,531 | 540,9 | 541,4 | 98,24 | 98,40 | 0,151 | 0,148 | 109 | 0,2356927 |
| 15,566 | 540,8 | 541,4 | 97,95 | 98,49 | 0,151 | 0,148 | 110 | 0,2363378 |
| 15,585 | 540,8 | 541,3 | 97,81 | 97,96 | 0,151 | 0,148 | 111 | 0,2367663 |
| 15,461 | 540,8 | 541,3 | 98,62 | 98,84 | 0,151 | 0,148 | 112 | 0,2348297 |
| 15,344 | 540,7 | 541,3 | 99,11 | 99,82 | 0,151 | 0,148 | 113 | 0,233098 |
| 15,558 | 540,7 | 541,3 | 97,77 | 98,15 | 0,150 | 0,148 | 114 | 0,2363371 |
| 15,552 | 540,7 | 541,3 | 97,89 | 98,19 | 0,150 | 0,148 | 115 | 0,2363371 |
| 15,506 | 540,7 | 541,3 | 98,23 | 98,46 | 0,151 | 0,148 | 116 | 0,2356918 |
| 15,481 | 540,7 | 541,2 | 98,22 | 98,56 | 0,151 | 0,148 | 117 | 0,2352616 |
| 15,454 | 540,6 | 541,2 | 98,44 | 98,85 | 0,150 | 0,148 | 118 | 0,2348291 |
| 15,545 | 540,6 | 541,2 | 97,89 | 98,13 | 0,151 | 0,148 | 119 | 0,2363373 |
| 15,268 | 540,6 | 541,1 | 99,74 | 100,08 | 0,151 | 0,148 | 120 | 0,2320042 |
| 15,378 | 540,6 | 541,1 | 99,02 | 99,21 | 0,151 | 0,148 | 121 | 0,2337466 |
| 15,508 | 540,6 | 541,1 | 98,04 | 98,50 | 0,151 | 0,148 | 122 | 0,235692 |
| 15,329 | 540,5 | 541,1 | 99,15 | 99,37 | 0,150 | 0,148 | 123 | 0,2330947 |
| 15,504 | 540,5 | 541,1 | 98,05 | 98,52 | 0,151 | 0,148 | 124 | 0,2356919 |
| 15,445 | 540,5 | 541,1 | 98,42 | 99,06 | 0,151 | 0,148 | 125 | 0,2348293 |
| 15,547 | 540,5 | 541,1 | 97,92 | 98,10 | 0,151 | 0,148 | 126 | 0,2363365 |
| 15,493 | 540,5 | 541,1 | 98,13 | 98,46 | 0,151 | 0,148 | 127 | 0,2356917 |
| 15,531 | 540,5 | 541,1 | 97,78 | 98,09 | 0,151 | 0,148 | 128 | 0,2363378 |
| 15,246 | 540,4 | 541,0 | 99,52 | 99,84 | 0,151 | 0,148 | 129 | 0,2320034 |
| 15,319 | 540,4 | 541,0 | 98,99 | 99,54 | 0,150 | 0,148 | 130 | 0,2330942 |
| 15,532 | 540,4 | 541,0 | 97,87 | 98,21 | 0,151 | 0,148 | 131 | 0,236337 |
| 15,487 | 540,3 | 541,0 | 98,19 | 98,36 | 0,151 | 0,148 | 132 | 0,2356918 |

| | | | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|-----|-----------|
| 15,459 | 540,3 | 540,9 | 98,25 | 98,50 | 0,151 | 0,148 | 133 | 0,235261 |
| 15,358 | 540,4 | 541,0 | 98,83 | 99,24 | 0,151 | 0,148 | 134 | 0,2337464 |
| 15,519 | 540,3 | 540,9 | 97,65 | 97,98 | 0,151 | 0,148 | 135 | 0,2363374 |
| 15,584 | 540,3 | 540,9 | 97,28 | 97,45 | 0,151 | 0,148 | 136 | 0,2374013 |
| 15,417 | 540,2 | 540,8 | 98,22 | 98,75 | 0,151 | 0,148 | 137 | 0,2348292 |
| 15,408 | 540,2 | 540,8 | 98,29 | 98,68 | 0,151 | 0,148 | 138 | 0,2348287 |
| 15,474 | 540,2 | 540,8 | 97,95 | 98,21 | 0,151 | 0,148 | 139 | 0,2356918 |
| 15,599 | 540,2 | 540,8 | 96,95 | 97,38 | 0,151 | 0,148 | 140 | 0,2377318 |
| 15,265 | 540,2 | 540,8 | 99,17 | 99,38 | 0,151 | 0,148 | 141 | 0,2326591 |
| 15,576 | 540,1 | 540,7 | 97,13 | 97,48 | 0,151 | 0,148 | 142 | 0,2374077 |
| 15,505 | 540,1 | 540,7 | 97,75 | 97,92 | 0,151 | 0,148 | 143 | 0,2363369 |
| 15,572 | 540,1 | 540,7 | 97,23 | 97,54 | 0,151 | 0,148 | 144 | 0,2374078 |
| 15,578 | 540,1 | 540,7 | 97,33 | 97,54 | 0,151 | 0,148 | 145 | 0,2374078 |
| 15,530 | 540,0 | 540,6 | 97,65 | 97,97 | 0,151 | 0,148 | 146 | 0,2367674 |
| 15,424 | 540,0 | 540,6 | 98,10 | 98,43 | 0,151 | 0,148 | 147 | 0,2352616 |
| 15,620 | 539,9 | 540,5 | 97,00 | 97,26 | 0,151 | 0,148 | 148 | 0,2382611 |
| 15,521 | 539,9 | 540,5 | 97,49 | 97,66 | 0,151 | 0,148 | 149 | 0,2367653 |
| 15,565 | 539,9 | 540,4 | 97,19 | 97,48 | 0,151 | 0,148 | 150 | 0,2374073 |
| 15,491 | 539,9 | 540,4 | 97,57 | 98,08 | 0,151 | 0,148 | 151 | 0,2363368 |
| 15,521 | 539,8 | 540,4 | 97,55 | 97,74 | 0,151 | 0,148 | 152 | 0,2367651 |
| 15,330 | 539,8 | 540,4 | 98,53 | 99,14 | 0,151 | 0,148 | 153 | 0,2340002 |
| 15,495 | 539,8 | 540,3 | 97,36 | 97,85 | 0,151 | 0,148 | 154 | 0,2363367 |
| 15,587 | 539,8 | 540,3 | 97,05 | 97,30 | 0,151 | 0,148 | 155 | 0,2378348 |
| 15,313 | 539,7 | 540,2 | 98,69 | 99,25 | 0,151 | 0,148 | 156 | 0,2337467 |
| 15,443 | 539,7 | 540,2 | 97,79 | 97,97 | 0,151 | 0,148 | 157 | 0,2357596 |
| 15,586 | 539,7 | 540,2 | 97,00 | 97,32 | 0,151 | 0,148 | 158 | 0,2378346 |
| 15,555 | 539,7 | 540,2 | 97,06 | 97,53 | 0,151 | 0,148 | 159 | 0,2374076 |
| 15,415 | 539,6 | 540,2 | 98,17 | 98,37 | 0,151 | 0,148 | 160 | 0,235261 |
| 15,486 | 539,6 | 540,2 | 97,58 | 97,85 | 0,151 | 0,148 | 161 | 0,2363374 |
| 15,479 | 539,6 | 540,1 | 97,50 | 97,92 | 0,151 | 0,148 | 162 | 0,2363375 |
| 15,480 | 539,6 | 540,1 | 97,55 | 97,69 | 0,151 | 0,148 | 163 | 0,2363372 |
| 15,437 | 539,6 | 540,1 | 97,76 | 98,11 | 0,151 | 0,148 | 164 | 0,2356909 |
| 15,394 | 539,6 | 540,1 | 98,22 | 98,67 | 0,151 | 0,148 | 165 | 0,234932 |
| 15,510 | 539,5 | 540,0 | 97,29 | 97,70 | 0,151 | 0,148 | 166 | 0,2367649 |
| 15,510 | 539,6 | 540,1 | 97,38 | 97,68 | 0,151 | 0,148 | 167 | 0,2367651 |
| 15,392 | 539,6 | 540,1 | 98,04 | 98,50 | 0,151 | 0,148 | 168 | 0,2348283 |
| 15,444 | 539,8 | 540,2 | 98,26 | 98,28 | 0,151 | 0,148 | 169 | 0,2352612 |
| 15,493 | 539,9 | 540,3 | 98,10 | 98,41 | 0,151 | 0,148 | 170 | 0,2356912 |
| 15,501 | 540,0 | 540,4 | 98,07 | 98,38 | 0,151 | 0,148 | 171 | 0,2356912 |
| 15,634 | 540,2 | 540,5 | 97,30 | 97,50 | 0,151 | 0,148 | 172 | 0,2378351 |
| 15,458 | 540,2 | 540,5 | 98,24 | 98,68 | 0,151 | 0,148 | 173 | 0,2352614 |
| 15,590 | 540,2 | 540,6 | 97,26 | 97,59 | 0,151 | 0,148 | 174 | 0,2374077 |
| 15,523 | 540,3 | 540,6 | 97,73 | 98,13 | 0,151 | 0,148 | 175 | 0,2363367 |
| 15,572 | 540,3 | 540,7 | 97,59 | 98,04 | 0,151 | 0,148 | 176 | 0,2367653 |
| 15,515 | 540,5 | 540,8 | 98,32 | 98,34 | 0,151 | 0,148 | 177 | 0,2356917 |
| 15,562 | 540,6 | 540,9 | 97,95 | 98,10 | 0,151 | 0,148 | 178 | 0,2363368 |
| 15,503 | 540,8 | 541,1 | 98,54 | 98,85 | 0,151 | 0,148 | 179 | 0,2352616 |
| 15,537 | 540,9 | 541,2 | 98,10 | 98,76 | 0,150 | 0,148 | 180 | 0,2356921 |
| 15,613 | 541,1 | 541,4 | 97,77 | 97,98 | 0,150 | 0,148 | 181 | 0,2367661 |
| 15,558 | 541,3 | 541,5 | 98,42 | 98,70 | 0,150 | 0,148 | 182 | 0,235692 |
| 15,606 | 541,5 | 541,7 | 97,99 | 98,50 | 0,150 | 0,148 | 183 | 0,2363375 |
| 15,647 | 541,6 | 541,9 | 97,93 | 98,51 | 0,150 | 0,148 | 184 | 0,2367668 |
| 15,572 | 541,8 | 542,0 | 98,41 | 98,79 | 0,150 | 0,148 | 185 | 0,2356874 |
| 15,652 | 542,0 | 542,2 | 97,72 | 98,19 | 0,150 | 0,148 | 186 | 0,2367672 |
| 15,759 | 542,2 | 542,4 | 97,40 | 97,48 | 0,150 | 0,147 | 187 | 0,2382629 |
| 15,706 | 542,4 | 542,6 | 97,70 | 98,02 | 0,150 | 0,147 | 188 | 0,2374038 |
| 15,809 | 542,6 | 542,8 | 96,99 | 97,45 | 0,150 | 0,147 | 189 | 0,2389016 |
| 15,640 | 542,7 | 543,0 | 98,06 | 98,45 | 0,150 | 0,147 | 190 | 0,2363396 |
| 15,747 | 542,9 | 543,2 | 97,64 | 98,02 | 0,150 | 0,147 | 191 | 0,237838 |
| 15,781 | 543,1 | 543,4 | 97,47 | 97,70 | 0,150 | 0,147 | 192 | 0,2382639 |
| 15,758 | 543,2 | 543,5 | 97,57 | 98,20 | 0,150 | 0,148 | 193 | 0,2378385 |
| 15,827 | 543,4 | 543,7 | 97,18 | 97,52 | 0,150 | 0,148 | 194 | 0,238903 |
| 15,695 | 543,6 | 543,9 | 98,02 | 98,41 | 0,150 | 0,147 | 195 | 0,2367694 |
| 15,736 | 543,8 | 544,1 | 97,67 | 98,02 | 0,150 | 0,147 | 196 | 0,237411 |
| 15,748 | 543,9 | 544,3 | 97,93 | 98,21 | 0,150 | 0,147 | 197 | 0,2374113 |
| 15,848 | 544,1 | 544,4 | 97,35 | 97,60 | 0,150 | 0,147 | 198 | 0,2388949 |
| 15,884 | 544,2 | 544,6 | 97,33 | 97,49 | 0,150 | 0,147 | 199 | 0,239328 |
| 15,694 | 544,4 | 544,8 | 97,91 | 98,16 | 0,150 | 0,147 | 200 | 0,2367701 |
| 15,676 | 544,5 | 544,9 | 97,66 | 97,80 | 0,150 | 0,147 | 201 | 0,2367707 |

| | | | | | | | | |
|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 15,654 | 544,5 | 544,9 | 97,62 | 97,84 | 0,150 | 0,147 | 202 | 0,2367712 |
| 15,618 | 544,5 | 544,9 | 97,73 | 98,09 | 0,150 | 0,147 | 203 | 0,2363425 |
| 15,634 | 544,4 | 544,8 | 97,66 | 97,94 | 0,150 | 0,147 | 204 | 0,2367711 |
| 15,550 | 544,3 | 544,8 | 97,92 | 98,25 | 0,150 | 0,147 | 205 | 0,2356793 |
| 15,716 | 544,1 | 544,7 | 96,93 | 97,29 | 0,150 | 0,147 | 206 | 0,2382665 |
| 15,585 | 544,0 | 544,6 | 97,64 | 98,00 | 0,150 | 0,147 | 207 | 0,2363431 |
| 15,534 | 543,9 | 544,5 | 97,89 | 97,94 | 0,150 | 0,147 | 208 | 0,2356975 |
| 15,617 | 543,9 | 544,5 | 97,51 | 97,73 | 0,150 | 0,147 | 209 | 0,2367707 |
| 15,530 | 543,9 | 544,4 | 98,14 | 98,69 | 0,150 | 0,147 | 210 | 0,2352667 |
| 15,549 | 543,9 | 544,5 | 98,52 | 98,75 | 0,150 | 0,147 | 211 | 0,2352665 |
| 15,665 | 544,0 | 544,6 | 97,84 | 98,09 | 0,150 | 0,147 | 212 | 0,2367711 |
| 15,579 | 544,1 | 544,7 | 98,52 | 98,80 | 0,150 | 0,147 | 213 | 0,2352672 |
| 15,414 | 544,3 | 544,8 | 99,58 | 99,78 | 0,150 | 0,147 | 214 | 0,2326648 |
| 15,620 | 544,5 | 544,9 | 98,22 | 98,47 | 0,150 | 0,147 | 215 | 0,2356984 |
| 15,670 | 544,6 | 545,0 | 98,17 | 98,36 | 0,150 | 0,147 | 216 | 0,2363432 |
| 15,684 | 544,8 | 545,2 | 98,11 | 98,49 | 0,150 | 0,147 | 217 | 0,2363433 |
| 15,402 | 545,0 | 545,4 | 100,09 | 100,60 | 0,150 | 0,147 | 218 | 0,2320098 |
| 15,632 | 545,2 | 545,5 | 98,90 | 99,15 | 0,150 | 0,147 | 219 | 0,2352676 |
| 15,697 | 545,3 | 545,7 | 98,27 | 98,84 | 0,150 | 0,147 | 220 | 0,236344 |
| 15,605 | 545,5 | 545,8 | 98,62 | 99,04 | 0,150 | 0,147 | 221 | 0,2352676 |
| 15,555 | 545,6 | 545,9 | 98,65 | 98,97 | 0,150 | 0,147 | 222 | 0,2348356 |
| 15,566 | 545,6 | 546,0 | 98,47 | 98,98 | 0,150 | 0,147 | 223 | 0,2352679 |
| 15,555 | 545,5 | 545,9 | 98,46 | 98,77 | 0,150 | 0,147 | 224 | 0,2352688 |
| 15,738 | 545,4 | 545,9 | 97,06 | 97,35 | 0,150 | 0,147 | 225 | 0,2382685 |
| 15,434 | 545,3 | 545,8 | 99,02 | 99,29 | 0,150 | 0,147 | 226 | 0,2337541 |
| 15,501 | 545,2 | 545,7 | 98,45 | 98,84 | 0,150 | 0,147 | 227 | 0,2348362 |
| 15,424 | 545,1 | 545,7 | 98,77 | 98,92 | 0,150 | 0,147 | 228 | 0,2337535 |
| 15,550 | 545,0 | 545,6 | 97,98 | 98,44 | 0,150 | 0,147 | 229 | 0,2356992 |
| 15,542 | 544,9 | 545,5 | 98,12 | 98,22 | 0,150 | 0,147 | 230 | 0,2356987 |
| 15,542 | 544,8 | 545,4 | 98,16 | 98,22 | 0,150 | 0,147 | 231 | 0,2356988 |
| 15,502 | 544,7 | 545,3 | 98,09 | 98,68 | 0,150 | 0,147 | 232 | 0,2352681 |
| 15,254 | 544,6 | 545,2 | 99,88 | 99,75 | 0,150 | 0,147 | 233 | 0,2315733 |
| 15,482 | 544,6 | 545,2 | 98,42 | 98,76 | 0,150 | 0,147 | 234 | 0,2348362 |
| 15,431 | 544,6 | 545,2 | 99,05 | 99,28 | 0,150 | 0,147 | 235 | 0,233754 |
| 15,517 | 544,7 | 545,2 | 98,71 | 99,04 | 0,150 | 0,147 | 236 | 0,2348361 |
| 15,341 | 544,8 | 545,3 | 99,97 | 100,19 | 0,150 | 0,147 | 237 | 0,2320103 |
| 15,405 | 545,0 | 545,4 | 99,79 | 99,84 | 0,150 | 0,147 | 238 | 0,232666 |
| 15,554 | 545,2 | 545,6 | 98,86 | 98,97 | 0,150 | 0,147 | 239 | 0,2348364 |
| 15,601 | 545,3 | 545,7 | 98,67 | 99,06 | 0,150 | 0,147 | 240 | 0,2352687 |
| 15,395 | 545,5 | 545,9 | 100,00 | 100,48 | 0,150 | 0,147 | 241 | 0,2320106 |
| 15,638 | 545,7 | 546,0 | 98,65 | 99,03 | 0,150 | 0,147 | 242 | 0,2356989 |
| 15,593 | 545,8 | 546,2 | 98,53 | 98,78 | 0,150 | 0,147 | 243 | 0,2352687 |
| 15,568 | 545,9 | 546,2 | 98,43 | 98,86 | 0,150 | 0,147 | 244 | 0,2352691 |
| 15,621 | 545,9 | 546,3 | 97,86 | 98,22 | 0,150 | 0,147 | 245 | 0,2363451 |
| 15,537 | 545,8 | 546,2 | 98,24 | 98,51 | 0,150 | 0,147 | 246 | 0,2352692 |
| 15,315 | 545,7 | 546,2 | 99,32 | 99,76 | 0,150 | 0,147 | 247 | 0,2320118 |
| 15,421 | 545,6 | 546,1 | 98,50 | 98,87 | 0,150 | 0,147 | 248 | 0,2337577 |
| 15,548 | 545,5 | 546,1 | 97,53 | 98,07 | 0,149 | 0,147 | 249 | 0,2356999 |
| 15,482 | 545,4 | 546,0 | 98,14 | 98,28 | 0,150 | 0,147 | 250 | 0,2348366 |
| 15,506 | 545,3 | 545,9 | 97,80 | 98,07 | 0,150 | 0,147 | 251 | 0,2352687 |
| 15,399 | 545,2 | 545,8 | 98,45 | 98,82 | 0,150 | 0,147 | 252 | 0,2337548 |
| 15,400 | 545,1 | 545,7 | 98,33 | 98,99 | 0,150 | 0,147 | 253 | 0,233754 |
| 15,528 | 545,0 | 545,6 | 97,57 | 97,84 | 0,150 | 0,147 | 254 | 0,2356994 |
| 15,393 | 545,0 | 545,6 | 98,32 | 98,93 | 0,150 | 0,147 | 255 | 0,2337546 |
| 15,349 | 544,9 | 545,5 | 98,58 | 99,09 | 0,150 | 0,147 | 256 | 0,2331018 |
| 15,277 | 544,8 | 545,4 | 99,08 | 99,33 | 0,150 | 0,147 | 257 | 0,232011 |
| 15,326 | 544,8 | 545,4 | 98,93 | 99,29 | 0,150 | 0,147 | 258 | 0,2326661 |
| 15,534 | 544,8 | 545,4 | 97,81 | 98,40 | 0,150 | 0,147 | 259 | 0,235452 |
| 15,561 | 544,9 | 545,5 | 98,02 | 98,07 | 0,150 | 0,147 | 260 | 0,2356988 |
| 15,653 | 545,0 | 545,5 | 97,56 | 97,89 | 0,150 | 0,147 | 261 | 0,2367733 |
| 15,402 | 545,2 | 545,6 | 99,26 | 99,52 | 0,150 | 0,147 | 262 | 0,2326664 |
| 15,581 | 545,3 | 545,8 | 98,16 | 98,37 | 0,149 | 0,147 | 263 | 0,2352688 |
| 15,358 | 545,5 | 545,9 | 99,91 | 100,37 | 0,149 | 0,147 | 264 | 0,231573 |
| 15,517 | 545,7 | 546,1 | 99,01 | 99,44 | 0,149 | 0,147 | 265 | 0,2337548 |
| 15,568 | 545,9 | 546,3 | 98,39 | 98,87 | 0,149 | 0,147 | 266 | 0,2348374 |
| 15,404 | 546,0 | 546,4 | 99,33 | 99,45 | 0,149 | 0,147 | 267 | 0,2326689 |
| 15,585 | 546,1 | 546,4 | 97,88 | 98,06 | 0,149 | 0,147 | 268 | 0,2357 |
| 15,443 | 546,0 | 546,4 | 98,58 | 99,04 | 0,149 | 0,147 | 269 | 0,2337586 |
| 15,531 | 546,0 | 546,4 | 97,87 | 98,02 | 0,149 | 0,147 | 270 | 0,2352693 |

| | | | | | | | | |
|--------|-------|-------|-------|--------|-------|-------|-----|-----------|
| 15,378 | 545,9 | 546,3 | 98,68 | 99,11 | 0,149 | 0,147 | 271 | 0,2331018 |
| 15,413 | 545,8 | 546,3 | 98,38 | 98,75 | 0,149 | 0,147 | 272 | 0,2337542 |
| 15,544 | 545,7 | 546,2 | 97,57 | 98,02 | 0,149 | 0,147 | 273 | 0,2356996 |
| 15,504 | 545,6 | 546,1 | 97,77 | 98,35 | 0,149 | 0,147 | 274 | 0,2352693 |
| 15,332 | 545,5 | 546,1 | 98,90 | 99,29 | 0,150 | 0,147 | 275 | 0,232667 |
| 15,469 | 545,4 | 546,0 | 98,02 | 98,30 | 0,150 | 0,147 | 276 | 0,234837 |
| 15,352 | 545,3 | 545,9 | 98,68 | 99,00 | 0,150 | 0,147 | 277 | 0,2331019 |
| 15,393 | 545,2 | 545,8 | 98,35 | 98,52 | 0,150 | 0,147 | 278 | 0,2337546 |
| 15,342 | 545,1 | 545,7 | 98,62 | 98,98 | 0,150 | 0,147 | 279 | 0,2331016 |
| 15,217 | 545,0 | 545,7 | 99,49 | 99,92 | 0,150 | 0,147 | 280 | 0,2311351 |
| 15,319 | 545,0 | 545,6 | 98,88 | 99,19 | 0,150 | 0,147 | 281 | 0,2326664 |
| 15,485 | 544,9 | 545,6 | 98,03 | 97,98 | 0,150 | 0,147 | 282 | 0,235269 |
| 15,565 | 544,9 | 545,5 | 97,51 | 97,78 | 0,150 | 0,147 | 283 | 0,2363445 |
| 15,275 | 545,0 | 545,5 | 99,60 | 100,01 | 0,150 | 0,147 | 284 | 0,2315733 |
| 15,322 | 545,1 | 545,6 | 99,36 | 99,78 | 0,150 | 0,147 | 285 | 0,232093 |
| 15,404 | 545,2 | 545,7 | 99,10 | 99,42 | 0,150 | 0,147 | 286 | 0,2331016 |
| 15,333 | 545,4 | 545,8 | 99,81 | 100,35 | 0,150 | 0,147 | 287 | 0,2315725 |
| 15,489 | 545,5 | 545,9 | 98,93 | 99,19 | 0,149 | 0,147 | 288 | 0,2337544 |
| 15,577 | 545,7 | 546,1 | 98,80 | 99,05 | 0,150 | 0,147 | 289 | 0,2348367 |
| 15,631 | 545,9 | 546,2 | 98,27 | 98,57 | 0,150 | 0,147 | 290 | 0,2356831 |
| 15,553 | 546,1 | 546,4 | 98,50 | 99,05 | 0,150 | 0,147 | 291 | 0,2348365 |
| 15,565 | 546,1 | 546,5 | 98,23 | 98,72 | 0,150 | 0,147 | 292 | 0,2352695 |
| 15,305 | 546,1 | 546,5 | 99,67 | 99,86 | 0,150 | 0,147 | 293 | 0,2315735 |
| 15,535 | 546,1 | 546,5 | 98,02 | 98,31 | 0,150 | 0,147 | 294 | 0,2352693 |
| 15,525 | 546,0 | 546,5 | 97,94 | 98,15 | 0,150 | 0,147 | 295 | 0,2352694 |
| 15,547 | 546,0 | 546,4 | 97,75 | 97,99 | 0,150 | 0,147 | 296 | 0,2356996 |
| 15,289 | 545,9 | 546,4 | 99,31 | 99,52 | 0,150 | 0,147 | 297 | 0,2318803 |
| 15,407 | 545,8 | 546,3 | 98,74 | 98,82 | 0,150 | 0,147 | 298 | 0,2337552 |
| 15,402 | 545,8 | 546,2 | 98,47 | 98,61 | 0,150 | 0,147 | 299 | 0,233754 |
| 15,473 | 545,7 | 546,2 | 97,94 | 98,26 | 0,150 | 0,147 | 300 | 0,2348374 |
| 15,497 | 545,6 | 546,1 | 97,73 | 98,11 | 0,150 | 0,147 | 301 | 0,2352693 |
| 15,525 | 545,5 | 546,0 | 97,68 | 97,92 | 0,150 | 0,147 | 302 | 0,2356992 |
| 15,491 | 545,5 | 546,0 | 97,84 | 98,19 | 0,150 | 0,147 | 303 | 0,2352684 |
| 15,516 | 545,4 | 545,9 | 97,63 | 98,01 | 0,150 | 0,147 | 304 | 0,235699 |
| 15,388 | 545,3 | 545,9 | 98,48 | 98,94 | 0,150 | 0,147 | 305 | 0,2337543 |
| 15,516 | 545,3 | 545,8 | 97,64 | 97,76 | 0,150 | 0,147 | 306 | 0,2356994 |
| 15,512 | 545,2 | 545,7 | 97,65 | 98,09 | 0,150 | 0,147 | 307 | 0,2356992 |
| 15,386 | 545,2 | 545,7 | 98,33 | 98,78 | 0,150 | 0,147 | 308 | 0,2337539 |
| 15,513 | 545,1 | 545,6 | 97,77 | 97,88 | 0,150 | 0,147 | 309 | 0,2356995 |
| 15,452 | 545,1 | 545,6 | 97,83 | 98,46 | 0,150 | 0,147 | 310 | 0,2348333 |
| 15,339 | 545,0 | 545,5 | 98,85 | 99,15 | 0,150 | 0,147 | 311 | 0,2331014 |
| 15,315 | 545,0 | 545,5 | 99,00 | 99,18 | 0,150 | 0,147 | 312 | 0,2326662 |
| 15,328 | 545,0 | 545,5 | 98,86 | 99,33 | 0,150 | 0,147 | 313 | 0,232666 |
| 15,277 | 545,1 | 545,6 | 99,73 | 100,13 | 0,150 | 0,147 | 314 | 0,2315756 |
| 15,287 | 545,2 | 545,6 | 99,75 | 100,01 | 0,150 | 0,147 | 315 | 0,2315727 |
| 15,331 | 545,3 | 545,7 | 99,36 | 100,09 | 0,150 | 0,147 | 316 | 0,232011 |
| 15,468 | 545,5 | 545,9 | 98,92 | 99,17 | 0,150 | 0,147 | 317 | 0,2337538 |
| 15,612 | 545,7 | 546,0 | 98,23 | 98,38 | 0,150 | 0,147 | 318 | 0,2356994 |
| 15,547 | 545,8 | 546,1 | 98,28 | 98,92 | 0,150 | 0,147 | 319 | 0,2348359 |
| 15,342 | 546,0 | 546,3 | 99,60 | 99,95 | 0,149 | 0,147 | 320 | 0,2320116 |
| 15,616 | 546,1 | 546,3 | 97,65 | 98,13 | 0,150 | 0,147 | 321 | 0,236345 |
| 15,535 | 546,0 | 546,4 | 98,13 | 98,30 | 0,150 | 0,147 | 322 | 0,2352691 |
| 15,497 | 546,0 | 546,4 | 98,09 | 98,34 | 0,150 | 0,147 | 323 | 0,2348367 |
| 15,491 | 546,0 | 546,3 | 98,14 | 98,51 | 0,150 | 0,147 | 324 | 0,2348365 |
| 15,542 | 545,9 | 546,3 | 97,84 | 97,91 | 0,150 | 0,147 | 325 | 0,2356996 |
| 15,338 | 545,8 | 546,2 | 99,05 | 99,25 | 0,150 | 0,147 | 326 | 0,2326668 |
| 15,403 | 545,8 | 546,2 | 98,59 | 98,92 | 0,150 | 0,147 | 327 | 0,2337545 |
| 15,568 | 545,7 | 546,1 | 97,66 | 97,68 | 0,150 | 0,147 | 328 | 0,2363447 |
| 15,354 | 545,6 | 546,1 | 98,76 | 99,12 | 0,150 | 0,147 | 329 | 0,2330974 |
| 15,494 | 545,5 | 546,0 | 97,85 | 98,19 | 0,150 | 0,147 | 330 | 0,2352694 |
| 15,523 | 545,5 | 546,0 | 97,74 | 97,94 | 0,150 | 0,147 | 331 | 0,2356941 |
| 15,462 | 545,4 | 545,9 | 98,12 | 98,34 | 0,150 | 0,147 | 332 | 0,2348366 |
| 15,516 | 545,4 | 545,9 | 97,72 | 97,96 | 0,150 | 0,147 | 333 | 0,2356989 |
| 15,517 | 545,3 | 545,8 | 97,67 | 97,88 | 0,150 | 0,147 | 334 | 0,2356974 |
| 15,387 | 545,3 | 545,8 | 98,40 | 98,86 | 0,150 | 0,147 | 335 | 0,233754 |
| 15,387 | 545,2 | 545,7 | 98,51 | 98,69 | 0,150 | 0,147 | 336 | 0,2337808 |
| 15,346 | 545,2 | 545,7 | 99,01 | 98,97 | 0,150 | 0,147 | 337 | 0,2331011 |
| 15,244 | 545,1 | 545,7 | 99,70 | 99,81 | 0,150 | 0,147 | 338 | 0,2315724 |
| 15,509 | 545,1 | 545,6 | 97,70 | 98,18 | 0,150 | 0,147 | 339 | 0,2356986 |

| | | | | | | | | |
|--------|-------|-------|--------|--------|-------|-------|-----|-----------|
| 15,549 | 545,1 | 545,6 | 97,46 | 97,57 | 0,150 | 0,147 | 340 | 0,2363351 |
| 15,335 | 545,0 | 545,5 | 98,80 | 99,20 | 0,150 | 0,147 | 341 | 0,2331013 |
| 15,463 | 545,0 | 545,5 | 98,06 | 98,23 | 0,150 | 0,147 | 342 | 0,2350544 |
| 15,449 | 544,9 | 545,4 | 98,04 | 98,25 | 0,150 | 0,147 | 343 | 0,2348363 |
| 15,511 | 544,9 | 545,4 | 97,77 | 97,97 | 0,150 | 0,147 | 344 | 0,2356987 |
| 15,466 | 544,9 | 545,4 | 98,15 | 98,48 | 0,150 | 0,147 | 345 | 0,2348393 |
| 15,483 | 545,0 | 545,5 | 98,28 | 98,42 | 0,150 | 0,147 | 346 | 0,2348365 |
| 15,320 | 545,1 | 545,6 | 99,47 | 100,11 | 0,150 | 0,147 | 347 | 0,2320106 |
| 15,377 | 545,3 | 545,7 | 99,36 | 99,87 | 0,150 | 0,147 | 348 | 0,2326736 |
| 15,351 | 545,5 | 545,8 | 99,72 | 100,11 | 0,150 | 0,147 | 349 | 0,2320109 |
| 15,527 | 545,6 | 546,0 | 98,43 | 98,66 | 0,150 | 0,147 | 350 | 0,2348356 |
| 15,512 | 545,8 | 546,1 | 98,39 | 98,72 | 0,150 | 0,147 | 351 | 0,2348358 |
| 15,386 | 545,8 | 546,2 | 98,99 | 99,34 | 0,150 | 0,147 | 352 | 0,2331012 |
| 15,349 | 545,9 | 546,2 | 99,11 | 99,35 | 0,150 | 0,147 | 353 | 0,2326659 |
| 15,414 | 545,8 | 546,2 | 98,57 | 99,02 | 0,150 | 0,147 | 354 | 0,2337541 |
| 15,263 | 545,8 | 546,1 | 99,63 | 100,05 | 0,150 | 0,147 | 355 | 0,2315729 |
| 15,572 | 545,7 | 546,1 | 97,50 | 97,74 | 0,150 | 0,147 | 356 | 0,2363445 |
| 15,466 | 545,6 | 546,0 | 98,25 | 98,47 | 0,150 | 0,147 | 357 | 0,2348362 |
| 15,391 | 545,5 | 546,0 | 98,52 | 98,85 | 0,150 | 0,147 | 358 | 0,2337538 |
| 15,515 | 545,5 | 545,9 | 97,74 | 98,09 | 0,150 | 0,147 | 359 | 0,2356988 |
| 15,455 | 545,4 | 545,8 | 98,04 | 98,50 | 0,150 | 0,147 | 360 | 0,2348362 |
| 15,508 | 545,3 | 545,8 | 97,61 | 98,04 | 0,150 | 0,147 | 361 | 0,2356984 |
| 15,481 | 545,3 | 545,7 | 97,70 | 98,10 | 0,150 | 0,147 | 362 | 0,2352686 |
| 15,477 | 545,2 | 545,7 | 97,84 | 98,28 | 0,150 | 0,147 | 363 | 0,2352682 |
| 15,303 | 545,2 | 545,6 | 98,93 | 99,36 | 0,150 | 0,147 | 364 | 0,2326657 |
| 15,329 | 545,1 | 545,6 | 98,78 | 99,00 | 0,150 | 0,147 | 365 | 0,2331007 |
| 15,370 | 545,1 | 545,5 | 98,37 | 98,73 | 0,150 | 0,147 | 366 | 0,233737 |
| 15,440 | 545,0 | 545,5 | 98,07 | 98,24 | 0,150 | 0,147 | 367 | 0,2348313 |
| 15,438 | 545,0 | 545,4 | 98,02 | 98,21 | 0,150 | 0,147 | 368 | 0,2348358 |
| 15,437 | 544,9 | 545,4 | 98,09 | 98,24 | 0,150 | 0,147 | 369 | 0,2348355 |
| 15,292 | 544,9 | 545,3 | 98,95 | 99,20 | 0,150 | 0,147 | 370 | 0,2326654 |
| 15,534 | 544,8 | 545,3 | 97,45 | 97,50 | 0,150 | 0,147 | 371 | 0,2363439 |
| 15,219 | 544,8 | 545,2 | 99,19 | 99,72 | 0,150 | 0,147 | 372 | 0,2315721 |
| 15,217 | 544,7 | 545,2 | 99,20 | 99,76 | 0,150 | 0,147 | 373 | 0,2315717 |
| 15,246 | 544,7 | 545,2 | 99,27 | 99,58 | 0,150 | 0,147 | 374 | 0,2320102 |
| 15,220 | 544,6 | 545,1 | 99,41 | 99,73 | 0,150 | 0,147 | 375 | 0,2315719 |
| 15,329 | 544,6 | 545,1 | 98,84 | 99,33 | 0,150 | 0,147 | 376 | 0,2331003 |
| 15,392 | 544,7 | 545,2 | 98,68 | 98,89 | 0,150 | 0,147 | 377 | 0,2337525 |
| 15,410 | 544,8 | 545,2 | 98,85 | 99,15 | 0,150 | 0,147 | 378 | 0,2337528 |
| 15,503 | 544,9 | 545,3 | 98,51 | 98,39 | 0,150 | 0,147 | 379 | 0,2348346 |
| 15,412 | 545,1 | 545,4 | 99,26 | 99,61 | 0,150 | 0,147 | 380 | 0,2331004 |
| 15,535 | 545,3 | 545,6 | 98,53 | 98,77 | 0,150 | 0,147 | 381 | 0,2348347 |
| 15,232 | 545,4 | 545,7 | 100,28 | 100,75 | 0,150 | 0,147 | 382 | 0,2304739 |
| 15,285 | 545,5 | 545,8 | 99,74 | 99,88 | 0,150 | 0,147 | 383 | 0,2315721 |
| 15,347 | 545,5 | 545,8 | 99,19 | 99,46 | 0,150 | 0,147 | 384 | 0,2326708 |
| 15,403 | 545,5 | 545,8 | 98,53 | 98,86 | 0,150 | 0,147 | 385 | 0,2337533 |
| 15,354 | 545,4 | 545,8 | 98,95 | 99,20 | 0,150 | 0,147 | 386 | 0,2331002 |
| 15,519 | 545,4 | 545,8 | 97,74 | 98,23 | 0,150 | 0,147 | 387 | 0,2356983 |
| 15,454 | 545,3 | 545,7 | 98,01 | 98,55 | 0,150 | 0,147 | 388 | 0,2348355 |
| 15,509 | 545,2 | 545,6 | 97,67 | 97,99 | 0,150 | 0,147 | 389 | 0,2356983 |
| 15,476 | 545,2 | 545,6 | 97,91 | 98,28 | 0,150 | 0,147 | 390 | 0,2352682 |
| 15,443 | 545,1 | 545,5 | 97,91 | 98,40 | 0,150 | 0,147 | 391 | 0,2348357 |
| 15,535 | 545,0 | 545,5 | 97,52 | 97,85 | 0,150 | 0,147 | 392 | 0,2362953 |
| 15,252 | 545,0 | 545,4 | 99,17 | 99,59 | 0,150 | 0,147 | 393 | 0,2320101 |
| 15,464 | 544,9 | 545,4 | 97,82 | 98,12 | 0,150 | 0,147 | 394 | 0,2352676 |
| 15,290 | 544,8 | 545,3 | 98,87 | 99,44 | 0,150 | 0,147 | 395 | 0,2326655 |
| 15,244 | 544,8 | 545,3 | 99,12 | 99,60 | 0,150 | 0,148 | 396 | 0,2320101 |
| 15,245 | 544,7 | 545,2 | 99,16 | 99,38 | 0,150 | 0,147 | 397 | 0,2320099 |
| 15,239 | 544,7 | 545,2 | 99,19 | 99,24 | 0,150 | 0,147 | 398 | 0,2320099 |
| 15,300 | 544,6 | 545,1 | 98,73 | 98,97 | 0,150 | 0,147 | 399 | 0,2329496 |
| 15,525 | 544,6 | 545,1 | 97,39 | 97,60 | 0,150 | 0,147 | 400 | 0,2363439 |

APPENDIX 3: Calibration data

APPENDIX 4: Unit pre burn

| Time minute | Flue | Room | weight | right | back | bottom | top | left |
|-------------|------|------|--------|-------|------|--------|-----|------|
| 0 | 71 | 72 | 8,80 | 71 | 71 | 71 | 72 | 71 |
| 1 | 51 | 72 | 8,70 | 71 | 71 | 71 | 77 | 72 |
| 2 | 276 | 71 | 8,50 | 75 | 71 | 71 | 94 | 84 |
| 3 | 338 | 71 | 8,30 | 81 | 72 | 71 | 125 | 96 |
| 4 | 405 | 71 | 8,10 | 88 | 74 | 71 | 162 | 105 |
| 5 | 474 | 72 | 7,80 | 97 | 78 | 71 | 221 | 122 |
| 6 | 493 | 72 | 7,60 | 107 | 84 | 71 | 280 | 135 |
| 7 | 512 | 72 | 7,50 | 117 | 91 | 71 | 345 | 150 |
| 8 | 515 | 72 | 7,10 | 128 | 99 | 71 | 398 | 164 |
| 9 | 552 | 72 | 6,90 | 139 | 109 | 71 | 452 | 179 |
| 10 | 579 | 72 | 6,60 | 151 | 119 | 71 | 501 | 193 |
| 11 | 570 | 72 | 6,40 | 165 | 130 | 72 | 534 | 206 |
| 12 | 597 | 73 | 6,20 | 179 | 142 | 73 | 548 | 220 |
| 13 | 548 | 73 | 6,00 | 194 | 152 | 74 | 560 | 233 |
| 14 | 541 | 73 | 5,80 | 209 | 161 | 75 | 564 | 245 |
| 15 | 547 | 71 | 5,60 | 224 | 169 | 77 | 568 | 255 |
| 16 | 561 | 72 | 5,40 | 238 | 177 | 79 | 577 | 266 |
| 17 | 563 | 72 | 5,20 | 252 | 184 | 81 | 586 | 275 |
| 18 | 552 | 72 | 5,00 | 266 | 192 | 84 | 594 | 286 |
| 19 | 568 | 73 | 4,80 | 279 | 199 | 87 | 601 | 296 |
| 20 | 575 | 73 | 4,60 | 293 | 206 | 90 | 612 | 305 |
| 21 | 580 | 74 | 4,40 | 305 | 214 | 94 | 621 | 315 |
| 22 | 587 | 74 | 4,20 | 318 | 221 | 97 | 629 | 324 |
| 23 | 581 | 74 | 4,10 | 331 | 228 | 101 | 633 | 332 |
| 24 | 571 | 74 | 3,90 | 342 | 235 | 105 | 634 | 340 |
| 25 | 562 | 75 | 3,70 | 353 | 242 | 109 | 631 | 348 |
| 26 | 557 | 73 | 3,60 | 363 | 249 | 113 | 626 | 354 |
| 27 | 551 | 74 | 3,50 | 371 | 256 | 117 | 622 | 360 |
| 28 | 552 | 75 | 3,30 | 379 | 263 | 121 | 619 | 365 |
| 29 | 548 | 74 | 3,20 | 386 | 269 | 126 | 616 | 372 |
| 30 | 543 | 74 | 3,10 | 391 | 275 | 130 | 611 | 377 |
| 31 | 539 | 74 | 2,90 | 396 | 281 | 135 | 609 | 383 |
| 32 | 541 | 75 | 2,109 | 403 | 288 | 139 | 596 | 388 |
| 33 | 536 | 75 | 2,159 | 407 | 295 | 144 | 583 | 389 |
| 34 | 461 | 75 | 2,189 | 408 | 302 | 149 | 559 | 380 |
| 35 | 497 | 75 | 2,129 | 408 | 307 | 154 | 553 | 391 |
| 36 | 517 | 75 | 2,109 | 408 | 311 | 159 | 555 | 391 |
| 37 | 531 | 75 | 2,089 | 406 | 314 | 163 | 563 | 390 |
| 38 | 540 | 75 | 2,069 | 403 | 317 | 167 | 570 | 391 |
| 39 | 559 | 75 | 2,049 | 402 | 318 | 170 | 584 | 392 |
| 40 | 569 | 75 | 2,029 | 401 | 320 | 173 | 599 | 393 |
| 41 | 565 | 75 | 2,009 | 400 | 321 | 175 | 609 | 394 |
| 42 | 566 | 75 | 1,989 | 400 | 323 | 178 | 615 | 395 |
| 43 | 531 | 75 | 1,969 | 401 | 324 | 180 | 609 | 396 |
| 44 | 521 | 75 | 1,959 | 400 | 326 | 183 | 600 | 397 |
| 45 | 507 | 75 | 1,939 | 400 | 327 | 185 | 589 | 396 |
| 46 | 500 | 75 | 1,929 | 399 | 328 | 187 | 578 | 395 |
| 47 | 496 | 75 | 1,919 | 398 | 329 | 189 | 569 | 395 |
| 48 | 494 | 75 | 1,899 | 397 | 330 | 191 | 561 | 394 |
| 49 | 493 | 75 | 1,889 | 395 | 331 | 193 | 555 | 394 |
| 50 | 504 | 75 | 1,869 | 393 | 331 | 195 | 566 | 395 |
| 51 | 517 | 75 | 1,849 | 391 | 331 | 196 | 561 | 396 |
| 52 | 520 | 75 | 1,839 | 389 | 330 | 198 | 565 | 398 |
| 53 | 515 | 75 | 1,819 | 388 | 329 | 200 | 567 | 401 |
| 54 | 508 | 76 | 1,799 | 386 | 328 | 202 | 566 | 403 |
| 55 | 506 | 75 | 1,789 | 385 | 327 | 203 | 563 | 407 |
| 56 | 512 | 75 | 1,769 | 384 | 326 | 205 | 563 | 411 |
| 57 | 525 | 75 | 1,749 | 383 | 325 | 207 | 570 | 414 |
| 58 | 551 | 75 | 1,729 | 383 | 325 | 208 | 586 | 418 |
| 59 | 573 | 76 | 1,709 | 384 | 325 | 210 | 605 | 422 |
| 60 | 588 | 76 | 1,679 | 385 | 325 | 212 | 626 | 427 |
| 61 | 596 | 76 | 1,659 | 389 | 326 | 214 | 644 | 432 |
| 62 | 603 | 76 | 1,639 | 391 | 328 | 216 | 661 | 437 |
| 63 | 609 | 76 | 1,609 | 395 | 330 | 218 | 674 | 443 |
| 64 | 613 | 76 | 1,589 | 399 | 332 | 220 | 686 | 448 |
| 65 | 617 | 76 | 1,569 | 405 | 335 | 222 | 697 | 453 |
| 66 | 619 | 76 | 1,539 | 410 | 337 | 223 | 705 | 459 |
| 67 | 619 | 76 | 1,519 | 416 | 340 | 225 | 711 | 464 |
| 68 | 618 | 76 | 1,499 | 421 | 344 | 227 | 716 | 470 |
| 69 | 618 | 76 | 1,469 | 427 | 347 | 229 | 723 | 475 |
| 70 | 617 | 77 | 1,449 | 432 | 350 | 231 | 728 | 480 |
| 71 | 618 | 77 | 1,429 | 437 | 354 | 233 | 733 | 485 |
| 72 | 617 | 77 | 1,409 | 443 | 358 | 235 | 735 | 489 |
| 73 | 616 | 76 | 1,389 | 447 | 362 | 237 | 737 | 494 |
| 74 | 614 | 77 | 1,369 | 451 | 365 | 240 | 739 | 499 |
| 75 | 613 | 77 | 1,340 | 455 | 369 | 242 | 739 | 503 |
| 76 | 611 | 77 | 1,320 | 458 | 372 | 244 | 739 | 507 |
| 77 | 608 | 77 | 1,300 | 462 | 376 | 247 | 736 | 510 |
| 78 | 606 | 77 | 1,280 | 466 | 380 | 249 | 734 | 513 |
| 79 | 604 | 77 | 1,260 | 468 | 383 | 252 | 731 | 517 |
| 80 | 601 | 77 | 1,240 | 471 | 386 | 254 | 729 | 521 |
| 81 | 601 | 76 | 1,220 | 473 | 390 | 257 | 727 | 524 |
| 82 | 602 | 77 | 1,200 | 476 | 393 | 260 | 726 | 528 |
| 83 | 600 | 76 | 1,180 | 478 | 396 | 263 | 725 | 531 |
| 84 | 598 | 77 | 1,160 | 480 | 399 | 266 | 724 | 535 |
| 85 | 598 | 77 | 1,150 | 483 | 402 | 268 | 723 | 538 |
| 86 | 596 | 77 | 1,130 | 485 | 405 | 271 | 721 | 541 |
| 87 | 595 | 77 | 1,110 | 487 | 408 | 274 | 720 | 544 |
| 88 | 592 | 77 | 1,090 | 490 | 411 | 278 | 719 | 546 |
| 89 | 592 | 77 | 1,070 | 491 | 413 | 281 | 718 | 550 |
| 90 | 591 | 77 | 1,050 | 493 | 416 | 284 | 718 | 552 |
| 91 | 589 | 77 | 1,040 | 494 | 418 | 288 | 717 | 554 |
| 92 | 587 | 77 | 1,020 | 496 | 420 | 291 | 715 | 556 |
| 93 | 587 | 77 | 1,000 | 498 | 423 | 294 | 714 | 558 |
| 94 | 586 | 77 | 9,80 | 499 | 425 | 298 | 712 | 559 |
| 95 | 584 | 77 | 9,70 | 500 | 427 | 302 | 710 | 560 |
| 96 | 583 | 77 | 9,50 | 501 | 429 | 306 | 711 | 562 |
| 97 | 585 | 78 | 9,30 | 503 | 431 | 309 | 712 | 564 |
| 98 | 586 | 77 | 9,20 | 503 | 433 | 313 | 713 | 565 |
| 99 | 584 | 78 | 9,00 | 505 | 435 | 317 | 714 | 567 |
| 100 | 583 | 77 | 8,80 | 505 | 437 | 321 | 713 | 568 |
| 101 | 579 | 77 | 8,70 | 507 | 439 | 325 | 711 | 570 |
| 102 | 570 | 77 | 8,50 | 508 | 441 | 329 | 704 | 570 |
| 103 | 566 | 78 | 8,40 | 509 | 443 | 334 | 698 | 571 |
| 104 | 563 | 78 | 8,30 | 509 | 445 | 338 | 691 | 570 |
| 105 | 558 | 77 | 8,10 | 510 | 446 | 342 | 684 | 570 |
| 106 | 555 | 78 | 8,00 | 511 | 448 | 347 | 679 | 570 |
| 107 | 553 | 78 | 7,90 | 511 | 449 | 351 | 673 | 570 |
| 108 | 552 | 78 | 7,80 | 512 | 451 | 356 | 669 | 569 |
| 109 | 552 | 78 | 7,60 | 513 | 452 | 360 | 665 | 569 |
| 110 | 550 | 78 | 7,50 | 514 | 453 | 365 | 661 | 568 |
| 111 | 548 | 78 | 7,40 | 514 | 455 | 369 | 658 | 568 |
| 112 | 543 | 78 | 7,30 | 515 | 456 | 374 | 654 | 567 |
| 113 | 534 | 78 | 7,20 | 515 | 457 | 378 | 645 | 567 |
| 114 | 522 | 78 | 7,10 | 515 | 458 | 383 | 636 | 565 |
| 115 | 513 | 78 | 7,00 | 515 | 460 | 388 | 625 | 562 |
| 116 | 505 | 77 | 6,90 | 514 | 461 | 392 | 614 | 560 |
| 117 | 496 | 77 | 6,80 | 513 | 462 | 397 | 603 | 557 |
| 118 | 489 | 77 | 6,70 | 511 | 463 | 402 | 592 | 553 |
| 119 | 482 | 78 | 6,70 | 510 | 465 | 406 | 582 | 550 |
| 120 | 476 | 78 | 6,60 | 508 | 465 | 411 | 573 | 545 |
| 121 | 471 | 78 | 6,60 | 506 | 466 | 416 | 563 | 541 |
| 122 | 466 | 78 | 6,50 | 503 | 466 | 420 | 554 | 536 |
| 123 | 462 | 78 | 6,50 | 501 | 467 | 425 | 547 | 532 |
| 124 | 458 | 78 | 6,40 | 498 | 467 | 429 | 540 | 528 |
| 125 | 454 | 78 | 6,30 | 495 | 467 | 434 | 533 | 523 |
| 126 | 450 | 78 | 6,30 | 493 | 467 | 439 | 526 | 519 |
| 127 | 447 | 78 | 6,20 | 490 | 467 | 443 | 520 | 515 |
| 128 | 444 | 78 | 6,20 | 487 | 466 | 448 | 514 | 511 |
| 129 | 441 | 78 | 6,10 | 485 | 466 | 452 | 508 | 507 |
| 130 | 438 | 78 | 6,10 | 482 | 466 | 456 | 503 | 503 |
| 131 | 436 | 77 | 6,00 | 480 | 465 | 461 | 498 | 500 |
| 132 | 433 | 77 | 6,00 | 478 | 465 | 465 | 493 | 497 |
| 133 | 432 | 77 | 5,90 | 475 | 465 | 469 | 489 | 493 |
| 134 | 430 | 77 | 5,80 | 472 | 464 | 473 | 484 | 490 |
| 135 | 428 | 77 | 5,80 | 470 | 464 | 477 | 481 | 487 |
| 136 | 427 | 77 | 5,70 | 469 | 464 | 481 | 478 | 485 |
| 137 | 426 | 77 | 5,70 | 467 | 463 | 485 | 475 | 483 |

| | | | | | | | | |
|-----|-----|----|-------|-----|-----|-----|-----|-----|
| 138 | 425 | 77 | 5,60 | 465 | 463 | 489 | 471 | 479 |
| 139 | 423 | 77 | 5,50 | 463 | 463 | 493 | 469 | 478 |
| 140 | 423 | 77 | 5,40 | 461 | 463 | 496 | 467 | 476 |
| 141 | 422 | 77 | 5,40 | 460 | 463 | 500 | 465 | 474 |
| 142 | 422 | 77 | 5,40 | 458 | 463 | 503 | 462 | 472 |
| 143 | 421 | 77 | 5,30 | 457 | 464 | 506 | 461 | 470 |
| 144 | 418 | 76 | 5,30 | 455 | 465 | 509 | 459 | 468 |
| 145 | 414 | 77 | 5,20 | 454 | 464 | 512 | 457 | 466 |
| 146 | 409 | 76 | 5,20 | 452 | 464 | 515 | 454 | 462 |
| 147 | 404 | 77 | 5,10 | 450 | 462 | 517 | 451 | 460 |
| 148 | 399 | 77 | 5,10 | 448 | 462 | 519 | 448 | 458 |
| 149 | 397 | 77 | 5,00 | 446 | 460 | 521 | 445 | 456 |
| 150 | 394 | 77 | 5,00 | 444 | 459 | 523 | 441 | 453 |
| 151 | 391 | 77 | 4,90 | 442 | 457 | 525 | 437 | 450 |
| 152 | 390 | 77 | 4,90 | 440 | 456 | 526 | 435 | 448 |
| 153 | 387 | 77 | 4,80 | 438 | 455 | 528 | 431 | 446 |
| 154 | 385 | 77 | 4,80 | 435 | 453 | 529 | 428 | 443 |
| 155 | 383 | 77 | 4,80 | 434 | 451 | 530 | 425 | 441 |
| 156 | 379 | 77 | 4,70 | 431 | 449 | 531 | 422 | 439 |
| 157 | 377 | 77 | 4,70 | 429 | 447 | 532 | 419 | 437 |
| 158 | 375 | 77 | 4,70 | 427 | 446 | 533 | 415 | 434 |
| 159 | 373 | 76 | 4,60 | 425 | 444 | 533 | 412 | 432 |
| 160 | 371 | 76 | 4,60 | 422 | 441 | 534 | 409 | 430 |
| 161 | 370 | 77 | 4,50 | 420 | 441 | 535 | 407 | 428 |
| 162 | 368 | 77 | 4,50 | 418 | 438 | 535 | 405 | 426 |
| 163 | 366 | 77 | 4,40 | 416 | 435 | 536 | 403 | 424 |
| 164 | 365 | 77 | 4,40 | 414 | 434 | 537 | 400 | 422 |
| 165 | 364 | 76 | 4,40 | 412 | 432 | 538 | 398 | 420 |
| 166 | 362 | 77 | 4,30 | 410 | 430 | 539 | 396 | 418 |
| 167 | 362 | 77 | 4,30 | 409 | 428 | 540 | 394 | 416 |
| 168 | 360 | 77 | 4,20 | 406 | 426 | 541 | 392 | 414 |
| 169 | 359 | 77 | 4,20 | 405 | 425 | 541 | 390 | 412 |
| 170 | 358 | 77 | 4,20 | 403 | 423 | 542 | 388 | 411 |
| 171 | 357 | 76 | 4,10 | 401 | 422 | 543 | 386 | 409 |
| 172 | 356 | 77 | 4,10 | 400 | 421 | 544 | 385 | 408 |
| 173 | 355 | 77 | 4,00 | 398 | 419 | 545 | 384 | 406 |
| 174 | 356 | 76 | 4,00 | 396 | 417 | 546 | 383 | 405 |
| 175 | 356 | 76 | 4,00 | 395 | 415 | 546 | 382 | 403 |
| 176 | 356 | 77 | 3,90 | 394 | 414 | 547 | 382 | 402 |
| 177 | 356 | 77 | 3,90 | 394 | 413 | 548 | 381 | 400 |
| 178 | 357 | 77 | 3,80 | 393 | 412 | 549 | 381 | 399 |
| 179 | 357 | 77 | 3,80 | 393 | 412 | 550 | 381 | 399 |
| 180 | 361 | 77 | 3,70 | 392 | 412 | 551 | 381 | 397 |
| 181 | 365 | 77 | 3,70 | 391 | 411 | 552 | 382 | 396 |
| 182 | 368 | 76 | 3,60 | 391 | 410 | 553 | 382 | 395 |
| 183 | 370 | 76 | 3,60 | 392 | 411 | 553 | 384 | 395 |
| 184 | 372 | 77 | 3,50 | 392 | 411 | 554 | 386 | 395 |
| 185 | 377 | 77 | 3,50 | 392 | 411 | 556 | 388 | 395 |
| 186 | 381 | 77 | 3,40 | 392 | 412 | 557 | 391 | 395 |
| 187 | 385 | 77 | 3,40 | 392 | 413 | 558 | 393 | 395 |
| 188 | 379 | 77 | 3,30 | 393 | 415 | 559 | 394 | 396 |
| 189 | 410 | 77 | 3,30 | 393 | 416 | 562 | 404 | 399 |
| 190 | 420 | 77 | 3,20 | 394 | 417 | 562 | 414 | 400 |
| 191 | 418 | 77 | 3,20 | 395 | 417 | 562 | 421 | 401 |
| 192 | 408 | 77 | 3,10 | 396 | 417 | 561 | 425 | 402 |
| 193 | 402 | 77 | 3,10 | 397 | 418 | 560 | 426 | 402 |
| 194 | 401 | 77 | 3,10 | 398 | 419 | 558 | 428 | 402 |
| 195 | 400 | 77 | 3,00 | 398 | 419 | 557 | 429 | 402 |
| 196 | 398 | 77 | 3,00 | 399 | 420 | 555 | 428 | 402 |
| 197 | 389 | 77 | 3,00 | 400 | 420 | 552 | 425 | 402 |
| 198 | 382 | 77 | 3,00 | 400 | 421 | 550 | 421 | 401 |
| 199 | 377 | 77 | 2,90 | 400 | 421 | 547 | 417 | 400 |
| 200 | 306 | 77 | 18,09 | 400 | 422 | 545 | 403 | 399 |
| 201 | 358 | 77 | 21,89 | 400 | 426 | 543 | 390 | 397 |
| 202 | 421 | 77 | 21,89 | 398 | 427 | 541 | 389 | 395 |
| 203 | 443 | 78 | 21,59 | 396 | 427 | 538 | 393 | 392 |
| 204 | 561 | 78 | 21,29 | 396 | 426 | 536 | 412 | 390 |
| 205 | 568 | 78 | 20,89 | 396 | 425 | 533 | 455 | 388 |
| 206 | 572 | 78 | 20,69 | 396 | 423 | 530 | 498 | 387 |
| 207 | 601 | 78 | 20,39 | 398 | 422 | 527 | 546 | 387 |
| 208 | 630 | 78 | 19,99 | 402 | 420 | 524 | 591 | 391 |
| 209 | 642 | 79 | 19,69 | 408 | 420 | 522 | 631 | 394 |
| 210 | 642 | 79 | 19,39 | 413 | 419 | 518 | 662 | 399 |
| 211 | 654 | 79 | 19,09 | 420 | 418 | 515 | 691 | 406 |
| 212 | 665 | 79 | 18,89 | 427 | 418 | 512 | 715 | 415 |
| 213 | 665 | 79 | 18,59 | 434 | 417 | 508 | 734 | 423 |
| 214 | 665 | 80 | 18,29 | 441 | 417 | 505 | 748 | 432 |
| 215 | 552 | 80 | 17,99 | 448 | 418 | 501 | 750 | 440 |
| 216 | 464 | 79 | 17,89 | 453 | 419 | 498 | 733 | 446 |
| 217 | 414 | 79 | 17,79 | 455 | 418 | 495 | 703 | 450 |
| 218 | 379 | 79 | 17,69 | 456 | 419 | 492 | 669 | 452 |
| 219 | 475 | 79 | 17,59 | 455 | 419 | 487 | 642 | 452 |
| 220 | 480 | 80 | 17,39 | 454 | 418 | 484 | 636 | 452 |
| 221 | 441 | 79 | 17,29 | 451 | 417 | 481 | 633 | 450 |
| 222 | 424 | 80 | 17,19 | 448 | 415 | 478 | 625 | 450 |
| 223 | 413 | 79 | 16,99 | 444 | 414 | 474 | 615 | 448 |
| 224 | 404 | 80 | 16,89 | 440 | 412 | 471 | 604 | 448 |
| 225 | 398 | 80 | 16,79 | 436 | 411 | 467 | 593 | 446 |
| 226 | 393 | 79 | 16,59 | 433 | 408 | 464 | 584 | 445 |
| 227 | 388 | 80 | 16,49 | 429 | 407 | 461 | 576 | 444 |
| 228 | 384 | 80 | 16,39 | 425 | 405 | 457 | 567 | 444 |
| 229 | 382 | 80 | 16,29 | 421 | 404 | 454 | 559 | 443 |
| 230 | 381 | 79 | 16,09 | 418 | 402 | 451 | 552 | 443 |
| 231 | 380 | 80 | 15,99 | 414 | 401 | 447 | 549 | 443 |
| 232 | 381 | 80 | 15,89 | 411 | 400 | 445 | 547 | 443 |
| 233 | 382 | 80 | 15,69 | 408 | 398 | 442 | 547 | 442 |
| 234 | 383 | 80 | 15,59 | 406 | 397 | 439 | 548 | 442 |
| 235 | 383 | 80 | 15,39 | 402 | 396 | 437 | 551 | 442 |
| 236 | 383 | 80 | 15,29 | 400 | 395 | 434 | 551 | 442 |
| 237 | 385 | 80 | 15,19 | 398 | 393 | 429 | 553 | 441 |
| 238 | 386 | 80 | 14,99 | 396 | 393 | 429 | 555 | 441 |
| 239 | 385 | 80 | 14,89 | 395 | 391 | 427 | 555 | 440 |
| 240 | 386 | 80 | 14,69 | 394 | 390 | 424 | 557 | 440 |
| 241 | 386 | 80 | 14,59 | 393 | 389 | 421 | 558 | 440 |
| 242 | 387 | 80 | 14,49 | 391 | 388 | 420 | 559 | 439 |
| 243 | 388 | 80 | 14,29 | 391 | 388 | 418 | 562 | 439 |
| 244 | 390 | 80 | 14,19 | 390 | 387 | 416 | 566 | 439 |
| 245 | 390 | 80 | 14,09 | 390 | 387 | 414 | 568 | 439 |
| 246 | 388 | 80 | 13,90 | 390 | 386 | 411 | 567 | 440 |
| 247 | 388 | 80 | 13,79 | 390 | 386 | 409 | 566 | 440 |
| 248 | 388 | 80 | 13,60 | 390 | 385 | 408 | 566 | 441 |
| 249 | 388 | 81 | 13,50 | 390 | 385 | 406 | 566 | 441 |
| 250 | 388 | 80 | 13,40 | 390 | 384 | 404 | 566 | 441 |
| 251 | 389 | 80 | 13,20 | 390 | 383 | 402 | 567 | 442 |
| 252 | 391 | 81 | 13,10 | 391 | 383 | 400 | 567 | 443 |
| 253 | 391 | 80 | 13,00 | 391 | 382 | 399 | 568 | 443 |
| 254 | 391 | 80 | 12,80 | 392 | 382 | 398 | 568 | 444 |
| 255 | 392 | 80 | 12,70 | 392 | 382 | 397 | 571 | 444 |
| 256 | 393 | 80 | 12,54 | 393 | 381 | 396 | 573 | 445 |
| 257 | 394 | 81 | 12,40 | 394 | 381 | 394 | 575 | 446 |
| 258 | 395 | 80 | 12,30 | 396 | 381 | 394 | 577 | 447 |
| 259 | 396 | 80 | 12,10 | 397 | 381 | 393 | 579 | 449 |
| 260 | 398 | 80 | 12,00 | 398 | 381 | 391 | 581 | 450 |
| 261 | 399 | 81 | 11,90 | 400 | 381 | 391 | 585 | 452 |
| 262 | 400 | 79 | 11,70 | 402 | 380 | 390 | 586 | 453 |
| 263 | 402 | 79 | 11,60 | 403 | 380 | 389 | 588 | 454 |
| 264 | 403 | 80 | 11,40 | 405 | 380 | 388 | 590 | 456 |
| 265 | 405 | 80 | 11,30 | 407 | 380 | 388 | 594 | 457 |
| 266 | 405 | 80 | 11,20 | 409 | 380 | 387 | 597 | 459 |
| 267 | 406 | 80 | 11,00 | 412 | 380 | 386 | 599 | 460 |
| 268 | 408 | 80 | 10,90 | 414 | 380 | 386 | 602 | 462 |
| 269 | 409 | 80 | 10,80 | 417 | 380 | 385 | 604 | 463 |
| 270 | 409 | 81 | 10,60 | 420 | 381 | 384 | 609 | 464 |
| 271 | 411 | 81 | 10,50 | 422 | 381 | 384 | 614 | 465 |
| 272 | 411 | 80 | 10,38 | 425 | 381 | 384 | 618 | 466 |
| 273 | 412 | 81 | 10,20 | 429 | 381 | 383 | 623 | 467 |
| 274 | 413 | 81 | 10,10 | 432 | 382 | 383 | 627 | 468 |
| 275 | 413 | 81 | 9,90 | 435 | 382 | 383 | 630 | 468 |
| 276 | 414 | 81 | 9,80 | 439 | 382 | 383 | 632 | 469 |

| | | | | | | | | |
|-----|-----|----|------|-----|-----|-----|-----|-----|
| 277 | 416 | 81 | 9,70 | 442 | 382 | 382 | 636 | 470 |
| 278 | 415 | 81 | 9,50 | 446 | 383 | 381 | 640 | 471 |
| 279 | 414 | 81 | 9,40 | 449 | 383 | 382 | 641 | 473 |
| 280 | 411 | 81 | 9,30 | 451 | 383 | 381 | 639 | 474 |
| 281 | 410 | 81 | 9,20 | 454 | 384 | 381 | 637 | 475 |
| 282 | 410 | 81 | 9,00 | 455 | 384 | 381 | 636 | 477 |
| 283 | 409 | 81 | 8,90 | 457 | 385 | 381 | 636 | 479 |
| 284 | 411 | 81 | 8,80 | 459 | 385 | 380 | 637 | 481 |
| 285 | 412 | 81 | 8,70 | 461 | 386 | 380 | 638 | 484 |
| 286 | 411 | 81 | 8,50 | 462 | 386 | 380 | 640 | 486 |
| 287 | 410 | 81 | 8,40 | 464 | 387 | 380 | 640 | 488 |
| 288 | 412 | 81 | 8,30 | 466 | 387 | 379 | 641 | 489 |
| 289 | 413 | 82 | 8,20 | 467 | 388 | 379 | 642 | 491 |
| 290 | 416 | 82 | 8,10 | 470 | 389 | 379 | 645 | 492 |
| 291 | 417 | 82 | 7,90 | 472 | 389 | 378 | 647 | 494 |
| 292 | 418 | 82 | 7,80 | 474 | 390 | 379 | 650 | 496 |
| 293 | 419 | 82 | 7,70 | 476 | 391 | 379 | 653 | 497 |
| 294 | 419 | 82 | 7,60 | 478 | 391 | 379 | 656 | 498 |
| 295 | 418 | 82 | 7,50 | 480 | 392 | 379 | 658 | 500 |
| 296 | 419 | 82 | 7,30 | 481 | 393 | 379 | 660 | 501 |
| 297 | 417 | 82 | 7,20 | 483 | 394 | 379 | 660 | 502 |
| 298 | 413 | 82 | 7,10 | 484 | 396 | 379 | 658 | 504 |
| 299 | 409 | 82 | 7,00 | 484 | 397 | 379 | 651 | 505 |
| 300 | 404 | 82 | 6,90 | 485 | 398 | 379 | 644 | 506 |
| 301 | 400 | 82 | 6,80 | 485 | 399 | 379 | 636 | 508 |
| 302 | 398 | 82 | 6,80 | 485 | 400 | 380 | 627 | 508 |
| 303 | 392 | 82 | 6,70 | 484 | 401 | 380 | 618 | 509 |
| 304 | 387 | 82 | 6,60 | 484 | 402 | 380 | 609 | 509 |
| 305 | 383 | 82 | 6,50 | 483 | 403 | 380 | 601 | 510 |
| 306 | 379 | 82 | 6,50 | 482 | 403 | 381 | 593 | 510 |
| 307 | 376 | 82 | 6,40 | 481 | 404 | 381 | 586 | 510 |
| 308 | 374 | 82 | 6,30 | 480 | 405 | 381 | 580 | 510 |
| 309 | 371 | 82 | 6,30 | 479 | 406 | 382 | 574 | 510 |
| 310 | 368 | 82 | 6,20 | 478 | 406 | 382 | 569 | 509 |
| 311 | 366 | 82 | 6,10 | 477 | 407 | 382 | 564 | 508 |
| 312 | 365 | 82 | 6,00 | 476 | 408 | 383 | 559 | 508 |
| 313 | 363 | 82 | 6,00 | 474 | 409 | 383 | 554 | 507 |
| 314 | 360 | 82 | 5,90 | 473 | 409 | 384 | 550 | 507 |
| 315 | 358 | 82 | 5,80 | 472 | 410 | 385 | 546 | 506 |
| 316 | 356 | 82 | 5,80 | 471 | 411 | 385 | 542 | 505 |
| 317 | 356 | 82 | 5,70 | 470 | 411 | 386 | 538 | 505 |
| 318 | 354 | 81 | 5,60 | 469 | 412 | 386 | 535 | 505 |
| 319 | 352 | 82 | 5,60 | 468 | 413 | 387 | 533 | 505 |
| 320 | 351 | 82 | 5,50 | 467 | 414 | 387 | 532 | 504 |
| 321 | 350 | 82 | 5,40 | 466 | 414 | 388 | 530 | 504 |
| 322 | 349 | 82 | 5,40 | 465 | 415 | 389 | 528 | 503 |
| 323 | 347 | 82 | 5,30 | 464 | 416 | 389 | 527 | 502 |
| 324 | 347 | 82 | 5,30 | 463 | 416 | 390 | 525 | 502 |
| 325 | 346 | 82 | 5,20 | 462 | 416 | 391 | 523 | 501 |
| 326 | 346 | 82 | 5,10 | 461 | 417 | 392 | 523 | 499 |
| 327 | 346 | 82 | 5,10 | 460 | 418 | 392 | 522 | 498 |
| 328 | 345 | 82 | 5,00 | 459 | 418 | 392 | 521 | 496 |
| 329 | 345 | 82 | 5,00 | 459 | 418 | 394 | 521 | 494 |
| 330 | 345 | 82 | 4,90 | 458 | 419 | 394 | 521 | 493 |
| 331 | 344 | 82 | 4,80 | 458 | 419 | 395 | 522 | 491 |
| 332 | 344 | 82 | 4,80 | 457 | 420 | 396 | 521 | 490 |
| 333 | 342 | 82 | 4,70 | 456 | 420 | 397 | 520 | 488 |
| 334 | 341 | 82 | 4,60 | 456 | 420 | 397 | 519 | 486 |
| 335 | 340 | 82 | 4,60 | 455 | 421 | 398 | 516 | 485 |
| 336 | 338 | 82 | 4,50 | 455 | 421 | 399 | 514 | 483 |
| 337 | 337 | 82 | 4,50 | 455 | 421 | 399 | 511 | 481 |
| 338 | 336 | 82 | 4,40 | 454 | 421 | 400 | 508 | 479 |
| 339 | 334 | 82 | 4,40 | 454 | 422 | 401 | 505 | 477 |
| 340 | 332 | 82 | 4,30 | 454 | 422 | 401 | 502 | 475 |
| 341 | 330 | 82 | 4,30 | 454 | 422 | 402 | 498 | 473 |
| 342 | 328 | 82 | 4,20 | 454 | 422 | 403 | 495 | 471 |
| 343 | 326 | 82 | 4,20 | 454 | 422 | 403 | 491 | 469 |
| 344 | 323 | 82 | 4,20 | 454 | 422 | 404 | 486 | 467 |
| 345 | 319 | 82 | 4,10 | 453 | 422 | 404 | 482 | 465 |
| 346 | 315 | 82 | 4,10 | 453 | 422 | 405 | 477 | 462 |
| 347 | 311 | 82 | 4,10 | 452 | 421 | 405 | 471 | 460 |
| 348 | 307 | 82 | 4,00 | 450 | 421 | 406 | 466 | 457 |
| 349 | 304 | 82 | 4,00 | 449 | 421 | 406 | 459 | 454 |
| 350 | 301 | 82 | 4,00 | 447 | 421 | 407 | 454 | 451 |
| 351 | 298 | 82 | 4,00 | 444 | 420 | 407 | 448 | 448 |
| 352 | 295 | 82 | 3,90 | 442 | 419 | 408 | 443 | 445 |
| 353 | 293 | 82 | 3,90 | 439 | 418 | 408 | 438 | 442 |
| 354 | 290 | 82 | 3,90 | 437 | 417 | 408 | 434 | 439 |
| 355 | 289 | 82 | 3,90 | 434 | 416 | 409 | 429 | 436 |
| 356 | 287 | 82 | 3,80 | 432 | 415 | 409 | 425 | 433 |
| 357 | 286 | 82 | 3,80 | 429 | 413 | 410 | 421 | 430 |
| 358 | 284 | 81 | 3,80 | 426 | 411 | 411 | 418 | 428 |
| 359 | 283 | 81 | 3,80 | 424 | 410 | 411 | 413 | 426 |
| 360 | 281 | 82 | 3,70 | 422 | 409 | 412 | 410 | 423 |
| 361 | 280 | 81 | 3,70 | 419 | 408 | 412 | 407 | 421 |
| 362 | 279 | 82 | 3,70 | 417 | 406 | 413 | 404 | 419 |
| 363 | 277 | 82 | 3,70 | 415 | 406 | 414 | 402 | 417 |
| 364 | 276 | 82 | 3,60 | 413 | 405 | 414 | 400 | 415 |
| 365 | 275 | 82 | 3,60 | 412 | 404 | 415 | 397 | 413 |
| 366 | 275 | 82 | 3,60 | 410 | 402 | 416 | 396 | 412 |
| 367 | 274 | 81 | 3,60 | 408 | 402 | 417 | 394 | 410 |
| 368 | 273 | 81 | 3,50 | 407 | 401 | 418 | 392 | 409 |
| 369 | 273 | 82 | 3,50 | 405 | 400 | 418 | 391 | 407 |
| 370 | 272 | 81 | 3,50 | 404 | 399 | 419 | 389 | 406 |
| 371 | 271 | 81 | 3,50 | 403 | 398 | 420 | 388 | 404 |
| 372 | 270 | 82 | 3,40 | 401 | 397 | 421 | 387 | 403 |
| 373 | 270 | 81 | 3,40 | 400 | 397 | 422 | 386 | 401 |
| 374 | 269 | 82 | 3,40 | 399 | 396 | 423 | 384 | 400 |
| 375 | 268 | 81 | 3,40 | 398 | 396 | 423 | 383 | 399 |
| 376 | 267 | 82 | 3,30 | 397 | 395 | 424 | 382 | 397 |
| 377 | 267 | 82 | 3,30 | 396 | 395 | 425 | 381 | 396 |
| 378 | 265 | 82 | 3,30 | 395 | 394 | 426 | 380 | 395 |
| 379 | 264 | 81 | 3,30 | 394 | 393 | 426 | 378 | 394 |
| 380 | 264 | 81 | 3,30 | 393 | 392 | 427 | 377 | 393 |
| 381 | 263 | 81 | 3,20 | 392 | 392 | 428 | 376 | 391 |
| 382 | 263 | 82 | 3,20 | 390 | 392 | 428 | 374 | 391 |
| 383 | 261 | 81 | 3,20 | 389 | 392 | 429 | 373 | 389 |
| 384 | 261 | 81 | 3,20 | 389 | 391 | 429 | 371 | 388 |
| 385 | 260 | 81 | 3,20 | 387 | 391 | 430 | 370 | 387 |
| 386 | 259 | 81 | 3,10 | 386 | 390 | 429 | 368 | 386 |
| 387 | 258 | 81 | 3,10 | 385 | 390 | 430 | 368 | 385 |
| 388 | 258 | 81 | 3,10 | 384 | 390 | 430 | 367 | 384 |
| 389 | 257 | 81 | 3,10 | 383 | 389 | 431 | 366 | 383 |
| 390 | 257 | 81 | 3,00 | 382 | 388 | 431 | 365 | 383 |
| 391 | 256 | 81 | 3,00 | 381 | 388 | 432 | 364 | 382 |
| 392 | 256 | 81 | 3,00 | 380 | 388 | 432 | 363 | 381 |
| 393 | 256 | 81 | 3,00 | 379 | 388 | 432 | 361 | 380 |
| 394 | 256 | 81 | 3,00 | 378 | 387 | 432 | 360 | 379 |
| 395 | 255 | 81 | 2,90 | 377 | 387 | 432 | 359 | 379 |
| 396 | 255 | 81 | 2,90 | 377 | 387 | 433 | 358 | 378 |
| 397 | 255 | 81 | 2,90 | 375 | 386 | 433 | 357 | 377 |
| 398 | 254 | 81 | 2,90 | 374 | 385 | 433 | 357 | 377 |
| 399 | 254 | 81 | 2,90 | 373 | 385 | 433 | 356 | 376 |
| 400 | 254 | 81 | 2,80 | 373 | 384 | 433 | 356 | 375 |
| 401 | 253 | 81 | 2,80 | 372 | 384 | 433 | 355 | 374 |
| 402 | 253 | 81 | 2,80 | 371 | 384 | 433 | 353 | 373 |
| 403 | 252 | 81 | 2,80 | 370 | 383 | 434 | 353 | 373 |
| 404 | 252 | 80 | 2,80 | 369 | 382 | 434 | 352 | 372 |
| 405 | 251 | 80 | 2,70 | 368 | 382 | 434 | 351 | 371 |
| 406 | 252 | 81 | 2,70 | 368 | 382 | 434 | 351 | 370 |
| 407 | 251 | 81 | 2,70 | 366 | 381 | 434 | 350 | 369 |
| 408 | 250 | 81 | 2,70 | 366 | 381 | 434 | 350 | 369 |
| 409 | 249 | 81 | 2,70 | 365 | 380 | 434 | 349 | 368 |
| 410 | 249 | 81 | 2,60 | 364 | 380 | 434 | 348 | 367 |
| 411 | 248 | 81 | 2,60 | 363 | 379 | 434 | 346 | 366 |
| 412 | 247 | 81 | 2,60 | 362 | 379 | 434 | 344 | 365 |
| 413 | 246 | 81 | 2,60 | 362 | 379 | 434 | 343 | 364 |
| 414 | 245 | 81 | 2,60 | 361 | 378 | 434 | 342 | 364 |
| 415 | 244 | 81 | 2,60 | 360 | 378 | 434 | 340 | 363 |

| | | | | | | | | |
|-----|-----|----|------|-----|-----|-----|-----|-----|
| 416 | 244 | 81 | 2.50 | 359 | 377 | 434 | 339 | 362 |
| 417 | 243 | 81 | 2.50 | 359 | 376 | 434 | 338 | 361 |
| 418 | 243 | 81 | 2.50 | 358 | 376 | 433 | 336 | 361 |
| 419 | 242 | 81 | 2.50 | 357 | 375 | 433 | 335 | 360 |
| 420 | 242 | 81 | 2.50 | 356 | 375 | 433 | 334 | 359 |
| 421 | 241 | 81 | 2.50 | 355 | 374 | 432 | 333 | 358 |
| 422 | 240 | 81 | 2.40 | 354 | 373 | 432 | 333 | 357 |
| 423 | 240 | 81 | 2.40 | 353 | 373 | 432 | 332 | 357 |
| 424 | 239 | 80 | 2.40 | 353 | 372 | 431 | 331 | 356 |
| 425 | 239 | 81 | 2.40 | 352 | 372 | 431 | 330 | 355 |
| 426 | 239 | 80 | 2.40 | 351 | 371 | 430 | 330 | 354 |
| 427 | 238 | 80 | 2.40 | 350 | 370 | 430 | 329 | 353 |
| 428 | 238 | 80 | 2.30 | 349 | 369 | 430 | 328 | 353 |
| 429 | 237 | 80 | 2.30 | 348 | 369 | 429 | 326 | 352 |
| 430 | 236 | 80 | 2.30 | 347 | 368 | 429 | 325 | 351 |
| 431 | 236 | 80 | 2.30 | 346 | 367 | 429 | 324 | 350 |
| 432 | 235 | 80 | 2.30 | 345 | 367 | 428 | 323 | 350 |
| 433 | 234 | 80 | 2.30 | 344 | 366 | 428 | 322 | 349 |
| 434 | 234 | 80 | 2.30 | 344 | 365 | 427 | 321 | 348 |
| 435 | 233 | 80 | 2.20 | 343 | 365 | 426 | 320 | 347 |
| 436 | 233 | 80 | 2.20 | 341 | 364 | 426 | 318 | 346 |
| 437 | 232 | 80 | 2.20 | 341 | 364 | 425 | 317 | 345 |
| 438 | 231 | 80 | 2.20 | 339 | 363 | 424 | 316 | 345 |
| 439 | 231 | 80 | 2.20 | 339 | 362 | 423 | 315 | 344 |
| 440 | 231 | 80 | 2.20 | 338 | 362 | 422 | 314 | 343 |
| 441 | 230 | 80 | 2.20 | 337 | 361 | 421 | 313 | 342 |
| 442 | 230 | 80 | 2.10 | 336 | 360 | 420 | 312 | 341 |
| 443 | 230 | 80 | 2.10 | 335 | 360 | 419 | 312 | 340 |
| 444 | 229 | 80 | 2.10 | 334 | 359 | 418 | 311 | 340 |
| 445 | 229 | 80 | 2.10 | 333 | 359 | 417 | 310 | 339 |
| 446 | 228 | 80 | 2.10 | 332 | 358 | 416 | 309 | 338 |
| 447 | 228 | 80 | 2.10 | 331 | 358 | 415 | 309 | 337 |
| 448 | 227 | 80 | 2.00 | 330 | 357 | 414 | 308 | 337 |
| 449 | 226 | 80 | 2.00 | 329 | 356 | 414 | 308 | 336 |
| 450 | 226 | 80 | 2.00 | 328 | 356 | 413 | 307 | 335 |
| 451 | 226 | 80 | 2.00 | 328 | 355 | 412 | 306 | 335 |
| 452 | 225 | 80 | 2.00 | 327 | 354 | 411 | 306 | 334 |
| 453 | 225 | 80 | 2.00 | 326 | 354 | 410 | 305 | 334 |
| 454 | 225 | 80 | 2.00 | 325 | 353 | 409 | 304 | 333 |
| 455 | 224 | 80 | 1.90 | 324 | 353 | 409 | 303 | 332 |
| 456 | 223 | 80 | 1.90 | 324 | 353 | 408 | 303 | 332 |
| 457 | 223 | 80 | 1.90 | 323 | 352 | 407 | 302 | 331 |
| 458 | 223 | 80 | 1.90 | 322 | 352 | 407 | 302 | 330 |
| 459 | 223 | 80 | 1.90 | 321 | 351 | 406 | 301 | 330 |
| 460 | 222 | 80 | 1.90 | 321 | 351 | 405 | 300 | 329 |
| 461 | 222 | 80 | 1.80 | 320 | 350 | 405 | 299 | 329 |
| 462 | 222 | 80 | 1.80 | 319 | 350 | 404 | 299 | 328 |
| 463 | 221 | 80 | 1.80 | 319 | 349 | 403 | 298 | 328 |
| 464 | 221 | 80 | 1.80 | 318 | 349 | 403 | 298 | 327 |
| 465 | 221 | 80 | 1.80 | 317 | 348 | 402 | 297 | 327 |
| 466 | 221 | 80 | 1.80 | 317 | 348 | 402 | 297 | 327 |
| 467 | 220 | 80 | 1.80 | 316 | 348 | 401 | 296 | 326 |
| 468 | 220 | 80 | 1.80 | 316 | 347 | 401 | 296 | 326 |
| 469 | 219 | 80 | 1.70 | 315 | 347 | 400 | 295 | 325 |
| 470 | 219 | 80 | 1.70 | 314 | 346 | 400 | 295 | 324 |
| 471 | 218 | 80 | 1.70 | 314 | 346 | 399 | 294 | 324 |
| 472 | 217 | 80 | 1.70 | 313 | 345 | 399 | 294 | 323 |
| 473 | 217 | 80 | 1.70 | 312 | 345 | 398 | 293 | 323 |
| 474 | 217 | 80 | 1.70 | 312 | 344 | 398 | 293 | 322 |
| 475 | 217 | 80 | 1.70 | 311 | 344 | 397 | 292 | 322 |
| 476 | 216 | 80 | 1.60 | 310 | 343 | 397 | 292 | 321 |
| 477 | 216 | 80 | 1.60 | 310 | 343 | 396 | 291 | 321 |
| 478 | 215 | 80 | 1.60 | 309 | 342 | 396 | 291 | 320 |
| 479 | 215 | 80 | 1.60 | 309 | 341 | 396 | 290 | 320 |
| 480 | 215 | 80 | 1.60 | 308 | 341 | 395 | 290 | 319 |
| 481 | 214 | 80 | 1.60 | 308 | 341 | 395 | 289 | 319 |
| 482 | 215 | 79 | 1.60 | 307 | 340 | 395 | 289 | 318 |
| 483 | 214 | 80 | 1.60 | 306 | 340 | 394 | 288 | 318 |
| 484 | 214 | 79 | 1.50 | 306 | 339 | 394 | 288 | 317 |
| 485 | 213 | 79 | 1.50 | 305 | 339 | 393 | 288 | 317 |
| 486 | 213 | 79 | 1.50 | 305 | 339 | 393 | 287 | 316 |
| 487 | 212 | 79 | 1.50 | 304 | 338 | 393 | 286 | 316 |
| 488 | 212 | 79 | 1.50 | 304 | 338 | 393 | 286 | 315 |
| 489 | 212 | 79 | 1.50 | 304 | 337 | 392 | 285 | 315 |
| 490 | 212 | 79 | 1.50 | 303 | 337 | 392 | 285 | 314 |
| 491 | 211 | 79 | 1.40 | 303 | 337 | 392 | 285 | 314 |
| 492 | 211 | 79 | 1.40 | 302 | 336 | 391 | 284 | 313 |
| 493 | 211 | 79 | 1.40 | 302 | 336 | 391 | 284 | 313 |
| 494 | 211 | 79 | 1.40 | 301 | 336 | 391 | 283 | 312 |
| 495 | 210 | 79 | 1.40 | 301 | 335 | 390 | 283 | 312 |
| 496 | 210 | 79 | 1.40 | 300 | 335 | 390 | 283 | 311 |
| 497 | 210 | 79 | 1.40 | 300 | 335 | 390 | 282 | 311 |
| 498 | 210 | 79 | 1.30 | 299 | 334 | 389 | 282 | 311 |
| 499 | 210 | 79 | 1.30 | 299 | 334 | 389 | 281 | 310 |
| 500 | 209 | 79 | 1.30 | 299 | 334 | 389 | 281 | 310 |
| 501 | 209 | 79 | 1.30 | 298 | 333 | 388 | 280 | 309 |
| 502 | 209 | 79 | 1.30 | 298 | 333 | 388 | 280 | 309 |
| 503 | 208 | 79 | 1.30 | 298 | 333 | 388 | 280 | 309 |
| 504 | 208 | 79 | 1.30 | 297 | 333 | 388 | 280 | 308 |
| 505 | 208 | 79 | 1.20 | 297 | 332 | 387 | 279 | 308 |
| 506 | 208 | 79 | 1.20 | 296 | 332 | 387 | 279 | 307 |
| 507 | 208 | 79 | 1.20 | 296 | 332 | 387 | 278 | 307 |
| 508 | 207 | 79 | 1.20 | 295 | 332 | 387 | 278 | 307 |
| 509 | 207 | 79 | 1.20 | 295 | 331 | 386 | 278 | 307 |
| 510 | 207 | 79 | 1.20 | 295 | 331 | 386 | 277 | 306 |
| 511 | 206 | 79 | 1.20 | 294 | 331 | 386 | 277 | 305 |
| 512 | 206 | 79 | 1.20 | 294 | 331 | 386 | 276 | 305 |
| 513 | 206 | 79 | 1.10 | 293 | 331 | 385 | 276 | 305 |
| 514 | 206 | 79 | 1.10 | 293 | 331 | 385 | 275 | 304 |
| 515 | 206 | 79 | 1.10 | 293 | 331 | 385 | 275 | 304 |
| 516 | 205 | 79 | 1.10 | 292 | 330 | 385 | 275 | 304 |
| 517 | 205 | 79 | 1.10 | 292 | 330 | 385 | 274 | 303 |
| 518 | 205 | 79 | 1.10 | 291 | 330 | 384 | 274 | 303 |
| 519 | 205 | 79 | 1.10 | 291 | 330 | 384 | 273 | 303 |
| 520 | 204 | 79 | 1.10 | 290 | 330 | 384 | 273 | 302 |
| 521 | 205 | 79 | 1.00 | 290 | 330 | 384 | 273 | 302 |
| 522 | 204 | 79 | 1.00 | 289 | 330 | 384 | 272 | 301 |
| 523 | 203 | 79 | 1.00 | 289 | 329 | 383 | 271 | 301 |
| 524 | 203 | 79 | 1.00 | 288 | 330 | 383 | 271 | 301 |
| 525 | 203 | 79 | 1.00 | 288 | 329 | 383 | 270 | 300 |
| 526 | 202 | 79 | 1.00 | 287 | 329 | 383 | 270 | 300 |
| 527 | 202 | 79 | 1.00 | 287 | 329 | 382 | 269 | 299 |
| 528 | 201 | 79 | 1.00 | 286 | 329 | 382 | 269 | 299 |
| 529 | 201 | 79 | 0.90 | 286 | 329 | 382 | 269 | 298 |
| 530 | 201 | 79 | 0.90 | 285 | 329 | 381 | 268 | 298 |
| 531 | 201 | 79 | 0.90 | 285 | 328 | 381 | 268 | 298 |
| 532 | 201 | 79 | 0.90 | 284 | 328 | 381 | 267 | 297 |
| 533 | 200 | 79 | 0.90 | 284 | 328 | 381 | 267 | 297 |
| 534 | 200 | 79 | 0.90 | 284 | 328 | 381 | 267 | 296 |
| 535 | 200 | 79 | 0.90 | 283 | 328 | 381 | 267 | 296 |
| 536 | 200 | 79 | 0.90 | 283 | 328 | 381 | 266 | 295 |
| 537 | 199 | 79 | 0.80 | 282 | 327 | 381 | 266 | 295 |
| 538 | 199 | 79 | 0.80 | 282 | 327 | 380 | 266 | 295 |
| 539 | 199 | 79 | 0.80 | 282 | 327 | 380 | 266 | 294 |
| 540 | 199 | 79 | 0.80 | 281 | 327 | 380 | 266 | 294 |
| 541 | 199 | 79 | 0.80 | 281 | 327 | 380 | 266 | 293 |
| 542 | 199 | 79 | 0.80 | 281 | 327 | 380 | 265 | 293 |
| 543 | 199 | 79 | 0.80 | 281 | 327 | 380 | 265 | 293 |
| 544 | 199 | 79 | 0.80 | 280 | 327 | 380 | 265 | 292 |
| 545 | 199 | 79 | 0.70 | 280 | 326 | 380 | 265 | 292 |
| 546 | 199 | 79 | 0.70 | 280 | 327 | 380 | 265 | 291 |
| 547 | 199 | 79 | 0.70 | 280 | 327 | 380 | 265 | 291 |
| 548 | 199 | 79 | 0.70 | 279 | 327 | 380 | 265 | 291 |
| 549 | 199 | 79 | 0.70 | 279 | 327 | 381 | 265 | 290 |
| 550 | 199 | 78 | 0.70 | 279 | 327 | 380 | 264 | 290 |
| 551 | 199 | 78 | 0.60 | 279 | 327 | 380 | 264 | 290 |
| 552 | 199 | 78 | 0.60 | 279 | 327 | 381 | 264 | 289 |
| 553 | 199 | 78 | 0.60 | 279 | 327 | 381 | 264 | 289 |
| 554 | 199 | 78 | 0.60 | 278 | 328 | 381 | 264 | 289 |

| | | | | | | | | |
|-----|-----|----|-------|-----|-----|-----|-----|-----|
| 555 | 199 | 78 | 0,60 | 278 | 328 | 381 | 263 | 288 |
| 556 | 199 | 78 | 0,60 | 278 | 328 | 381 | 263 | 288 |
| 557 | 199 | 78 | 0,60 | 278 | 328 | 381 | 263 | 288 |
| 558 | 198 | 78 | 0,60 | 278 | 329 | 382 | 262 | 287 |
| 559 | 198 | 78 | 0,50 | 278 | 329 | 382 | 262 | 287 |
| 560 | 199 | 78 | 0,50 | 277 | 329 | 382 | 262 | 287 |
| 561 | 199 | 78 | 0,50 | 277 | 330 | 382 | 262 | 287 |
| 562 | 199 | 78 | 0,50 | 277 | 330 | 382 | 262 | 286 |
| 563 | 199 | 78 | 0,50 | 277 | 330 | 383 | 262 | 286 |
| 564 | 199 | 78 | 0,50 | 277 | 331 | 384 | 262 | 286 |
| 565 | 199 | 78 | 0,50 | 277 | 331 | 383 | 263 | 285 |
| 566 | 199 | 78 | 0,50 | 277 | 332 | 384 | 262 | 285 |
| 567 | 199 | 78 | 0,40 | 277 | 332 | 384 | 263 | 285 |
| 568 | 199 | 78 | 0,40 | 277 | 332 | 384 | 263 | 284 |
| 569 | 199 | 78 | 0,40 | 276 | 333 | 384 | 263 | 284 |
| 570 | 199 | 78 | 0,40 | 276 | 333 | 385 | 263 | 284 |
| 571 | 200 | 78 | 0,40 | 276 | 334 | 386 | 264 | 284 |
| 572 | 199 | 78 | 0,40 | 276 | 334 | 386 | 264 | 284 |
| 573 | 200 | 78 | 0,40 | 276 | 334 | 387 | 264 | 283 |
| 574 | 200 | 78 | 0,30 | 276 | 335 | 388 | 264 | 283 |
| 575 | 200 | 78 | 0,30 | 276 | 335 | 388 | 264 | 283 |
| 576 | 200 | 78 | 0,30 | 276 | 336 | 388 | 264 | 283 |
| 577 | 200 | 78 | 0,30 | 276 | 336 | 389 | 264 | 283 |
| 578 | 200 | 78 | 0,30 | 276 | 336 | 389 | 264 | 283 |
| 579 | 200 | 78 | 0,30 | 275 | 337 | 390 | 264 | 283 |
| 580 | 200 | 78 | 0,30 | 275 | 337 | 390 | 264 | 283 |
| 581 | 201 | 78 | 0,30 | 275 | 338 | 391 | 264 | 283 |
| 582 | 201 | 78 | 0,20 | 275 | 338 | 391 | 264 | 282 |
| 583 | 201 | 78 | 0,20 | 275 | 339 | 392 | 264 | 282 |
| 584 | 201 | 78 | 0,20 | 275 | 339 | 393 | 264 | 282 |
| 585 | 202 | 78 | 0,20 | 275 | 340 | 393 | 264 | 282 |
| 586 | 202 | 78 | 0,20 | 275 | 341 | 394 | 265 | 282 |
| 587 | 202 | 78 | 0,20 | 275 | 341 | 395 | 265 | 282 |
| 588 | 202 | 78 | 0,20 | 275 | 341 | 395 | 265 | 282 |
| 589 | 201 | 78 | 0,20 | 275 | 342 | 396 | 265 | 282 |
| 590 | 201 | 78 | 0,10 | 275 | 342 | 396 | 265 | 282 |
| 591 | 201 | 78 | 0,10 | 274 | 342 | 397 | 265 | 282 |
| 592 | 201 | 78 | 0,10 | 274 | 342 | 397 | 265 | 282 |
| 593 | 201 | 78 | 0,10 | 274 | 342 | 398 | 265 | 282 |
| 594 | 200 | 78 | 0,10 | 274 | 343 | 398 | 265 | 282 |
| 595 | 200 | 78 | 0,10 | 274 | 342 | 399 | 265 | 282 |
| 596 | 200 | 78 | 0,10 | 274 | 342 | 398 | 265 | 282 |
| 597 | 200 | 78 | 0,10 | 274 | 342 | 399 | 264 | 282 |
| 598 | 200 | 78 | 0,10 | 273 | 342 | 400 | 264 | 281 |
| 599 | 200 | 78 | 0,00 | 273 | 342 | 400 | 264 | 281 |
| 600 | 73 | 72 | 8,70 | 72 | 71 | 71 | 73 | 72 |
| 601 | 147 | 72 | 8,50 | 73 | 71 | 71 | 84 | 74 |
| 602 | 164 | 72 | 8,30 | 77 | 72 | 71 | 102 | 88 |
| 603 | 333 | 72 | 8,20 | 83 | 73 | 71 | 137 | 102 |
| 604 | 387 | 73 | 7,90 | 92 | 76 | 71 | 180 | 112 |
| 605 | 445 | 73 | 7,70 | 101 | 79 | 71 | 241 | 126 |
| 606 | 484 | 73 | 7,40 | 110 | 83 | 71 | 311 | 143 |
| 607 | 518 | 74 | 7,20 | 121 | 89 | 71 | 379 | 158 |
| 608 | 555 | 74 | 6,90 | 132 | 96 | 71 | 443 | 176 |
| 609 | 565 | 74 | 6,60 | 144 | 103 | 72 | 497 | 194 |
| 610 | 565 | 74 | 6,40 | 158 | 112 | 72 | 529 | 210 |
| 611 | 563 | 74 | 6,10 | 171 | 121 | 73 | 554 | 225 |
| 612 | 573 | 74 | 5,90 | 184 | 130 | 74 | 578 | 241 |
| 613 | 573 | 75 | 5,70 | 199 | 140 | 76 | 599 | 256 |
| 614 | 588 | 75 | 5,40 | 213 | 149 | 78 | 619 | 270 |
| 615 | 597 | 75 | 5,20 | 228 | 158 | 80 | 636 | 285 |
| 616 | 598 | 75 | 4,90 | 241 | 167 | 82 | 652 | 300 |
| 617 | 598 | 75 | 4,70 | 254 | 175 | 85 | 663 | 315 |
| 618 | 601 | 75 | 4,50 | 266 | 185 | 89 | 671 | 330 |
| 619 | 605 | 76 | 4,30 | 278 | 194 | 92 | 679 | 346 |
| 620 | 593 | 76 | 4,10 | 288 | 203 | 96 | 682 | 360 |
| 621 | 584 | 76 | 3,90 | 298 | 212 | 100 | 680 | 374 |
| 622 | 571 | 76 | 3,70 | 307 | 222 | 104 | 673 | 387 |
| 623 | 564 | 75 | 3,60 | 315 | 231 | 108 | 667 | 399 |
| 624 | 562 | 76 | 3,40 | 322 | 240 | 112 | 660 | 410 |
| 625 | 559 | 75 | 3,30 | 330 | 248 | 117 | 656 | 419 |
| 626 | 559 | 75 | 3,10 | 336 | 257 | 121 | 653 | 429 |
| 627 | 557 | 75 | 3,00 | 342 | 265 | 126 | 652 | 437 |
| 628 | 549 | 75 | 2,80 | 347 | 273 | 131 | 647 | 444 |
| 629 | 502 | 75 | 2,219 | 352 | 281 | 136 | 626 | 448 |
| 630 | 543 | 75 | 2,189 | 357 | 288 | 141 | 611 | 452 |
| 631 | 539 | 75 | 2,159 | 360 | 296 | 146 | 598 | 453 |
| 632 | 510 | 75 | 2,139 | 362 | 303 | 151 | 588 | 451 |
| 633 | 494 | 75 | 2,129 | 363 | 308 | 156 | 579 | 447 |
| 634 | 469 | 75 | 2,109 | 363 | 312 | 160 | 564 | 441 |
| 635 | 435 | 74 | 20,99 | 361 | 315 | 165 | 545 | 433 |
| 636 | 404 | 74 | 20,99 | 358 | 317 | 169 | 524 | 425 |
| 637 | 346 | 75 | 20,99 | 355 | 317 | 173 | 497 | 417 |
| 638 | 325 | 75 | 20,89 | 352 | 317 | 176 | 464 | 411 |
| 639 | 399 | 74 | 20,59 | 350 | 315 | 179 | 447 | 408 |
| 640 | 440 | 75 | 20,49 | 345 | 314 | 182 | 445 | 405 |
| 641 | 459 | 75 | 20,29 | 341 | 313 | 185 | 447 | 403 |
| 642 | 466 | 75 | 20,19 | 338 | 312 | 188 | 454 | 402 |
| 643 | 498 | 76 | 19,99 | 335 | 312 | 190 | 470 | 403 |
| 644 | 524 | 76 | 19,89 | 335 | 312 | 192 | 500 | 404 |
| 645 | 533 | 76 | 19,49 | 336 | 313 | 195 | 525 | 406 |
| 646 | 535 | 77 | 19,29 | 338 | 315 | 197 | 543 | 406 |
| 647 | 542 | 77 | 19,09 | 342 | 317 | 199 | 559 | 407 |
| 648 | 545 | 77 | 18,89 | 345 | 319 | 201 | 574 | 408 |
| 649 | 546 | 77 | 18,69 | 350 | 322 | 203 | 586 | 409 |
| 650 | 553 | 77 | 18,49 | 355 | 324 | 206 | 596 | 411 |
| 651 | 559 | 77 | 18,19 | 360 | 326 | 208 | 609 | 412 |
| 652 | 548 | 77 | 17,99 | 365 | 329 | 210 | 613 | 412 |
| 653 | 551 | 77 | 17,79 | 370 | 331 | 213 | 617 | 412 |
| 654 | 558 | 77 | 17,59 | 376 | 333 | 215 | 625 | 412 |
| 655 | 567 | 78 | 17,39 | 382 | 336 | 218 | 636 | 412 |
| 656 | 570 | 78 | 17,19 | 388 | 338 | 220 | 645 | 413 |
| 657 | 574 | 77 | 16,99 | 394 | 340 | 223 | 652 | 413 |
| 658 | 578 | 77 | 16,69 | 401 | 343 | 225 | 660 | 413 |
| 659 | 580 | 78 | 16,49 | 407 | 345 | 228 | 666 | 414 |
| 660 | 585 | 78 | 16,29 | 413 | 348 | 230 | 675 | 416 |
| 661 | 593 | 78 | 16,09 | 419 | 351 | 233 | 685 | 420 |
| 662 | 598 | 79 | 15,79 | 425 | 354 | 235 | 697 | 423 |
| 663 | 621 | 78 | 15,59 | 431 | 357 | 237 | 712 | 428 |
| 664 | 637 | 78 | 15,29 | 437 | 360 | 240 | 729 | 433 |
| 665 | 645 | 78 | 15,09 | 442 | 363 | 242 | 744 | 438 |
| 666 | 649 | 78 | 14,79 | 448 | 366 | 245 | 756 | 445 |
| 667 | 649 | 78 | 14,49 | 454 | 370 | 247 | 766 | 452 |
| 668 | 648 | 79 | 14,29 | 459 | 374 | 250 | 772 | 459 |
| 669 | 646 | 79 | 14,09 | 464 | 378 | 252 | 778 | 467 |
| 670 | 643 | 79 | 13,79 | 469 | 382 | 254 | 781 | 474 |
| 671 | 640 | 79 | 13,60 | 474 | 386 | 257 | 783 | 481 |
| 672 | 640 | 78 | 13,30 | 479 | 390 | 259 | 783 | 488 |
| 673 | 636 | 77 | 13,10 | 483 | 394 | 262 | 782 | 494 |
| 674 | 633 | 78 | 12,90 | 488 | 398 | 264 | 781 | 500 |
| 675 | 630 | 78 | 12,70 | 492 | 402 | 267 | 780 | 506 |
| 676 | 627 | 78 | 12,50 | 496 | 405 | 269 | 778 | 510 |
| 677 | 625 | 79 | 12,20 | 499 | 409 | 272 | 776 | 515 |
| 678 | 623 | 78 | 12,00 | 503 | 413 | 274 | 775 | 518 |
| 679 | 621 | 79 | 11,80 | 506 | 416 | 277 | 772 | 522 |
| 680 | 617 | 78 | 11,60 | 510 | 419 | 280 | 770 | 525 |
| 681 | 614 | 79 | 11,40 | 512 | 423 | 283 | 767 | 528 |
| 682 | 611 | 79 | 11,20 | 515 | 426 | 285 | 763 | 531 |
| 683 | 609 | 77 | 11,00 | 519 | 429 | 288 | 760 | 533 |
| 684 | 606 | 78 | 10,90 | 521 | 432 | 291 | 755 | 535 |
| 685 | 604 | 79 | 10,70 | 523 | 435 | 294 | 752 | 537 |
| 686 | 600 | 79 | 10,50 | 526 | 438 | 297 | 748 | 540 |
| 687 | 598 | 78 | 10,30 | 528 | 440 | 300 | 745 | 542 |
| 688 | 595 | 78 | 10,10 | 531 | 443 | 303 | 741 | 544 |
| 689 | 591 | 78 | 10,00 | 532 | 446 | 307 | 738 | 546 |
| 690 | 590 | 79 | 9,80 | 534 | 448 | 310 | 737 | 548 |
| 691 | 589 | 78 | 9,60 | 536 | 451 | 313 | 734 | 551 |
| 692 | 588 | 79 | 9,40 | 538 | 453 | 317 | 732 | 553 |
| 693 | 589 | 80 | 9,30 | 539 | 456 | 320 | 732 | 555 |

| | | | | | | | | |
|-----|-----|----|-------|-----|-----|-----|-----|-----|
| 694 | 590 | 79 | 9,10 | 540 | 458 | 324 | 732 | 559 |
| 695 | 586 | 80 | 8,90 | 542 | 461 | 327 | 732 | 560 |
| 696 | 576 | 78 | 8,50 | 542 | 463 | 331 | 727 | 562 |
| 697 | 566 | 80 | 8,70 | 544 | 465 | 335 | 717 | 564 |
| 698 | 559 | 78 | 8,50 | 543 | 467 | 339 | 704 | 565 |
| 699 | 550 | 79 | 8,40 | 543 | 468 | 342 | 691 | 566 |
| 700 | 542 | 77 | 8,30 | 542 | 469 | 346 | 678 | 565 |
| 701 | 533 | 77 | 8,20 | 541 | 470 | 350 | 663 | 564 |
| 702 | 525 | 78 | 8,10 | 540 | 470 | 354 | 650 | 563 |
| 703 | 519 | 77 | 8,00 | 539 | 471 | 358 | 638 | 560 |
| 704 | 514 | 78 | 8,00 | 536 | 471 | 362 | 626 | 558 |
| 705 | 507 | 78 | 7,90 | 535 | 471 | 366 | 615 | 555 |
| 706 | 501 | 77 | 7,80 | 532 | 471 | 370 | 604 | 552 |
| 707 | 494 | 78 | 7,70 | 530 | 470 | 373 | 594 | 549 |
| 708 | 490 | 78 | 7,60 | 528 | 470 | 377 | 584 | 546 |
| 709 | 485 | 78 | 7,60 | 525 | 469 | 381 | 577 | 543 |
| 710 | 482 | 79 | 7,50 | 523 | 468 | 385 | 569 | 540 |
| 711 | 478 | 78 | 7,40 | 520 | 468 | 389 | 561 | 537 |
| 712 | 475 | 78 | 7,40 | 518 | 467 | 393 | 554 | 534 |
| 713 | 472 | 79 | 7,30 | 515 | 466 | 397 | 548 | 530 |
| 714 | 468 | 77 | 7,20 | 512 | 465 | 400 | 542 | 528 |
| 715 | 466 | 78 | 7,10 | 510 | 464 | 404 | 537 | 525 |
| 716 | 463 | 78 | 7,10 | 506 | 463 | 407 | 533 | 522 |
| 717 | 460 | 79 | 7,00 | 504 | 461 | 411 | 529 | 519 |
| 718 | 459 | 79 | 6,90 | 502 | 461 | 414 | 525 | 517 |
| 719 | 457 | 79 | 6,90 | 499 | 460 | 417 | 522 | 515 |
| 720 | 457 | 79 | 6,80 | 496 | 458 | 420 | 518 | 513 |
| 721 | 457 | 79 | 6,70 | 493 | 457 | 423 | 517 | 512 |
| 722 | 456 | 78 | 6,70 | 492 | 456 | 426 | 514 | 510 |
| 723 | 452 | 78 | 6,60 | 489 | 455 | 429 | 511 | 508 |
| 724 | 447 | 78 | 6,50 | 486 | 454 | 431 | 507 | 507 |
| 725 | 440 | 77 | 6,50 | 485 | 453 | 434 | 502 | 503 |
| 726 | 433 | 78 | 6,40 | 482 | 453 | 436 | 496 | 500 |
| 727 | 427 | 78 | 6,40 | 479 | 452 | 438 | 490 | 497 |
| 728 | 422 | 78 | 6,30 | 477 | 451 | 440 | 484 | 492 |
| 729 | 417 | 78 | 6,30 | 474 | 450 | 442 | 478 | 488 |
| 730 | 414 | 78 | 6,20 | 471 | 449 | 444 | 472 | 484 |
| 731 | 411 | 78 | 6,20 | 469 | 448 | 446 | 467 | 480 |
| 732 | 407 | 78 | 6,10 | 466 | 447 | 448 | 462 | 476 |
| 733 | 404 | 77 | 6,10 | 463 | 445 | 450 | 456 | 472 |
| 734 | 400 | 78 | 6,00 | 461 | 443 | 451 | 451 | 468 |
| 735 | 397 | 78 | 6,00 | 458 | 442 | 453 | 446 | 464 |
| 736 | 393 | 79 | 5,90 | 455 | 441 | 455 | 442 | 461 |
| 737 | 391 | 78 | 5,90 | 452 | 439 | 456 | 437 | 458 |
| 738 | 388 | 78 | 5,80 | 450 | 438 | 458 | 433 | 454 |
| 739 | 385 | 78 | 5,80 | 447 | 437 | 459 | 430 | 451 |
| 740 | 384 | 78 | 5,80 | 445 | 435 | 461 | 426 | 448 |
| 741 | 382 | 78 | 5,70 | 442 | 433 | 462 | 422 | 445 |
| 742 | 380 | 79 | 5,70 | 440 | 432 | 463 | 419 | 442 |
| 743 | 379 | 78 | 5,60 | 438 | 430 | 464 | 416 | 439 |
| 744 | 377 | 79 | 5,60 | 436 | 429 | 466 | 414 | 437 |
| 745 | 376 | 79 | 5,50 | 434 | 428 | 467 | 411 | 435 |
| 746 | 375 | 78 | 5,50 | 432 | 427 | 468 | 409 | 433 |
| 747 | 373 | 78 | 5,50 | 430 | 425 | 469 | 406 | 431 |
| 748 | 371 | 78 | 5,40 | 428 | 423 | 470 | 404 | 429 |
| 749 | 370 | 78 | 5,40 | 426 | 422 | 472 | 401 | 427 |
| 750 | 367 | 78 | 5,30 | 424 | 420 | 472 | 399 | 425 |
| 751 | 365 | 78 | 5,30 | 422 | 420 | 473 | 396 | 423 |
| 752 | 364 | 78 | 5,30 | 420 | 418 | 475 | 394 | 421 |
| 753 | 362 | 78 | 5,20 | 418 | 417 | 476 | 392 | 419 |
| 754 | 360 | 78 | 5,20 | 417 | 416 | 476 | 390 | 417 |
| 755 | 360 | 79 | 5,10 | 415 | 416 | 477 | 388 | 416 |
| 756 | 359 | 77 | 5,10 | 413 | 414 | 478 | 387 | 415 |
| 757 | 358 | 78 | 5,10 | 411 | 413 | 479 | 386 | 414 |
| 758 | 358 | 78 | 5,00 | 410 | 412 | 479 | 385 | 412 |
| 759 | 356 | 78 | 5,00 | 408 | 412 | 480 | 384 | 410 |
| 760 | 355 | 78 | 5,00 | 406 | 411 | 481 | 382 | 410 |
| 761 | 355 | 77 | 4,90 | 405 | 410 | 481 | 381 | 408 |
| 762 | 355 | 78 | 4,90 | 403 | 409 | 482 | 380 | 407 |
| 763 | 353 | 78 | 4,80 | 401 | 409 | 483 | 379 | 405 |
| 764 | 352 | 78 | 4,80 | 400 | 408 | 483 | 378 | 404 |
| 765 | 351 | 78 | 4,70 | 398 | 407 | 484 | 377 | 403 |
| 766 | 350 | 78 | 4,70 | 397 | 406 | 484 | 376 | 402 |
| 767 | 349 | 78 | 4,70 | 395 | 405 | 485 | 375 | 400 |
| 768 | 348 | 78 | 4,60 | 394 | 405 | 486 | 374 | 399 |
| 769 | 347 | 78 | 4,60 | 393 | 404 | 486 | 373 | 398 |
| 770 | 346 | 78 | 4,60 | 391 | 403 | 487 | 371 | 397 |
| 771 | 346 | 78 | 4,50 | 390 | 402 | 488 | 370 | 396 |
| 772 | 345 | 78 | 4,50 | 389 | 401 | 489 | 369 | 394 |
| 773 | 345 | 78 | 4,50 | 387 | 400 | 489 | 368 | 393 |
| 774 | 344 | 78 | 4,40 | 386 | 400 | 490 | 368 | 392 |
| 775 | 345 | 77 | 4,40 | 385 | 399 | 491 | 367 | 392 |
| 776 | 344 | 77 | 4,40 | 384 | 398 | 491 | 366 | 390 |
| 777 | 344 | 78 | 4,30 | 383 | 398 | 492 | 366 | 389 |
| 778 | 343 | 78 | 4,30 | 382 | 397 | 493 | 366 | 388 |
| 779 | 342 | 78 | 4,30 | 381 | 396 | 495 | 365 | 387 |
| 780 | 341 | 78 | 4,20 | 380 | 396 | 496 | 364 | 386 |
| 781 | 341 | 78 | 4,20 | 379 | 395 | 496 | 364 | 385 |
| 782 | 339 | 78 | 4,20 | 378 | 394 | 497 | 362 | 384 |
| 783 | 338 | 78 | 4,10 | 376 | 394 | 499 | 361 | 384 |
| 784 | 339 | 78 | 4,10 | 375 | 393 | 499 | 360 | 383 |
| 785 | 339 | 78 | 4,00 | 374 | 392 | 500 | 360 | 383 |
| 786 | 336 | 77 | 4,00 | 372 | 391 | 501 | 359 | 382 |
| 787 | 334 | 78 | 4,00 | 371 | 391 | 502 | 357 | 381 |
| 788 | 332 | 77 | 3,90 | 370 | 390 | 503 | 356 | 380 |
| 789 | 331 | 77 | 3,90 | 368 | 389 | 503 | 354 | 379 |
| 790 | 329 | 77 | 3,90 | 367 | 388 | 504 | 353 | 378 |
| 791 | 328 | 77 | 3,90 | 366 | 387 | 505 | 351 | 376 |
| 792 | 327 | 77 | 3,80 | 365 | 388 | 505 | 349 | 375 |
| 793 | 329 | 78 | 3,80 | 364 | 388 | 506 | 349 | 374 |
| 794 | 329 | 78 | 3,80 | 362 | 386 | 506 | 348 | 372 |
| 795 | 328 | 77 | 3,70 | 361 | 386 | 507 | 347 | 371 |
| 796 | 329 | 76 | 3,70 | 360 | 385 | 507 | 346 | 370 |
| 797 | 327 | 77 | 3,70 | 358 | 384 | 507 | 345 | 369 |
| 798 | 326 | 76 | 3,60 | 357 | 384 | 507 | 344 | 368 |
| 799 | 326 | 77 | 3,60 | 356 | 384 | 508 | 343 | 367 |
| 800 | 326 | 77 | 3,60 | 355 | 383 | 508 | 343 | 366 |
| 801 | 326 | 77 | 3,50 | 354 | 383 | 508 | 342 | 365 |
| 802 | 289 | 77 | 22,69 | 354 | 383 | 509 | 332 | 364 |
| 803 | 283 | 77 | 22,09 | 354 | 383 | 510 | 321 | 365 |
| 804 | 383 | 77 | 21,79 | 354 | 383 | 510 | 327 | 364 |
| 805 | 405 | 77 | 21,59 | 352 | 383 | 509 | 332 | 361 |
| 806 | 427 | 77 | 21,39 | 350 | 382 | 508 | 339 | 360 |
| 807 | 459 | 77 | 21,09 | 349 | 380 | 508 | 360 | 360 |
| 808 | 442 | 77 | 20,89 | 348 | 379 | 506 | 388 | 360 |
| 809 | 423 | 77 | 20,79 | 347 | 377 | 504 | 401 | 359 |
| 810 | 410 | 77 | 20,59 | 347 | 375 | 502 | 406 | 358 |
| 811 | 429 | 77 | 20,49 | 346 | 373 | 500 | 421 | 358 |
| 812 | 463 | 77 | 20,29 | 347 | 371 | 497 | 449 | 356 |
| 813 | 516 | 77 | 20,09 | 347 | 368 | 495 | 490 | 355 |
| 814 | 532 | 77 | 19,89 | 348 | 366 | 492 | 518 | 354 |
| 815 | 558 | 77 | 19,59 | 350 | 364 | 489 | 552 | 355 |
| 816 | 578 | 77 | 19,39 | 353 | 361 | 486 | 585 | 358 |
| 817 | 593 | 77 | 19,09 | 357 | 360 | 484 | 613 | 362 |
| 818 | 493 | 78 | 18,89 | 362 | 359 | 481 | 624 | 367 |
| 819 | 529 | 77 | 18,79 | 367 | 359 | 478 | 615 | 370 |
| 820 | 385 | 78 | 18,69 | 371 | 359 | 475 | 594 | 374 |
| 821 | 358 | 77 | 18,59 | 374 | 359 | 472 | 573 | 376 |
| 822 | 338 | 77 | 18,49 | 376 | 359 | 469 | 552 | 377 |
| 823 | 323 | 77 | 18,39 | 377 | 360 | 465 | 532 | 376 |
| 824 | 308 | 77 | 18,29 | 376 | 360 | 462 | 513 | 375 |
| 825 | 334 | 77 | 18,19 | 375 | 361 | 459 | 493 | 372 |
| 826 | 369 | 77 | 18,09 | 373 | 360 | 456 | 480 | 369 |
| 827 | 410 | 77 | 17,99 | 372 | 361 | 453 | 481 | 366 |
| 828 | 454 | 77 | 17,79 | 372 | 360 | 450 | 497 | 363 |
| 829 | 506 | 76 | 17,59 | 372 | 358 | 446 | 526 | 363 |
| 830 | 557 | 77 | 17,39 | 374 | 357 | 443 | 565 | 364 |
| 831 | 591 | 77 | 17,09 | 377 | 355 | 440 | 604 | 368 |
| 832 | 485 | 78 | 16,89 | 381 | 355 | 437 | 618 | 372 |

| | | | | | | | | |
|-----|-----|----|-------|-----|-----|-----|-----|-----|
| 833 | 439 | 77 | 16,69 | 384 | 355 | 434 | 622 | 376 |
| 834 | 411 | 77 | 16,59 | 388 | 355 | 432 | 621 | 379 |
| 835 | 386 | 77 | 16,48 | 392 | 356 | 429 | 613 | 383 |
| 836 | 370 | 76 | 16,29 | 395 | 357 | 426 | 601 | 384 |
| 837 | 351 | 77 | 16,29 | 397 | 358 | 424 | 583 | 386 |
| 838 | 335 | 76 | 16,19 | 398 | 360 | 421 | 565 | 386 |
| 839 | 323 | 76 | 16,09 | 398 | 362 | 419 | 546 | 386 |
| 840 | 312 | 76 | 15,99 | 398 | 363 | 417 | 529 | 385 |
| 841 | 302 | 76 | 15,89 | 394 | 364 | 414 | 513 | 385 |
| 842 | 333 | 76 | 15,89 | 391 | 365 | 412 | 495 | 382 |
| 843 | 494 | 75 | 17,09 | 389 | 366 | 409 | 486 | 379 |
| 844 | 509 | 76 | 15,49 | 387 | 365 | 407 | 524 | 379 |
| 845 | 523 | 76 | 14,39 | 386 | 365 | 405 | 545 | 379 |
| 846 | 535 | 76 | 15,89 | 388 | 365 | 402 | 556 | 382 |
| 847 | 587 | 76 | 14,69 | 391 | 365 | 400 | 599 | 388 |
| 848 | 603 | 75 | 14,49 | 396 | 365 | 398 | 639 | 395 |
| 849 | 608 | 76 | 14,19 | 401 | 365 | 396 | 672 | 404 |
| 850 | 502 | 77 | 13,99 | 407 | 366 | 394 | 678 | 411 |
| 851 | 454 | 77 | 13,89 | 412 | 368 | 393 | 675 | 416 |
| 852 | 427 | 77 | 13,69 | 416 | 370 | 391 | 669 | 420 |
| 853 | 408 | 77 | 13,59 | 420 | 371 | 389 | 660 | 424 |
| 854 | 394 | 76 | 13,49 | 423 | 374 | 387 | 648 | 426 |
| 855 | 381 | 77 | 13,39 | 425 | 376 | 386 | 637 | 428 |
| 856 | 372 | 76 | 13,19 | 426 | 378 | 384 | 626 | 428 |
| 857 | 363 | 76 | 13,09 | 426 | 379 | 383 | 615 | 428 |
| 858 | 355 | 77 | 12,99 | 426 | 381 | 381 | 605 | 428 |
| 859 | 349 | 77 | 12,90 | 425 | 382 | 379 | 593 | 426 |
| 860 | 343 | 78 | 12,89 | 424 | 384 | 378 | 583 | 424 |
| 861 | 339 | 78 | 12,79 | 423 | 385 | 376 | 573 | 422 |
| 862 | 336 | 78 | 12,70 | 421 | 386 | 375 | 565 | 420 |
| 863 | 335 | 78 | 12,60 | 420 | 387 | 373 | 560 | 418 |
| 864 | 335 | 78 | 12,50 | 419 | 387 | 372 | 558 | 415 |
| 865 | 334 | 78 | 12,40 | 419 | 388 | 370 | 554 | 412 |
| 866 | 332 | 79 | 12,30 | 419 | 387 | 369 | 552 | 410 |
| 867 | 330 | 78 | 12,20 | 419 | 387 | 368 | 549 | 407 |
| 868 | 329 | 78 | 12,10 | 419 | 387 | 366 | 547 | 404 |
| 869 | 326 | 78 | 12,00 | 419 | 386 | 365 | 544 | 402 |
| 870 | 321 | 79 | 11,90 | 419 | 386 | 363 | 536 | 399 |
| 871 | 317 | 79 | 11,80 | 419 | 385 | 362 | 528 | 396 |
| 872 | 312 | 79 | 11,70 | 418 | 385 | 360 | 520 | 394 |
| 873 | 305 | 79 | 11,70 | 417 | 384 | 359 | 511 | 391 |
| 874 | 300 | 79 | 11,59 | 416 | 383 | 358 | 504 | 389 |
| 875 | 296 | 79 | 11,50 | 413 | 382 | 356 | 497 | 386 |
| 876 | 293 | 79 | 11,40 | 411 | 381 | 355 | 491 | 384 |
| 877 | 293 | 79 | 11,40 | 408 | 380 | 354 | 485 | 381 |
| 878 | 296 | 79 | 11,30 | 405 | 379 | 353 | 483 | 379 |
| 879 | 296 | 79 | 11,20 | 401 | 377 | 351 | 481 | 377 |
| 880 | 292 | 79 | 11,10 | 397 | 375 | 350 | 477 | 374 |
| 881 | 285 | 79 | 11,00 | 393 | 373 | 349 | 472 | 372 |
| 882 | 280 | 79 | 11,00 | 389 | 372 | 348 | 468 | 370 |
| 883 | 269 | 79 | 10,90 | 385 | 370 | 347 | 459 | 368 |
| 884 | 260 | 78 | 10,90 | 382 | 368 | 346 | 447 | 366 |
| 885 | 254 | 78 | 10,80 | 378 | 366 | 345 | 436 | 363 |
| 886 | 249 | 78 | 10,80 | 375 | 365 | 344 | 426 | 361 |
| 887 | 245 | 79 | 10,70 | 372 | 362 | 343 | 417 | 358 |
| 888 | 241 | 78 | 10,60 | 368 | 360 | 342 | 407 | 355 |
| 889 | 237 | 79 | 10,60 | 365 | 358 | 341 | 399 | 352 |
| 890 | 234 | 79 | 10,50 | 362 | 356 | 340 | 392 | 349 |
| 891 | 231 | 79 | 10,50 | 359 | 354 | 339 | 384 | 346 |
| 892 | 228 | 78 | 10,40 | 357 | 352 | 339 | 377 | 343 |
| 893 | 225 | 78 | 10,30 | 354 | 350 | 338 | 371 | 340 |
| 894 | 222 | 78 | 10,30 | 351 | 348 | 337 | 365 | 337 |
| 895 | 220 | 78 | 10,20 | 349 | 346 | 336 | 360 | 335 |
| 896 | 218 | 78 | 10,20 | 347 | 344 | 335 | 355 | 332 |
| 897 | 216 | 79 | 10,10 | 344 | 342 | 335 | 350 | 329 |
| 898 | 214 | 79 | 10,10 | 342 | 340 | 334 | 346 | 327 |
| 899 | 213 | 78 | 10,00 | 340 | 338 | 333 | 342 | 325 |
| 900 | 211 | 78 | 9,90 | 338 | 337 | 333 | 339 | 322 |
| 901 | 209 | 78 | 9,90 | 336 | 335 | 332 | 335 | 320 |
| 902 | 208 | 78 | 9,80 | 334 | 333 | 332 | 332 | 318 |
| 903 | 207 | 78 | 9,70 | 333 | 332 | 331 | 329 | 315 |
| 904 | 207 | 78 | 9,70 | 331 | 330 | 330 | 327 | 313 |
| 905 | 206 | 78 | 9,60 | 330 | 329 | 330 | 324 | 312 |
| 906 | 205 | 78 | 9,50 | 328 | 328 | 329 | 322 | 310 |
| 907 | 205 | 78 | 9,50 | 327 | 326 | 329 | 319 | 308 |
| 908 | 204 | 78 | 9,40 | 326 | 325 | 328 | 318 | 307 |
| 909 | 204 | 78 | 9,30 | 324 | 324 | 328 | 316 | 305 |
| 910 | 203 | 78 | 9,20 | 323 | 322 | 328 | 315 | 304 |
| 911 | 203 | 78 | 9,20 | 322 | 321 | 327 | 313 | 302 |
| 912 | 203 | 78 | 9,10 | 321 | 320 | 327 | 312 | 301 |
| 913 | 203 | 78 | 9,00 | 320 | 319 | 327 | 311 | 300 |
| 914 | 202 | 78 | 8,90 | 319 | 318 | 326 | 310 | 299 |
| 915 | 202 | 78 | 8,80 | 318 | 317 | 326 | 309 | 298 |
| 916 | 202 | 77 | 8,80 | 317 | 316 | 326 | 308 | 297 |
| 917 | 201 | 78 | 8,70 | 317 | 315 | 326 | 307 | 296 |
| 918 | 201 | 77 | 8,60 | 316 | 313 | 325 | 307 | 295 |
| 919 | 201 | 77 | 8,50 | 315 | 312 | 325 | 306 | 294 |
| 920 | 200 | 77 | 8,40 | 315 | 312 | 325 | 305 | 293 |
| 921 | 201 | 77 | 8,30 | 314 | 311 | 325 | 305 | 293 |
| 922 | 200 | 77 | 8,20 | 313 | 310 | 325 | 304 | 292 |
| 923 | 200 | 77 | 8,20 | 313 | 309 | 325 | 304 | 291 |
| 924 | 200 | 77 | 8,10 | 312 | 309 | 325 | 304 | 290 |
| 925 | 200 | 77 | 8,00 | 312 | 308 | 325 | 303 | 290 |
| 926 | 200 | 77 | 7,90 | 311 | 308 | 325 | 303 | 289 |
| 927 | 200 | 77 | 7,80 | 311 | 308 | 325 | 303 | 289 |
| 928 | 201 | 77 | 7,70 | 311 | 308 | 325 | 303 | 288 |
| 929 | 201 | 77 | 7,60 | 310 | 307 | 325 | 303 | 288 |
| 930 | 201 | 77 | 7,50 | 310 | 307 | 325 | 303 | 288 |
| 931 | 201 | 77 | 7,40 | 310 | 306 | 325 | 303 | 287 |
| 932 | 201 | 77 | 7,40 | 309 | 306 | 325 | 303 | 287 |
| 933 | 200 | 77 | 7,30 | 309 | 305 | 325 | 303 | 287 |
| 934 | 200 | 77 | 7,20 | 309 | 305 | 325 | 303 | 287 |
| 935 | 200 | 77 | 7,10 | 309 | 305 | 325 | 303 | 287 |
| 936 | 201 | 77 | 7,00 | 309 | 304 | 325 | 303 | 286 |
| 937 | 201 | 77 | 6,90 | 309 | 304 | 325 | 304 | 286 |
| 938 | 201 | 77 | 6,80 | 308 | 304 | 325 | 304 | 286 |
| 939 | 201 | 77 | 6,70 | 308 | 304 | 325 | 304 | 286 |
| 940 | 201 | 77 | 6,60 | 308 | 304 | 325 | 304 | 286 |
| 941 | 201 | 77 | 6,50 | 308 | 304 | 325 | 304 | 285 |
| 942 | 200 | 77 | 6,40 | 308 | 304 | 325 | 304 | 285 |
| 943 | 200 | 77 | 6,30 | 308 | 304 | 325 | 305 | 285 |
| 944 | 199 | 77 | 6,20 | 308 | 304 | 325 | 305 | 285 |
| 945 | 198 | 77 | 6,20 | 308 | 304 | 324 | 304 | 285 |
| 946 | 197 | 76 | 6,10 | 307 | 303 | 324 | 304 | 285 |
| 947 | 196 | 77 | 6,00 | 308 | 303 | 324 | 304 | 285 |
| 948 | 196 | 77 | 6,00 | 307 | 303 | 324 | 303 | 285 |
| 949 | 195 | 76 | 5,90 | 307 | 303 | 324 | 302 | 285 |
| 950 | 195 | 76 | 5,90 | 307 | 303 | 324 | 301 | 285 |
| 951 | 194 | 76 | 5,80 | 306 | 303 | 324 | 300 | 285 |
| 952 | 193 | 76 | 5,70 | 306 | 303 | 324 | 299 | 285 |
| 953 | 192 | 76 | 5,70 | 306 | 303 | 324 | 298 | 285 |
| 954 | 192 | 76 | 5,60 | 306 | 303 | 324 | 297 | 285 |
| 955 | 191 | 76 | 5,60 | 305 | 303 | 324 | 296 | 285 |
| 956 | 191 | 76 | 5,50 | 305 | 303 | 324 | 296 | 285 |
| 957 | 190 | 76 | 5,50 | 305 | 303 | 324 | 295 | 285 |
| 958 | 189 | 76 | 5,40 | 304 | 303 | 324 | 294 | 286 |
| 959 | 189 | 76 | 5,40 | 304 | 304 | 324 | 293 | 286 |
| 960 | 189 | 76 | 5,30 | 304 | 304 | 324 | 292 | 286 |
| 961 | 188 | 76 | 5,30 | 303 | 304 | 324 | 291 | 286 |
| 962 | 187 | 76 | 5,20 | 303 | 305 | 324 | 290 | 286 |
| 963 | 187 | 76 | 5,10 | 302 | 305 | 324 | 289 | 287 |
| 964 | 187 | 77 | 5,10 | 302 | 305 | 324 | 288 | 287 |
| 965 | 186 | 76 | 5,00 | 301 | 306 | 324 | 288 | 287 |
| 966 | 186 | 76 | 5,00 | 301 | 306 | 324 | 287 | 287 |
| 967 | 186 | 76 | 4,90 | 300 | 307 | 324 | 286 | 287 |
| 968 | 186 | 76 | 4,90 | 300 | 307 | 324 | 285 | 287 |
| 969 | 185 | 76 | 4,80 | 299 | 307 | 324 | 285 | 288 |
| 970 | 185 | 77 | 4,80 | 299 | 308 | 324 | 284 | 288 |
| 971 | 184 | 76 | 4,70 | 298 | 308 | 324 | 284 | 288 |

| | | | | | | | | |
|------|-----|----|------|-----|-----|-----|-----|-----|
| 972 | 184 | 76 | 4,70 | 298 | 308 | 324 | 283 | 288 |
| 973 | 183 | 76 | 4,60 | 298 | 309 | 324 | 282 | 288 |
| 974 | 183 | 76 | 4,60 | 297 | 309 | 324 | 281 | 289 |
| 975 | 183 | 76 | 4,60 | 297 | 310 | 324 | 280 | 289 |
| 976 | 183 | 76 | 4,50 | 297 | 310 | 324 | 279 | 289 |
| 977 | 182 | 76 | 4,50 | 296 | 311 | 324 | 279 | 289 |
| 978 | 182 | 76 | 4,40 | 296 | 311 | 324 | 278 | 289 |
| 979 | 181 | 76 | 4,40 | 295 | 312 | 324 | 278 | 289 |
| 980 | 181 | 77 | 4,30 | 295 | 312 | 324 | 277 | 289 |
| 981 | 180 | 76 | 4,30 | 295 | 313 | 324 | 276 | 290 |
| 982 | 180 | 76 | 4,20 | 294 | 313 | 324 | 276 | 290 |
| 983 | 180 | 76 | 4,20 | 294 | 314 | 324 | 275 | 290 |
| 984 | 179 | 76 | 4,20 | 294 | 314 | 324 | 275 | 290 |
| 985 | 179 | 76 | 4,10 | 294 | 315 | 324 | 274 | 290 |
| 986 | 179 | 76 | 4,10 | 293 | 315 | 324 | 274 | 290 |
| 987 | 179 | 76 | 4,00 | 293 | 315 | 324 | 273 | 291 |
| 988 | 178 | 76 | 4,00 | 292 | 315 | 324 | 272 | 291 |
| 989 | 178 | 76 | 4,00 | 292 | 315 | 323 | 272 | 291 |
| 990 | 178 | 76 | 3,90 | 292 | 316 | 324 | 271 | 291 |
| 991 | 177 | 76 | 3,90 | 292 | 316 | 323 | 271 | 291 |
| 992 | 177 | 76 | 3,80 | 291 | 316 | 323 | 270 | 291 |
| 993 | 177 | 76 | 3,80 | 291 | 316 | 323 | 270 | 291 |
| 994 | 177 | 76 | 3,80 | 291 | 317 | 323 | 269 | 292 |
| 995 | 177 | 75 | 3,80 | 290 | 317 | 323 | 268 | 292 |
| 996 | 176 | 76 | 3,70 | 290 | 317 | 323 | 268 | 292 |
| 997 | 176 | 75 | 3,70 | 289 | 317 | 323 | 267 | 292 |
| 998 | 175 | 75 | 3,70 | 289 | 317 | 323 | 266 | 292 |
| 999 | 174 | 76 | 3,70 | 288 | 317 | 323 | 266 | 292 |
| 1000 | 174 | 75 | 3,70 | 288 | 316 | 323 | 265 | 292 |
| 1001 | 174 | 75 | 3,70 | 287 | 316 | 323 | 264 | 292 |
| 1002 | 174 | 75 | 3,60 | 287 | 316 | 323 | 264 | 292 |
| 1003 | 173 | 75 | 3,60 | 286 | 316 | 322 | 264 | 291 |
| 1004 | 173 | 75 | 3,60 | 286 | 316 | 322 | 263 | 292 |
| 1005 | 173 | 75 | 3,60 | 286 | 315 | 322 | 262 | 292 |
| 1006 | 173 | 75 | 3,60 | 285 | 316 | 322 | 262 | 291 |
| 1007 | 172 | 75 | 3,60 | 285 | 315 | 322 | 261 | 292 |
| 1008 | 172 | 75 | 3,50 | 285 | 315 | 322 | 261 | 291 |
| 1009 | 172 | 75 | 3,50 | 284 | 315 | 322 | 261 | 291 |
| 1010 | 172 | 75 | 3,50 | 284 | 315 | 322 | 260 | 291 |
| 1011 | 172 | 75 | 3,50 | 283 | 315 | 322 | 260 | 291 |
| 1012 | 171 | 75 | 3,50 | 283 | 315 | 322 | 260 | 291 |
| 1013 | 171 | 75 | 3,50 | 283 | 315 | 323 | 259 | 291 |
| 1014 | 171 | 75 | 3,40 | 282 | 314 | 323 | 259 | 291 |
| 1015 | 171 | 75 | 3,40 | 282 | 314 | 323 | 259 | 291 |
| 1016 | 171 | 75 | 3,40 | 281 | 314 | 323 | 258 | 291 |
| 1017 | 171 | 75 | 3,40 | 281 | 314 | 323 | 258 | 291 |
| 1018 | 171 | 75 | 3,40 | 281 | 314 | 323 | 258 | 291 |
| 1019 | 171 | 75 | 3,30 | 280 | 314 | 323 | 257 | 291 |
| 1020 | 171 | 75 | 3,30 | 280 | 314 | 324 | 257 | 291 |
| 1021 | 170 | 75 | 3,30 | 280 | 314 | 324 | 257 | 291 |
| 1022 | 170 | 75 | 3,30 | 280 | 314 | 324 | 257 | 291 |
| 1023 | 170 | 75 | 3,30 | 279 | 314 | 324 | 257 | 291 |
| 1024 | 170 | 75 | 3,30 | 279 | 314 | 324 | 256 | 291 |
| 1025 | 170 | 75 | 3,30 | 279 | 314 | 325 | 256 | 291 |
| 1026 | 170 | 75 | 3,20 | 278 | 314 | 325 | 256 | 291 |
| 1027 | 169 | 75 | 3,20 | 278 | 314 | 325 | 256 | 291 |
| 1028 | 169 | 75 | 3,20 | 278 | 314 | 325 | 256 | 291 |
| 1029 | 169 | 75 | 3,20 | 278 | 314 | 326 | 255 | 291 |
| 1030 | 169 | 75 | 3,20 | 278 | 314 | 326 | 255 | 291 |
| 1031 | 169 | 75 | 3,20 | 277 | 314 | 326 | 255 | 291 |
| 1032 | 169 | 75 | 3,20 | 277 | 314 | 326 | 255 | 291 |
| 1033 | 169 | 76 | 3,10 | 277 | 314 | 327 | 255 | 292 |
| 1034 | 169 | 75 | 3,10 | 277 | 314 | 327 | 254 | 291 |
| 1035 | 169 | 75 | 3,10 | 276 | 314 | 327 | 254 | 291 |
| 1036 | 169 | 75 | 3,10 | 276 | 314 | 327 | 254 | 291 |
| 1037 | 169 | 75 | 3,10 | 276 | 314 | 328 | 254 | 292 |
| 1038 | 169 | 75 | 3,10 | 276 | 314 | 328 | 254 | 292 |
| 1039 | 169 | 75 | 3,00 | 276 | 314 | 328 | 253 | 291 |
| 1040 | 168 | 75 | 3,00 | 275 | 314 | 329 | 253 | 291 |
| 1041 | 168 | 75 | 3,00 | 275 | 314 | 329 | 253 | 291 |
| 1042 | 168 | 75 | 3,00 | 275 | 314 | 329 | 253 | 291 |
| 1043 | 168 | 75 | 3,00 | 275 | 314 | 329 | 253 | 291 |
| 1044 | 168 | 75 | 3,00 | 275 | 314 | 330 | 252 | 291 |
| 1045 | 168 | 75 | 3,00 | 275 | 314 | 330 | 252 | 291 |
| 1046 | 168 | 75 | 3,00 | 275 | 314 | 330 | 252 | 291 |
| 1047 | 168 | 75 | 2,90 | 275 | 314 | 331 | 252 | 291 |
| 1048 | 168 | 75 | 2,90 | 275 | 314 | 331 | 252 | 291 |
| 1049 | 168 | 75 | 2,90 | 274 | 314 | 331 | 252 | 291 |
| 1050 | 168 | 75 | 2,90 | 274 | 314 | 331 | 252 | 291 |
| 1051 | 168 | 75 | 2,90 | 274 | 313 | 332 | 252 | 291 |
| 1052 | 168 | 75 | 2,90 | 274 | 313 | 332 | 252 | 291 |
| 1053 | 167 | 75 | 2,90 | 274 | 314 | 332 | 252 | 291 |
| 1054 | 168 | 75 | 2,80 | 274 | 314 | 332 | 252 | 290 |
| 1055 | 168 | 75 | 2,80 | 274 | 314 | 333 | 252 | 290 |
| 1056 | 168 | 75 | 2,80 | 274 | 314 | 333 | 252 | 290 |
| 1057 | 168 | 75 | 2,80 | 274 | 314 | 333 | 252 | 290 |
| 1058 | 168 | 75 | 2,80 | 274 | 314 | 334 | 251 | 290 |
| 1059 | 168 | 75 | 2,80 | 274 | 314 | 334 | 251 | 290 |
| 1060 | 168 | 75 | 2,80 | 274 | 314 | 334 | 251 | 290 |
| 1061 | 168 | 75 | 2,70 | 274 | 314 | 335 | 251 | 289 |
| 1062 | 168 | 75 | 2,70 | 274 | 314 | 335 | 251 | 290 |
| 1063 | 168 | 75 | 2,70 | 274 | 315 | 335 | 251 | 290 |
| 1064 | 168 | 75 | 2,70 | 274 | 315 | 335 | 251 | 289 |
| 1065 | 168 | 75 | 2,70 | 274 | 315 | 336 | 251 | 289 |
| 1066 | 168 | 75 | 2,70 | 274 | 315 | 336 | 251 | 289 |
| 1067 | 168 | 75 | 2,70 | 274 | 315 | 336 | 251 | 289 |
| 1068 | 168 | 75 | 2,60 | 274 | 315 | 336 | 251 | 289 |
| 1069 | 168 | 75 | 2,60 | 273 | 315 | 337 | 251 | 289 |
| 1070 | 168 | 75 | 2,60 | 274 | 316 | 337 | 251 | 289 |
| 1071 | 168 | 75 | 2,60 | 274 | 315 | 337 | 251 | 289 |
| 1072 | 168 | 75 | 2,60 | 274 | 315 | 337 | 251 | 289 |
| 1073 | 168 | 75 | 2,60 | 274 | 315 | 338 | 251 | 289 |
| 1074 | 169 | 75 | 2,60 | 274 | 315 | 338 | 251 | 288 |
| 1075 | 169 | 75 | 2,50 | 274 | 316 | 338 | 251 | 288 |
| 1076 | 168 | 75 | 2,50 | 274 | 316 | 338 | 251 | 288 |
| 1077 | 168 | 75 | 2,50 | 274 | 316 | 338 | 251 | 288 |
| 1078 | 168 | 75 | 2,50 | 274 | 316 | 339 | 251 | 288 |
| 1079 | 169 | 75 | 2,50 | 274 | 316 | 339 | 251 | 288 |
| 1080 | 169 | 75 | 2,50 | 274 | 316 | 339 | 251 | 288 |
| 1081 | 169 | 75 | 2,50 | 274 | 316 | 339 | 251 | 288 |
| 1082 | 168 | 75 | 2,40 | 274 | 316 | 339 | 252 | 288 |
| 1083 | 169 | 75 | 2,40 | 274 | 316 | 340 | 252 | 288 |
| 1084 | 169 | 75 | 2,40 | 274 | 316 | 340 | 252 | 287 |
| 1085 | 169 | 75 | 2,40 | 274 | 316 | 340 | 252 | 287 |
| 1086 | 169 | 75 | 2,40 | 274 | 316 | 340 | 252 | 287 |
| 1087 | 169 | 75 | 2,40 | 274 | 316 | 340 | 252 | 287 |
| 1088 | 169 | 75 | 2,40 | 275 | 317 | 341 | 253 | 287 |
| 1089 | 169 | 75 | 2,40 | 275 | 316 | 341 | 253 | 287 |
| 1090 | 170 | 75 | 2,30 | 275 | 317 | 341 | 253 | 287 |
| 1091 | 170 | 75 | 2,30 | 275 | 317 | 341 | 253 | 287 |
| 1092 | 170 | 75 | 2,30 | 275 | 317 | 342 | 253 | 287 |
| 1093 | 171 | 75 | 2,30 | 275 | 317 | 342 | 254 | 287 |
| 1094 | 170 | 75 | 2,30 | 276 | 317 | 342 | 254 | 287 |
| 1095 | 170 | 75 | 2,30 | 276 | 317 | 342 | 254 | 287 |
| 1096 | 170 | 75 | 2,30 | 276 | 318 | 343 | 254 | 287 |
| 1097 | 171 | 75 | 2,20 | 276 | 318 | 343 | 255 | 287 |
| 1098 | 171 | 75 | 2,20 | 276 | 318 | 343 | 255 | 287 |
| 1099 | 170 | 75 | 2,20 | 276 | 318 | 344 | 255 | 287 |
| 1100 | 171 | 75 | 2,20 | 277 | 318 | 344 | 255 | 287 |
| 1101 | 171 | 75 | 2,20 | 277 | 318 | 344 | 255 | 287 |
| 1102 | 171 | 75 | 2,20 | 277 | 318 | 345 | 255 | 287 |
| 1103 | 171 | 75 | 2,20 | 277 | 318 | 345 | 256 | 287 |
| 1104 | 171 | 75 | 2,10 | 277 | 318 | 345 | 256 | 287 |
| 1105 | 171 | 75 | 2,10 | 277 | 318 | 346 | 256 | 287 |
| 1106 | 171 | 75 | 2,10 | 277 | 318 | 346 | 256 | 287 |
| 1107 | 170 | 75 | 2,10 | 277 | 318 | 346 | 256 | 287 |
| 1108 | 171 | 75 | 2,10 | 277 | 318 | 347 | 256 | 287 |
| 1109 | 171 | 75 | 2,10 | 277 | 318 | 347 | 256 | 287 |
| 1110 | 171 | 75 | 2,10 | 277 | 319 | 347 | 256 | 287 |

| | | | | | | | | |
|------|-----|----|------|-----|-----|-----|-----|-----|
| 1111 | 171 | 74 | 2.10 | 277 | 318 | 348 | 256 | 287 |
| 1112 | 171 | 75 | 2.00 | 277 | 319 | 348 | 256 | 287 |
| 1113 | 171 | 75 | 2.00 | 277 | 319 | 348 | 256 | 287 |
| 1114 | 171 | 74 | 2.00 | 277 | 319 | 349 | 256 | 287 |
| 1115 | 171 | 75 | 2.00 | 277 | 319 | 349 | 256 | 287 |
| 1116 | 171 | 75 | 2.00 | 277 | 319 | 349 | 257 | 287 |
| 1117 | 171 | 75 | 2.00 | 277 | 319 | 350 | 257 | 287 |
| 1118 | 171 | 75 | 2.00 | 277 | 319 | 350 | 257 | 287 |
| 1119 | 171 | 74 | 1.90 | 277 | 319 | 350 | 257 | 287 |
| 1120 | 171 | 74 | 1.90 | 277 | 319 | 350 | 257 | 287 |
| 1121 | 171 | 75 | 1.90 | 277 | 319 | 351 | 257 | 287 |
| 1122 | 171 | 75 | 1.90 | 277 | 319 | 351 | 257 | 287 |
| 1123 | 171 | 74 | 1.90 | 277 | 319 | 351 | 257 | 287 |
| 1124 | 169 | 74 | 1.90 | 277 | 319 | 352 | 257 | 287 |
| 1125 | 171 | 75 | 1.90 | 276 | 319 | 352 | 257 | 287 |
| 1126 | 171 | 75 | 1.90 | 276 | 319 | 352 | 257 | 287 |
| 1127 | 171 | 75 | 1.80 | 276 | 320 | 352 | 257 | 287 |
| 1128 | 170 | 75 | 1.80 | 276 | 320 | 353 | 257 | 287 |
| 1129 | 170 | 74 | 1.80 | 276 | 320 | 353 | 257 | 287 |
| 1130 | 170 | 75 | 1.80 | 276 | 319 | 353 | 257 | 287 |
| 1131 | 170 | 75 | 1.80 | 276 | 319 | 353 | 256 | 287 |
| 1132 | 170 | 75 | 1.80 | 276 | 319 | 353 | 256 | 286 |
| 1133 | 170 | 74 | 1.80 | 276 | 319 | 354 | 256 | 286 |
| 1134 | 170 | 75 | 1.80 | 276 | 320 | 354 | 256 | 286 |
| 1135 | 170 | 74 | 1.80 | 276 | 319 | 354 | 256 | 286 |
| 1136 | 170 | 75 | 1.70 | 276 | 319 | 354 | 256 | 286 |
| 1137 | 170 | 75 | 1.70 | 276 | 320 | 354 | 256 | 286 |
| 1138 | 170 | 74 | 1.70 | 276 | 319 | 354 | 256 | 286 |
| 1139 | 170 | 75 | 1.70 | 275 | 319 | 354 | 255 | 285 |
| 1140 | 169 | 74 | 1.70 | 275 | 319 | 355 | 255 | 285 |
| 1141 | 169 | 74 | 1.70 | 275 | 318 | 355 | 255 | 285 |
| 1142 | 170 | 74 | 1.70 | 275 | 318 | 355 | 255 | 285 |
| 1143 | 170 | 74 | 1.70 | 275 | 318 | 355 | 255 | 285 |
| 1144 | 169 | 74 | 1.60 | 275 | 318 | 355 | 255 | 285 |
| 1145 | 170 | 74 | 1.60 | 275 | 318 | 355 | 255 | 285 |
| 1146 | 170 | 74 | 1.60 | 275 | 318 | 355 | 255 | 285 |
| 1147 | 169 | 74 | 1.60 | 275 | 317 | 355 | 255 | 285 |
| 1148 | 170 | 74 | 1.60 | 275 | 317 | 355 | 254 | 285 |
| 1149 | 170 | 74 | 1.60 | 274 | 317 | 355 | 254 | 285 |
| 1150 | 169 | 74 | 1.60 | 274 | 317 | 355 | 254 | 285 |
| 1151 | 169 | 74 | 1.50 | 274 | 317 | 355 | 254 | 285 |
| 1152 | 169 | 74 | 1.50 | 274 | 316 | 355 | 254 | 285 |
| 1153 | 169 | 74 | 1.50 | 274 | 316 | 356 | 254 | 285 |
| 1154 | 169 | 74 | 1.50 | 274 | 316 | 356 | 254 | 284 |
| 1155 | 169 | 74 | 1.50 | 274 | 316 | 356 | 254 | 284 |
| 1156 | 169 | 74 | 1.50 | 274 | 316 | 356 | 253 | 284 |
| 1157 | 169 | 74 | 1.50 | 274 | 316 | 356 | 253 | 284 |
| 1158 | 169 | 74 | 1.50 | 274 | 316 | 356 | 253 | 284 |
| 1159 | 169 | 74 | 1.50 | 274 | 316 | 356 | 254 | 284 |
| 1160 | 169 | 74 | 1.40 | 274 | 316 | 356 | 253 | 284 |
| 1161 | 169 | 74 | 1.40 | 274 | 316 | 356 | 253 | 284 |
| 1162 | 169 | 74 | 1.40 | 273 | 316 | 356 | 253 | 284 |
| 1163 | 169 | 74 | 1.40 | 273 | 316 | 356 | 253 | 284 |
| 1164 | 169 | 74 | 1.40 | 273 | 315 | 356 | 253 | 284 |
| 1165 | 169 | 74 | 1.40 | 273 | 315 | 356 | 253 | 284 |
| 1166 | 169 | 74 | 1.40 | 273 | 315 | 356 | 253 | 284 |
| 1167 | 169 | 74 | 1.40 | 273 | 315 | 356 | 253 | 283 |
| 1168 | 169 | 74 | 1.30 | 273 | 315 | 356 | 253 | 283 |
| 1169 | 169 | 74 | 1.30 | 273 | 315 | 356 | 253 | 283 |
| 1170 | 169 | 74 | 1.30 | 272 | 315 | 356 | 253 | 283 |
| 1171 | 168 | 74 | 1.30 | 272 | 315 | 357 | 253 | 283 |
| 1172 | 168 | 74 | 1.30 | 272 | 315 | 357 | 253 | 283 |
| 1173 | 168 | 74 | 1.30 | 272 | 315 | 357 | 252 | 283 |
| 1174 | 168 | 74 | 1.30 | 272 | 315 | 357 | 252 | 283 |
| 1175 | 168 | 74 | 1.30 | 272 | 315 | 357 | 252 | 283 |
| 1176 | 168 | 74 | 1.20 | 271 | 315 | 357 | 252 | 283 |
| 1177 | 168 | 74 | 1.20 | 271 | 315 | 357 | 252 | 283 |
| 1178 | 168 | 74 | 1.20 | 271 | 314 | 357 | 252 | 283 |
| 1179 | 168 | 74 | 1.20 | 271 | 314 | 357 | 252 | 283 |
| 1180 | 168 | 74 | 1.20 | 271 | 314 | 357 | 252 | 282 |
| 1181 | 168 | 74 | 1.20 | 271 | 314 | 357 | 252 | 282 |
| 1182 | 168 | 74 | 1.20 | 271 | 314 | 357 | 252 | 282 |
| 1183 | 168 | 74 | 1.20 | 270 | 314 | 357 | 252 | 282 |
| 1184 | 168 | 74 | 1.10 | 270 | 314 | 357 | 252 | 282 |
| 1185 | 168 | 74 | 1.10 | 270 | 314 | 357 | 252 | 282 |
| 1186 | 168 | 74 | 1.10 | 270 | 314 | 357 | 252 | 282 |
| 1187 | 168 | 74 | 1.10 | 270 | 314 | 357 | 252 | 282 |
| 1188 | 168 | 74 | 1.10 | 270 | 314 | 357 | 252 | 281 |
| 1189 | 168 | 74 | 1.10 | 270 | 314 | 357 | 252 | 281 |
| 1190 | 168 | 73 | 1.10 | 270 | 314 | 357 | 251 | 281 |
| 1191 | 168 | 74 | 1.00 | 269 | 314 | 357 | 251 | 281 |
| 1192 | 168 | 74 | 1.00 | 269 | 314 | 357 | 251 | 281 |
| 1193 | 168 | 74 | 1.00 | 269 | 314 | 357 | 251 | 281 |
| 1194 | 168 | 74 | 1.00 | 269 | 314 | 357 | 251 | 280 |
| 1195 | 167 | 74 | 1.00 | 269 | 314 | 357 | 251 | 280 |
| 1196 | 167 | 73 | 1.00 | 269 | 314 | 357 | 250 | 280 |
| 1197 | 166 | 74 | 1.00 | 268 | 314 | 357 | 250 | 280 |
| 1198 | 166 | 74 | 1.00 | 268 | 314 | 357 | 250 | 280 |
| 1199 | 166 | 73 | 1.00 | 268 | 313 | 357 | 250 | 280 |
| 1200 | 166 | 73 | 0.90 | 268 | 313 | 357 | 249 | 279 |
| 1201 | 165 | 74 | 0.90 | 268 | 313 | 357 | 249 | 279 |
| 1202 | 165 | 74 | 0.90 | 267 | 313 | 357 | 248 | 279 |
| 1203 | 165 | 74 | 0.90 | 267 | 313 | 357 | 248 | 279 |
| 1204 | 165 | 73 | 0.90 | 267 | 313 | 357 | 247 | 278 |
| 1205 | 164 | 73 | 0.90 | 266 | 312 | 356 | 247 | 278 |
| 1206 | 164 | 73 | 0.90 | 266 | 312 | 356 | 246 | 278 |
| 1207 | 164 | 73 | 0.90 | 265 | 312 | 356 | 246 | 277 |
| 1208 | 163 | 73 | 0.90 | 265 | 312 | 355 | 245 | 277 |
| 1209 | 163 | 73 | 0.80 | 264 | 311 | 355 | 244 | 277 |
| 1210 | 163 | 73 | 0.80 | 264 | 311 | 354 | 244 | 276 |
| 1211 | 163 | 73 | 0.80 | 263 | 311 | 354 | 244 | 276 |
| 1212 | 162 | 73 | 0.80 | 263 | 311 | 354 | 243 | 276 |
| 1213 | 162 | 74 | 0.80 | 263 | 310 | 353 | 243 | 275 |
| 1214 | 162 | 73 | 0.80 | 262 | 310 | 352 | 242 | 275 |
| 1215 | 162 | 73 | 0.80 | 262 | 310 | 352 | 242 | 275 |
| 1216 | 161 | 73 | 0.80 | 261 | 309 | 351 | 242 | 274 |
| 1217 | 161 | 73 | 0.80 | 261 | 309 | 351 | 241 | 274 |
| 1218 | 161 | 73 | 0.80 | 260 | 308 | 350 | 241 | 274 |
| 1219 | 161 | 73 | 0.70 | 259 | 308 | 350 | 241 | 273 |
| 1220 | 161 | 73 | 0.70 | 259 | 308 | 349 | 240 | 273 |
| 1221 | 160 | 74 | 0.70 | 258 | 308 | 349 | 239 | 272 |
| 1222 | 160 | 73 | 0.70 | 258 | 307 | 348 | 239 | 272 |
| 1223 | 160 | 73 | 0.70 | 257 | 307 | 348 | 239 | 271 |
| 1224 | 160 | 74 | 0.70 | 257 | 307 | 347 | 238 | 271 |
| 1225 | 160 | 74 | 0.70 | 256 | 306 | 347 | 238 | 271 |
| 1226 | 159 | 73 | 0.70 | 256 | 306 | 346 | 237 | 270 |
| 1227 | 159 | 73 | 0.70 | 255 | 305 | 346 | 237 | 270 |
| 1228 | 159 | 73 | 0.70 | 255 | 305 | 345 | 236 | 270 |
| 1229 | 159 | 73 | 0.70 | 255 | 305 | 345 | 236 | 269 |
| 1230 | 159 | 73 | 0.60 | 254 | 304 | 344 | 236 | 269 |
| 1231 | 158 | 74 | 0.60 | 254 | 304 | 344 | 236 | 268 |
| 1232 | 158 | 74 | 0.60 | 253 | 304 | 343 | 235 | 268 |
| 1233 | 158 | 73 | 0.60 | 253 | 303 | 343 | 235 | 268 |
| 1234 | 158 | 74 | 0.60 | 252 | 304 | 343 | 235 | 267 |
| 1235 | 158 | 74 | 0.60 | 252 | 303 | 342 | 234 | 267 |
| 1236 | 158 | 74 | 0.60 | 252 | 303 | 342 | 234 | 266 |
| 1237 | 157 | 73 | 0.60 | 251 | 303 | 341 | 234 | 266 |
| 1238 | 157 | 73 | 0.60 | 251 | 302 | 341 | 233 | 265 |
| 1239 | 157 | 74 | 0.60 | 251 | 302 | 341 | 233 | 265 |
| 1240 | 157 | 73 | 0.60 | 250 | 301 | 340 | 232 | 264 |
| 1241 | 157 | 74 | 0.50 | 250 | 301 | 340 | 232 | 264 |
| 1242 | 157 | 74 | 0.50 | 249 | 301 | 340 | 232 | 264 |
| 1243 | 156 | 74 | 0.50 | 249 | 301 | 339 | 232 | 263 |
| 1244 | 156 | 73 | 0.50 | 249 | 300 | 339 | 231 | 263 |
| 1245 | 156 | 74 | 0.50 | 248 | 300 | 339 | 231 | 262 |
| 1246 | 156 | 73 | 0.50 | 248 | 299 | 338 | 231 | 262 |
| 1247 | 156 | 73 | 0.50 | 247 | 299 | 338 | 230 | 261 |
| 1248 | 155 | 73 | 0.50 | 247 | 299 | 338 | 230 | 261 |
| 1249 | 155 | 73 | 0.50 | 247 | 298 | 337 | 230 | 261 |

| | | | | | | | | |
|------|-----|----|-------|-----|-----|-----|-----|-----|
| 1250 | 155 | 73 | 0,50 | 246 | 298 | 337 | 230 | 260 |
| 1251 | 155 | 73 | 0,50 | 246 | 297 | 337 | 230 | 260 |
| 1252 | 155 | 73 | 0,40 | 245 | 297 | 336 | 229 | 259 |
| 1253 | 155 | 73 | 0,40 | 245 | 297 | 336 | 229 | 259 |
| 1254 | 155 | 73 | 0,40 | 245 | 297 | 336 | 229 | 259 |
| 1255 | 155 | 73 | 0,40 | 245 | 296 | 336 | 229 | 258 |
| 1256 | 155 | 73 | 0,40 | 245 | 296 | 335 | 229 | 258 |
| 1257 | 154 | 73 | 0,40 | 244 | 295 | 335 | 228 | 257 |
| 1258 | 154 | 73 | 0,40 | 244 | 295 | 335 | 228 | 257 |
| 1259 | 154 | 73 | 0,40 | 244 | 295 | 335 | 228 | 257 |
| 1260 | 154 | 73 | 0,40 | 243 | 295 | 334 | 228 | 256 |
| 1261 | 154 | 73 | 0,40 | 243 | 295 | 334 | 227 | 256 |
| 1262 | 154 | 73 | 0,40 | 243 | 295 | 334 | 227 | 256 |
| 1263 | 153 | 73 | 0,40 | 242 | 294 | 334 | 227 | 255 |
| 1264 | 153 | 73 | 0,40 | 242 | 294 | 334 | 226 | 254 |
| 1265 | 153 | 73 | 0,40 | 242 | 294 | 333 | 226 | 254 |
| 1266 | 153 | 73 | 0,30 | 242 | 293 | 333 | 226 | 253 |
| 1267 | 153 | 73 | 0,30 | 241 | 293 | 333 | 225 | 253 |
| 1268 | 153 | 73 | 0,30 | 241 | 293 | 333 | 225 | 253 |
| 1269 | 153 | 73 | 0,30 | 241 | 293 | 333 | 225 | 252 |
| 1270 | 153 | 73 | 0,30 | 241 | 292 | 333 | 225 | 251 |
| 1271 | 153 | 73 | 0,30 | 241 | 292 | 333 | 225 | 251 |
| 1272 | 152 | 73 | 0,30 | 240 | 292 | 333 | 225 | 251 |
| 1273 | 152 | 73 | 0,30 | 240 | 292 | 332 | 224 | 250 |
| 1274 | 152 | 73 | 0,30 | 240 | 292 | 332 | 224 | 250 |
| 1275 | 152 | 73 | 0,30 | 240 | 292 | 332 | 224 | 249 |
| 1276 | 152 | 73 | 0,30 | 239 | 292 | 332 | 224 | 249 |
| 1277 | 152 | 73 | 0,30 | 240 | 292 | 332 | 223 | 249 |
| 1278 | 152 | 73 | 0,20 | 239 | 291 | 332 | 223 | 248 |
| 1279 | 152 | 73 | 0,20 | 239 | 291 | 332 | 223 | 248 |
| 1280 | 152 | 73 | 0,20 | 239 | 291 | 332 | 223 | 248 |
| 1281 | 152 | 73 | 0,20 | 238 | 291 | 332 | 222 | 247 |
| 1282 | 152 | 73 | 0,20 | 238 | 291 | 332 | 222 | 247 |
| 1283 | 152 | 73 | 0,20 | 238 | 290 | 332 | 222 | 247 |
| 1284 | 151 | 72 | 0,20 | 238 | 290 | 332 | 222 | 246 |
| 1285 | 152 | 73 | 0,20 | 238 | 290 | 332 | 222 | 246 |
| 1286 | 151 | 72 | 0,20 | 237 | 290 | 331 | 222 | 245 |
| 1287 | 151 | 72 | 0,20 | 237 | 290 | 331 | 221 | 245 |
| 1288 | 151 | 72 | 0,20 | 237 | 289 | 331 | 221 | 245 |
| 1289 | 151 | 72 | 0,10 | 237 | 289 | 331 | 221 | 244 |
| 1290 | 151 | 73 | 0,10 | 237 | 289 | 331 | 221 | 244 |
| 1291 | 151 | 73 | 0,10 | 237 | 289 | 331 | 221 | 244 |
| 1292 | 151 | 72 | 0,10 | 236 | 289 | 331 | 221 | 244 |
| 1293 | 151 | 73 | 0,10 | 236 | 289 | 331 | 220 | 243 |
| 1294 | 151 | 73 | 0,10 | 236 | 289 | 331 | 220 | 243 |
| 1295 | 151 | 73 | 0,10 | 236 | 289 | 331 | 220 | 243 |
| 1296 | 151 | 72 | 0,10 | 236 | 288 | 331 | 220 | 242 |
| 1297 | 150 | 72 | 0,10 | 235 | 288 | 331 | 220 | 242 |
| 1298 | 150 | 72 | 0,10 | 235 | 288 | 331 | 220 | 242 |
| 1299 | 150 | 73 | 0,10 | 235 | 288 | 331 | 219 | 242 |
| 1300 | 150 | 72 | 0,10 | 235 | 288 | 332 | 219 | 241 |
| 1301 | 150 | 73 | 0,10 | 235 | 288 | 332 | 219 | 241 |
| 1302 | 150 | 73 | 0,10 | 235 | 287 | 332 | 219 | 241 |
| 1303 | 150 | 72 | 0,10 | 234 | 287 | 332 | 218 | 241 |
| 1304 | 150 | 72 | 0,00 | 234 | 287 | 332 | 218 | 241 |
| 1305 | 150 | 73 | 0,00 | 234 | 287 | 332 | 218 | 240 |
| 1306 | 72 | 69 | 8,90 | 80 | 85 | 89 | 74 | 81 |
| 1307 | 103 | 69 | 8,80 | 80 | 84 | 88 | 76 | 81 |
| 1308 | 288 | 70 | 8,60 | 83 | 84 | 88 | 87 | 87 |
| 1309 | 479 | 70 | 8,20 | 92 | 85 | 88 | 135 | 101 |
| 1310 | 489 | 70 | 7,90 | 102 | 86 | 88 | 221 | 114 |
| 1311 | 517 | 70 | 7,60 | 112 | 90 | 87 | 303 | 127 |
| 1312 | 546 | 70 | 7,40 | 124 | 95 | 87 | 379 | 141 |
| 1313 | 568 | 71 | 7,10 | 136 | 101 | 87 | 447 | 155 |
| 1314 | 580 | 71 | 6,80 | 152 | 108 | 87 | 506 | 171 |
| 1315 | 577 | 71 | 6,51 | 167 | 116 | 87 | 555 | 187 |
| 1316 | 584 | 71 | 6,30 | 183 | 126 | 87 | 596 | 203 |
| 1317 | 573 | 71 | 6,10 | 198 | 135 | 88 | 622 | 219 |
| 1318 | 562 | 71 | 5,90 | 213 | 145 | 89 | 634 | 233 |
| 1319 | 558 | 71 | 5,70 | 228 | 155 | 90 | 640 | 246 |
| 1320 | 553 | 71 | 5,50 | 242 | 166 | 91 | 646 | 257 |
| 1321 | 557 | 71 | 5,30 | 256 | 177 | 93 | 650 | 269 |
| 1322 | 558 | 71 | 5,10 | 270 | 189 | 95 | 650 | 280 |
| 1323 | 554 | 71 | 4,90 | 283 | 200 | 97 | 649 | 291 |
| 1324 | 547 | 71 | 4,80 | 296 | 212 | 100 | 645 | 300 |
| 1325 | 546 | 71 | 4,60 | 308 | 223 | 103 | 643 | 308 |
| 1326 | 543 | 72 | 4,40 | 319 | 234 | 106 | 641 | 317 |
| 1327 | 542 | 72 | 4,30 | 330 | 245 | 109 | 636 | 325 |
| 1328 | 542 | 72 | 4,10 | 339 | 255 | 113 | 630 | 335 |
| 1329 | 539 | 72 | 4,00 | 347 | 264 | 116 | 625 | 345 |
| 1330 | 533 | 72 | 3,80 | 354 | 273 | 120 | 618 | 353 |
| 1331 | 523 | 72 | 3,70 | 360 | 281 | 124 | 610 | 362 |
| 1332 | 518 | 72 | 3,60 | 366 | 290 | 128 | 602 | 370 |
| 1333 | 516 | 72 | 3,40 | 371 | 297 | 132 | 596 | 378 |
| 1334 | 514 | 72 | 3,30 | 376 | 305 | 137 | 591 | 386 |
| 1335 | 511 | 72 | 3,20 | 380 | 311 | 141 | 586 | 393 |
| 1336 | 510 | 72 | 3,00 | 384 | 318 | 145 | 583 | 400 |
| 1337 | 510 | 72 | 12,30 | 389 | 325 | 150 | 576 | 405 |
| 1338 | 453 | 73 | 22,29 | 394 | 332 | 154 | 548 | 410 |
| 1339 | 555 | 73 | 21,99 | 397 | 339 | 159 | 537 | 413 |
| 1340 | 611 | 73 | 21,89 | 400 | 345 | 163 | 548 | 415 |
| 1341 | 580 | 73 | 21,39 | 402 | 350 | 168 | 573 | 416 |
| 1342 | 579 | 73 | 21,19 | 404 | 354 | 172 | 594 | 417 |
| 1343 | 584 | 73 | 20,89 | 406 | 358 | 175 | 613 | 418 |
| 1344 | 595 | 73 | 20,69 | 407 | 360 | 179 | 627 | 419 |
| 1345 | 622 | 73 | 20,39 | 408 | 363 | 182 | 646 | 422 |
| 1346 | 630 | 73 | 20,09 | 411 | 365 | 185 | 665 | 425 |
| 1347 | 635 | 73 | 19,79 | 413 | 367 | 188 | 682 | 429 |
| 1348 | 641 | 73 | 19,59 | 416 | 369 | 191 | 698 | 434 |
| 1349 | 643 | 74 | 19,29 | 420 | 371 | 193 | 712 | 439 |
| 1350 | 642 | 74 | 19,09 | 424 | 372 | 195 | 724 | 444 |
| 1351 | 640 | 74 | 18,79 | 428 | 374 | 198 | 732 | 450 |
| 1352 | 638 | 74 | 18,59 | 432 | 376 | 200 | 739 | 455 |
| 1353 | 641 | 74 | 18,29 | 436 | 378 | 202 | 745 | 460 |
| 1354 | 645 | 74 | 17,99 | 441 | 380 | 204 | 750 | 463 |
| 1355 | 647 | 74 | 17,79 | 443 | 383 | 206 | 757 | 468 |
| 1356 | 649 | 74 | 17,49 | 447 | 385 | 208 | 762 | 473 |
| 1357 | 652 | 74 | 17,29 | 449 | 388 | 211 | 766 | 477 |
| 1358 | 656 | 74 | 16,99 | 453 | 391 | 213 | 772 | 481 |
| 1359 | 662 | 74 | 16,79 | 456 | 394 | 216 | 777 | 485 |
| 1360 | 666 | 75 | 16,49 | 459 | 397 | 218 | 783 | 489 |
| 1361 | 671 | 75 | 16,29 | 462 | 400 | 221 | 789 | 494 |
| 1362 | 676 | 75 | 15,99 | 466 | 403 | 223 | 795 | 498 |
| 1363 | 680 | 75 | 15,69 | 469 | 406 | 226 | 800 | 502 |
| 1364 | 683 | 75 | 15,39 | 474 | 410 | 229 | 806 | 506 |
| 1365 | 682 | 75 | 15,19 | 478 | 414 | 231 | 810 | 510 |
| 1366 | 682 | 74 | 14,89 | 482 | 418 | 234 | 814 | 515 |
| 1367 | 683 | 75 | 14,59 | 486 | 421 | 237 | 816 | 520 |
| 1368 | 682 | 75 | 14,39 | 490 | 425 | 239 | 818 | 524 |
| 1369 | 682 | 76 | 14,09 | 494 | 428 | 242 | 821 | 528 |
| 1370 | 687 | 76 | 13,89 | 498 | 432 | 245 | 826 | 533 |
| 1371 | 687 | 76 | 13,59 | 502 | 435 | 248 | 833 | 537 |
| 1372 | 685 | 75 | 13,40 | 507 | 439 | 251 | 837 | 542 |
| 1373 | 679 | 76 | 13,10 | 510 | 443 | 254 | 838 | 546 |
| 1374 | 676 | 76 | 12,90 | 514 | 446 | 257 | 838 | 549 |
| 1375 | 672 | 76 | 12,60 | 518 | 449 | 260 | 838 | 553 |
| 1376 | 667 | 76 | 12,40 | 522 | 452 | 263 | 836 | 556 |
| 1377 | 666 | 76 | 12,20 | 525 | 455 | 266 | 834 | 559 |
| 1378 | 661 | 75 | 12,00 | 529 | 458 | 269 | 832 | 561 |
| 1379 | 661 | 76 | 11,70 | 531 | 461 | 272 | 831 | 563 |
| 1380 | 660 | 75 | 11,50 | 533 | 464 | 276 | 830 | 566 |
| 1381 | 659 | 76 | 11,30 | 537 | 467 | 279 | 830 | 568 |
| 1382 | 657 | 76 | 11,10 | 539 | 469 | 282 | 829 | 570 |
| 1383 | 656 | 76 | 10,90 | 541 | 472 | 286 | 828 | 572 |
| 1384 | 654 | 76 | 10,60 | 544 | 475 | 289 | 828 | 574 |
| 1385 | 654 | 76 | 10,40 | 545 | 476 | 292 | 827 | 577 |
| 1386 | 653 | 77 | 10,20 | 547 | 479 | 296 | 828 | 579 |
| 1387 | 652 | 76 | 10,00 | 549 | 481 | 299 | 826 | 581 |
| 1388 | 649 | 76 | 9,80 | 552 | 482 | 303 | 825 | 583 |

| | | | | | | | | |
|------|-----|----|-------|-----|-----|-----|-----|-----|
| 1389 | 645 | 75 | 9,60 | 554 | 484 | 306 | 823 | 584 |
| 1390 | 638 | 76 | 9,40 | 556 | 486 | 310 | 818 | 585 |
| 1391 | 631 | 76 | 9,30 | 558 | 488 | 313 | 812 | 586 |
| 1392 | 623 | 76 | 9,10 | 559 | 490 | 317 | 806 | 587 |
| 1393 | 615 | 75 | 8,90 | 560 | 492 | 321 | 796 | 587 |
| 1394 | 609 | 77 | 8,80 | 561 | 493 | 324 | 787 | 587 |
| 1395 | 604 | 76 | 8,60 | 561 | 494 | 328 | 779 | 586 |
| 1396 | 601 | 76 | 8,40 | 561 | 496 | 331 | 771 | 585 |
| 1397 | 598 | 76 | 8,30 | 562 | 498 | 335 | 764 | 585 |
| 1398 | 594 | 77 | 8,10 | 562 | 499 | 339 | 757 | 584 |
| 1399 | 591 | 76 | 8,00 | 562 | 500 | 342 | 751 | 583 |
| 1400 | 588 | 77 | 7,90 | 562 | 502 | 346 | 746 | 581 |
| 1401 | 585 | 76 | 7,70 | 562 | 503 | 350 | 740 | 580 |
| 1402 | 584 | 77 | 7,50 | 562 | 505 | 353 | 737 | 578 |
| 1403 | 581 | 76 | 7,40 | 561 | 506 | 357 | 732 | 577 |
| 1404 | 578 | 76 | 7,30 | 561 | 508 | 360 | 729 | 576 |
| 1405 | 575 | 76 | 7,20 | 562 | 510 | 364 | 727 | 575 |
| 1406 | 572 | 76 | 7,00 | 562 | 511 | 368 | 723 | 575 |
| 1407 | 570 | 76 | 6,90 | 562 | 512 | 371 | 720 | 574 |
| 1408 | 569 | 76 | 6,80 | 563 | 514 | 375 | 717 | 571 |
| 1409 | 567 | 76 | 6,70 | 563 | 515 | 379 | 715 | 570 |
| 1410 | 565 | 76 | 6,50 | 563 | 516 | 383 | 711 | 568 |
| 1411 | 565 | 77 | 6,40 | 564 | 517 | 386 | 708 | 567 |
| 1412 | 564 | 76 | 6,30 | 564 | 518 | 390 | 707 | 565 |
| 1413 | 563 | 75 | 6,20 | 564 | 519 | 394 | 704 | 564 |
| 1414 | 561 | 75 | 6,10 | 564 | 519 | 398 | 702 | 563 |
| 1415 | 561 | 77 | 5,90 | 565 | 520 | 402 | 702 | 562 |
| 1416 | 558 | 77 | 5,80 | 566 | 521 | 406 | 700 | 560 |
| 1417 | 556 | 77 | 5,70 | 566 | 522 | 409 | 697 | 558 |
| 1418 | 553 | 76 | 5,70 | 566 | 523 | 413 | 693 | 558 |
| 1419 | 548 | 76 | 5,50 | 566 | 524 | 417 | 685 | 556 |
| 1420 | 543 | 76 | 5,50 | 566 | 525 | 421 | 679 | 554 |
| 1421 | 538 | 77 | 5,40 | 565 | 525 | 424 | 668 | 553 |
| 1422 | 534 | 77 | 5,30 | 565 | 526 | 428 | 659 | 551 |
| 1423 | 531 | 77 | 5,30 | 564 | 526 | 432 | 651 | 548 |
| 1424 | 528 | 76 | 5,20 | 563 | 526 | 436 | 643 | 547 |
| 1425 | 521 | 77 | 5,10 | 562 | 526 | 439 | 636 | 544 |
| 1426 | 512 | 77 | 5,10 | 561 | 526 | 443 | 626 | 542 |
| 1427 | 505 | 77 | 5,00 | 559 | 525 | 447 | 617 | 539 |
| 1428 | 499 | 76 | 5,00 | 556 | 525 | 450 | 607 | 535 |
| 1429 | 492 | 77 | 5,00 | 553 | 523 | 454 | 597 | 533 |
| 1430 | 487 | 76 | 4,90 | 550 | 522 | 457 | 589 | 530 |
| 1431 | 482 | 76 | 4,90 | 547 | 521 | 461 | 580 | 527 |
| 1432 | 478 | 77 | 4,80 | 542 | 519 | 464 | 571 | 523 |
| 1433 | 474 | 76 | 4,80 | 539 | 518 | 467 | 564 | 521 |
| 1434 | 471 | 76 | 4,80 | 535 | 516 | 471 | 557 | 518 |
| 1435 | 469 | 76 | 4,70 | 531 | 514 | 474 | 551 | 515 |
| 1436 | 467 | 77 | 4,70 | 527 | 513 | 477 | 546 | 512 |
| 1437 | 466 | 77 | 4,60 | 523 | 512 | 480 | 542 | 510 |
| 1438 | 464 | 77 | 4,60 | 519 | 510 | 483 | 537 | 508 |
| 1439 | 462 | 77 | 4,60 | 516 | 509 | 486 | 533 | 506 |
| 1440 | 460 | 76 | 4,50 | 513 | 507 | 488 | 528 | 504 |
| 1441 | 457 | 76 | 4,50 | 509 | 506 | 491 | 524 | 503 |
| 1442 | 455 | 76 | 4,40 | 506 | 505 | 493 | 520 | 500 |
| 1443 | 440 | 76 | 4,40 | 503 | 504 | 496 | 515 | 498 |
| 1444 | 442 | 76 | 4,30 | 500 | 503 | 498 | 510 | 498 |
| 1445 | 440 | 76 | 4,30 | 497 | 502 | 500 | 504 | 497 |
| 1446 | 436 | 76 | 4,30 | 495 | 500 | 502 | 499 | 495 |
| 1447 | 433 | 76 | 4,30 | 492 | 499 | 504 | 495 | 494 |
| 1448 | 430 | 75 | 4,20 | 489 | 498 | 505 | 490 | 491 |
| 1449 | 427 | 76 | 4,20 | 486 | 496 | 507 | 485 | 489 |
| 1450 | 424 | 76 | 4,20 | 483 | 494 | 507 | 481 | 487 |
| 1451 | 421 | 76 | 4,10 | 481 | 493 | 509 | 477 | 485 |
| 1452 | 416 | 76 | 4,10 | 478 | 491 | 510 | 472 | 482 |
| 1453 | 414 | 75 | 4,10 | 475 | 489 | 511 | 468 | 480 |
| 1454 | 411 | 76 | 4,00 | 472 | 486 | 512 | 463 | 478 |
| 1455 | 362 | 76 | 22,35 | 470 | 485 | 513 | 453 | 476 |
| 1456 | 384 | 76 | 22,09 | 466 | 484 | 514 | 438 | 471 |
| 1457 | 469 | 76 | 21,89 | 462 | 483 | 515 | 444 | 467 |
| 1458 | 466 | 76 | 21,59 | 457 | 480 | 516 | 468 | 461 |
| 1459 | 669 | 75 | 21,19 | 453 | 477 | 517 | 519 | 460 |
| 1460 | 690 | 76 | 20,69 | 452 | 474 | 517 | 573 | 461 |
| 1461 | 673 | 76 | 20,39 | 451 | 471 | 518 | 626 | 460 |
| 1462 | 676 | 76 | 20,09 | 452 | 469 | 518 | 667 | 463 |
| 1463 | 689 | 76 | 19,69 | 454 | 467 | 517 | 705 | 468 |
| 1464 | 699 | 77 | 19,39 | 458 | 465 | 516 | 738 | 475 |
| 1465 | 705 | 77 | 18,99 | 463 | 463 | 516 | 766 | 483 |
| 1466 | 713 | 77 | 18,69 | 468 | 461 | 515 | 790 | 492 |
| 1467 | 714 | 77 | 18,29 | 474 | 461 | 514 | 810 | 500 |
| 1468 | 679 | 77 | 17,99 | 480 | 460 | 512 | 823 | 509 |
| 1469 | 626 | 77 | 17,79 | 487 | 460 | 511 | 822 | 517 |
| 1470 | 567 | 78 | 17,49 | 492 | 459 | 509 | 813 | 523 |
| 1471 | 516 | 77 | 17,39 | 495 | 458 | 507 | 795 | 528 |
| 1472 | 489 | 78 | 17,19 | 498 | 458 | 504 | 775 | 529 |
| 1473 | 469 | 77 | 17,09 | 499 | 458 | 503 | 754 | 530 |
| 1474 | 465 | 77 | 16,89 | 500 | 456 | 500 | 736 | 529 |
| 1475 | 442 | 77 | 16,79 | 499 | 454 | 498 | 720 | 526 |
| 1476 | 432 | 77 | 16,69 | 499 | 454 | 495 | 705 | 523 |
| 1477 | 423 | 77 | 16,49 | 497 | 453 | 493 | 692 | 519 |
| 1478 | 417 | 78 | 16,39 | 495 | 451 | 490 | 681 | 514 |
| 1479 | 413 | 77 | 16,19 | 494 | 449 | 487 | 671 | 510 |
| 1480 | 407 | 77 | 16,09 | 491 | 448 | 485 | 663 | 505 |
| 1481 | 402 | 77 | 15,99 | 490 | 447 | 482 | 655 | 501 |
| 1482 | 399 | 77 | 15,79 | 487 | 445 | 479 | 650 | 497 |
| 1483 | 397 | 77 | 15,69 | 485 | 443 | 476 | 645 | 492 |
| 1484 | 394 | 77 | 15,49 | 483 | 442 | 472 | 641 | 488 |
| 1485 | 393 | 77 | 15,39 | 481 | 440 | 469 | 638 | 484 |
| 1486 | 392 | 77 | 15,19 | 479 | 438 | 467 | 636 | 481 |
| 1487 | 392 | 77 | 15,09 | 477 | 437 | 464 | 635 | 478 |
| 1488 | 394 | 76 | 14,99 | 475 | 435 | 461 | 635 | 475 |
| 1489 | 396 | 76 | 14,79 | 474 | 434 | 458 | 636 | 471 |
| 1490 | 396 | 77 | 14,69 | 472 | 432 | 456 | 637 | 469 |
| 1491 | 398 | 77 | 14,49 | 471 | 430 | 453 | 640 | 466 |
| 1492 | 400 | 77 | 14,39 | 470 | 429 | 450 | 642 | 463 |
| 1493 | 400 | 77 | 14,19 | 469 | 427 | 447 | 645 | 462 |
| 1494 | 401 | 77 | 14,09 | 468 | 426 | 445 | 650 | 460 |
| 1495 | 402 | 77 | 13,89 | 468 | 425 | 442 | 653 | 457 |
| 1496 | 402 | 77 | 13,79 | 467 | 425 | 439 | 655 | 456 |
| 1497 | 402 | 77 | 13,59 | 467 | 424 | 437 | 656 | 455 |
| 1498 | 403 | 77 | 13,39 | 467 | 422 | 434 | 660 | 454 |
| 1499 | 402 | 77 | 13,29 | 466 | 422 | 432 | 660 | 452 |
| 1500 | 401 | 77 | 13,09 | 466 | 422 | 429 | 660 | 451 |
| 1501 | 401 | 77 | 12,99 | 467 | 421 | 426 | 659 | 450 |
| 1502 | 401 | 77 | 12,79 | 466 | 420 | 424 | 659 | 450 |
| 1503 | 400 | 77 | 12,70 | 467 | 420 | 422 | 658 | 449 |
| 1504 | 401 | 77 | 12,50 | 467 | 419 | 420 | 660 | 449 |
| 1505 | 400 | 77 | 12,40 | 467 | 419 | 417 | 661 | 448 |
| 1506 | 398 | 77 | 12,20 | 467 | 418 | 415 | 662 | 448 |
| 1507 | 395 | 77 | 12,10 | 467 | 418 | 413 | 661 | 448 |
| 1508 | 393 | 77 | 12,00 | 466 | 418 | 411 | 661 | 447 |
| 1509 | 391 | 77 | 11,80 | 466 | 418 | 409 | 659 | 448 |
| 1510 | 389 | 77 | 11,70 | 466 | 418 | 406 | 659 | 447 |
| 1511 | 387 | 77 | 11,59 | 465 | 418 | 405 | 659 | 448 |
| 1512 | 386 | 77 | 11,40 | 464 | 419 | 403 | 657 | 447 |
| 1513 | 384 | 77 | 11,30 | 463 | 419 | 401 | 655 | 447 |
| 1514 | 382 | 77 | 11,20 | 463 | 419 | 399 | 652 | 448 |
| 1515 | 379 | 77 | 11,10 | 461 | 418 | 398 | 649 | 448 |
| 1516 | 378 | 77 | 11,00 | 461 | 418 | 396 | 647 | 448 |
| 1517 | 375 | 77 | 10,80 | 460 | 417 | 395 | 644 | 448 |
| 1518 | 374 | 77 | 10,70 | 459 | 418 | 393 | 641 | 448 |
| 1519 | 374 | 77 | 10,60 | 458 | 417 | 391 | 638 | 448 |
| 1520 | 372 | 77 | 10,50 | 458 | 417 | 390 | 636 | 448 |
| 1521 | 371 | 76 | 10,40 | 457 | 417 | 388 | 634 | 448 |
| 1522 | 369 | 76 | 10,30 | 455 | 417 | 387 | 630 | 448 |
| 1523 | 367 | 76 | 10,20 | 455 | 416 | 385 | 628 | 448 |
| 1524 | 369 | 77 | 10,00 | 454 | 416 | 384 | 626 | 449 |
| 1525 | 368 | 76 | 9,90 | 452 | 416 | 383 | 621 | 450 |
| 1526 | 364 | 76 | 9,80 | 451 | 415 | 381 | 616 | 451 |
| 1527 | 362 | 77 | 9,70 | 450 | 415 | 380 | 611 | 452 |

| | | | | | | | | |
|------|-----|----|------|-----|-----|-----|-----|-----|
| 1528 | 360 | 76 | 9,60 | 449 | 415 | 379 | 611 | 453 |
| 1529 | 359 | 77 | 9,50 | 448 | 415 | 377 | 613 | 454 |
| 1530 | 360 | 77 | 9,47 | 447 | 415 | 376 | 613 | 455 |
| 1531 | 360 | 77 | 9,30 | 447 | 415 | 375 | 613 | 455 |
| 1532 | 361 | 77 | 9,20 | 447 | 415 | 373 | 613 | 456 |
| 1533 | 362 | 77 | 9,10 | 447 | 415 | 372 | 613 | 456 |
| 1534 | 362 | 78 | 8,90 | 448 | 414 | 371 | 614 | 456 |
| 1535 | 362 | 77 | 8,80 | 448 | 414 | 370 | 616 | 457 |
| 1536 | 360 | 77 | 8,70 | 449 | 414 | 369 | 619 | 457 |
| 1537 | 360 | 78 | 8,60 | 450 | 414 | 367 | 620 | 457 |
| 1538 | 358 | 77 | 8,50 | 450 | 414 | 366 | 619 | 458 |
| 1539 | 357 | 77 | 8,40 | 450 | 414 | 365 | 620 | 458 |
| 1540 | 356 | 77 | 8,30 | 450 | 413 | 364 | 618 | 458 |
| 1541 | 359 | 77 | 8,20 | 450 | 413 | 363 | 622 | 458 |
| 1542 | 360 | 76 | 8,10 | 449 | 414 | 362 | 615 | 458 |
| 1543 | 361 | 77 | 8,00 | 448 | 414 | 361 | 614 | 459 |
| 1544 | 361 | 77 | 7,90 | 446 | 414 | 360 | 613 | 460 |
| 1545 | 361 | 77 | 7,80 | 444 | 414 | 359 | 612 | 462 |
| 1546 | 359 | 77 | 7,70 | 442 | 414 | 358 | 610 | 464 |
| 1547 | 358 | 77 | 7,70 | 441 | 415 | 357 | 610 | 465 |
| 1548 | 356 | 78 | 7,60 | 438 | 415 | 356 | 610 | 468 |
| 1549 | 355 | 78 | 7,50 | 436 | 415 | 355 | 607 | 470 |
| 1550 | 353 | 77 | 7,40 | 434 | 416 | 354 | 605 | 473 |
| 1551 | 351 | 77 | 7,20 | 431 | 416 | 353 | 603 | 475 |
| 1552 | 350 | 77 | 7,20 | 429 | 416 | 353 | 599 | 477 |
| 1553 | 350 | 77 | 7,10 | 427 | 416 | 352 | 595 | 478 |
| 1554 | 347 | 77 | 7,00 | 425 | 417 | 351 | 589 | 478 |
| 1555 | 342 | 78 | 7,00 | 424 | 417 | 350 | 582 | 479 |
| 1556 | 338 | 78 | 6,90 | 421 | 418 | 350 | 574 | 480 |
| 1557 | 334 | 77 | 6,80 | 420 | 417 | 349 | 567 | 479 |
| 1558 | 330 | 77 | 6,80 | 419 | 418 | 349 | 560 | 478 |
| 1559 | 327 | 78 | 6,70 | 417 | 418 | 348 | 553 | 476 |
| 1560 | 324 | 78 | 6,70 | 415 | 418 | 348 | 546 | 475 |
| 1561 | 322 | 78 | 6,60 | 414 | 418 | 347 | 540 | 473 |
| 1562 | 318 | 78 | 6,50 | 413 | 417 | 346 | 534 | 471 |
| 1563 | 316 | 78 | 6,50 | 411 | 417 | 346 | 527 | 469 |
| 1564 | 313 | 77 | 6,40 | 409 | 416 | 345 | 522 | 467 |
| 1565 | 310 | 78 | 6,40 | 408 | 416 | 345 | 517 | 465 |
| 1566 | 308 | 78 | 6,30 | 406 | 415 | 344 | 512 | 462 |
| 1567 | 304 | 77 | 6,30 | 405 | 414 | 344 | 507 | 461 |
| 1568 | 302 | 77 | 6,20 | 404 | 414 | 344 | 502 | 459 |
| 1569 | 300 | 77 | 6,20 | 402 | 413 | 343 | 498 | 457 |
| 1570 | 298 | 77 | 6,10 | 401 | 412 | 343 | 493 | 455 |
| 1571 | 296 | 78 | 6,10 | 400 | 412 | 343 | 488 | 453 |
| 1572 | 293 | 78 | 6,00 | 399 | 412 | 343 | 484 | 450 |
| 1573 | 292 | 78 | 6,00 | 398 | 411 | 342 | 479 | 449 |
| 1574 | 290 | 78 | 5,90 | 396 | 410 | 342 | 476 | 447 |
| 1575 | 289 | 77 | 5,90 | 395 | 410 | 342 | 472 | 444 |
| 1576 | 287 | 78 | 5,80 | 394 | 409 | 341 | 468 | 442 |
| 1577 | 286 | 77 | 5,80 | 393 | 408 | 341 | 465 | 440 |
| 1578 | 284 | 77 | 5,80 | 392 | 407 | 341 | 462 | 439 |
| 1579 | 282 | 77 | 5,70 | 391 | 406 | 341 | 459 | 437 |
| 1580 | 281 | 78 | 5,70 | 390 | 406 | 340 | 456 | 435 |
| 1581 | 281 | 78 | 5,60 | 389 | 405 | 340 | 453 | 434 |
| 1582 | 279 | 78 | 5,60 | 388 | 404 | 340 | 450 | 433 |
| 1583 | 278 | 77 | 5,50 | 387 | 404 | 340 | 448 | 432 |
| 1584 | 277 | 77 | 5,50 | 386 | 403 | 340 | 446 | 431 |
| 1585 | 277 | 77 | 5,40 | 385 | 402 | 340 | 444 | 429 |
| 1586 | 276 | 77 | 5,40 | 384 | 401 | 339 | 443 | 427 |
| 1587 | 276 | 77 | 5,40 | 384 | 399 | 339 | 442 | 426 |
| 1588 | 275 | 78 | 5,30 | 383 | 399 | 339 | 441 | 424 |
| 1589 | 275 | 78 | 5,30 | 382 | 398 | 339 | 440 | 422 |
| 1590 | 275 | 78 | 5,20 | 382 | 397 | 339 | 439 | 421 |
| 1591 | 275 | 78 | 5,20 | 381 | 397 | 339 | 438 | 419 |
| 1592 | 274 | 78 | 5,10 | 381 | 396 | 339 | 437 | 417 |
| 1593 | 274 | 77 | 5,10 | 380 | 396 | 338 | 436 | 416 |
| 1594 | 274 | 78 | 5,00 | 380 | 395 | 338 | 436 | 414 |
| 1595 | 274 | 78 | 5,00 | 379 | 395 | 338 | 435 | 413 |
| 1596 | 274 | 78 | 4,90 | 379 | 394 | 338 | 435 | 411 |
| 1597 | 273 | 78 | 4,90 | 378 | 393 | 338 | 434 | 410 |
| 1598 | 274 | 78 | 4,80 | 378 | 393 | 338 | 434 | 409 |
| 1599 | 275 | 78 | 4,80 | 378 | 393 | 338 | 435 | 408 |
| 1600 | 276 | 77 | 4,70 | 377 | 392 | 338 | 435 | 408 |
| 1601 | 277 | 77 | 4,70 | 377 | 391 | 337 | 436 | 408 |
| 1602 | 278 | 77 | 4,60 | 376 | 391 | 337 | 436 | 407 |
| 1603 | 278 | 78 | 4,60 | 376 | 391 | 337 | 437 | 407 |
| 1604 | 278 | 77 | 4,50 | 375 | 390 | 337 | 437 | 407 |
| 1605 | 279 | 77 | 4,50 | 375 | 390 | 337 | 438 | 407 |
| 1606 | 279 | 76 | 4,40 | 374 | 390 | 337 | 439 | 408 |
| 1607 | 280 | 77 | 4,40 | 374 | 389 | 337 | 441 | 408 |
| 1608 | 280 | 77 | 4,40 | 374 | 389 | 337 | 442 | 409 |
| 1609 | 278 | 77 | 4,30 | 373 | 389 | 336 | 442 | 409 |
| 1610 | 274 | 77 | 4,30 | 373 | 389 | 336 | 439 | 408 |
| 1611 | 271 | 78 | 4,30 | 372 | 389 | 336 | 437 | 408 |
| 1612 | 266 | 77 | 4,20 | 372 | 389 | 336 | 432 | 408 |
| 1613 | 261 | 78 | 4,20 | 371 | 389 | 336 | 428 | 407 |
| 1614 | 256 | 77 | 4,20 | 370 | 388 | 336 | 422 | 405 |
| 1615 | 252 | 77 | 4,20 | 369 | 388 | 335 | 416 | 403 |
| 1616 | 249 | 78 | 4,20 | 368 | 387 | 335 | 409 | 401 |
| 1617 | 246 | 77 | 4,10 | 367 | 386 | 335 | 403 | 398 |
| 1618 | 243 | 77 | 4,10 | 366 | 385 | 335 | 397 | 395 |
| 1619 | 240 | 77 | 4,10 | 364 | 383 | 334 | 391 | 392 |
| 1620 | 238 | 77 | 4,10 | 363 | 381 | 334 | 386 | 389 |
| 1621 | 235 | 77 | 4,10 | 361 | 379 | 334 | 381 | 386 |
| 1622 | 234 | 78 | 4,00 | 360 | 377 | 334 | 376 | 383 |
| 1623 | 231 | 78 | 4,00 | 359 | 375 | 334 | 371 | 380 |
| 1624 | 230 | 77 | 4,00 | 357 | 373 | 333 | 367 | 377 |
| 1625 | 228 | 77 | 4,00 | 356 | 371 | 333 | 363 | 374 |
| 1626 | 226 | 77 | 4,00 | 354 | 369 | 333 | 359 | 372 |
| 1627 | 224 | 77 | 3,90 | 353 | 367 | 333 | 356 | 369 |
| 1628 | 223 | 77 | 3,90 | 352 | 365 | 333 | 353 | 367 |
| 1629 | 222 | 77 | 3,90 | 351 | 363 | 333 | 350 | 365 |
| 1630 | 220 | 77 | 3,90 | 349 | 361 | 333 | 347 | 362 |
| 1631 | 220 | 77 | 3,90 | 347 | 359 | 333 | 344 | 360 |
| 1632 | 218 | 77 | 3,90 | 346 | 358 | 333 | 341 | 358 |
| 1633 | 217 | 77 | 3,80 | 345 | 356 | 333 | 338 | 355 |
| 1634 | 216 | 77 | 3,80 | 344 | 354 | 333 | 337 | 354 |
| 1635 | 215 | 77 | 3,80 | 343 | 353 | 332 | 334 | 352 |
| 1636 | 214 | 77 | 3,80 | 342 | 351 | 333 | 332 | 350 |
| 1637 | 213 | 77 | 3,80 | 340 | 350 | 332 | 330 | 348 |
| 1638 | 212 | 77 | 3,70 | 339 | 349 | 333 | 328 | 347 |
| 1639 | 211 | 77 | 3,70 | 338 | 347 | 333 | 326 | 346 |
| 1640 | 210 | 77 | 3,70 | 337 | 346 | 333 | 325 | 344 |
| 1641 | 209 | 77 | 3,70 | 336 | 345 | 333 | 323 | 343 |
| 1642 | 209 | 77 | 3,60 | 335 | 343 | 333 | 321 | 341 |
| 1643 | 208 | 77 | 3,60 | 334 | 343 | 333 | 320 | 340 |
| 1644 | 207 | 77 | 3,60 | 332 | 341 | 333 | 318 | 339 |
| 1645 | 206 | 77 | 3,60 | 332 | 340 | 333 | 317 | 337 |
| 1646 | 205 | 77 | 3,60 | 331 | 339 | 333 | 315 | 336 |
| 1647 | 204 | 77 | 3,60 | 329 | 337 | 333 | 313 | 335 |
| 1648 | 204 | 77 | 3,60 | 328 | 336 | 333 | 312 | 334 |
| 1649 | 203 | 77 | 3,50 | 327 | 336 | 333 | 310 | 333 |
| 1650 | 203 | 77 | 3,50 | 327 | 335 | 333 | 309 | 332 |
| 1651 | 203 | 77 | 3,50 | 325 | 334 | 333 | 308 | 331 |
| 1652 | 202 | 76 | 3,50 | 325 | 333 | 333 | 307 | 330 |
| 1653 | 202 | 76 | 3,50 | 323 | 332 | 333 | 306 | 330 |
| 1654 | 201 | 76 | 3,50 | 322 | 331 | 333 | 305 | 328 |
| 1655 | 200 | 76 | 3,40 | 322 | 330 | 333 | 304 | 328 |
| 1656 | 200 | 76 | 3,40 | 321 | 329 | 333 | 303 | 327 |
| 1657 | 200 | 76 | 3,40 | 320 | 328 | 333 | 303 | 326 |
| 1658 | 200 | 76 | 3,40 | 319 | 328 | 334 | 302 | 325 |
| 1659 | 199 | 77 | 3,40 | 319 | 327 | 334 | 301 | 324 |
| 1660 | 198 | 76 | 3,40 | 318 | 326 | 334 | 300 | 323 |
| 1661 | 198 | 76 | 3,30 | 317 | 326 | 334 | 300 | 323 |
| 1662 | 198 | 76 | 3,30 | 316 | 325 | 334 | 299 | 322 |
| 1663 | 198 | 76 | 3,30 | 316 | 324 | 334 | 298 | 322 |
| 1664 | 197 | 76 | 3,30 | 315 | 324 | 334 | 297 | 321 |
| 1665 | 197 | 76 | 3,30 | 314 | 324 | 334 | 297 | 320 |
| 1666 | 197 | 76 | 3,30 | 313 | 323 | 334 | 297 | 320 |

| | | | | | | | | |
|------|-----|----|------|-----|-----|-----|-----|-----|
| 1667 | 197 | 76 | 3,30 | 313 | 322 | 334 | 296 | 319 |
| 1668 | 196 | 76 | 3,20 | 312 | 322 | 334 | 296 | 319 |
| 1669 | 196 | 76 | 3,12 | 321 | 321 | 334 | 295 | 318 |
| 1670 | 195 | 76 | 3,20 | 312 | 321 | 334 | 294 | 318 |
| 1671 | 195 | 76 | 3,20 | 310 | 320 | 334 | 293 | 318 |
| 1672 | 195 | 76 | 3,20 | 310 | 320 | 334 | 293 | 317 |
| 1673 | 194 | 76 | 3,20 | 309 | 320 | 334 | 292 | 317 |
| 1674 | 194 | 76 | 3,10 | 309 | 319 | 334 | 291 | 316 |
| 1675 | 194 | 76 | 3,10 | 308 | 319 | 335 | 290 | 316 |
| 1676 | 194 | 76 | 3,10 | 308 | 318 | 335 | 290 | 316 |
| 1677 | 194 | 75 | 3,10 | 307 | 318 | 335 | 289 | 315 |
| 1678 | 193 | 76 | 3,10 | 307 | 318 | 335 | 289 | 314 |
| 1679 | 193 | 76 | 3,10 | 306 | 317 | 335 | 288 | 315 |
| 1680 | 193 | 76 | 3,00 | 306 | 317 | 335 | 288 | 314 |
| 1681 | 192 | 75 | 3,00 | 305 | 316 | 335 | 288 | 314 |
| 1682 | 192 | 75 | 3,00 | 305 | 316 | 335 | 287 | 314 |
| 1683 | 192 | 76 | 3,00 | 305 | 316 | 335 | 287 | 314 |
| 1684 | 192 | 76 | 3,00 | 304 | 316 | 335 | 287 | 314 |
| 1685 | 192 | 76 | 3,00 | 304 | 315 | 335 | 286 | 314 |
| 1686 | 192 | 75 | 2,90 | 303 | 315 | 335 | 286 | 313 |
| 1687 | 192 | 76 | 2,90 | 303 | 315 | 335 | 286 | 313 |
| 1688 | 192 | 75 | 2,90 | 303 | 315 | 336 | 286 | 313 |
| 1689 | 192 | 75 | 2,90 | 303 | 314 | 336 | 286 | 313 |
| 1690 | 192 | 75 | 2,90 | 302 | 314 | 336 | 286 | 313 |
| 1691 | 192 | 75 | 2,90 | 302 | 315 | 336 | 286 | 313 |
| 1692 | 192 | 76 | 2,90 | 302 | 315 | 336 | 286 | 313 |
| 1693 | 193 | 76 | 2,80 | 302 | 315 | 336 | 286 | 312 |
| 1694 | 193 | 76 | 2,80 | 302 | 315 | 337 | 286 | 313 |
| 1695 | 193 | 76 | 2,80 | 302 | 315 | 337 | 287 | 312 |
| 1696 | 193 | 76 | 2,80 | 302 | 315 | 337 | 287 | 313 |
| 1697 | 194 | 75 | 2,80 | 302 | 315 | 337 | 287 | 313 |
| 1698 | 194 | 75 | 2,80 | 302 | 315 | 337 | 287 | 313 |
| 1699 | 194 | 75 | 2,70 | 302 | 315 | 338 | 288 | 313 |
| 1700 | 195 | 76 | 2,70 | 303 | 316 | 338 | 288 | 313 |
| 1701 | 195 | 76 | 2,70 | 303 | 316 | 338 | 289 | 313 |
| 1702 | 195 | 75 | 2,70 | 303 | 316 | 338 | 289 | 313 |
| 1703 | 195 | 76 | 2,70 | 303 | 316 | 339 | 290 | 313 |
| 1704 | 195 | 75 | 2,70 | 303 | 316 | 339 | 290 | 313 |
| 1705 | 195 | 76 | 2,70 | 304 | 316 | 339 | 290 | 313 |
| 1706 | 195 | 76 | 2,60 | 304 | 316 | 339 | 290 | 313 |
| 1707 | 195 | 75 | 2,60 | 304 | 316 | 340 | 291 | 313 |
| 1708 | 196 | 76 | 2,60 | 304 | 316 | 340 | 291 | 313 |
| 1709 | 196 | 75 | 2,60 | 304 | 316 | 340 | 291 | 312 |
| 1710 | 196 | 75 | 2,60 | 304 | 315 | 340 | 291 | 312 |
| 1711 | 196 | 75 | 2,60 | 304 | 315 | 340 | 291 | 312 |
| 1712 | 196 | 75 | 2,50 | 304 | 315 | 340 | 291 | 312 |
| 1713 | 197 | 75 | 2,50 | 304 | 315 | 340 | 292 | 312 |
| 1714 | 196 | 75 | 2,50 | 305 | 315 | 340 | 292 | 312 |
| 1715 | 197 | 76 | 2,50 | 305 | 316 | 340 | 292 | 312 |
| 1716 | 197 | 75 | 2,50 | 305 | 316 | 340 | 293 | 312 |
| 1717 | 197 | 76 | 2,50 | 305 | 316 | 340 | 292 | 312 |
| 1718 | 198 | 76 | 2,50 | 305 | 316 | 340 | 293 | 312 |
| 1719 | 198 | 76 | 2,40 | 306 | 316 | 340 | 293 | 312 |
| 1720 | 198 | 76 | 2,40 | 306 | 316 | 340 | 293 | 312 |
| 1721 | 198 | 76 | 2,40 | 306 | 317 | 340 | 294 | 312 |
| 1722 | 198 | 75 | 2,40 | 306 | 316 | 340 | 294 | 313 |
| 1723 | 198 | 75 | 2,40 | 306 | 316 | 340 | 294 | 313 |
| 1724 | 198 | 75 | 2,40 | 306 | 316 | 340 | 294 | 313 |
| 1725 | 197 | 76 | 2,40 | 306 | 316 | 340 | 294 | 313 |
| 1726 | 197 | 76 | 2,30 | 306 | 316 | 340 | 294 | 313 |
| 1727 | 197 | 76 | 2,30 | 306 | 316 | 340 | 294 | 313 |
| 1728 | 197 | 75 | 2,30 | 306 | 316 | 340 | 294 | 313 |
| 1729 | 197 | 76 | 2,30 | 306 | 316 | 340 | 294 | 313 |
| 1730 | 196 | 76 | 2,30 | 306 | 316 | 340 | 294 | 313 |
| 1731 | 196 | 76 | 2,30 | 306 | 316 | 340 | 293 | 313 |
| 1732 | 196 | 75 | 2,20 | 306 | 316 | 340 | 293 | 313 |
| 1733 | 196 | 76 | 2,20 | 306 | 316 | 340 | 292 | 313 |
| 1734 | 195 | 76 | 2,20 | 306 | 316 | 340 | 292 | 313 |
| 1735 | 195 | 75 | 2,20 | 305 | 316 | 340 | 291 | 313 |
| 1736 | 195 | 75 | 2,20 | 305 | 316 | 340 | 291 | 312 |
| 1737 | 195 | 75 | 2,20 | 305 | 316 | 340 | 291 | 312 |
| 1738 | 195 | 75 | 2,20 | 305 | 316 | 340 | 290 | 312 |
| 1739 | 194 | 75 | 2,10 | 305 | 316 | 340 | 290 | 312 |
| 1740 | 194 | 76 | 2,10 | 304 | 316 | 340 | 289 | 311 |
| 1741 | 194 | 75 | 2,10 | 304 | 316 | 340 | 289 | 311 |
| 1742 | 194 | 76 | 2,10 | 304 | 316 | 340 | 288 | 311 |
| 1743 | 194 | 75 | 2,10 | 304 | 315 | 340 | 288 | 311 |
| 1744 | 193 | 75 | 2,10 | 303 | 315 | 340 | 288 | 311 |
| 1745 | 193 | 75 | 2,10 | 303 | 315 | 340 | 287 | 310 |
| 1746 | 193 | 75 | 2,10 | 303 | 315 | 340 | 287 | 310 |
| 1747 | 193 | 75 | 2,00 | 302 | 315 | 339 | 287 | 310 |
| 1748 | 193 | 75 | 2,00 | 302 | 315 | 339 | 286 | 309 |
| 1749 | 193 | 75 | 2,00 | 302 | 315 | 339 | 286 | 309 |
| 1750 | 192 | 75 | 2,00 | 302 | 315 | 339 | 286 | 309 |
| 1751 | 191 | 76 | 2,00 | 302 | 315 | 339 | 286 | 309 |
| 1752 | 192 | 76 | 2,00 | 302 | 315 | 339 | 285 | 309 |
| 1753 | 191 | 76 | 2,00 | 301 | 315 | 339 | 285 | 308 |
| 1754 | 191 | 76 | 2,00 | 301 | 315 | 339 | 284 | 308 |
| 1755 | 191 | 75 | 1,90 | 301 | 315 | 339 | 284 | 308 |
| 1756 | 190 | 75 | 1,90 | 300 | 315 | 339 | 284 | 307 |
| 1757 | 190 | 75 | 1,90 | 300 | 314 | 338 | 283 | 307 |
| 1758 | 190 | 76 | 1,90 | 300 | 314 | 338 | 283 | 306 |
| 1759 | 189 | 76 | 1,90 | 300 | 315 | 338 | 282 | 306 |
| 1760 | 189 | 76 | 1,90 | 299 | 314 | 338 | 282 | 306 |
| 1761 | 189 | 75 | 1,90 | 299 | 314 | 338 | 281 | 305 |
| 1762 | 188 | 75 | 1,90 | 298 | 314 | 338 | 280 | 305 |
| 1763 | 188 | 75 | 1,80 | 298 | 314 | 338 | 280 | 304 |
| 1764 | 187 | 76 | 1,80 | 297 | 314 | 338 | 279 | 304 |
| 1765 | 187 | 76 | 1,80 | 297 | 315 | 338 | 279 | 304 |
| 1766 | 187 | 75 | 1,80 | 296 | 315 | 338 | 278 | 303 |
| 1767 | 186 | 76 | 1,80 | 296 | 315 | 338 | 278 | 302 |
| 1768 | 186 | 76 | 1,80 | 295 | 315 | 337 | 277 | 302 |
| 1769 | 186 | 76 | 1,80 | 294 | 315 | 337 | 276 | 302 |
| 1770 | 185 | 76 | 1,70 | 294 | 315 | 337 | 276 | 301 |
| 1771 | 186 | 76 | 1,70 | 293 | 315 | 337 | 275 | 301 |
| 1772 | 185 | 76 | 1,70 | 293 | 315 | 336 | 275 | 300 |
| 1773 | 185 | 75 | 1,70 | 292 | 316 | 336 | 274 | 300 |
| 1774 | 185 | 76 | 1,70 | 292 | 316 | 336 | 274 | 299 |
| 1775 | 184 | 76 | 1,70 | 292 | 316 | 336 | 273 | 299 |
| 1776 | 184 | 75 | 1,70 | 291 | 317 | 335 | 273 | 299 |
| 1777 | 184 | 76 | 1,70 | 291 | 317 | 335 | 272 | 299 |
| 1778 | 184 | 76 | 1,60 | 291 | 317 | 335 | 272 | 298 |
| 1779 | 184 | 76 | 1,60 | 290 | 317 | 334 | 272 | 298 |
| 1780 | 184 | 76 | 1,60 | 290 | 317 | 334 | 271 | 297 |
| 1781 | 183 | 76 | 1,60 | 289 | 317 | 334 | 271 | 297 |
| 1782 | 183 | 76 | 1,60 | 289 | 318 | 333 | 270 | 297 |
| 1783 | 183 | 76 | 1,60 | 289 | 318 | 333 | 270 | 296 |
| 1784 | 184 | 76 | 1,60 | 288 | 318 | 333 | 270 | 295 |
| 1785 | 183 | 75 | 1,60 | 288 | 318 | 332 | 270 | 296 |
| 1786 | 183 | 76 | 1,50 | 287 | 318 | 332 | 269 | 295 |
| 1787 | 183 | 76 | 1,50 | 287 | 319 | 332 | 269 | 295 |
| 1788 | 183 | 75 | 1,50 | 287 | 319 | 331 | 269 | 295 |
| 1789 | 183 | 75 | 1,50 | 287 | 319 | 331 | 269 | 295 |
| 1790 | 182 | 76 | 1,50 | 286 | 319 | 331 | 268 | 294 |
| 1791 | 182 | 75 | 1,50 | 286 | 319 | 330 | 268 | 294 |
| 1792 | 182 | 75 | 1,50 | 286 | 320 | 330 | 268 | 294 |
| 1793 | 182 | 75 | 1,50 | 285 | 320 | 330 | 268 | 294 |
| 1794 | 182 | 75 | 1,40 | 285 | 320 | 329 | 267 | 294 |
| 1795 | 182 | 75 | 1,40 | 285 | 320 | 329 | 267 | 294 |
| 1796 | 182 | 75 | 1,40 | 284 | 320 | 329 | 267 | 293 |
| 1797 | 182 | 75 | 1,40 | 284 | 320 | 328 | 267 | 293 |
| 1798 | 182 | 75 | 1,40 | 284 | 321 | 328 | 267 | 293 |
| 1799 | 182 | 75 | 1,40 | 284 | 321 | 328 | 266 | 293 |
| 1800 | 182 | 75 | 1,40 | 283 | 321 | 328 | 266 | 293 |
| 1801 | 182 | 75 | 1,40 | 283 | 321 | 327 | 266 | 293 |
| 1802 | 182 | 75 | 1,30 | 283 | 321 | 327 | 266 | 293 |
| 1803 | 181 | 75 | 1,30 | 283 | 322 | 327 | 266 | 293 |
| 1804 | 181 | 75 | 1,30 | 283 | 321 | 326 | 266 | 293 |
| 1805 | 181 | 75 | 1,30 | 282 | 321 | 326 | 265 | 293 |

| | | | | | | | | |
|------|-----|----|--------|-----|-----|-----|-----|-----|
| 1806 | 181 | 75 | 1,30 | 282 | 322 | 326 | 265 | 292 |
| 1807 | 181 | 75 | 1,30 | 282 | 322 | 326 | 265 | 292 |
| 1808 | 181 | 75 | 1,30 | 282 | 322 | 326 | 265 | 292 |
| 1809 | 181 | 75 | 1,30 | 281 | 322 | 325 | 265 | 292 |
| 1810 | 181 | 75 | 1,20 | 281 | 323 | 325 | 265 | 292 |
| 1811 | 180 | 75 | 1,20 | 281 | 323 | 325 | 265 | 292 |
| 1812 | 181 | 75 | 1,20 | 281 | 323 | 325 | 265 | 292 |
| 1813 | 180 | 75 | 1,20 | 281 | 323 | 324 | 265 | 292 |
| 1814 | 181 | 75 | 1,20 | 281 | 324 | 324 | 265 | 292 |
| 1815 | 181 | 75 | 1,20 | 281 | 324 | 324 | 264 | 292 |
| 1816 | 181 | 75 | 1,20 | 281 | 324 | 324 | 264 | 292 |
| 1817 | 180 | 75 | 1,10 | 281 | 324 | 324 | 264 | 292 |
| 1818 | 180 | 75 | 1,10 | 280 | 324 | 323 | 264 | 292 |
| 1819 | 180 | 74 | 0,80 | 280 | 324 | 323 | 264 | 292 |
| 1820 | 180 | 75 | 1,10 | 280 | 324 | 323 | 264 | 292 |
| 1821 | 180 | 75 | 1,10 | 279 | 324 | 323 | 263 | 292 |
| 1822 | 180 | 75 | 1,10 | 279 | 324 | 323 | 263 | 292 |
| 1823 | 180 | 75 | 1,10 | 279 | 324 | 323 | 263 | 292 |
| 1824 | 180 | 75 | 1,10 | 279 | 324 | 322 | 263 | 292 |
| 1825 | 180 | 75 | 1,00 | 278 | 325 | 322 | 263 | 291 |
| 1826 | 180 | 75 | 1,00 | 278 | 325 | 322 | 263 | 291 |
| 1827 | 180 | 75 | 1,00 | 278 | 325 | 322 | 263 | 292 |
| 1828 | 180 | 75 | 1,00 | 278 | 325 | 322 | 262 | 291 |
| 1829 | 180 | 75 | 1,00 | 278 | 325 | 322 | 262 | 291 |
| 1830 | 179 | 75 | 1,00 | 277 | 325 | 322 | 262 | 291 |
| 1831 | 180 | 75 | 1,00 | 277 | 325 | 322 | 262 | 291 |
| 1832 | 180 | 75 | 1,00 | 277 | 325 | 322 | 262 | 291 |
| 1833 | 179 | 75 | 0,90 | 277 | 325 | 322 | 262 | 291 |
| 1834 | 179 | 75 | 0,90 | 276 | 325 | 322 | 262 | 291 |
| 1835 | 179 | 75 | 0,90 | 276 | 325 | 322 | 262 | 291 |
| 1836 | 178 | 75 | 0,90 | 276 | 325 | 322 | 262 | 291 |
| 1837 | 179 | 75 | 0,90 | 275 | 325 | 322 | 261 | 290 |
| 1838 | 178 | 75 | 0,90 | 275 | 325 | 322 | 261 | 290 |
| 1839 | 178 | 75 | 0,90 | 275 | 324 | 321 | 261 | 290 |
| 1840 | 178 | 75 | 0,90 | 274 | 324 | 321 | 261 | 290 |
| 1841 | 178 | 75 | 0,80 | 274 | 324 | 321 | 261 | 290 |
| 1842 | 178 | 75 | 0,80 | 274 | 324 | 321 | 260 | 290 |
| 1843 | 177 | 75 | 0,80 | 273 | 323 | 321 | 260 | 289 |
| 1844 | 177 | 74 | 0,80 | 273 | 323 | 321 | 260 | 289 |
| 1845 | 177 | 75 | 0,80 | 273 | 322 | 321 | 260 | 289 |
| 1846 | 177 | 75 | 0,80 | 272 | 322 | 321 | 260 | 289 |
| 1847 | 177 | 75 | 0,80 | 272 | 322 | 321 | 259 | 288 |
| 1848 | 177 | 75 | 0,80 | 271 | 322 | 321 | 259 | 288 |
| 1849 | 177 | 74 | 0,80 | 271 | 321 | 321 | 258 | 288 |
| 1850 | 177 | 75 | 0,70 | 271 | 321 | 321 | 258 | 287 |
| 1851 | 176 | 75 | 0,70 | 270 | 321 | 321 | 257 | 287 |
| 1852 | 176 | 75 | 0,70 | 270 | 321 | 321 | 257 | 287 |
| 1853 | 176 | 75 | 0,70 | 321 | 321 | 321 | 256 | 286 |
| 1854 | 175 | 75 | 0,70 | 269 | 321 | 321 | 256 | 286 |
| 1855 | 175 | 75 | 0,70 | 269 | 320 | 321 | 255 | 286 |
| 1856 | 175 | 75 | 0,70 | 269 | 320 | 321 | 255 | 286 |
| 1857 | 175 | 75 | 0,70 | 269 | 320 | 321 | 255 | 286 |
| 1858 | 174 | 75 | 0,70 | 268 | 319 | 321 | 254 | 285 |
| 1859 | 174 | 75 | 0,60 | 268 | 319 | 321 | 254 | 284 |
| 1860 | 173 | 75 | 0,60 | 267 | 318 | 320 | 254 | 284 |
| 1861 | 173 | 75 | 0,60 | 267 | 317 | 320 | 253 | 283 |
| 1862 | 172 | 75 | 0,60 | 267 | 317 | 320 | 253 | 282 |
| 1863 | 172 | 74 | 0,60 | 266 | 316 | 320 | 252 | 282 |
| 1864 | 172 | 75 | 0,60 | 266 | 316 | 320 | 252 | 281 |
| 1865 | 172 | 75 | 0,60 | 265 | 315 | 320 | 251 | 280 |
| 1866 | 172 | 75 | 0,60 | 265 | 315 | 320 | 251 | 279 |
| 1867 | 171 | 75 | 0,60 | 265 | 315 | 320 | 250 | 279 |
| 1868 | 171 | 75 | 0,60 | 264 | 314 | 320 | 249 | 278 |
| 1869 | 170 | 75 | 0,50 | 264 | 314 | 319 | 249 | 277 |
| 1870 | 170 | 75 | 0,50 | 264 | 313 | 319 | 248 | 276 |
| 1871 | 169 | 75 | 0,50 | 263 | 312 | 319 | 247 | 276 |
| 1872 | 169 | 75 | 0,50 | 263 | 311 | 319 | 247 | 275 |
| 1873 | 169 | 75 | 0,50 | 262 | 311 | 319 | 246 | 274 |
| 1874 | 169 | 75 | 0,50 | 262 | 311 | 319 | 245 | 273 |
| 1875 | 168 | 74 | 0,50 | 261 | 310 | 319 | 245 | 272 |
| 1876 | 168 | 75 | 0,50 | 261 | 310 | 319 | 244 | 271 |
| 1877 | 168 | 75 | 0,50 | 260 | 310 | 318 | 243 | 271 |
| 1878 | 167 | 75 | 0,50 | 260 | 309 | 318 | 243 | 270 |
| 1879 | 167 | 75 | 0,40 | 260 | 308 | 318 | 242 | 270 |
| 1880 | 167 | 75 | 0,40 | 259 | 308 | 318 | 241 | 269 |
| 1881 | 167 | 75 | 0,40 | 259 | 308 | 318 | 241 | 268 |
| 1882 | 166 | 75 | 0,40 | 258 | 307 | 318 | 240 | 267 |
| 1883 | 166 | 75 | 0,40 | 258 | 307 | 318 | 240 | 267 |
| 1884 | 166 | 75 | 0,40 | 258 | 306 | 317 | 239 | 266 |
| 1885 | 165 | 75 | 0,40 | 257 | 305 | 317 | 238 | 265 |
| 1886 | 165 | 75 | 0,40 | 257 | 305 | 317 | 238 | 264 |
| 1887 | 165 | 75 | 0,40 | 256 | 304 | 317 | 238 | 263 |
| 1888 | 165 | 74 | 0,40 | 256 | 304 | 317 | 237 | 263 |
| 1889 | 164 | 75 | 0,40 | 255 | 304 | 317 | 236 | 262 |
| 1890 | 164 | 75 | 0,30 | 255 | 303 | 317 | 236 | 262 |
| 1891 | 164 | 75 | 0,30 | 255 | 303 | 317 | 235 | 261 |
| 1892 | 164 | 75 | 0,30 | 254 | 303 | 316 | 235 | 260 |
| 1893 | 163 | 74 | 0,30 | 254 | 303 | 316 | 234 | 260 |
| 1894 | 163 | 74 | 0,30 | 254 | 302 | 316 | 234 | 259 |
| 1895 | 163 | 74 | 0,30 | 253 | 302 | 316 | 233 | 258 |
| 1896 | 163 | 74 | 0,30 | 253 | 302 | 316 | 233 | 257 |
| 1897 | 162 | 74 | 0,30 | 253 | 302 | 316 | 233 | 257 |
| 1898 | 162 | 75 | 0,30 | 252 | 302 | 316 | 232 | 257 |
| 1899 | 162 | 75 | 0,30 | 252 | 301 | 316 | 232 | 256 |
| 1900 | 162 | 74 | 0,30 | 252 | 300 | 316 | 231 | 256 |
| 1901 | 161 | 75 | 0,20 | 251 | 300 | 315 | 231 | 255 |
| 1902 | 161 | 75 | 0,20 | 251 | 300 | 315 | 230 | 254 |
| 1903 | 161 | 75 | 0,20 | 250 | 299 | 315 | 230 | 254 |
| 1904 | 161 | 75 | 0,20 | 250 | 299 | 315 | 229 | 253 |
| 1905 | 160 | 74 | 0,20 | 250 | 298 | 315 | 229 | 253 |
| 1906 | 160 | 75 | 0,20 | 249 | 298 | 315 | 228 | 252 |
| 1907 | 160 | 75 | 0,20 | 249 | 297 | 315 | 228 | 252 |
| 1908 | 160 | 75 | 0,20 | 249 | 297 | 315 | 228 | 251 |
| 1909 | 159 | 75 | 0,20 | 248 | 297 | 315 | 227 | 251 |
| 1910 | 159 | 75 | 0,20 | 248 | 297 | 315 | 227 | 250 |
| 1911 | 159 | 75 | 0,10 | 248 | 296 | 314 | 227 | 250 |
| 1912 | 159 | 75 | 0,10 | 248 | 296 | 314 | 226 | 249 |
| 1913 | 159 | 75 | 0,10 | 247 | 296 | 314 | 226 | 249 |
| 1914 | 159 | 75 | 0,10 | 247 | 295 | 314 | 225 | 248 |
| 1915 | 158 | 75 | 0,10 | 247 | 295 | 314 | 225 | 248 |
| 1916 | 158 | 75 | 0,10 | 247 | 295 | 314 | 225 | 247 |
| 1917 | 158 | 75 | 0,10 | 246 | 295 | 314 | 224 | 247 |
| 1918 | 158 | 75 | 0,10 | 246 | 295 | 314 | 224 | 246 |
| 1919 | 158 | 68 | 6,0988 | 166 | 104 | 68 | 638 | 193 |
| 1920 | 157 | 75 | 0,10 | 245 | 294 | 314 | 223 | 245 |
| 1921 | 157 | 75 | 0,10 | 245 | 294 | 314 | 223 | 245 |
| 1922 | 157 | 75 | 0,10 | 245 | 294 | 314 | 222 | 245 |
| 1923 | 157 | 75 | 0,10 | 244 | 294 | 314 | 222 | 244 |
| 1924 | 156 | 74 | 0,00 | 244 | 294 | 314 | 222 | 244 |
| 1925 | 86 | 67 | 8,8976 | 67 | 67 | 67 | 67 | 67 |
| 1926 | 112 | 67 | 8,7976 | 67 | 67 | 67 | 67 | 67 |
| 1927 | 208 | 67 | 8,6976 | 69 | 67 | 67 | 67 | 69 |
| 1928 | 290 | 67 | 8,4977 | 73 | 67 | 67 | 127 | 75 |
| 1929 | 407 | 67 | 8,2978 | 80 | 68 | 67 | 182 | 83 |
| 1930 | 470 | 67 | 7,9980 | 80 | 69 | 67 | 261 | 85 |
| 1931 | 552 | 67 | 7,6981 | 100 | 72 | 67 | 354 | 111 |
| 1932 | 578 | 67 | 7,3982 | 110 | 75 | 67 | 435 | 128 |
| 1933 | 588 | 68 | 7,1982 | 121 | 81 | 67 | 501 | 143 |
| 1934 | 602 | 68 | 6,8983 | 135 | 87 | 67 | 555 | 159 |
| 1935 | 620 | 68 | 6,5987 | 150 | 95 | 68 | 601 | 175 |
| 1936 | 621 | 68 | 6,2988 | 166 | 104 | 68 | 638 | 193 |
| 1937 | 614 | 68 | 6,0989 | 183 | 114 | 69 | 659 | 211 |
| 1938 | 618 | 68 | 5,7981 | 201 | 124 | 70 | 676 | 227 |
| 1939 | 625 | 69 | 5,5991 | 219 | 135 | 72 | 690 | 243 |
| 1940 | 629 | 69 | 5,3991 | 237 | 146 | 74 | 701 | 258 |
| 1941 | 631 | 70 | 5,0992 | 253 | 157 | 76 | 710 | 272 |
| 1942 | 628 | 70 | 4,8994 | 268 | 168 | 79 | 717 | 287 |
| 1943 | 627 | 70 | 4,6994 | 283 | 179 | 82 | 721 | 300 |
| 1944 | 623 | 70 | 4,4994 | 298 | 190 | 85 | 722 | 313 |

| | | | | | | | | |
|------|-----|----|---------|-----|-----|-----|-----|-----|
| 1945 | 619 | 70 | 4,2996 | 312 | 201 | 89 | 722 | 326 |
| 1946 | 617 | 71 | 4,0996 | 324 | 212 | 92 | 722 | 337 |
| 1947 | 613 | 71 | 3,8997 | 337 | 223 | 97 | 722 | 348 |
| 1948 | 608 | 71 | 3,6999 | 350 | 233 | 101 | 721 | 359 |
| 1949 | 597 | 70 | 3,4999 | 362 | 244 | 106 | 718 | 369 |
| 1950 | 590 | 70 | 3,2999 | 372 | 254 | 110 | 708 | 379 |
| 1951 | 580 | 71 | 3,2001 | 381 | 263 | 115 | 697 | 387 |
| 1952 | 571 | 71 | 3,1003 | 389 | 272 | 120 | 686 | 395 |
| 1953 | 547 | 71 | 19,9014 | 388 | 282 | 126 | 666 | 404 |
| 1954 | 590 | 71 | 21,9903 | 404 | 291 | 131 | 636 | 411 |
| 1955 | 647 | 70 | 21,5907 | 410 | 301 | 137 | 636 | 416 |
| 1956 | 624 | 70 | 21,3908 | 413 | 310 | 142 | 658 | 420 |
| 1957 | 630 | 71 | 21,0910 | 415 | 317 | 148 | 683 | 422 |
| 1958 | 651 | 71 | 20,7912 | 416 | 324 | 153 | 715 | 424 |
| 1959 | 665 | 71 | 20,4905 | 419 | 330 | 157 | 742 | 426 |
| 1960 | 683 | 71 | 20,1914 | 421 | 335 | 162 | 765 | 429 |
| 1961 | 700 | 71 | 19,8914 | 425 | 339 | 165 | 790 | 433 |
| 1962 | 702 | 72 | 19,5917 | 429 | 342 | 169 | 807 | 439 |
| 1963 | 704 | 71 | 19,2918 | 433 | 346 | 172 | 821 | 445 |
| 1964 | 706 | 72 | 18,9920 | 436 | 349 | 175 | 831 | 451 |
| 1965 | 708 | 73 | 18,6923 | 444 | 351 | 178 | 840 | 459 |
| 1966 | 705 | 73 | 18,3924 | 450 | 354 | 181 | 847 | 466 |
| 1967 | 703 | 73 | 18,0927 | 456 | 357 | 183 | 851 | 474 |
| 1968 | 697 | 74 | 17,7927 | 462 | 359 | 185 | 853 | 480 |
| 1969 | 692 | 74 | 17,4930 | 468 | 362 | 188 | 854 | 486 |
| 1970 | 688 | 74 | 17,2930 | 474 | 364 | 190 | 855 | 492 |
| 1971 | 684 | 74 | 16,9933 | 479 | 367 | 192 | 853 | 498 |
| 1972 | 680 | 74 | 16,6934 | 485 | 369 | 194 | 853 | 503 |
| 1973 | 676 | 74 | 16,4935 | 489 | 372 | 196 | 850 | 508 |
| 1974 | 673 | 75 | 16,1938 | 494 | 374 | 198 | 849 | 512 |
| 1975 | 674 | 75 | 15,9937 | 499 | 377 | 200 | 849 | 517 |
| 1976 | 671 | 74 | 15,6939 | 504 | 379 | 202 | 849 | 521 |
| 1977 | 669 | 74 | 15,4940 | 509 | 381 | 204 | 848 | 526 |
| 1978 | 667 | 75 | 15,1941 | 512 | 384 | 205 | 848 | 530 |
| 1979 | 666 | 75 | 14,9943 | 516 | 386 | 207 | 847 | 534 |
| 1980 | 664 | 74 | 14,6944 | 520 | 388 | 209 | 847 | 537 |
| 1981 | 663 | 75 | 14,4945 | 524 | 390 | 212 | 846 | 540 |
| 1982 | 661 | 76 | 14,1947 | 527 | 392 | 214 | 846 | 544 |
| 1983 | 661 | 76 | 13,9948 | 531 | 394 | 216 | 845 | 546 |
| 1984 | 660 | 75 | 13,6949 | 535 | 396 | 219 | 843 | 549 |
| 1985 | 658 | 75 | 13,4953 | 538 | 398 | 222 | 842 | 552 |
| 1986 | 655 | 75 | 13,2952 | 541 | 401 | 224 | 839 | 554 |
| 1987 | 653 | 75 | 12,9953 | 544 | 402 | 227 | 836 | 557 |
| 1988 | 650 | 74 | 12,7954 | 548 | 404 | 230 | 832 | 559 |
| 1989 | 647 | 74 | 12,5957 | 550 | 406 | 233 | 828 | 562 |
| 1990 | 644 | 75 | 12,3957 | 553 | 409 | 237 | 825 | 564 |
| 1991 | 641 | 75 | 12,0958 | 556 | 411 | 240 | 819 | 566 |
| 1992 | 638 | 75 | 11,8959 | 559 | 413 | 244 | 814 | 568 |
| 1993 | 637 | 76 | 11,6960 | 560 | 415 | 247 | 810 | 570 |
| 1994 | 634 | 76 | 11,4961 | 562 | 417 | 251 | 805 | 571 |
| 1995 | 632 | 76 | 11,2962 | 564 | 420 | 255 | 801 | 573 |
| 1996 | 630 | 76 | 11,0962 | 567 | 422 | 259 | 798 | 574 |
| 1997 | 629 | 76 | 10,8963 | 568 | 424 | 262 | 795 | 576 |
| 1998 | 627 | 76 | 10,5965 | 570 | 426 | 266 | 791 | 578 |
| 1999 | 626 | 76 | 10,3966 | 572 | 428 | 270 | 788 | 579 |
| 2000 | 626 | 75 | 10,1968 | 575 | 431 | 274 | 785 | 581 |
| 2001 | 628 | 76 | 9,9970 | 576 | 433 | 278 | 783 | 583 |
| 2002 | 628 | 75 | 9,7971 | 578 | 435 | 282 | 782 | 584 |
| 2003 | 631 | 76 | 9,5970 | 579 | 438 | 286 | 783 | 586 |
| 2004 | 630 | 76 | 9,3973 | 582 | 440 | 290 | 785 | 587 |
| 2005 | 631 | 77 | 9,1972 | 584 | 444 | 294 | 786 | 589 |
| 2006 | 632 | 75 | 8,9973 | 586 | 446 | 298 | 788 | 592 |
| 2007 | 631 | 76 | 8,7975 | 588 | 448 | 302 | 788 | 595 |
| 2008 | 629 | 76 | 8,5976 | 589 | 451 | 307 | 784 | 596 |
| 2009 | 624 | 75 | 8,3976 | 591 | 454 | 311 | 779 | 599 |
| 2010 | 620 | 76 | 8,2977 | 593 | 456 | 315 | 774 | 601 |
| 2011 | 617 | 75 | 8,0977 | 595 | 459 | 319 | 770 | 604 |
| 2012 | 611 | 76 | 7,8979 | 597 | 462 | 323 | 765 | 606 |
| 2013 | 609 | 75 | 7,7979 | 598 | 464 | 327 | 759 | 609 |
| 2014 | 605 | 74 | 7,5980 | 599 | 468 | 331 | 755 | 612 |
| 2015 | 600 | 75 | 7,4979 | 600 | 470 | 335 | 749 | 613 |
| 2016 | 596 | 75 | 7,2982 | 602 | 473 | 340 | 745 | 614 |
| 2017 | 591 | 75 | 7,1981 | 602 | 475 | 344 | 741 | 617 |
| 2018 | 589 | 76 | 6,9983 | 603 | 478 | 348 | 734 | 617 |
| 2019 | 584 | 76 | 6,8982 | 604 | 481 | 353 | 728 | 617 |
| 2020 | 581 | 75 | 6,7984 | 605 | 484 | 357 | 722 | 617 |
| 2021 | 578 | 76 | 6,5985 | 606 | 486 | 362 | 718 | 618 |
| 2022 | 574 | 76 | 6,4985 | 606 | 489 | 367 | 714 | 618 |
| 2023 | 569 | 75 | 6,3987 | 607 | 492 | 372 | 709 | 618 |
| 2024 | 566 | 74 | 6,2987 | 606 | 494 | 377 | 703 | 618 |
| 2025 | 562 | 75 | 6,1988 | 605 | 496 | 382 | 698 | 616 |
| 2026 | 553 | 75 | 6,0988 | 603 | 499 | 387 | 691 | 613 |
| 2027 | 543 | 73 | 6,0987 | 600 | 501 | 391 | 681 | 610 |
| 2028 | 534 | 74 | 5,9987 | 597 | 503 | 396 | 670 | 606 |
| 2029 | 527 | 75 | 5,8988 | 593 | 505 | 401 | 658 | 602 |
| 2030 | 521 | 75 | 5,8988 | 589 | 508 | 406 | 646 | 597 |
| 2031 | 515 | 75 | 5,7990 | 585 | 509 | 411 | 635 | 591 |
| 2032 | 510 | 74 | 5,6987 | 580 | 510 | 416 | 625 | 587 |
| 2033 | 506 | 73 | 5,6987 | 577 | 511 | 420 | 616 | 582 |
| 2034 | 503 | 73 | 5,5988 | 572 | 511 | 425 | 608 | 578 |
| 2035 | 499 | 74 | 5,4990 | 567 | 512 | 429 | 599 | 572 |
| 2036 | 496 | 74 | 5,4990 | 563 | 513 | 434 | 591 | 568 |
| 2037 | 493 | 75 | 5,3989 | 559 | 514 | 438 | 584 | 564 |
| 2038 | 490 | 74 | 5,2990 | 555 | 514 | 442 | 578 | 560 |
| 2039 | 488 | 74 | 5,2990 | 552 | 514 | 446 | 572 | 555 |
| 2040 | 486 | 75 | 5,1990 | 548 | 514 | 450 | 566 | 552 |
| 2041 | 484 | 73 | 5,1990 | 543 | 514 | 454 | 562 | 549 |
| 2042 | 483 | 74 | 5,0990 | 540 | 514 | 458 | 557 | 545 |
| 2043 | 482 | 74 | 5,0990 | 537 | 513 | 461 | 554 | 542 |
| 2044 | 479 | 74 | 4,9991 | 534 | 514 | 465 | 551 | 540 |
| 2045 | 477 | 74 | 4,8991 | 530 | 514 | 468 | 548 | 537 |
| 2046 | 478 | 74 | 4,8991 | 529 | 514 | 471 | 545 | 534 |
| 2047 | 477 | 74 | 4,7991 | 525 | 514 | 474 | 543 | 532 |
| 2048 | 471 | 73 | 4,7991 | 523 | 513 | 478 | 539 | 530 |
| 2049 | 464 | 74 | 4,6991 | 520 | 514 | 481 | 534 | 527 |
| 2050 | 459 | 73 | 4,6991 | 518 | 514 | 483 | 528 | 523 |
| 2051 | 455 | 74 | 4,5992 | 515 | 514 | 486 | 523 | 521 |
| 2052 | 449 | 73 | 4,5992 | 512 | 512 | 489 | 517 | 518 |
| 2053 | 445 | 73 | 4,5992 | 509 | 512 | 491 | 512 | 514 |
| 2054 | 442 | 73 | 4,4991 | 506 | 511 | 493 | 507 | 511 |
| 2055 | 439 | 73 | 4,4991 | 503 | 509 | 496 | 502 | 507 |
| 2056 | 436 | 73 | 4,4991 | 500 | 508 | 498 | 497 | 504 |
| 2057 | 433 | 74 | 4,3992 | 497 | 507 | 500 | 492 | 501 |
| 2058 | 431 | 73 | 4,3992 | 494 | 506 | 502 | 488 | 498 |
| 2059 | 428 | 74 | 4,2993 | 492 | 504 | 504 | 484 | 494 |
| 2060 | 426 | 74 | 4,2993 | 488 | 503 | 506 | 480 | 491 |
| 2061 | 424 | 74 | 4,2992 | 485 | 501 | 507 | 477 | 489 |
| 2062 | 423 | 74 | 4,1993 | 483 | 500 | 509 | 474 | 486 |
| 2063 | 421 | 73 | 4,1992 | 481 | 498 | 510 | 471 | 483 |
| 2064 | 419 | 73 | 4,1992 | 478 | 498 | 512 | 468 | 480 |
| 2065 | 419 | 74 | 4,0992 | 475 | 496 | 513 | 466 | 477 |
| 2066 | 418 | 73 | 4,0992 | 473 | 495 | 515 | 464 | 476 |
| 2067 | 418 | 74 | 4,0992 | 471 | 495 | 516 | 462 | 472 |
| 2068 | 339 | 74 | 21,0907 | 470 | 495 | 518 | 447 | 471 |
| 2069 | 461 | 73 | 21,6903 | 468 | 495 | 521 | 437 | 467 |
| 2070 | 535 | 73 | 21,3904 | 466 | 495 | 523 | 444 | 465 |
| 2071 | 616 | 73 | 20,9906 | 463 | 495 | 525 | 476 | 464 |
| 2072 | 635 | 73 | 20,6902 | 462 | 493 | 527 | 539 | 464 |
| 2073 | 644 | 73 | 20,2911 | 462 | 491 | 528 | 595 | 463 |
| 2074 | 663 | 73 | 19,9911 | 463 | 488 | 529 | 652 | 467 |
| 2075 | 668 | 73 | 19,6914 | 465 | 484 | 530 | 695 | 472 |
| 2076 | 677 | 73 | 19,3915 | 469 | 484 | 529 | 731 | 480 |
| 2077 | 687 | 74 | 18,9916 | 474 | 482 | 529 | 763 | 487 |
| 2078 | 693 | 74 | 18,6919 | 479 | 478 | 528 | 788 | 495 |
| 2079 | 699 | 74 | 18,3920 | 485 | 476 | 528 | 810 | 503 |
| 2080 | 705 | 74 | 18,0923 | 491 | 475 | 526 | 830 | 512 |
| 2081 | 688 | 74 | 17,7923 | 497 | 474 | 525 | 842 | 520 |
| 2082 | 613 | 73 | 17,5923 | 501 | 472 | 524 | 842 | 525 |
| 2083 | 537 | 74 | 17,3927 | 505 | 471 | 522 | 824 | 530 |

| | | | | | | | | |
|------|-----|----|---------|-----|-----|-----|-----|-----|
| 2084 | 494 | 75 | 17,1927 | 507 | 469 | 520 | 804 | 532 |
| 2085 | 466 | 74 | 16,9929 | 509 | 469 | 518 | 783 | 532 |
| 2086 | 444 | 74 | 16,9830 | 509 | 468 | 515 | 762 | 530 |
| 2087 | 426 | 74 | 16,7931 | 508 | 466 | 512 | 743 | 527 |
| 2088 | 411 | 74 | 16,5931 | 506 | 465 | 510 | 723 | 524 |
| 2089 | 398 | 74 | 16,4931 | 503 | 464 | 507 | 705 | 518 |
| 2090 | 385 | 74 | 16,3931 | 500 | 462 | 505 | 688 | 514 |
| 2091 | 374 | 74 | 16,2932 | 496 | 461 | 501 | 671 | 508 |
| 2092 | 364 | 74 | 16,1934 | 490 | 458 | 499 | 655 | 504 |
| 2093 | 357 | 74 | 16,0934 | 486 | 457 | 496 | 640 | 499 |
| 2094 | 350 | 74 | 15,9934 | 479 | 455 | 493 | 627 | 493 |
| 2095 | 345 | 73 | 15,8934 | 474 | 453 | 490 | 616 | 488 |
| 2096 | 340 | 73 | 15,6935 | 468 | 450 | 487 | 607 | 483 |
| 2097 | 336 | 73 | 15,5936 | 462 | 447 | 483 | 599 | 479 |
| 2098 | 333 | 73 | 15,4936 | 457 | 445 | 480 | 589 | 475 |
| 2099 | 330 | 74 | 15,3937 | 452 | 442 | 477 | 581 | 472 |
| 2100 | 329 | 73 | 15,2937 | 447 | 440 | 474 | 575 | 467 |
| 2101 | 328 | 73 | 15,1937 | 443 | 437 | 471 | 570 | 464 |
| 2102 | 328 | 73 | 15,0938 | 438 | 436 | 468 | 565 | 461 |
| 2103 | 328 | 73 | 14,8940 | 434 | 433 | 465 | 562 | 458 |
| 2104 | 328 | 73 | 14,7939 | 431 | 431 | 462 | 560 | 455 |
| 2105 | 329 | 73 | 14,6940 | 427 | 429 | 459 | 558 | 453 |
| 2106 | 330 | 73 | 14,5940 | 424 | 427 | 456 | 558 | 451 |
| 2107 | 331 | 73 | 14,3942 | 421 | 425 | 453 | 559 | 449 |
| 2108 | 332 | 73 | 14,2942 | 419 | 424 | 450 | 559 | 448 |
| 2109 | 334 | 72 | 14,1943 | 416 | 422 | 447 | 560 | 446 |
| 2110 | 336 | 73 | 13,9944 | 414 | 421 | 444 | 561 | 445 |
| 2111 | 337 | 73 | 13,8946 | 412 | 420 | 441 | 563 | 444 |
| 2112 | 339 | 73 | 13,7946 | 410 | 418 | 438 | 566 | 444 |
| 2113 | 341 | 73 | 13,6945 | 409 | 418 | 435 | 569 | 444 |
| 2114 | 341 | 73 | 13,4949 | 407 | 417 | 433 | 571 | 444 |
| 2115 | 342 | 73 | 13,3949 | 407 | 416 | 430 | 572 | 443 |
| 2116 | 344 | 74 | 13,1948 | 406 | 415 | 427 | 575 | 443 |
| 2117 | 345 | 74 | 13,0949 | 405 | 416 | 425 | 577 | 444 |
| 2118 | 347 | 73 | 12,9948 | 405 | 415 | 422 | 579 | 444 |
| 2119 | 347 | 73 | 12,7949 | 404 | 414 | 419 | 581 | 444 |
| 2120 | 349 | 73 | 12,6950 | 403 | 413 | 417 | 584 | 444 |
| 2121 | 350 | 73 | 12,5953 | 403 | 412 | 415 | 586 | 445 |
| 2122 | 353 | 73 | 12,3951 | 403 | 411 | 412 | 589 | 445 |
| 2123 | 353 | 73 | 12,2952 | 403 | 411 | 410 | 592 | 446 |
| 2124 | 354 | 73 | 12,0953 | 403 | 412 | 408 | 595 | 447 |
| 2125 | 355 | 73 | 11,9954 | 403 | 412 | 405 | 597 | 448 |
| 2126 | 356 | 73 | 11,8954 | 403 | 411 | 403 | 600 | 448 |
| 2127 | 357 | 73 | 11,6955 | 404 | 411 | 401 | 602 | 449 |
| 2128 | 358 | 73 | 11,5947 | 403 | 411 | 398 | 607 | 450 |
| 2129 | 359 | 73 | 11,4956 | 403 | 411 | 396 | 612 | 450 |
| 2130 | 360 | 74 | 11,2957 | 404 | 410 | 394 | 617 | 450 |
| 2131 | 361 | 73 | 11,1957 | 404 | 410 | 393 | 623 | 451 |
| 2132 | 365 | 73 | 10,9957 | 405 | 409 | 391 | 630 | 452 |
| 2133 | 370 | 73 | 10,8958 | 406 | 409 | 389 | 637 | 452 |
| 2134 | 370 | 73 | 10,6959 | 407 | 409 | 387 | 640 | 453 |
| 2135 | 369 | 73 | 10,5960 | 409 | 409 | 385 | 645 | 454 |
| 2136 | 369 | 74 | 10,3960 | 411 | 409 | 383 | 646 | 455 |
| 2137 | 364 | 73 | 10,2963 | 413 | 408 | 381 | 646 | 455 |
| 2138 | 359 | 73 | 10,1962 | 415 | 408 | 380 | 644 | 455 |
| 2139 | 355 | 73 | 10,0962 | 417 | 408 | 378 | 641 | 456 |
| 2140 | 353 | 73 | 9,9964 | 418 | 409 | 376 | 638 | 456 |
| 2141 | 351 | 74 | 9,8964 | 419 | 409 | 375 | 634 | 456 |
| 2142 | 349 | 73 | 9,7965 | 420 | 409 | 373 | 630 | 456 |
| 2143 | 348 | 73 | 9,5965 | 421 | 409 | 371 | 627 | 457 |
| 2144 | 347 | 74 | 9,4966 | 421 | 409 | 370 | 624 | 456 |
| 2145 | 346 | 73 | 9,3967 | 422 | 409 | 368 | 622 | 457 |
| 2146 | 346 | 74 | 9,2967 | 422 | 409 | 366 | 620 | 457 |
| 2147 | 345 | 74 | 9,1967 | 422 | 410 | 365 | 618 | 457 |
| 2148 | 345 | 74 | 9,0968 | 421 | 410 | 364 | 617 | 458 |
| 2149 | 346 | 74 | 8,9968 | 421 | 410 | 362 | 617 | 459 |
| 2150 | 345 | 74 | 8,8969 | 420 | 410 | 361 | 616 | 459 |
| 2151 | 346 | 74 | 8,6969 | 420 | 410 | 359 | 616 | 459 |
| 2152 | 346 | 74 | 8,5970 | 420 | 411 | 358 | 616 | 459 |
| 2153 | 346 | 74 | 8,4972 | 420 | 411 | 357 | 617 | 460 |
| 2154 | 347 | 74 | 8,3971 | 420 | 411 | 356 | 617 | 460 |
| 2155 | 347 | 74 | 8,2972 | 421 | 411 | 354 | 618 | 460 |
| 2156 | 347 | 74 | 8,1973 | 422 | 412 | 353 | 618 | 460 |
| 2157 | 348 | 74 | 8,0972 | 422 | 412 | 352 | 621 | 460 |
| 2158 | 349 | 74 | 7,8974 | 424 | 413 | 351 | 623 | 459 |
| 2159 | 350 | 74 | 7,7974 | 425 | 412 | 350 | 628 | 459 |
| 2160 | 351 | 74 | 7,6974 | 426 | 413 | 349 | 631 | 458 |
| 2161 | 353 | 74 | 7,5975 | 428 | 413 | 348 | 634 | 457 |
| 2162 | 353 | 74 | 7,4974 | 429 | 413 | 347 | 639 | 455 |
| 2163 | 354 | 74 | 7,2977 | 432 | 413 | 346 | 642 | 453 |
| 2164 | 355 | 74 | 7,1977 | 434 | 413 | 345 | 646 | 452 |
| 2165 | 355 | 74 | 7,098 | 435 | 413 | 344 | 651 | 451 |
| 2166 | 354 | 74 | 6,998 | 438 | 413 | 343 | 653 | 450 |
| 2167 | 355 | 74 | 6,898 | 440 | 413 | 343 | 654 | 449 |
| 2168 | 356 | 74 | 6,798 | 442 | 414 | 342 | 656 | 449 |
| 2169 | 356 | 74 | 6,598 | 443 | 414 | 341 | 657 | 449 |
| 2170 | 355 | 74 | 6,498 | 445 | 414 | 340 | 659 | 448 |
| 2171 | 353 | 75 | 6,398 | 446 | 414 | 339 | 660 | 449 |
| 2172 | 351 | 74 | 6,298 | 446 | 415 | 339 | 660 | 449 |
| 2173 | 346 | 74 | 6,198 | 447 | 416 | 338 | 658 | 450 |
| 2174 | 341 | 74 | 6,198 | 448 | 416 | 337 | 655 | 450 |
| 2175 | 339 | 75 | 6,098 | 448 | 417 | 336 | 651 | 449 |
| 2176 | 337 | 74 | 5,998 | 448 | 417 | 336 | 646 | 450 |
| 2177 | 335 | 74 | 5,898 | 448 | 417 | 336 | 644 | 449 |
| 2178 | 334 | 74 | 5,798 | 448 | 418 | 335 | 640 | 448 |
| 2179 | 333 | 74 | 5,798 | 447 | 418 | 335 | 637 | 448 |
| 2180 | 330 | 74 | 5,698 | 447 | 418 | 334 | 634 | 448 |
| 2181 | 328 | 74 | 5,598 | 446 | 419 | 334 | 632 | 447 |
| 2182 | 326 | 74 | 5,499 | 446 | 419 | 333 | 630 | 445 |
| 2183 | 325 | 74 | 5,499 | 446 | 420 | 333 | 627 | 444 |
| 2184 | 322 | 75 | 5,398 | 446 | 420 | 332 | 622 | 443 |
| 2185 | 319 | 74 | 5,299 | 445 | 420 | 332 | 619 | 442 |
| 2186 | 315 | 74 | 5,299 | 444 | 421 | 331 | 614 | 441 |
| 2187 | 311 | 74 | 5,199 | 444 | 422 | 331 | 605 | 439 |
| 2188 | 307 | 74 | 5,199 | 443 | 422 | 331 | 597 | 438 |
| 2189 | 304 | 75 | 5,099 | 443 | 423 | 331 | 587 | 436 |
| 2190 | 300 | 75 | 5,099 | 442 | 423 | 331 | 576 | 434 |
| 2191 | 294 | 74 | 4,999 | 441 | 423 | 330 | 563 | 434 |
| 2192 | 288 | 74 | 4,999 | 440 | 423 | 330 | 550 | 431 |
| 2193 | 283 | 75 | 4,999 | 440 | 423 | 330 | 536 | 429 |
| 2194 | 278 | 74 | 4,999 | 439 | 423 | 330 | 525 | 427 |
| 2195 | 274 | 75 | 4,899 | 437 | 422 | 329 | 515 | 425 |
| 2196 | 271 | 75 | 4,899 | 435 | 422 | 329 | 505 | 423 |
| 2197 | 267 | 74 | 4,899 | 433 | 421 | 329 | 496 | 421 |
| 2198 | 263 | 74 | 4,799 | 431 | 421 | 329 | 486 | 418 |
| 2199 | 258 | 74 | 4,799 | 428 | 420 | 329 | 475 | 416 |
| 2200 | 254 | 74 | 4,799 | 425 | 419 | 329 | 464 | 413 |
| 2201 | 249 | 74 | 4,799 | 422 | 419 | 328 | 454 | 410 |
| 2202 | 246 | 74 | 4,699 | 419 | 418 | 328 | 445 | 408 |
| 2203 | 242 | 74 | 4,699 | 416 | 416 | 328 | 436 | 405 |
| 2204 | 239 | 73 | 4,699 | 413 | 414 | 328 | 427 | 403 |
| 2205 | 236 | 74 | 4,699 | 410 | 413 | 328 | 419 | 400 |
| 2206 | 234 | 74 | 4,599 | 407 | 411 | 328 | 412 | 397 |
| 2207 | 231 | 74 | 4,599 | 404 | 410 | 328 | 405 | 394 |
| 2208 | 228 | 74 | 4,599 | 400 | 408 | 328 | 399 | 392 |
| 2209 | 226 | 74 | 4,599 | 398 | 406 | 329 | 393 | 390 |
| 2210 | 224 | 74 | 4,499 | 395 | 405 | 328 | 388 | 388 |
| 2211 | 222 | 74 | 4,499 | 392 | 403 | 329 | 382 | 386 |
| 2212 | 220 | 74 | 4,499 | 389 | 401 | 329 | 378 | 383 |
| 2213 | 218 | 74 | 4,499 | 387 | 400 | 329 | 373 | 381 |
| 2214 | 217 | 74 | 4,499 | 385 | 399 | 329 | 369 | 380 |
| 2215 | 215 | 74 | 4,399 | 382 | 398 | 329 | 366 | 378 |
| 2216 | 213 | 74 | 4,399 | 380 | 396 | 329 | 362 | 376 |
| 2217 | 212 | 74 | 4,399 | 378 | 396 | 329 | 359 | 374 |
| 2218 | 211 | 74 | 4,399 | 375 | 394 | 330 | 356 | 372 |
| 2219 | 209 | 74 | 4,399 | 373 | 393 | 330 | 353 | 371 |
| 2220 | 208 | 74 | 4,299 | 370 | 392 | 330 | 350 | 369 |
| 2221 | 207 | 74 | 4,299 | 370 | 391 | 330 | 347 | 368 |
| 2222 | 206 | 74 | 4,299 | 369 | 390 | 330 | 345 | 367 |

| | | | | | | | | |
|------|-----|----|-------|-----|-----|-----|-----|-----|
| 2223 | 205 | 74 | 4,299 | 367 | 389 | 330 | 342 | 365 |
| 2224 | 205 | 73 | 4,199 | 365 | 388 | 330 | 340 | 364 |
| 2225 | 203 | 74 | 4,199 | 364 | 387 | 331 | 338 | 363 |
| 2226 | 203 | 74 | 4,199 | 363 | 386 | 331 | 337 | 362 |
| 2227 | 202 | 74 | 4,199 | 361 | 385 | 331 | 334 | 361 |
| 2228 | 201 | 74 | 4,199 | 359 | 383 | 331 | 333 | 359 |
| 2229 | 200 | 73 | 4,199 | 359 | 384 | 331 | 331 | 358 |
| 2230 | 199 | 74 | 4,099 | 357 | 383 | 332 | 329 | 357 |
| 2231 | 199 | 74 | 4,099 | 356 | 382 | 332 | 328 | 356 |
| 2232 | 198 | 74 | 4,099 | 355 | 382 | 332 | 327 | 355 |
| 2233 | 198 | 74 | 4,099 | 354 | 381 | 332 | 325 | 354 |
| 2234 | 198 | 74 | 4,099 | 353 | 381 | 332 | 324 | 353 |
| 2235 | 197 | 74 | 4,099 | 352 | 380 | 332 | 322 | 352 |
| 2236 | 196 | 74 | 3,999 | 351 | 380 | 332 | 321 | 351 |
| 2237 | 196 | 74 | 3,999 | 350 | 379 | 333 | 320 | 351 |
| 2238 | 196 | 74 | 3,999 | 349 | 379 | 333 | 319 | 350 |
| 2239 | 195 | 74 | 3,999 | 348 | 379 | 333 | 318 | 349 |
| 2240 | 194 | 73 | 3,999 | 347 | 378 | 333 | 317 | 349 |
| 2241 | 194 | 74 | 3,899 | 347 | 378 | 333 | 316 | 348 |
| 2242 | 193 | 73 | 3,899 | 346 | 378 | 333 | 315 | 347 |
| 2243 | 193 | 74 | 3,899 | 345 | 377 | 333 | 314 | 347 |
| 2244 | 193 | 74 | 3,899 | 344 | 376 | 333 | 313 | 347 |
| 2245 | 192 | 74 | 3,899 | 344 | 376 | 334 | 312 | 346 |
| 2246 | 192 | 74 | 3,899 | 343 | 376 | 334 | 312 | 345 |
| 2247 | 192 | 74 | 3,799 | 342 | 375 | 334 | 311 | 344 |
| 2248 | 192 | 74 | 3,799 | 341 | 375 | 334 | 310 | 344 |
| 2249 | 191 | 74 | 3,799 | 341 | 375 | 334 | 309 | 344 |
| 2250 | 191 | 73 | 3,799 | 340 | 375 | 334 | 309 | 343 |
| 2251 | 190 | 74 | 3,799 | 374 | 374 | 334 | 309 | 342 |
| 2252 | 190 | 74 | 3,799 | 359 | 375 | 335 | 308 | 342 |
| 2253 | 190 | 74 | 3,699 | 358 | 373 | 335 | 308 | 341 |
| 2254 | 190 | 73 | 3,699 | 358 | 373 | 335 | 307 | 340 |
| 2255 | 189 | 73 | 3,699 | 357 | 373 | 335 | 306 | 340 |
| 2256 | 190 | 73 | 3,699 | 357 | 373 | 335 | 305 | 340 |
| 2257 | 190 | 73 | 3,699 | 356 | 372 | 335 | 305 | 339 |
| 2258 | 189 | 73 | 3,699 | 356 | 372 | 335 | 304 | 339 |
| 2259 | 189 | 73 | 3,599 | 355 | 372 | 335 | 303 | 338 |
| 2260 | 189 | 73 | 3,599 | 355 | 372 | 335 | 303 | 338 |
| 2261 | 188 | 73 | 3,599 | 354 | 371 | 335 | 303 | 337 |
| 2262 | 189 | 73 | 3,599 | 354 | 371 | 336 | 302 | 337 |
| 2263 | 188 | 73 | 3,599 | 354 | 371 | 336 | 302 | 337 |
| 2264 | 188 | 73 | 3,499 | 353 | 371 | 336 | 301 | 336 |
| 2265 | 188 | 73 | 3,499 | 353 | 371 | 336 | 301 | 336 |
| 2266 | 188 | 73 | 3,499 | 352 | 370 | 336 | 301 | 336 |
| 2267 | 188 | 73 | 3,499 | 352 | 370 | 336 | 300 | 335 |
| 2268 | 188 | 73 | 3,499 | 352 | 370 | 336 | 300 | 335 |
| 2269 | 187 | 73 | 3,499 | 351 | 370 | 336 | 300 | 334 |
| 2270 | 187 | 73 | 3,499 | 351 | 370 | 336 | 299 | 334 |
| 2271 | 187 | 73 | 3,399 | 351 | 370 | 336 | 299 | 334 |
| 2272 | 187 | 73 | 3,399 | 350 | 369 | 337 | 299 | 334 |
| 2273 | 187 | 73 | 3,399 | 350 | 369 | 336 | 299 | 333 |
| 2274 | 186 | 73 | 3,399 | 329 | 369 | 337 | 298 | 333 |
| 2275 | 186 | 74 | 3,399 | 329 | 369 | 337 | 298 | 333 |
| 2276 | 186 | 74 | 3,399 | 329 | 369 | 337 | 298 | 333 |
| 2277 | 186 | 74 | 3,299 | 328 | 368 | 337 | 298 | 332 |
| 2278 | 186 | 74 | 3,299 | 328 | 368 | 337 | 298 | 332 |
| 2279 | 186 | 74 | 3,299 | 327 | 368 | 337 | 298 | 332 |
| 2280 | 186 | 73 | 3,299 | 327 | 368 | 337 | 298 | 332 |
| 2281 | 186 | 73 | 3,299 | 327 | 368 | 337 | 298 | 332 |
| 2282 | 186 | 74 | 3,299 | 327 | 368 | 337 | 297 | 331 |
| 2283 | 186 | 73 | 3,299 | 326 | 368 | 337 | 297 | 331 |
| 2284 | 186 | 73 | 3,199 | 326 | 368 | 338 | 298 | 331 |
| 2285 | 186 | 73 | 3,199 | 326 | 368 | 337 | 297 | 331 |
| 2286 | 186 | 74 | 3,199 | 326 | 368 | 338 | 297 | 331 |
| 2287 | 186 | 74 | 3,199 | 325 | 368 | 337 | 297 | 330 |
| 2288 | 186 | 73 | 3,199 | 325 | 367 | 338 | 297 | 330 |
| 2289 | 186 | 73 | 3,199 | 325 | 367 | 338 | 297 | 330 |
| 2290 | 186 | 73 | 3,099 | 325 | 367 | 338 | 297 | 330 |
| 2291 | 185 | 73 | 3,099 | 324 | 367 | 338 | 296 | 330 |
| 2292 | 185 | 73 | 3,099 | 324 | 367 | 338 | 296 | 329 |
| 2293 | 185 | 73 | 3,099 | 324 | 367 | 338 | 296 | 329 |
| 2294 | 185 | 73 | 3,099 | 324 | 366 | 338 | 296 | 330 |
| 2295 | 185 | 73 | 3,099 | 323 | 367 | 338 | 296 | 329 |
| 2296 | 186 | 73 | 3,099 | 323 | 367 | 338 | 296 | 329 |
| 2297 | 185 | 73 | 2,999 | 323 | 366 | 338 | 296 | 328 |
| 2298 | 185 | 73 | 2,999 | 323 | 366 | 338 | 296 | 328 |
| 2299 | 185 | 73 | 2,999 | 323 | 366 | 338 | 296 | 328 |
| 2300 | 185 | 73 | 2,999 | 322 | 366 | 338 | 296 | 328 |
| 2301 | 185 | 73 | 2,999 | 322 | 365 | 338 | 296 | 328 |
| 2302 | 185 | 73 | 2,999 | 322 | 365 | 338 | 296 | 327 |
| 2303 | 185 | 73 | 2,999 | 322 | 365 | 338 | 296 | 327 |
| 2304 | 185 | 73 | 2,898 | 321 | 365 | 338 | 296 | 326 |
| 2305 | 185 | 73 | 2,898 | 321 | 365 | 338 | 296 | 326 |
| 2306 | 184 | 74 | 2,898 | 321 | 365 | 339 | 297 | 326 |
| 2307 | 184 | 73 | 2,898 | 320 | 365 | 339 | 296 | 326 |
| 2308 | 184 | 73 | 2,898 | 320 | 365 | 339 | 296 | 325 |
| 2309 | 184 | 73 | 2,899 | 320 | 364 | 339 | 296 | 325 |
| 2310 | 184 | 73 | 2,898 | 319 | 363 | 338 | 296 | 325 |
| 2311 | 184 | 73 | 2,899 | 319 | 362 | 338 | 295 | 324 |
| 2312 | 184 | 73 | 2,800 | 319 | 362 | 338 | 295 | 324 |
| 2313 | 184 | 73 | 2,800 | 318 | 362 | 338 | 295 | 324 |
| 2314 | 184 | 73 | 2,800 | 318 | 362 | 338 | 295 | 324 |
| 2315 | 184 | 73 | 2,800 | 318 | 362 | 338 | 294 | 323 |
| 2316 | 183 | 73 | 2,800 | 318 | 361 | 338 | 294 | 323 |
| 2317 | 183 | 73 | 2,800 | 317 | 361 | 338 | 294 | 323 |
| 2318 | 183 | 73 | 2,700 | 317 | 361 | 338 | 294 | 323 |
| 2319 | 183 | 73 | 2,700 | 317 | 360 | 338 | 294 | 323 |
| 2320 | 183 | 73 | 2,700 | 317 | 360 | 338 | 294 | 323 |
| 2321 | 183 | 73 | 2,700 | 317 | 360 | 338 | 294 | 322 |
| 2322 | 183 | 73 | 2,700 | 316 | 360 | 338 | 293 | 322 |
| 2323 | 183 | 73 | 2,700 | 316 | 360 | 338 | 293 | 322 |
| 2324 | 183 | 73 | 2,700 | 316 | 360 | 337 | 293 | 321 |
| 2325 | 183 | 73 | 2,600 | 316 | 360 | 337 | 293 | 321 |
| 2326 | 183 | 73 | 2,600 | 316 | 359 | 337 | 293 | 321 |
| 2327 | 183 | 73 | 2,600 | 316 | 360 | 337 | 293 | 321 |
| 2328 | 183 | 73 | 2,600 | 315 | 360 | 337 | 293 | 320 |
| 2329 | 183 | 73 | 2,600 | 316 | 360 | 337 | 293 | 320 |
| 2330 | 183 | 73 | 2,600 | 315 | 360 | 337 | 293 | 321 |
| 2331 | 183 | 73 | 2,600 | 315 | 360 | 337 | 293 | 320 |
| 2332 | 182 | 73 | 2,600 | 315 | 360 | 337 | 293 | 320 |
| 2333 | 182 | 73 | 2,500 | 315 | 360 | 337 | 293 | 320 |
| 2334 | 182 | 73 | 2,500 | 315 | 360 | 337 | 293 | 320 |
| 2335 | 182 | 73 | 2,500 | 315 | 360 | 337 | 294 | 320 |
| 2336 | 183 | 73 | 2,500 | 315 | 360 | 337 | 294 | 320 |
| 2337 | 182 | 73 | 2,500 | 314 | 360 | 337 | 294 | 320 |
| 2338 | 183 | 74 | 2,500 | 314 | 360 | 337 | 294 | 319 |
| 2339 | 182 | 74 | 2,400 | 314 | 360 | 337 | 294 | 319 |
| 2340 | 183 | 73 | 2,400 | 315 | 359 | 337 | 294 | 319 |
| 2341 | 182 | 73 | 2,400 | 314 | 360 | 337 | 294 | 319 |
| 2342 | 182 | 74 | 2,400 | 314 | 360 | 338 | 294 | 319 |
| 2343 | 182 | 74 | 2,400 | 314 | 360 | 337 | 294 | 320 |
| 2344 | 182 | 74 | 2,400 | 314 | 360 | 338 | 295 | 319 |
| 2345 | 183 | 73 | 2,400 | 314 | 360 | 337 | 295 | 319 |
| 2346 | 183 | 73 | 2,300 | 314 | 360 | 338 | 295 | 319 |
| 2347 | 183 | 73 | 2,300 | 314 | 360 | 337 | 295 | 319 |
| 2348 | 183 | 73 | 2,300 | 314 | 359 | 338 | 295 | 319 |
| 2349 | 183 | 73 | 2,300 | 314 | 359 | 338 | 295 | 319 |
| 2350 | 183 | 73 | 2,300 | 314 | 359 | 338 | 295 | 320 |
| 2351 | 183 | 73 | 2,300 | 314 | 358 | 338 | 295 | 319 |
| 2352 | 183 | 73 | 2,200 | 314 | 358 | 338 | 296 | 319 |
| 2353 | 183 | 73 | 2,200 | 314 | 359 | 338 | 296 | 319 |
| 2354 | 183 | 73 | 2,200 | 314 | 358 | 338 | 296 | 319 |
| 2355 | 183 | 73 | 2,200 | 314 | 358 | 338 | 296 | 319 |
| 2356 | 183 | 74 | 2,200 | 313 | 357 | 338 | 296 | 318 |
| 2357 | 183 | 73 | 2,200 | 313 | 357 | 338 | 296 | 319 |
| 2358 | 183 | 73 | 2,200 | 313 | 357 | 338 | 296 | 318 |
| 2359 | 183 | 74 | 2,100 | 313 | 357 | 338 | 297 | 318 |
| 2360 | 183 | 74 | 2,100 | 313 | 356 | 338 | 297 | 318 |
| 2361 | 183 | 73 | 2,100 | 313 | 356 | 338 | 297 | 318 |

| | | | | | | | | |
|------|-----|----|-------|-----|-----|-----|-----|-----|
| 2362 | 183 | 73 | 2,100 | 313 | 356 | 338 | 297 | 318 |
| 2363 | 183 | 74 | 2,100 | 313 | 356 | 338 | 297 | 318 |
| 2364 | 183 | 73 | 2,100 | 312 | 355 | 338 | 297 | 318 |
| 2365 | 183 | 74 | 2,100 | 312 | 354 | 338 | 297 | 317 |
| 2366 | 183 | 74 | 2,000 | 312 | 354 | 338 | 297 | 317 |
| 2367 | 183 | 73 | 2,000 | 312 | 354 | 338 | 297 | 317 |
| 2368 | 183 | 73 | 2,000 | 312 | 354 | 338 | 297 | 317 |
| 2369 | 183 | 73 | 2,000 | 312 | 353 | 338 | 297 | 317 |
| 2370 | 182 | 73 | 2,000 | 311 | 353 | 338 | 297 | 317 |
| 2371 | 182 | 74 | 2,000 | 311 | 353 | 338 | 296 | 317 |
| 2372 | 182 | 73 | 2,000 | 311 | 353 | 338 | 297 | 317 |
| 2373 | 182 | 73 | 2,000 | 311 | 353 | 338 | 296 | 317 |
| 2374 | 182 | 74 | 1,900 | 310 | 353 | 338 | 296 | 317 |
| 2375 | 182 | 74 | 1,900 | 310 | 352 | 338 | 296 | 317 |
| 2376 | 182 | 74 | 1,900 | 310 | 352 | 338 | 296 | 317 |
| 2377 | 182 | 73 | 1,900 | 310 | 351 | 338 | 296 | 317 |
| 2378 | 182 | 73 | 1,900 | 309 | 351 | 338 | 296 | 317 |
| 2379 | 182 | 73 | 1,900 | 309 | 351 | 337 | 295 | 317 |
| 2380 | 182 | 73 | 1,900 | 309 | 351 | 337 | 295 | 317 |
| 2381 | 182 | 73 | 1,800 | 309 | 351 | 337 | 295 | 317 |
| 2382 | 181 | 73 | 1,800 | 309 | 350 | 337 | 295 | 317 |
| 2383 | 181 | 73 | 1,800 | 308 | 350 | 337 | 295 | 317 |
| 2384 | 182 | 73 | 1,800 | 308 | 349 | 337 | 294 | 317 |
| 2385 | 181 | 73 | 1,800 | 308 | 349 | 337 | 294 | 317 |
| 2386 | 181 | 73 | 1,800 | 308 | 348 | 337 | 294 | 317 |
| 2387 | 181 | 73 | 1,800 | 308 | 348 | 337 | 293 | 317 |
| 2388 | 181 | 73 | 1,700 | 307 | 348 | 337 | 293 | 317 |
| 2389 | 181 | 73 | 1,700 | 307 | 347 | 337 | 293 | 317 |
| 2390 | 181 | 73 | 1,700 | 307 | 347 | 337 | 293 | 316 |
| 2391 | 181 | 73 | 1,700 | 307 | 347 | 337 | 292 | 316 |
| 2392 | 182 | 73 | 1,700 | 306 | 347 | 337 | 292 | 316 |
| 2393 | 181 | 73 | 1,700 | 306 | 346 | 337 | 292 | 316 |
| 2394 | 181 | 73 | 1,700 | 306 | 346 | 337 | 291 | 316 |
| 2395 | 182 | 73 | 1,600 | 305 | 346 | 336 | 291 | 316 |
| 2396 | 182 | 73 | 1,600 | 305 | 345 | 336 | 291 | 316 |
| 2397 | 181 | 73 | 1,600 | 304 | 345 | 336 | 290 | 316 |
| 2398 | 181 | 73 | 1,600 | 304 | 345 | 336 | 290 | 315 |
| 2399 | 181 | 73 | 1,600 | 304 | 345 | 336 | 290 | 315 |
| 2400 | 181 | 73 | 1,600 | 303 | 344 | 336 | 289 | 315 |
| 2401 | 181 | 73 | 1,600 | 303 | 344 | 336 | 290 | 315 |
| 2402 | 181 | 73 | 1,500 | 303 | 344 | 336 | 289 | 315 |
| 2403 | 180 | 73 | 1,500 | 302 | 344 | 336 | 289 | 314 |
| 2404 | 180 | 73 | 1,500 | 302 | 343 | 336 | 288 | 314 |
| 2405 | 180 | 73 | 1,500 | 301 | 343 | 336 | 289 | 314 |
| 2406 | 179 | 73 | 1,500 | 301 | 343 | 336 | 288 | 313 |
| 2407 | 179 | 73 | 1,500 | 301 | 342 | 336 | 288 | 313 |
| 2408 | 179 | 73 | 1,500 | 300 | 342 | 335 | 287 | 313 |
| 2409 | 179 | 73 | 1,500 | 300 | 342 | 335 | 286 | 313 |
| 2410 | 179 | 73 | 1,400 | 299 | 341 | 335 | 286 | 313 |
| 2411 | 179 | 73 | 1,400 | 299 | 341 | 335 | 286 | 312 |
| 2412 | 178 | 73 | 1,400 | 299 | 341 | 335 | 285 | 312 |
| 2413 | 178 | 73 | 1,400 | 298 | 341 | 335 | 285 | 312 |
| 2414 | 178 | 73 | 1,400 | 298 | 340 | 335 | 284 | 312 |
| 2415 | 177 | 73 | 1,400 | 297 | 340 | 335 | 283 | 311 |
| 2416 | 177 | 73 | 1,400 | 297 | 340 | 335 | 283 | 311 |
| 2417 | 177 | 73 | 1,300 | 297 | 340 | 335 | 282 | 310 |
| 2418 | 177 | 73 | 1,300 | 296 | 340 | 335 | 282 | 310 |
| 2419 | 177 | 73 | 1,300 | 296 | 339 | 335 | 281 | 310 |
| 2420 | 177 | 73 | 1,300 | 296 | 339 | 335 | 280 | 310 |
| 2421 | 176 | 73 | 1,300 | 295 | 338 | 335 | 280 | 309 |
| 2422 | 176 | 73 | 1,300 | 295 | 338 | 334 | 280 | 309 |
| 2423 | 176 | 73 | 1,300 | 295 | 338 | 334 | 279 | 308 |
| 2424 | 176 | 73 | 1,300 | 294 | 338 | 334 | 279 | 308 |
| 2425 | 176 | 73 | 1,200 | 294 | 338 | 334 | 278 | 307 |
| 2426 | 175 | 73 | 1,200 | 294 | 337 | 334 | 278 | 307 |
| 2427 | 175 | 73 | 1,200 | 293 | 337 | 334 | 277 | 307 |
| 2428 | 175 | 73 | 1,200 | 293 | 337 | 334 | 276 | 306 |
| 2429 | 175 | 73 | 1,200 | 293 | 337 | 334 | 276 | 306 |
| 2430 | 174 | 73 | 1,200 | 292 | 337 | 334 | 276 | 306 |
| 2431 | 174 | 73 | 1,200 | 292 | 336 | 334 | 275 | 305 |
| 2432 | 174 | 73 | 1,200 | 292 | 336 | 334 | 275 | 305 |
| 2433 | 174 | 73 | 1,137 | 291 | 336 | 334 | 274 | 304 |
| 2434 | 174 | 73 | 1,100 | 291 | 336 | 334 | 274 | 304 |
| 2435 | 174 | 73 | 1,100 | 291 | 335 | 334 | 273 | 303 |
| 2436 | 173 | 73 | 1,100 | 290 | 335 | 333 | 273 | 303 |
| 2437 | 173 | 73 | 1,100 | 290 | 334 | 333 | 272 | 303 |
| 2438 | 173 | 73 | 1,100 | 290 | 334 | 333 | 272 | 302 |
| 2439 | 173 | 73 | 1,100 | 289 | 334 | 333 | 271 | 302 |
| 2440 | 173 | 73 | 1,100 | 289 | 334 | 333 | 271 | 302 |
| 2441 | 172 | 73 | 1,100 | 288 | 334 | 333 | 270 | 301 |
| 2442 | 172 | 73 | 1,000 | 288 | 333 | 333 | 270 | 301 |
| 2443 | 172 | 73 | 1,000 | 288 | 333 | 333 | 269 | 300 |
| 2444 | 171 | 73 | 1,000 | 287 | 332 | 333 | 269 | 300 |
| 2445 | 172 | 73 | 1,000 | 287 | 332 | 332 | 269 | 300 |
| 2446 | 171 | 73 | 1,000 | 287 | 332 | 332 | 268 | 299 |
| 2447 | 171 | 73 | 1,000 | 286 | 332 | 332 | 268 | 299 |
| 2448 | 171 | 73 | 1,000 | 286 | 332 | 332 | 268 | 298 |
| 2449 | 171 | 73 | 1,000 | 286 | 331 | 332 | 267 | 298 |
| 2450 | 171 | 73 | 0,900 | 285 | 331 | 332 | 267 | 297 |
| 2451 | 170 | 73 | 0,900 | 285 | 331 | 332 | 267 | 297 |
| 2452 | 170 | 73 | 0,900 | 285 | 331 | 332 | 266 | 296 |
| 2453 | 170 | 73 | 0,900 | 284 | 331 | 332 | 266 | 296 |
| 2454 | 170 | 73 | 0,900 | 284 | 330 | 332 | 266 | 296 |
| 2455 | 170 | 73 | 0,900 | 284 | 330 | 332 | 265 | 295 |
| 2456 | 170 | 73 | 0,900 | 283 | 330 | 331 | 265 | 295 |
| 2457 | 170 | 73 | 0,900 | 283 | 330 | 331 | 265 | 295 |
| 2458 | 169 | 73 | 0,900 | 283 | 329 | 331 | 264 | 294 |
| 2459 | 169 | 73 | 0,800 | 282 | 329 | 331 | 263 | 294 |
| 2460 | 169 | 73 | 0,800 | 282 | 329 | 331 | 263 | 294 |
| 2461 | 169 | 73 | 0,800 | 282 | 329 | 331 | 262 | 294 |
| 2462 | 169 | 73 | 0,800 | 281 | 329 | 331 | 262 | 293 |
| 2463 | 169 | 73 | 0,800 | 281 | 329 | 331 | 262 | 293 |
| 2464 | 169 | 73 | 0,800 | 281 | 329 | 331 | 262 | 293 |
| 2465 | 169 | 73 | 0,800 | 281 | 328 | 331 | 261 | 293 |
| 2466 | 169 | 73 | 0,800 | 280 | 328 | 331 | 261 | 292 |
| 2467 | 169 | 73 | 0,700 | 280 | 328 | 331 | 261 | 292 |
| 2468 | 169 | 73 | 0,700 | 280 | 328 | 330 | 260 | 292 |
| 2469 | 168 | 73 | 0,700 | 279 | 327 | 330 | 260 | 292 |
| 2470 | 168 | 73 | 0,700 | 279 | 327 | 330 | 260 | 291 |
| 2471 | 168 | 73 | 0,700 | 279 | 327 | 330 | 259 | 291 |
| 2472 | 168 | 73 | 0,700 | 278 | 326 | 330 | 259 | 291 |
| 2473 | 168 | 72 | 0,700 | 278 | 326 | 330 | 259 | 291 |
| 2474 | 168 | 72 | 0,700 | 278 | 326 | 330 | 259 | 290 |
| 2475 | 168 | 72 | 0,700 | 277 | 326 | 330 | 259 | 290 |
| 2476 | 168 | 73 | 0,600 | 277 | 325 | 330 | 258 | 290 |
| 2477 | 167 | 73 | 0,600 | 277 | 325 | 330 | 259 | 290 |
| 2478 | 168 | 73 | 0,600 | 277 | 325 | 330 | 258 | 289 |
| 2479 | 168 | 73 | 0,600 | 276 | 324 | 330 | 258 | 289 |
| 2480 | 167 | 73 | 0,600 | 276 | 325 | 330 | 258 | 289 |
| 2481 | 167 | 73 | 0,600 | 276 | 325 | 330 | 258 | 289 |
| 2482 | 167 | 73 | 0,600 | 275 | 324 | 330 | 258 | 288 |
| 2483 | 167 | 73 | 0,600 | 275 | 324 | 330 | 258 | 288 |
| 2484 | 167 | 72 | 0,600 | 275 | 324 | 330 | 257 | 288 |
| 2485 | 167 | 72 | 0,600 | 275 | 323 | 330 | 257 | 287 |
| 2486 | 167 | 72 | 0,500 | 274 | 323 | 330 | 257 | 287 |
| 2487 | 166 | 72 | 0,500 | 274 | 323 | 330 | 256 | 287 |
| 2488 | 166 | 72 | 0,500 | 274 | 322 | 329 | 256 | 286 |
| 2489 | 166 | 72 | 0,500 | 273 | 322 | 330 | 256 | 286 |
| 2490 | 166 | 72 | 0,500 | 273 | 322 | 329 | 255 | 285 |
| 2491 | 166 | 72 | 0,500 | 273 | 321 | 329 | 255 | 285 |
| 2492 | 166 | 72 | 0,500 | 272 | 321 | 329 | 255 | 284 |
| 2493 | 165 | 72 | 0,500 | 272 | 320 | 329 | 254 | 284 |
| 2494 | 165 | 72 | 0,500 | 272 | 320 | 329 | 254 | 284 |
| 2495 | 165 | 72 | 0,500 | 271 | 319 | 329 | 254 | 283 |
| 2496 | 165 | 72 | 0,400 | 271 | 319 | 329 | 253 | 283 |
| 2497 | 164 | 72 | 0,400 | 271 | 319 | 329 | 253 | 282 |
| 2498 | 164 | 72 | 0,400 | 270 | 319 | 329 | 253 | 282 |
| 2499 | 164 | 72 | 0,400 | 270 | 318 | 329 | 252 | 281 |
| 2500 | 164 | 72 | 0,400 | 270 | 318 | 329 | 252 | 281 |

| | | | | | | | | |
|------|-------|----|---------|-----|-----|-----|-----|-----|
| 2501 | 164 | 72 | 0,400 | 269 | 317 | 329 | 252 | 281 |
| 2502 | 163 | 72 | 0,400 | 269 | 317 | 329 | 251 | 280 |
| 2503 | 163 | 72 | 0,400 | 269 | 317 | 329 | 251 | 280 |
| 2504 | 163 | 72 | 0,400 | 268 | 316 | 329 | 251 | 279 |
| 2505 | 163 | 72 | 0,400 | 268 | 316 | 329 | 251 | 279 |
| 2506 | 163 | 72 | 0,300 | 268 | 316 | 329 | 250 | 278 |
| 2507 | 163 | 72 | 0,300 | 268 | 315 | 329 | 250 | 278 |
| 2508 | 162 | 72 | 0,300 | 267 | 315 | 329 | 250 | 277 |
| 2509 | 162 | 72 | 0,300 | 267 | 315 | 329 | 250 | 277 |
| 2510 | 162 | 72 | 0,300 | 267 | 314 | 329 | 250 | 277 |
| 2511 | 162 | 72 | 0,300 | 266 | 314 | 329 | 249 | 276 |
| 2512 | 162 | 72 | 0,300 | 266 | 314 | 329 | 249 | 276 |
| 2513 | 162 | 72 | 0,300 | 266 | 313 | 329 | 249 | 275 |
| 2514 | 161 | 72 | 0,300 | 266 | 313 | 329 | 249 | 275 |
| 2515 | 162 | 72 | 0,201 | 266 | 312 | 328 | 248 | 274 |
| 2516 | 161 | 72 | 0,200 | 265 | 312 | 328 | 248 | 274 |
| 2517 | 161 | 72 | 0,200 | 265 | 312 | 328 | 248 | 274 |
| 2518 | 161 | 72 | 0,200 | 265 | 312 | 328 | 248 | 273 |
| 2519 | 161 | 72 | 0,200 | 265 | 312 | 328 | 248 | 273 |
| 2520 | 161 | 72 | 0,200 | 265 | 312 | 328 | 247 | 273 |
| 2521 | 161 | 72 | 0,200 | 265 | 312 | 328 | 247 | 272 |
| 2522 | 161 | 72 | 0,200 | 264 | 311 | 328 | 247 | 272 |
| 2523 | 161 | 72 | 0,200 | 264 | 311 | 328 | 247 | 272 |
| 2524 | 161 | 72 | 0,200 | 264 | 311 | 328 | 246 | 271 |
| 2525 | 161 | 72 | 0,100 | 264 | 310 | 328 | 246 | 271 |
| 2526 | 160 | 72 | 0,100 | 264 | 310 | 328 | 246 | 270 |
| 2527 | 160 | 72 | 0,100 | 264 | 310 | 328 | 246 | 270 |
| 2528 | 160 | 72 | 0,100 | 263 | 310 | 328 | 246 | 269 |
| 2529 | 159 | 72 | 0,100 | 263 | 309 | 328 | 245 | 269 |
| 2530 | 159 | 72 | 0,100 | 263 | 310 | 328 | 245 | 269 |
| 2531 | 158 | 72 | 0,100 | 262 | 309 | 328 | 245 | 268 |
| 2532 | 158 | 72 | 0,100 | 262 | 309 | 328 | 244 | 267 |
| 2533 | 157 | 72 | 0,100 | 262 | 309 | 327 | 243 | 267 |
| 2534 | 157 | 72 | 0,100 | 261 | 309 | 327 | 243 | 266 |
| 2535 | 157 | 72 | 0,100 | 261 | 309 | 327 | 242 | 266 |
| 2536 | 156 | 72 | 0,000 | 260 | 308 | 327 | 242 | 265 |
| 2537 | 72 | 71 | 9,8966 | 73 | 73 | 74 | 73 | 73 |
| 2538 | 79 | 72 | 9,8966 | 73 | 73 | 74 | 74 | 73 |
| 2539 | 160 | 71 | 9,7967 | 74 | 73 | 74 | 92 | 75 |
| 2540 | 286 | 71 | 9,5966 | 76 | 73 | 74 | 149 | 78 |
| 2541 | 407 | 71 | 9,3968 | 80 | 74 | 74 | 239 | 86 |
| 2542 | 40970 | 72 | 9,0970 | 87 | 75 | 74 | 329 | 88 |
| 2543 | 565 | 72 | 8,7971 | 97 | 77 | 74 | 414 | 114 |
| 2544 | 605 | 72 | 8,4973 | 108 | 82 | 74 | 491 | 131 |
| 2545 | 574 | 72 | 8,1974 | 120 | 87 | 74 | 543 | 145 |
| 2546 | 571 | 72 | 7,8976 | 132 | 94 | 74 | 578 | 162 |
| 2547 | 594 | 72 | 7,6977 | 146 | 102 | 74 | 608 | 178 |
| 2548 | 610 | 72 | 7,3977 | 162 | 111 | 62 | 632 | 195 |
| 2549 | 621 | 72 | 7,0980 | 179 | 121 | 75 | 656 | 211 |
| 2550 | 611 | 72 | 6,8979 | 195 | 131 | 76 | 671 | 226 |
| 2551 | 606 | 72 | 6,5982 | 213 | 142 | 77 | 680 | 241 |
| 2552 | 609 | 73 | 6,3985 | 230 | 152 | 79 | 687 | 254 |
| 2553 | 615 | 73 | 6,1985 | 246 | 162 | 80 | 695 | 267 |
| 2554 | 620 | 73 | 5,8986 | 263 | 172 | 82 | 703 | 279 |
| 2555 | 628 | 72 | 5,6986 | 279 | 182 | 85 | 713 | 292 |
| 2556 | 637 | 73 | 5,3988 | 295 | 192 | 87 | 721 | 304 |
| 2557 | 637 | 73 | 5,1989 | 311 | 203 | 90 | 733 | 317 |
| 2558 | 636 | 73 | 4,9990 | 326 | 214 | 94 | 745 | 330 |
| 2559 | 638 | 73 | 4,6991 | 342 | 224 | 97 | 756 | 343 |
| 2560 | 640 | 74 | 4,4991 | 357 | 234 | 101 | 761 | 356 |
| 2561 | 637 | 74 | 4,2993 | 371 | 245 | 105 | 765 | 368 |
| 2562 | 628 | 74 | 3,9994 | 386 | 255 | 110 | 762 | 379 |
| 2563 | 619 | 74 | 3,8994 | 399 | 265 | 114 | 758 | 390 |
| 2564 | 606 | 74 | 3,6996 | 411 | 274 | 119 | 749 | 400 |
| 2565 | 598 | 74 | 3,4997 | 422 | 285 | 125 | 741 | 410 |
| 2566 | 589 | 73 | 3,2998 | 433 | 294 | 130 | 730 | 419 |
| 2567 | 576 | 74 | 3,1999 | 442 | 304 | 136 | 715 | 426 |
| 2568 | 565 | 74 | 3,1001 | 447 | 314 | 142 | 700 | 432 |
| 2569 | 535 | 75 | 14,1945 | 453 | 323 | 147 | 676 | 436 |
| 2570 | 616 | 74 | 22,9899 | 457 | 333 | 153 | 646 | 440 |
| 2571 | 847 | 74 | 20,1653 | 460 | 342 | 159 | 656 | 442 |
| 2572 | 682 | 75 | 21,1907 | 462 | 350 | 165 | 691 | 445 |
| 2573 | 662 | 74 | 20,8910 | 461 | 356 | 170 | 716 | 446 |
| 2574 | 669 | 75 | 20,5914 | 462 | 361 | 175 | 740 | 448 |
| 2575 | 664 | 75 | 20,3914 | 464 | 363 | 180 | 757 | 450 |
| 2576 | 660 | 75 | 20,0913 | 465 | 364 | 184 | 770 | 453 |
| 2577 | 661 | 75 | 19,7916 | 467 | 320 | 188 | 779 | 458 |
| 2578 | 661 | 75 | 19,4917 | 470 | 310 | 191 | 788 | 462 |
| 2579 | 661 | 75 | 19,2918 | 473 | 301 | 194 | 794 | 467 |
| 2580 | 663 | 75 | 18,9920 | 477 | 295 | 196 | 800 | 472 |
| 2581 | 664 | 75 | 18,6922 | 480 | 289 | 199 | 806 | 478 |
| 2582 | 663 | 75 | 18,4922 | 484 | 284 | 201 | 809 | 483 |
| 2583 | 667 | 75 | 18,1924 | 487 | 281 | 202 | 814 | 488 |
| 2584 | 665 | 75 | 17,8926 | 491 | 278 | 204 | 816 | 493 |
| 2585 | 667 | 75 | 17,6927 | 494 | 275 | 206 | 819 | 498 |
| 2586 | 664 | 75 | 17,3930 | 498 | 274 | 208 | 820 | 503 |
| 2587 | 663 | 75 | 17,0934 | 502 | 273 | 210 | 820 | 508 |
| 2588 | 661 | 75 | 16,8933 | 506 | 273 | 213 | 820 | 513 |
| 2589 | 659 | 75 | 16,5935 | 510 | 272 | 215 | 819 | 518 |
| 2590 | 655 | 75 | 16,3935 | 514 | 271 | 218 | 820 | 522 |
| 2591 | 652 | 76 | 16,0937 | 517 | 271 | 220 | 819 | 527 |
| 2592 | 650 | 76 | 15,8937 | 520 | 271 | 222 | 816 | 531 |
| 2593 | 646 | 75 | 15,6938 | 523 | 271 | 225 | 816 | 535 |
| 2594 | 644 | 75 | 15,3940 | 526 | 271 | 227 | 814 | 539 |
| 2595 | 643 | 75 | 15,1941 | 529 | 271 | 230 | 813 | 542 |
| 2596 | 642 | 75 | 14,8942 | 531 | 272 | 233 | 813 | 546 |
| 2597 | 640 | 75 | 14,6943 | 534 | 273 | 236 | 812 | 550 |
| 2598 | 638 | 75 | 14,4944 | 536 | 273 | 239 | 812 | 552 |
| 2599 | 636 | 76 | 14,1946 | 539 | 274 | 242 | 810 | 556 |
| 2600 | 633 | 76 | 13,9948 | 541 | 274 | 244 | 808 | 559 |
| 2601 | 632 | 75 | 13,7949 | 543 | 275 | 247 | 807 | 562 |
| 2602 | 629 | 76 | 13,5951 | 544 | 276 | 250 | 805 | 564 |
| 2603 | 627 | 75 | 13,2952 | 546 | 278 | 253 | 802 | 566 |
| 2604 | 625 | 76 | 13,0953 | 548 | 279 | 255 | 800 | 569 |
| 2605 | 623 | 76 | 12,8953 | 549 | 280 | 258 | 797 | 571 |
| 2606 | 627 | 75 | 12,6954 | 550 | 281 | 261 | 798 | 574 |
| 2607 | 626 | 75 | 12,4955 | 552 | 282 | 264 | 801 | 577 |
| 2608 | 621 | 76 | 12,1956 | 553 | 283 | 267 | 799 | 579 |
| 2609 | 616 | 76 | 11,9956 | 553 | 285 | 270 | 794 | 582 |
| 2610 | 609 | 75 | 11,7959 | 554 | 286 | 273 | 785 | 584 |
| 2611 | 603 | 75 | 11,5951 | 555 | 287 | 277 | 776 | 586 |
| 2612 | 597 | 75 | 11,4961 | 555 | 289 | 280 | 768 | 587 |
| 2613 | 593 | 75 | 11,2961 | 555 | 289 | 283 | 759 | 589 |
| 2614 | 587 | 75 | 11,0961 | 554 | 290 | 285 | 751 | 589 |
| 2615 | 583 | 75 | 10,8963 | 554 | 291 | 290 | 743 | 589 |
| 2616 | 581 | 75 | 10,6964 | 553 | 293 | 293 | 736 | 590 |
| 2617 | 580 | 75 | 10,5964 | 553 | 293 | 297 | 731 | 590 |
| 2618 | 580 | 74 | 10,3964 | 552 | 294 | 300 | 727 | 590 |
| 2619 | 580 | 74 | 10,1967 | 552 | 295 | 303 | 726 | 588 |
| 2620 | 580 | 75 | 9,9969 | 552 | 295 | 307 | 726 | 589 |
| 2621 | 582 | 76 | 9,8968 | 551 | 296 | 310 | 728 | 589 |
| 2622 | 585 | 75 | 9,6969 | 551 | 298 | 314 | 732 | 590 |
| 2623 | 587 | 76 | 9,4970 | 552 | 299 | 317 | 735 | 591 |
| 2624 | 589 | 75 | 9,2971 | 552 | 301 | 321 | 741 | 592 |
| 2625 | 594 | 76 | 9,0972 | 553 | 302 | 324 | 746 | 593 |
| 2626 | 597 | 76 | 8,8973 | 554 | 303 | 327 | 752 | 594 |
| 2627 | 599 | 76 | 8,6973 | 555 | 303 | 331 | 759 | 597 |
| 2628 | 604 | 75 | 8,4975 | 556 | 304 | 334 | 767 | 598 |
| 2629 | 603 | 75 | 8,2975 | 557 | 306 | 337 | 773 | 600 |
| 2630 | 599 | 76 | 8,1976 | 559 | 307 | 341 | 773 | 603 |
| 2631 | 595 | 76 | 7,9977 | 561 | 308 | 344 | 771 | 605 |
| 2632 | 592 | 76 | 7,7977 | 562 | 309 | 347 | 766 | 606 |
| 2633 | 587 | 75 | 7,6978 | 564 | 310 | 351 | 760 | 608 |
| 2634 | 584 | 75 | 7,4978 | 565 | 312 | 354 | 756 | 608 |
| 2635 | 584 | 76 | 7,2980 | 568 | 313 | 357 | 752 | 610 |
| 2636 | 585 | 76 | 7,1980 | 568 | 314 | 360 | 751 | 611 |
| 2637 | 584 | 76 | 6,9981 | 569 | 316 | 363 | 753 | 612 |
| 2638 | 578 | 76 | 6,8981 | 570 | 317 | 367 | 750 | 613 |
| 2639 | 562 | 76 | 6,7982 | 572 | 319 | 369 | 734 | 614 |

| | | | | | | | | |
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| 2640 | 548 | 76 | 6,6984 | 571 | 320 | 373 | 715 | 613 |
| 2641 | 535 | 76 | 6,5983 | 571 | 320 | 376 | 695 | 614 |
| 2642 | 526 | 75 | 6,5983 | 570 | 321 | 379 | 677 | 613 |
| 2643 | 516 | 75 | 6,4983 | 567 | 322 | 382 | 662 | 610 |
| 2644 | 507 | 75 | 6,3986 | 565 | 322 | 385 | 645 | 606 |
| 2645 | 500 | 76 | 6,3986 | 562 | 322 | 388 | 631 | 601 |
| 2646 | 493 | 76 | 6,2985 | 559 | 322 | 390 | 618 | 597 |
| 2647 | 487 | 75 | 6,2985 | 555 | 322 | 393 | 604 | 591 |
| 2648 | 481 | 76 | 6,1986 | 552 | 321 | 396 | 593 | 586 |
| 2649 | 476 | 76 | 6,0986 | 548 | 321 | 399 | 582 | 580 |
| 2650 | 472 | 75 | 6,0986 | 543 | 320 | 402 | 573 | 576 |
| 2651 | 468 | 75 | 5,9985 | 539 | 319 | 405 | 564 | 570 |
| 2652 | 463 | 75 | 5,9985 | 536 | 319 | 407 | 556 | 564 |
| 2653 | 460 | 75 | 5,8986 | 531 | 318 | 410 | 548 | 560 |
| 2654 | 456 | 75 | 5,7979 | 528 | 317 | 413 | 540 | 555 |
| 2655 | 454 | 75 | 5,7978 | 524 | 317 | 415 | 534 | 550 |
| 2656 | 451 | 75 | 5,6986 | 521 | 316 | 418 | 529 | 546 |
| 2657 | 448 | 75 | 5,6986 | 517 | 316 | 421 | 523 | 542 |
| 2658 | 445 | 75 | 5,5987 | 514 | 315 | 423 | 518 | 537 |
| 2659 | 442 | 75 | 5,5987 | 511 | 315 | 426 | 513 | 533 |
| 2660 | 440 | 75 | 5,4988 | 507 | 314 | 428 | 509 | 530 |
| 2661 | 438 | 76 | 5,3987 | 504 | 314 | 430 | 504 | 526 |
| 2662 | 436 | 75 | 5,3987 | 501 | 314 | 433 | 500 | 522 |
| 2663 | 435 | 75 | 5,2988 | 498 | 314 | 435 | 496 | 520 |
| 2664 | 433 | 75 | 5,2988 | 496 | 313 | 437 | 492 | 517 |
| 2665 | 432 | 75 | 5,1988 | 493 | 313 | 439 | 489 | 513 |
| 2666 | 430 | 75 | 5,1988 | 491 | 313 | 441 | 486 | 511 |
| 2667 | 427 | 75 | 5,099 | 488 | 312 | 443 | 482 | 508 |
| 2668 | 422 | 75 | 5,099 | 485 | 312 | 445 | 477 | 505 |
| 2669 | 416 | 75 | 5,099 | 482 | 312 | 447 | 473 | 502 |
| 2670 | 411 | 75 | 4,999 | 479 | 311 | 449 | 468 | 498 |
| 2671 | 406 | 74 | 4,999 | 476 | 310 | 451 | 463 | 495 |
| 2672 | 401 | 75 | 4,999 | 472 | 309 | 453 | 458 | 491 |
| 2673 | 398 | 75 | 4,899 | 469 | 308 | 454 | 453 | 487 |
| 2674 | 394 | 75 | 4,899 | 465 | 307 | 456 | 449 | 484 |
| 2675 | 392 | 75 | 4,899 | 462 | 306 | 457 | 444 | 480 |
| 2676 | 389 | 75 | 4,799 | 458 | 305 | 459 | 438 | 477 |
| 2677 | 385 | 75 | 4,799 | 455 | 304 | 460 | 434 | 474 |
| 2678 | 383 | 75 | 4,799 | 452 | 303 | 462 | 430 | 471 |
| 2679 | 379 | 75 | 4,699 | 448 | 302 | 463 | 425 | 467 |
| 2680 | 376 | 75 | 4,699 | 445 | 301 | 464 | 421 | 464 |
| 2681 | 375 | 74 | 4,599 | 442 | 300 | 465 | 416 | 462 |
| 2682 | 372 | 75 | 4,599 | 439 | 299 | 466 | 412 | 459 |
| 2683 | 370 | 74 | 4,599 | 437 | 298 | 467 | 408 | 456 |
| 2684 | 368 | 74 | 4,599 | 434 | 297 | 467 | 404 | 453 |
| 2685 | 366 | 75 | 4,499 | 431 | 296 | 468 | 401 | 450 |
| 2686 | 364 | 75 | 4,499 | 428 | 295 | 469 | 398 | 447 |
| 2687 | 363 | 74 | 4,499 | 426 | 295 | 470 | 394 | 444 |
| 2688 | 361 | 74 | 4,399 | 423 | 294 | 470 | 391 | 442 |
| 2689 | 359 | 74 | 4,399 | 421 | 294 | 471 | 388 | 440 |
| 2690 | 358 | 74 | 4,399 | 419 | 293 | 471 | 386 | 437 |
| 2691 | 356 | 74 | 4,399 | 417 | 293 | 471 | 383 | 435 |
| 2692 | 355 | 74 | 4,299 | 415 | 295 | 472 | 381 | 432 |
| 2693 | 354 | 74 | 4,299 | 412 | 296 | 472 | 379 | 430 |
| 2694 | 352 | 74 | 4,299 | 410 | 294 | 472 | 377 | 428 |
| 2695 | 350 | 74 | 4,299 | 409 | 294 | 473 | 376 | 426 |
| 2696 | 349 | 74 | 4,199 | 407 | 294 | 473 | 374 | 424 |
| 2697 | 348 | 74 | 4,199 | 405 | 294 | 473 | 373 | 422 |
| 2698 | 347 | 75 | 4,199 | 403 | 293 | 474 | 372 | 421 |
| 2699 | 347 | 73 | 4,099 | 402 | 293 | 474 | 370 | 418 |
| 2700 | 345 | 73 | 4,099 | 400 | 292 | 475 | 368 | 416 |
| 2701 | 344 | 74 | 4,099 | 399 | 292 | 476 | 367 | 415 |
| 2702 | 343 | 74 | 4,099 | 397 | 291 | 476 | 365 | 413 |
| 2703 | 342 | 74 | 3,999 | 396 | 291 | 477 | 363 | 412 |
| 2704 | 341 | 74 | 3,999 | 395 | 302 | 478 | 363 | 410 |
| 2705 | 280 | 75 | 18,292 | 394 | 325 | 479 | 353 | 409 |
| 2706 | 305 | 74 | 22,789 | 395 | 341 | 481 | 340 | 407 |
| 2707 | 494 | 75 | 22,490 | 392 | 353 | 482 | 345 | 403 |
| 2708 | 644 | 75 | 21,990 | 391 | 361 | 483 | 371 | 402 |
| 2709 | 625 | 74 | 21,490 | 393 | 368 | 484 | 445 | 402 |
| 2710 | 623 | 75 | 20,890 | 392 | 373 | 484 | 525 | 401 |
| 2711 | 637 | 75 | 20,591 | 393 | 378 | 485 | 590 | 402 |
| 2712 | 657 | 75 | 20,291 | 394 | 382 | 484 | 647 | 406 |
| 2713 | 653 | 75 | 19,991 | 396 | 384 | 484 | 669 | 411 |
| 2714 | 642 | 75 | 19,691 | 399 | 386 | 484 | 676 | 417 |
| 2715 | 637 | 75 | 19,391 | 404 | 387 | 483 | 684 | 425 |
| 2716 | 638 | 73 | 19,191 | 409 | 388 | 482 | 692 | 432 |
| 2717 | 643 | 73 | 18,892 | 415 | 388 | 481 | 700 | 439 |
| 2718 | 623 | 74 | 18,692 | 421 | 389 | 480 | 719 | 446 |
| 2719 | 583 | 74 | 18,392 | 426 | 390 | 479 | 735 | 452 |
| 2720 | 510 | 73 | 18,192 | 431 | 390 | 478 | 734 | 456 |
| 2721 | 470 | 73 | 17,992 | 435 | 391 | 476 | 720 | 459 |
| 2722 | 445 | 72 | 17,892 | 437 | 391 | 474 | 704 | 460 |
| 2723 | 420 | 71 | 17,792 | 438 | 390 | 473 | 683 | 460 |
| 2724 | 402 | 72 | 17,692 | 439 | 390 | 471 | 664 | 459 |
| 2725 | 388 | 73 | 17,492 | 438 | 390 | 469 | 646 | 456 |
| 2726 | 375 | 73 | 17,392 | 437 | 390 | 467 | 628 | 455 |
| 2727 | 366 | 73 | 17,292 | 435 | 390 | 465 | 613 | 451 |
| 2728 | 359 | 73 | 17,093 | 434 | 390 | 463 | 601 | 448 |
| 2729 | 353 | 74 | 16,993 | 432 | 389 | 461 | 590 | 444 |
| 2730 | 351 | 74 | 16,893 | 429 | 389 | 459 | 583 | 441 |
| 2731 | 350 | 73 | 16,793 | 427 | 388 | 457 | 577 | 437 |
| 2732 | 349 | 74 | 16,593 | 425 | 387 | 454 | 573 | 434 |
| 2733 | 347 | 74 | 16,493 | 423 | 387 | 452 | 568 | 431 |
| 2734 | 346 | 74 | 16,293 | 421 | 386 | 449 | 565 | 428 |
| 2735 | 345 | 74 | 16,193 | 419 | 385 | 447 | 561 | 426 |
| 2736 | 344 | 74 | 15,993 | 418 | 384 | 445 | 560 | 425 |
| 2737 | 344 | 75 | 15,893 | 415 | 383 | 442 | 560 | 422 |
| 2738 | 345 | 75 | 15,793 | 415 | 382 | 440 | 561 | 421 |
| 2739 | 346 | 75 | 15,693 | 413 | 381 | 437 | 562 | 419 |
| 2740 | 348 | 74 | 15,493 | 412 | 381 | 435 | 564 | 418 |
| 2741 | 348 | 74 | 15,393 | 412 | 380 | 432 | 567 | 418 |
| 2742 | 350 | 75 | 15,193 | 411 | 379 | 430 | 572 | 416 |
| 2743 | 353 | 74 | 15,094 | 411 | 379 | 428 | 579 | 415 |
| 2744 | 355 | 74 | 14,994 | 411 | 378 | 425 | 585 | 415 |
| 2745 | 357 | 74 | 14,794 | 411 | 378 | 423 | 592 | 414 |
| 2746 | 359 | 74 | 14,694 | 412 | 377 | 421 | 597 | 414 |
| 2747 | 361 | 74 | 14,494 | 412 | 377 | 418 | 601 | 413 |
| 2748 | 362 | 74 | 14,394 | 413 | 376 | 416 | 606 | 413 |
| 2749 | 362 | 74 | 14,194 | 414 | 376 | 413 | 610 | 413 |
| 2750 | 364 | 75 | 14,094 | 415 | 375 | 411 | 612 | 413 |
| 2751 | 364 | 74 | 13,994 | 415 | 375 | 409 | 616 | 413 |
| 2752 | 365 | 75 | 13,794 | 416 | 376 | 407 | 619 | 412 |
| 2753 | 364 | 75 | 13,694 | 418 | 375 | 404 | 620 | 413 |
| 2754 | 365 | 75 | 13,495 | 418 | 375 | 402 | 623 | 413 |
| 2755 | 364 | 75 | 13,395 | 419 | 375 | 400 | 624 | 413 |
| 2756 | 365 | 75 | 13,295 | 420 | 375 | 398 | 624 | 414 |
| 2757 | 365 | 75 | 13,095 | 421 | 375 | 396 | 625 | 414 |
| 2758 | 365 | 75 | 12,995 | 422 | 376 | 393 | 626 | 415 |
| 2759 | 364 | 75 | 12,895 | 422 | 376 | 391 | 626 | 415 |
| 2760 | 365 | 75 | 12,695 | 423 | 376 | 389 | 628 | 416 |
| 2761 | 366 | 75 | 12,595 | 424 | 376 | 387 | 630 | 417 |
| 2762 | 368 | 75 | 12,395 | 425 | 375 | 385 | 632 | 417 |
| 2763 | 368 | 75 | 12,295 | 427 | 375 | 383 | 633 | 418 |
| 2764 | 368 | 75 | 12,195 | 427 | 375 | 381 | 635 | 419 |
| 2765 | 367 | 75 | 11,995 | 429 | 365 | 380 | 636 | 421 |
| 2766 | 367 | 75 | 11,895 | 429 | 336 | 378 | 637 | 421 |
| 2767 | 365 | 75 | 11,695 | 430 | 319 | 376 | 636 | 423 |
| 2768 | 363 | 75 | 11,595 | 431 | 308 | 374 | 635 | 423 |
| 2769 | 361 | 75 | 11,495 | 432 | 299 | 373 | 634 | 424 |
| 2770 | 359 | 75 | 11,395 | 433 | 292 | 371 | 632 | 426 |
| 2771 | 356 | 75 | 11,196 | 434 | 286 | 369 | 630 | 426 |
| 2772 | 356 | 75 | 11,096 | 434 | 282 | 367 | 629 | 427 |
| 2773 | 356 | 75 | 10,996 | 434 | 278 | 366 | 628 | 429 |
| 2774 | 355 | 75 | 10,796 | 434 | 275 | 364 | 628 | 428 |
| 2775 | 357 | 75 | 10,696 | 435 | 272 | 363 | 631 | 430 |
| 2776 | 358 | 75 | 10,596 | 437 | 270 | 361 | 633 | 431 |
| 2777 | 361 | 75 | 10,396 | 437 | 268 | 359 | 635 | 432 |
| 2778 | 362 | 75 | 10,196 | 438 | 267 | 358 | 636 | 434 |

| | | | | | | | | |
|------|-----|----|--------|-----|-----|-----|-----|-----|
| 2779 | 362 | 75 | 10,096 | 438 | 265 | 356 | 639 | 436 |
| 2780 | 360 | 75 | 9,996 | 440 | 263 | 355 | 640 | 438 |
| 2781 | 359 | 75 | 9,796 | 439 | 262 | 354 | 641 | 440 |
| 2782 | 360 | 75 | 9,696 | 441 | 261 | 352 | 641 | 442 |
| 2783 | 359 | 75 | 9,497 | 442 | 261 | 350 | 641 | 444 |
| 2784 | 355 | 76 | 9,397 | 443 | 260 | 349 | 640 | 447 |
| 2785 | 351 | 76 | 9,297 | 443 | 260 | 347 | 637 | 447 |
| 2786 | 347 | 75 | 9,197 | 445 | 259 | 346 | 632 | 448 |
| 2787 | 342 | 74 | 9,097 | 445 | 259 | 344 | 628 | 448 |
| 2788 | 335 | 75 | 8,997 | 445 | 259 | 343 | 622 | 448 |
| 2789 | 327 | 75 | 8,997 | 445 | 258 | 342 | 612 | 447 |
| 2790 | 319 | 75 | 8,897 | 445 | 258 | 341 | 599 | 446 |
| 2791 | 310 | 75 | 8,797 | 444 | 258 | 339 | 585 | 444 |
| 2792 | 303 | 74 | 8,797 | 442 | 257 | 338 | 570 | 443 |
| 2793 | 296 | 76 | 8,697 | 440 | 257 | 337 | 556 | 441 |
| 2794 | 290 | 75 | 8,697 | 436 | 256 | 335 | 542 | 440 |
| 2795 | 284 | 75 | 8,597 | 433 | 256 | 334 | 529 | 438 |
| 2796 | 278 | 75 | 8,597 | 430 | 255 | 333 | 516 | 436 |
| 2797 | 272 | 75 | 8,497 | 427 | 254 | 332 | 504 | 433 |
| 2798 | 266 | 75 | 8,497 | 423 | 254 | 330 | 494 | 430 |
| 2799 | 263 | 74 | 8,397 | 420 | 253 | 329 | 483 | 428 |
| 2800 | 259 | 75 | 8,397 | 416 | 252 | 328 | 473 | 425 |
| 2801 | 255 | 75 | 8,297 | 413 | 251 | 327 | 464 | 422 |
| 2802 | 251 | 75 | 8,297 | 409 | 250 | 326 | 455 | 419 |
| 2803 | 247 | 75 | 8,197 | 405 | 249 | 325 | 446 | 416 |
| 2804 | 244 | 75 | 8,197 | 401 | 249 | 324 | 439 | 413 |
| 2805 | 241 | 75 | 8,097 | 397 | 248 | 323 | 431 | 410 |
| 2806 | 237 | 75 | 8,097 | 394 | 248 | 322 | 424 | 407 |
| 2807 | 235 | 75 | 7,997 | 390 | 247 | 322 | 417 | 404 |
| 2808 | 232 | 75 | 7,997 | 387 | 246 | 321 | 411 | 401 |
| 2809 | 230 | 75 | 7,897 | 384 | 245 | 320 | 405 | 398 |
| 2810 | 228 | 74 | 7,897 | 381 | 244 | 319 | 400 | 397 |
| 2811 | 227 | 75 | 7,797 | 378 | 242 | 319 | 395 | 394 |
| 2812 | 225 | 75 | 7,797 | 375 | 241 | 318 | 390 | 391 |
| 2813 | 224 | 75 | 7,697 | 372 | 240 | 318 | 386 | 390 |
| 2814 | 222 | 74 | 7,697 | 370 | 239 | 317 | 382 | 388 |
| 2815 | 221 | 74 | 7,597 | 367 | 238 | 317 | 378 | 386 |
| 2816 | 220 | 74 | 7,597 | 365 | 237 | 316 | 375 | 384 |
| 2817 | 218 | 75 | 7,497 | 363 | 236 | 316 | 372 | 382 |
| 2818 | 218 | 74 | 7,497 | 360 | 235 | 315 | 370 | 381 |
| 2819 | 217 | 74 | 7,397 | 359 | 235 | 315 | 367 | 380 |
| 2820 | 216 | 74 | 7,397 | 357 | 235 | 315 | 364 | 378 |
| 2821 | 215 | 75 | 7,397 | 355 | 234 | 314 | 362 | 377 |
| 2822 | 213 | 75 | 7,298 | 353 | 233 | 314 | 359 | 376 |
| 2823 | 213 | 75 | 7,298 | 352 | 233 | 313 | 358 | 375 |
| 2824 | 212 | 75 | 7,198 | 350 | 232 | 313 | 356 | 375 |
| 2825 | 211 | 75 | 7,198 | 348 | 232 | 313 | 354 | 374 |
| 2826 | 210 | 74 | 7,098 | 347 | 232 | 313 | 352 | 373 |
| 2827 | 209 | 74 | 7,098 | 346 | 231 | 312 | 351 | 372 |
| 2828 | 208 | 74 | 7,098 | 345 | 231 | 312 | 349 | 372 |
| 2829 | 207 | 74 | 6,998 | 344 | 231 | 312 | 348 | 371 |
| 2830 | 206 | 74 | 6,998 | 342 | 230 | 312 | 346 | 370 |
| 2831 | 204 | 74 | 6,898 | 341 | 230 | 311 | 344 | 368 |
| 2832 | 202 | 74 | 6,898 | 340 | 230 | 311 | 342 | 367 |
| 2833 | 200 | 74 | 6,898 | 339 | 229 | 311 | 340 | 365 |
| 2834 | 199 | 74 | 6,798 | 337 | 228 | 311 | 337 | 363 |
| 2835 | 197 | 74 | 6,798 | 336 | 227 | 310 | 335 | 361 |
| 2836 | 196 | 74 | 6,798 | 334 | 226 | 310 | 333 | 359 |
| 2837 | 194 | 74 | 6,698 | 334 | 225 | 310 | 331 | 357 |
| 2838 | 193 | 74 | 6,698 | 332 | 223 | 310 | 329 | 355 |
| 2839 | 192 | 75 | 6,698 | 331 | 221 | 309 | 326 | 353 |
| 2840 | 192 | 74 | 6,698 | 329 | 219 | 309 | 325 | 351 |
| 2841 | 191 | 74 | 6,598 | 328 | 218 | 309 | 323 | 348 |
| 2842 | 191 | 74 | 6,598 | 326 | 217 | 307 | 321 | 347 |
| 2843 | 190 | 74 | 6,598 | 325 | 215 | 309 | 319 | 344 |
| 2844 | 189 | 74 | 6,498 | 324 | 214 | 308 | 317 | 343 |
| 2845 | 188 | 74 | 6,498 | 323 | 213 | 308 | 315 | 341 |
| 2846 | 187 | 74 | 6,498 | 321 | 212 | 308 | 313 | 340 |
| 2847 | 186 | 74 | 6,398 | 320 | 211 | 307 | 312 | 338 |
| 2848 | 186 | 74 | 6,398 | 319 | 210 | 307 | 309 | 337 |
| 2849 | 185 | 74 | 6,398 | 318 | 210 | 307 | 307 | 335 |
| 2850 | 185 | 74 | 6,398 | 316 | 209 | 307 | 306 | 334 |
| 2851 | 184 | 74 | 6,298 | 316 | 208 | 307 | 305 | 333 |
| 2852 | 184 | 74 | 6,298 | 315 | 207 | 306 | 304 | 331 |
| 2853 | 183 | 74 | 6,298 | 314 | 207 | 306 | 303 | 330 |
| 2854 | 183 | 74 | 6,298 | 313 | 206 | 306 | 302 | 329 |
| 2855 | 183 | 74 | 6,198 | 312 | 206 | 306 | 301 | 328 |
| 2856 | 183 | 74 | 6,198 | 311 | 205 | 306 | 300 | 327 |
| 2857 | 183 | 74 | 6,198 | 310 | 205 | 306 | 299 | 326 |
| 2858 | 183 | 74 | 6,098 | 309 | 204 | 306 | 298 | 325 |
| 2859 | 183 | 74 | 6,098 | 308 | 204 | 306 | 297 | 324 |
| 2860 | 183 | 74 | 6,098 | 308 | 203 | 306 | 297 | 324 |
| 2861 | 183 | 74 | 5,998 | 307 | 203 | 306 | 296 | 323 |
| 2862 | 182 | 74 | 5,998 | 307 | 202 | 306 | 296 | 322 |
| 2863 | 183 | 74 | 5,998 | 306 | 202 | 306 | 295 | 322 |
| 2864 | 182 | 74 | 5,898 | 305 | 202 | 306 | 295 | 321 |
| 2865 | 183 | 74 | 5,898 | 305 | 202 | 306 | 295 | 321 |
| 2866 | 183 | 74 | 5,898 | 304 | 201 | 306 | 294 | 320 |
| 2867 | 182 | 74 | 5,797 | 304 | 201 | 306 | 294 | 320 |
| 2868 | 182 | 74 | 5,797 | 303 | 200 | 306 | 294 | 319 |
| 2869 | 182 | 74 | 5,797 | 303 | 200 | 307 | 293 | 319 |
| 2870 | 182 | 74 | 5,797 | 302 | 200 | 307 | 293 | 319 |
| 2871 | 182 | 73 | 5,698 | 302 | 199 | 307 | 293 | 318 |
| 2872 | 182 | 74 | 5,698 | 301 | 199 | 307 | 293 | 318 |
| 2873 | 182 | 74 | 5,698 | 301 | 199 | 307 | 293 | 317 |
| 2874 | 181 | 74 | 5,598 | 301 | 199 | 308 | 292 | 317 |
| 2875 | 181 | 74 | 5,598 | 300 | 199 | 308 | 292 | 317 |
| 2876 | 181 | 74 | 5,598 | 300 | 197 | 308 | 291 | 317 |
| 2877 | 181 | 74 | 5,498 | 299 | 196 | 309 | 291 | 316 |
| 2878 | 180 | 74 | 5,498 | 299 | 195 | 309 | 290 | 316 |
| 2879 | 180 | 74 | 5,498 | 299 | 195 | 309 | 290 | 315 |
| 2880 | 180 | 74 | 5,398 | 299 | 194 | 310 | 289 | 315 |
| 2881 | 179 | 74 | 5,398 | 298 | 194 | 310 | 289 | 314 |
| 2882 | 179 | 74 | 5,398 | 298 | 195 | 310 | 288 | 314 |
| 2883 | 179 | 74 | 5,298 | 298 | 195 | 310 | 288 | 314 |
| 2884 | 179 | 74 | 5,298 | 298 | 195 | 310 | 287 | 314 |
| 2885 | 179 | 74 | 5,298 | 297 | 195 | 311 | 287 | 314 |
| 2886 | 179 | 74 | 5,298 | 297 | 195 | 311 | 287 | 313 |
| 2887 | 178 | 74 | 5,198 | 297 | 195 | 311 | 286 | 313 |
| 2888 | 178 | 74 | 5,198 | 297 | 195 | 312 | 286 | 314 |
| 2889 | 178 | 74 | 5,198 | 296 | 195 | 312 | 286 | 313 |
| 2890 | 177 | 74 | 5,198 | 296 | 195 | 312 | 285 | 313 |
| 2891 | 177 | 74 | 5,098 | 296 | 194 | 313 | 284 | 312 |
| 2892 | 177 | 74 | 5,098 | 295 | 194 | 313 | 284 | 312 |
| 2893 | 177 | 74 | 5,098 | 295 | 194 | 313 | 284 | 312 |
| 2894 | 177 | 74 | 4,998 | 295 | 194 | 314 | 283 | 312 |
| 2895 | 177 | 74 | 4,998 | 295 | 194 | 314 | 283 | 312 |
| 2896 | 177 | 74 | 4,998 | 295 | 193 | 314 | 283 | 311 |
| 2897 | 176 | 74 | 4,998 | 295 | 193 | 315 | 283 | 312 |
| 2898 | 177 | 74 | 4,898 | 294 | 193 | 315 | 283 | 311 |
| 2899 | 177 | 74 | 4,898 | 294 | 193 | 315 | 283 | 311 |
| 2900 | 177 | 74 | 4,899 | 293 | 193 | 316 | 283 | 311 |
| 2901 | 177 | 74 | 4,899 | 293 | 193 | 316 | 282 | 310 |
| 2902 | 176 | 74 | 4,798 | 293 | 192 | 316 | 282 | 311 |
| 2903 | 176 | 74 | 4,799 | 292 | 192 | 317 | 282 | 310 |
| 2904 | 176 | 74 | 4,799 | 292 | 192 | 317 | 281 | 310 |
| 2905 | 176 | 74 | 4,699 | 292 | 193 | 318 | 281 | 310 |
| 2906 | 176 | 74 | 4,699 | 291 | 192 | 318 | 281 | 310 |
| 2907 | 176 | 74 | 4,699 | 291 | 192 | 318 | 281 | 310 |
| 2908 | 175 | 74 | 4,699 | 291 | 193 | 319 | 280 | 310 |
| 2909 | 176 | 74 | 4,599 | 291 | 193 | 319 | 281 | 310 |
| 2910 | 175 | 74 | 4,599 | 291 | 193 | 320 | 280 | 310 |
| 2911 | 175 | 74 | 4,599 | 290 | 193 | 320 | 280 | 310 |
| 2912 | 175 | 74 | 4,499 | 290 | 193 | 321 | 280 | 310 |
| 2913 | 175 | 73 | 4,499 | 290 | 193 | 321 | 280 | 309 |
| 2914 | 175 | 73 | 4,499 | 290 | 193 | 321 | 280 | 310 |
| 2915 | 175 | 73 | 4,399 | 289 | 193 | 322 | 280 | 310 |
| 2916 | 175 | 73 | 4,399 | 289 | 193 | 322 | 279 | 310 |
| 2917 | 174 | 73 | 4,399 | 289 | 193 | 323 | 279 | 310 |

| | | | | | | | | |
|------|-----|----|-------|-----|-----|-----|-----|-----|
| 2918 | 175 | 73 | 4,399 | 289 | 193 | 323 | 279 | 310 |
| 2919 | 175 | 73 | 4,299 | 289 | 192 | 323 | 279 | 310 |
| 2920 | 175 | 73 | 4,299 | 289 | 192 | 324 | 278 | 310 |
| 2921 | 175 | 73 | 4,299 | 289 | 193 | 324 | 278 | 310 |
| 2922 | 174 | 73 | 4,199 | 288 | 193 | 325 | 278 | 310 |
| 2923 | 173 | 73 | 4,199 | 288 | 192 | 325 | 278 | 310 |
| 2924 | 173 | 73 | 4,199 | 288 | 193 | 326 | 277 | 310 |
| 2925 | 173 | 73 | 4,199 | 288 | 193 | 326 | 277 | 310 |
| 2926 | 172 | 73 | 4,099 | 288 | 193 | 327 | 277 | 310 |
| 2927 | 172 | 73 | 4,099 | 288 | 193 | 327 | 276 | 310 |
| 2928 | 171 | 73 | 4,099 | 288 | 193 | 327 | 276 | 310 |
| 2929 | 171 | 73 | 3,999 | 288 | 193 | 328 | 276 | 310 |
| 2930 | 170 | 73 | 3,999 | 288 | 193 | 328 | 275 | 310 |
| 2931 | 170 | 73 | 3,999 | 288 | 193 | 329 | 275 | 310 |
| 2932 | 169 | 73 | 3,999 | 288 | 193 | 329 | 274 | 310 |
| 2933 | 168 | 73 | 3,899 | 288 | 193 | 329 | 274 | 310 |
| 2934 | 168 | 73 | 3,899 | 288 | 193 | 330 | 273 | 310 |
| 2935 | 168 | 73 | 3,899 | 287 | 193 | 330 | 273 | 309 |
| 2936 | 168 | 73 | 3,799 | 287 | 193 | 331 | 272 | 309 |
| 2937 | 167 | 73 | 3,799 | 287 | 193 | 331 | 272 | 309 |
| 2938 | 167 | 73 | 3,799 | 287 | 193 | 331 | 271 | 309 |
| 2939 | 167 | 73 | 3,799 | 287 | 193 | 332 | 271 | 309 |
| 2940 | 166 | 73 | 3,699 | 287 | 193 | 332 | 271 | 308 |
| 2941 | 166 | 73 | 3,699 | 287 | 193 | 332 | 270 | 308 |
| 2942 | 166 | 73 | 3,699 | 287 | 193 | 332 | 270 | 308 |
| 2943 | 165 | 73 | 3,699 | 286 | 193 | 333 | 269 | 307 |
| 2944 | 165 | 73 | 3,599 | 286 | 193 | 333 | 268 | 307 |
| 2945 | 165 | 73 | 3,599 | 286 | 194 | 333 | 268 | 307 |
| 2946 | 164 | 73 | 3,599 | 286 | 193 | 333 | 267 | 306 |
| 2947 | 165 | 73 | 3,599 | 285 | 193 | 333 | 267 | 306 |
| 2948 | 164 | 73 | 3,599 | 285 | 193 | 334 | 266 | 305 |
| 2949 | 164 | 73 | 3,599 | 285 | 192 | 334 | 265 | 305 |
| 2950 | 164 | 73 | 3,599 | 285 | 192 | 334 | 265 | 305 |
| 2951 | 164 | 73 | 3,499 | 284 | 192 | 334 | 264 | 304 |
| 2952 | 163 | 73 | 3,499 | 284 | 192 | 334 | 264 | 304 |
| 2953 | 163 | 73 | 3,499 | 284 | 192 | 334 | 263 | 304 |
| 2954 | 163 | 73 | 3,499 | 283 | 192 | 335 | 263 | 304 |
| 2955 | 163 | 73 | 3,499 | 283 | 192 | 335 | 262 | 303 |
| 2956 | 163 | 73 | 3,499 | 283 | 192 | 335 | 262 | 303 |
| 2957 | 163 | 73 | 3,499 | 283 | 193 | 335 | 262 | 303 |
| 2958 | 163 | 73 | 3,399 | 283 | 192 | 335 | 261 | 302 |
| 2959 | 163 | 73 | 3,399 | 283 | 191 | 335 | 261 | 302 |
| 2960 | 162 | 73 | 3,399 | 283 | 191 | 335 | 260 | 302 |
| 2961 | 162 | 73 | 3,399 | 282 | 191 | 335 | 260 | 302 |
| 2962 | 162 | 73 | 3,399 | 282 | 190 | 335 | 259 | 302 |
| 2963 | 162 | 73 | 3,399 | 282 | 190 | 336 | 259 | 302 |
| 2964 | 161 | 73 | 3,299 | 282 | 190 | 336 | 259 | 302 |
| 2965 | 161 | 73 | 3,299 | 282 | 190 | 336 | 258 | 302 |
| 2966 | 161 | 73 | 3,299 | 282 | 190 | 336 | 258 | 301 |
| 2967 | 161 | 73 | 3,299 | 282 | 189 | 336 | 257 | 301 |
| 2968 | 160 | 73 | 3,299 | 282 | 189 | 336 | 257 | 301 |
| 2969 | 160 | 73 | 3,299 | 282 | 189 | 336 | 256 | 301 |
| 2970 | 159 | 73 | 3,299 | 282 | 189 | 336 | 256 | 301 |
| 2971 | 159 | 73 | 3,199 | 282 | 189 | 336 | 256 | 301 |
| 2972 | 159 | 73 | 3,199 | 282 | 189 | 336 | 255 | 300 |
| 2973 | 159 | 73 | 3,199 | 282 | 189 | 336 | 255 | 300 |
| 2974 | 159 | 73 | 3,199 | 282 | 189 | 336 | 255 | 300 |
| 2975 | 158 | 73 | 3,199 | 282 | 189 | 336 | 255 | 300 |
| 2976 | 159 | 73 | 3,199 | 282 | 189 | 336 | 254 | 300 |
| 2977 | 159 | 73 | 3,199 | 282 | 189 | 337 | 254 | 300 |
| 2978 | 159 | 73 | 3,099 | 282 | 189 | 337 | 254 | 300 |
| 2979 | 158 | 73 | 3,099 | 283 | 190 | 337 | 254 | 300 |
| 2980 | 159 | 73 | 3,099 | 283 | 190 | 337 | 254 | 300 |
| 2981 | 158 | 73 | 3,099 | 283 | 190 | 337 | 254 | 299 |
| 2982 | 158 | 73 | 3,099 | 283 | 190 | 337 | 254 | 300 |
| 2983 | 159 | 73 | 3,099 | 284 | 190 | 337 | 254 | 299 |
| 2984 | 159 | 73 | 3,099 | 284 | 190 | 337 | 254 | 300 |
| 2985 | 158 | 73 | 3,099 | 284 | 190 | 337 | 254 | 300 |
| 2986 | 158 | 73 | 2,999 | 284 | 190 | 337 | 254 | 300 |
| 2987 | 158 | 73 | 2,999 | 284 | 190 | 337 | 254 | 299 |
| 2988 | 158 | 73 | 2,999 | 284 | 190 | 338 | 254 | 300 |
| 2989 | 158 | 73 | 2,999 | 285 | 190 | 338 | 254 | 299 |
| 2990 | 158 | 73 | 2,999 | 285 | 190 | 338 | 254 | 300 |
| 2991 | 158 | 73 | 2,999 | 285 | 190 | 338 | 253 | 300 |
| 2992 | 158 | 73 | 2,999 | 285 | 191 | 338 | 253 | 299 |
| 2993 | 158 | 73 | 2,899 | 285 | 191 | 338 | 253 | 299 |
| 2994 | 158 | 73 | 2,899 | 285 | 191 | 338 | 253 | 300 |
| 2995 | 158 | 73 | 2,899 | 285 | 191 | 338 | 253 | 299 |
| 2996 | 158 | 73 | 2,899 | 286 | 191 | 339 | 253 | 299 |
| 2997 | 158 | 73 | 2,899 | 286 | 191 | 339 | 253 | 299 |
| 2998 | 158 | 73 | 2,899 | 286 | 192 | 339 | 253 | 299 |
| 2999 | 158 | 73 | 2,899 | 286 | 192 | 339 | 253 | 299 |
| 3000 | 158 | 73 | 2,800 | 286 | 192 | 339 | 253 | 299 |
| 3001 | 158 | 73 | 2,800 | 286 | 192 | 339 | 253 | 299 |
| 3002 | 158 | 73 | 2,800 | 287 | 192 | 339 | 253 | 299 |
| 3003 | 158 | 73 | 2,800 | 287 | 193 | 340 | 254 | 299 |
| 3004 | 158 | 73 | 2,800 | 287 | 193 | 340 | 254 | 299 |
| 3005 | 158 | 73 | 2,800 | 287 | 193 | 340 | 254 | 299 |
| 3006 | 158 | 73 | 2,800 | 287 | 193 | 340 | 254 | 299 |
| 3007 | 159 | 73 | 2,800 | 288 | 193 | 340 | 254 | 299 |
| 3008 | 158 | 73 | 2,700 | 288 | 193 | 340 | 254 | 299 |
| 3009 | 158 | 73 | 2,700 | 288 | 193 | 340 | 254 | 299 |
| 3010 | 158 | 73 | 2,700 | 288 | 193 | 340 | 254 | 299 |
| 3011 | 158 | 73 | 2,700 | 288 | 193 | 341 | 255 | 299 |
| 3012 | 158 | 73 | 2,700 | 288 | 194 | 341 | 255 | 299 |
| 3013 | 159 | 73 | 2,600 | 288 | 195 | 341 | 255 | 298 |
| 3014 | 158 | 73 | 2,600 | 288 | 196 | 341 | 256 | 298 |
| 3015 | 159 | 73 | 2,600 | 288 | 196 | 341 | 255 | 298 |
| 3016 | 158 | 73 | 2,600 | 288 | 196 | 341 | 256 | 298 |
| 3017 | 158 | 73 | 2,600 | 288 | 197 | 341 | 256 | 297 |
| 3018 | 158 | 73 | 2,600 | 288 | 197 | 341 | 256 | 297 |
| 3019 | 158 | 73 | 2,600 | 288 | 197 | 341 | 256 | 297 |
| 3020 | 158 | 73 | 2,600 | 288 | 197 | 342 | 256 | 297 |
| 3021 | 158 | 73 | 2,500 | 288 | 198 | 342 | 256 | 297 |
| 3022 | 158 | 73 | 2,500 | 288 | 198 | 342 | 256 | 296 |
| 3023 | 158 | 73 | 2,500 | 288 | 198 | 342 | 256 | 296 |
| 3024 | 158 | 73 | 2,500 | 288 | 198 | 342 | 256 | 296 |
| 3025 | 158 | 73 | 2,500 | 288 | 198 | 342 | 256 | 295 |
| 3026 | 158 | 73 | 2,500 | 288 | 199 | 342 | 257 | 295 |
| 3027 | 157 | 73 | 2,500 | 288 | 199 | 342 | 256 | 295 |
| 3028 | 158 | 73 | 2,400 | 288 | 200 | 342 | 256 | 295 |
| 3029 | 158 | 73 | 2,400 | 288 | 200 | 342 | 256 | 294 |
| 3030 | 158 | 73 | 2,400 | 288 | 201 | 342 | 256 | 294 |
| 3031 | 157 | 73 | 2,400 | 288 | 201 | 342 | 256 | 294 |
| 3032 | 157 | 73 | 2,400 | 288 | 201 | 343 | 256 | 294 |
| 3033 | 158 | 73 | 2,400 | 288 | 201 | 343 | 256 | 293 |
| 3034 | 158 | 73 | 2,400 | 288 | 201 | 343 | 256 | 293 |
| 3035 | 158 | 73 | 2,400 | 288 | 202 | 343 | 256 | 293 |
| 3036 | 158 | 73 | 2,300 | 288 | 202 | 343 | 256 | 293 |
| 3037 | 157 | 73 | 2,300 | 288 | 202 | 343 | 256 | 292 |
| 3038 | 157 | 72 | 2,300 | 288 | 203 | 343 | 256 | 292 |
| 3039 | 158 | 73 | 2,300 | 288 | 203 | 343 | 256 | 292 |
| 3040 | 158 | 73 | 2,300 | 288 | 203 | 343 | 256 | 292 |
| 3041 | 157 | 73 | 2,300 | 288 | 203 | 343 | 256 | 292 |
| 3042 | 157 | 73 | 2,300 | 288 | 203 | 343 | 255 | 292 |
| 3043 | 158 | 72 | 2,200 | 287 | 203 | 343 | 255 | 292 |
| 3044 | 158 | 72 | 2,200 | 287 | 203 | 343 | 255 | 291 |
| 3045 | 157 | 72 | 2,200 | 287 | 203 | 343 | 255 | 291 |
| 3046 | 158 | 72 | 2,200 | 287 | 204 | 343 | 255 | 291 |
| 3047 | 158 | 72 | 2,200 | 287 | 204 | 343 | 255 | 291 |
| 3048 | 158 | 72 | 2,200 | 287 | 204 | 343 | 255 | 292 |
| 3049 | 158 | 73 | 2,200 | 287 | 204 | 343 | 255 | 292 |
| 3050 | 158 | 73 | 2,200 | 287 | 204 | 343 | 256 | 292 |
| 3051 | 158 | 72 | 2,200 | 287 | 205 | 343 | 255 | 292 |
| 3052 | 158 | 73 | 2,100 | 287 | 205 | 343 | 256 | 292 |
| 3053 | 158 | 72 | 2,100 | 287 | 204 | 343 | 255 | 292 |
| 3054 | 158 | 72 | 2,100 | 286 | 204 | 343 | 256 | 292 |
| 3055 | 158 | 72 | 2,100 | 286 | 204 | 343 | 256 | 292 |
| 3056 | 158 | 72 | 2,100 | 286 | 204 | 343 | 256 | 292 |

| | | | | | | | | |
|------|-----|----|-------|-----|-----|-----|-----|-----|
| 3057 | 158 | 72 | 2,100 | 286 | 204 | 343 | 256 | 292 |
| 3058 | 158 | 72 | 2,100 | 286 | 204 | 343 | 256 | 292 |
| 3059 | 158 | 72 | 2,000 | 286 | 204 | 343 | 256 | 292 |
| 3060 | 158 | 72 | 2,000 | 286 | 204 | 344 | 256 | 292 |
| 3061 | 158 | 72 | 2,000 | 286 | 205 | 344 | 256 | 291 |
| 3062 | 158 | 72 | 2,000 | 286 | 205 | 344 | 256 | 292 |
| 3063 | 158 | 72 | 2,000 | 286 | 205 | 344 | 256 | 291 |
| 3064 | 158 | 72 | 2,000 | 286 | 205 | 344 | 256 | 292 |
| 3065 | 158 | 72 | 2,000 | 286 | 205 | 344 | 256 | 292 |
| 3066 | 159 | 72 | 1,900 | 285 | 205 | 344 | 256 | 292 |
| 3067 | 158 | 72 | 1,900 | 285 | 205 | 343 | 256 | 292 |
| 3068 | 159 | 72 | 1,900 | 286 | 205 | 343 | 256 | 292 |
| 3069 | 158 | 72 | 1,900 | 285 | 206 | 343 | 256 | 292 |
| 3070 | 159 | 72 | 1,900 | 285 | 207 | 343 | 256 | 292 |
| 3071 | 158 | 72 | 1,900 | 285 | 207 | 343 | 256 | 292 |
| 3072 | 158 | 72 | 1,900 | 285 | 207 | 343 | 256 | 292 |
| 3073 | 158 | 72 | 1,900 | 285 | 208 | 343 | 256 | 292 |
| 3074 | 158 | 72 | 1,800 | 285 | 208 | 343 | 256 | 292 |
| 3075 | 158 | 72 | 1,800 | 285 | 208 | 343 | 256 | 291 |
| 3076 | 158 | 72 | 1,800 | 285 | 208 | 343 | 256 | 291 |
| 3077 | 158 | 72 | 1,800 | 284 | 208 | 343 | 256 | 291 |
| 3078 | 158 | 72 | 1,800 | 284 | 208 | 343 | 256 | 291 |
| 3079 | 157 | 72 | 1,800 | 284 | 208 | 342 | 256 | 291 |
| 3080 | 157 | 72 | 1,800 | 284 | 208 | 342 | 256 | 290 |
| 3081 | 158 | 72 | 1,800 | 283 | 208 | 342 | 256 | 290 |
| 3082 | 157 | 72 | 1,800 | 283 | 208 | 341 | 256 | 290 |
| 3083 | 157 | 72 | 1,700 | 283 | 209 | 341 | 255 | 290 |
| 3084 | 157 | 72 | 1,700 | 282 | 209 | 341 | 255 | 289 |
| 3085 | 157 | 72 | 1,700 | 282 | 209 | 340 | 255 | 289 |
| 3086 | 157 | 72 | 1,700 | 281 | 208 | 340 | 254 | 289 |
| 3087 | 157 | 72 | 1,700 | 281 | 208 | 340 | 254 | 289 |
| 3088 | 157 | 72 | 1,700 | 281 | 208 | 339 | 254 | 289 |
| 3089 | 157 | 72 | 1,700 | 280 | 208 | 339 | 253 | 289 |
| 3090 | 157 | 72 | 1,700 | 280 | 209 | 338 | 253 | 288 |
| 3091 | 157 | 72 | 1,600 | 279 | 209 | 338 | 253 | 288 |
| 3092 | 156 | 72 | 1,600 | 279 | 209 | 337 | 252 | 288 |
| 3093 | 156 | 72 | 1,600 | 279 | 209 | 337 | 252 | 288 |
| 3094 | 156 | 72 | 1,600 | 278 | 209 | 336 | 252 | 288 |
| 3095 | 156 | 72 | 1,600 | 278 | 209 | 336 | 252 | 288 |
| 3096 | 156 | 72 | 1,600 | 277 | 209 | 335 | 252 | 288 |
| 3097 | 156 | 72 | 1,600 | 277 | 209 | 335 | 252 | 287 |
| 3098 | 156 | 72 | 1,600 | 277 | 209 | 335 | 252 | 287 |
| 3099 | 155 | 72 | 1,600 | 276 | 209 | 334 | 252 | 287 |
| 3100 | 155 | 72 | 1,500 | 276 | 209 | 334 | 251 | 287 |
| 3101 | 155 | 72 | 1,500 | 275 | 209 | 333 | 251 | 286 |
| 3102 | 155 | 72 | 1,500 | 275 | 209 | 333 | 250 | 286 |
| 3103 | 155 | 72 | 1,500 | 274 | 209 | 332 | 250 | 286 |
| 3104 | 155 | 72 | 1,500 | 274 | 209 | 332 | 250 | 286 |
| 3105 | 154 | 72 | 1,500 | 273 | 208 | 331 | 249 | 285 |
| 3106 | 154 | 72 | 1,500 | 273 | 208 | 331 | 249 | 285 |
| 3107 | 154 | 72 | 1,500 | 272 | 208 | 330 | 248 | 285 |
| 3108 | 154 | 72 | 1,500 | 272 | 208 | 330 | 248 | 284 |
| 3109 | 153 | 72 | 1,500 | 272 | 208 | 330 | 248 | 284 |
| 3110 | 153 | 72 | 1,400 | 271 | 208 | 329 | 247 | 284 |
| 3111 | 153 | 72 | 1,400 | 270 | 208 | 329 | 247 | 283 |
| 3112 | 153 | 72 | 1,400 | 270 | 208 | 328 | 246 | 283 |
| 3113 | 153 | 72 | 1,400 | 270 | 207 | 328 | 246 | 282 |
| 3114 | 153 | 72 | 1,400 | 269 | 207 | 327 | 245 | 282 |
| 3115 | 152 | 72 | 1,400 | 269 | 207 | 327 | 244 | 282 |
| 3116 | 152 | 72 | 1,400 | 268 | 207 | 326 | 244 | 281 |
| 3117 | 152 | 72 | 1,400 | 268 | 207 | 326 | 244 | 281 |
| 3118 | 151 | 72 | 1,400 | 267 | 207 | 325 | 243 | 280 |
| 3119 | 151 | 72 | 1,400 | 267 | 207 | 325 | 242 | 280 |
| 3120 | 151 | 72 | 1,300 | 266 | 206 | 325 | 242 | 279 |
| 3121 | 151 | 72 | 1,300 | 266 | 206 | 324 | 241 | 279 |
| 3122 | 150 | 72 | 1,300 | 266 | 206 | 324 | 240 | 278 |
| 3123 | 150 | 72 | 1,300 | 265 | 206 | 323 | 240 | 278 |
| 3124 | 150 | 72 | 1,300 | 264 | 206 | 323 | 239 | 277 |
| 3125 | 150 | 72 | 1,300 | 264 | 206 | 322 | 238 | 276 |
| 3126 | 149 | 72 | 1,300 | 263 | 205 | 322 | 238 | 276 |
| 3127 | 149 | 72 | 1,300 | 263 | 205 | 321 | 237 | 275 |
| 3128 | 149 | 72 | 1,300 | 263 | 205 | 321 | 237 | 275 |
| 3129 | 148 | 72 | 1,200 | 262 | 204 | 320 | 236 | 274 |
| 3130 | 148 | 72 | 1,200 | 262 | 204 | 320 | 236 | 273 |
| 3131 | 148 | 72 | 1,200 | 261 | 204 | 319 | 235 | 272 |
| 3132 | 148 | 72 | 1,200 | 261 | 203 | 319 | 235 | 272 |
| 3133 | 147 | 72 | 1,200 | 260 | 203 | 319 | 234 | 271 |
| 3134 | 147 | 72 | 1,200 | 260 | 203 | 318 | 233 | 270 |
| 3135 | 147 | 72 | 1,200 | 259 | 203 | 318 | 233 | 270 |
| 3136 | 147 | 72 | 1,200 | 259 | 203 | 317 | 232 | 269 |
| 3137 | 146 | 72 | 1,200 | 258 | 202 | 317 | 232 | 269 |
| 3138 | 146 | 72 | 1,200 | 258 | 202 | 316 | 231 | 268 |
| 3139 | 146 | 72 | 1,200 | 258 | 202 | 316 | 230 | 267 |
| 3140 | 146 | 72 | 1,100 | 257 | 202 | 315 | 230 | 267 |
| 3141 | 145 | 72 | 1,100 | 257 | 202 | 315 | 229 | 266 |
| 3142 | 145 | 72 | 1,100 | 256 | 201 | 315 | 228 | 265 |
| 3143 | 145 | 72 | 1,100 | 256 | 201 | 314 | 228 | 265 |
| 3144 | 145 | 72 | 1,100 | 255 | 201 | 314 | 227 | 264 |
| 3145 | 144 | 72 | 1,100 | 255 | 200 | 313 | 227 | 264 |
| 3146 | 144 | 72 | 1,100 | 254 | 200 | 313 | 226 | 263 |
| 3147 | 143 | 72 | 1,100 | 254 | 199 | 313 | 225 | 263 |
| 3148 | 143 | 72 | 1,100 | 253 | 199 | 312 | 225 | 262 |
| 3149 | 143 | 72 | 1,100 | 253 | 199 | 312 | 224 | 261 |
| 3150 | 142 | 72 | 1,100 | 252 | 199 | 311 | 224 | 261 |
| 3151 | 142 | 72 | 1,000 | 251 | 199 | 311 | 223 | 260 |
| 3152 | 142 | 72 | 1,000 | 251 | 199 | 311 | 222 | 260 |
| 3153 | 142 | 72 | 1,000 | 251 | 199 | 310 | 222 | 259 |
| 3154 | 141 | 72 | 1,000 | 250 | 199 | 310 | 221 | 258 |
| 3155 | 141 | 72 | 1,001 | 249 | 200 | 309 | 221 | 258 |
| 3156 | 141 | 72 | 1,000 | 249 | 200 | 309 | 220 | 257 |
| 3157 | 140 | 72 | 1,000 | 248 | 199 | 309 | 220 | 257 |
| 3158 | 140 | 72 | 1,000 | 248 | 200 | 308 | 219 | 256 |
| 3159 | 140 | 72 | 1,000 | 247 | 200 | 308 | 218 | 255 |
| 3160 | 139 | 72 | 1,000 | 247 | 200 | 308 | 218 | 255 |
| 3161 | 139 | 72 | 1,000 | 246 | 200 | 307 | 217 | 254 |
| 3162 | 139 | 72 | 1,000 | 246 | 200 | 307 | 217 | 254 |
| 3163 | 139 | 72 | 0,900 | 245 | 200 | 307 | 216 | 253 |
| 3164 | 139 | 72 | 0,900 | 245 | 200 | 306 | 216 | 252 |
| 3165 | 139 | 72 | 0,900 | 244 | 200 | 306 | 215 | 252 |
| 3166 | 138 | 72 | 0,900 | 244 | 200 | 306 | 215 | 251 |
| 3167 | 138 | 72 | 0,900 | 243 | 200 | 305 | 215 | 251 |
| 3168 | 138 | 72 | 0,900 | 243 | 199 | 305 | 214 | 250 |
| 3169 | 138 | 72 | 0,900 | 242 | 199 | 305 | 214 | 250 |
| 3170 | 138 | 72 | 0,900 | 242 | 199 | 304 | 213 | 249 |
| 3171 | 137 | 72 | 0,900 | 241 | 199 | 304 | 213 | 249 |
| 3172 | 137 | 72 | 0,900 | 241 | 199 | 304 | 212 | 248 |
| 3173 | 137 | 72 | 0,900 | 240 | 200 | 303 | 212 | 248 |
| 3174 | 137 | 72 | 0,900 | 240 | 199 | 303 | 211 | 247 |
| 3175 | 137 | 72 | 0,800 | 239 | 199 | 303 | 211 | 247 |
| 3176 | 137 | 72 | 0,800 | 239 | 199 | 302 | 211 | 246 |
| 3177 | 136 | 72 | 0,800 | 239 | 199 | 302 | 210 | 246 |
| 3178 | 136 | 72 | 0,800 | 238 | 199 | 302 | 210 | 245 |
| 3179 | 136 | 72 | 0,800 | 238 | 198 | 301 | 209 | 245 |
| 3180 | 136 | 72 | 0,801 | 238 | 198 | 301 | 209 | 244 |
| 3181 | 136 | 72 | 0,801 | 237 | 198 | 301 | 208 | 244 |
| 3182 | 136 | 72 | 0,800 | 237 | 198 | 301 | 208 | 243 |
| 3183 | 136 | 72 | 0,801 | 237 | 197 | 300 | 207 | 243 |
| 3184 | 135 | 72 | 0,801 | 236 | 197 | 300 | 207 | 242 |
| 3185 | 135 | 72 | 0,800 | 236 | 197 | 300 | 206 | 242 |
| 3186 | 135 | 72 | 0,800 | 236 | 197 | 300 | 206 | 242 |
| 3187 | 135 | 72 | 0,701 | 235 | 197 | 300 | 205 | 241 |
| 3188 | 135 | 72 | 0,701 | 235 | 197 | 299 | 205 | 241 |
| 3189 | 134 | 72 | 0,701 | 234 | 197 | 299 | 205 | 240 |
| 3190 | 134 | 72 | 0,701 | 234 | 196 | 299 | 204 | 240 |
| 3191 | 134 | 72 | 0,701 | 234 | 196 | 299 | 204 | 239 |
| 3192 | 134 | 72 | 0,701 | 233 | 196 | 298 | 203 | 239 |
| 3193 | 134 | 72 | 0,701 | 233 | 196 | 298 | 203 | 238 |
| 3194 | 134 | 72 | 0,701 | 232 | 196 | 298 | 203 | 238 |
| 3195 | 133 | 72 | 0,701 | 232 | 196 | 298 | 202 | 238 |

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| 3196 | 133 | 72 | 0,701 | 232 | 196 | 298 | 202 | 237 |
| 3197 | 133 | 72 | 0,701 | 231 | 196 | 297 | 201 | 237 |
| 3198 | 133 | 72 | 0,701 | 231 | 196 | 297 | 201 | 237 |
| 3199 | 133 | 72 | 0,701 | 230 | 196 | 297 | 201 | 236 |
| 3200 | 132 | 72 | 0,701 | 230 | 196 | 297 | 200 | 236 |
| 3201 | 132 | 71 | 0,601 | 229 | 195 | 297 | 200 | 235 |
| 3202 | 132 | 71 | 0,601 | 229 | 195 | 297 | 199 | 235 |
| 3203 | 132 | 71 | 0,601 | 229 | 195 | 296 | 199 | 235 |
| 3204 | 132 | 71 | 0,601 | 228 | 195 | 296 | 199 | 235 |
| 3205 | 132 | 71 | 0,601 | 228 | 195 | 296 | 198 | 234 |
| 3206 | 132 | 71 | 0,601 | 228 | 195 | 296 | 198 | 234 |
| 3207 | 132 | 71 | 0,601 | 227 | 195 | 296 | 198 | 233 |
| 3208 | 131 | 71 | 0,601 | 227 | 195 | 295 | 197 | 233 |
| 3209 | 131 | 71 | 0,601 | 226 | 195 | 295 | 197 | 233 |
| 3210 | 131 | 71 | 0,601 | 226 | 195 | 295 | 197 | 233 |
| 3211 | 131 | 71 | 0,501 | 226 | 195 | 295 | 196 | 232 |
| 3212 | 131 | 71 | 0,501 | 225 | 195 | 295 | 196 | 232 |
| 3213 | 131 | 71 | 0,501 | 225 | 194 | 295 | 196 | 232 |
| 3214 | 131 | 71 | 0,501 | 225 | 194 | 294 | 196 | 231 |
| 3215 | 130 | 71 | 0,501 | 224 | 194 | 294 | 195 | 231 |
| 3216 | 130 | 71 | 0,501 | 224 | 194 | 294 | 195 | 231 |
| 3217 | 130 | 71 | 0,501 | 224 | 194 | 294 | 195 | 231 |
| 3218 | 130 | 71 | 0,501 | 224 | 194 | 294 | 194 | 230 |
| 3219 | 130 | 71 | 0,501 | 224 | 194 | 294 | 194 | 230 |
| 3220 | 130 | 71 | 0,501 | 223 | 193 | 294 | 194 | 230 |
| 3221 | 130 | 71 | 0,501 | 223 | 193 | 293 | 193 | 230 |
| 3222 | 130 | 71 | 0,501 | 223 | 193 | 293 | 193 | 229 |
| 3223 | 129 | 71 | 0,501 | 222 | 193 | 293 | 193 | 229 |
| 3224 | 129 | 71 | 0,501 | 222 | 192 | 293 | 192 | 229 |
| 3225 | 129 | 71 | 0,501 | 222 | 192 | 293 | 192 | 228 |
| 3226 | 129 | 71 | 0,401 | 222 | 192 | 293 | 192 | 228 |
| 3227 | 129 | 71 | 0,401 | 221 | 192 | 293 | 192 | 228 |
| 3228 | 129 | 71 | 0,401 | 221 | 192 | 293 | 191 | 228 |
| 3229 | 128 | 71 | 0,401 | 221 | 192 | 292 | 191 | 228 |
| 3230 | 128 | 71 | 0,401 | 221 | 192 | 292 | 191 | 227 |
| 3231 | 128 | 71 | 0,401 | 220 | 192 | 292 | 191 | 227 |
| 3232 | 128 | 71 | 0,401 | 220 | 191 | 292 | 190 | 227 |
| 3233 | 128 | 71 | 0,401 | 219 | 191 | 292 | 190 | 227 |
| 3234 | 128 | 71 | 0,401 | 219 | 191 | 292 | 190 | 226 |
| 3235 | 127 | 71 | 0,401 | 219 | 191 | 292 | 189 | 226 |
| 3236 | 127 | 71 | 0,401 | 218 | 190 | 292 | 189 | 226 |
| 3237 | 127 | 71 | 0,401 | 218 | 190 | 292 | 189 | 225 |
| 3238 | 127 | 71 | 0,401 | 217 | 190 | 291 | 188 | 225 |
| 3239 | 127 | 71 | 0,401 | 217 | 190 | 291 | 188 | 225 |
| 3240 | 127 | 71 | 0,401 | 217 | 189 | 291 | 188 | 224 |
| 3241 | 126 | 71 | 0,301 | 216 | 189 | 291 | 187 | 224 |
| 3242 | 126 | 71 | 0,301 | 216 | 189 | 291 | 187 | 224 |
| 3243 | 126 | 71 | 0,301 | 216 | 188 | 291 | 187 | 223 |
| 3244 | 126 | 71 | 0,301 | 215 | 188 | 291 | 186 | 223 |
| 3245 | 126 | 71 | 0,301 | 215 | 188 | 291 | 186 | 223 |
| 3246 | 125 | 71 | 0,301 | 215 | 187 | 291 | 186 | 222 |
| 3247 | 125 | 71 | 0,301 | 214 | 187 | 290 | 186 | 222 |
| 3248 | 125 | 71 | 0,301 | 214 | 187 | 290 | 185 | 222 |
| 3249 | 125 | 71 | 0,301 | 214 | 187 | 290 | 185 | 221 |
| 3250 | 125 | 71 | 0,301 | 213 | 187 | 290 | 185 | 221 |
| 3251 | 125 | 71 | 0,301 | 213 | 187 | 290 | 185 | 220 |
| 3252 | 125 | 71 | 0,301 | 212 | 187 | 290 | 184 | 220 |
| 3253 | 124 | 71 | 0,301 | 212 | 187 | 290 | 184 | 220 |
| 3254 | 124 | 71 | 0,301 | 212 | 188 | 290 | 184 | 220 |
| 3255 | 124 | 71 | 0,301 | 211 | 188 | 290 | 184 | 219 |
| 3256 | 124 | 71 | 0,301 | 210 | 188 | 289 | 183 | 219 |
| 3257 | 124 | 71 | 0,201 | 210 | 188 | 289 | 183 | 219 |
| 3258 | 124 | 71 | 0,201 | 210 | 189 | 289 | 183 | 218 |
| 3259 | 124 | 71 | 0,201 | 209 | 189 | 289 | 183 | 218 |
| 3260 | 123 | 71 | 0,201 | 209 | 189 | 289 | 182 | 218 |
| 3261 | 123 | 71 | 0,201 | 208 | 189 | 289 | 182 | 218 |
| 3262 | 123 | 71 | 0,201 | 208 | 189 | 289 | 182 | 217 |
| 3263 | 123 | 71 | 0,201 | 207 | 189 | 289 | 182 | 217 |
| 3264 | 123 | 71 | 0,201 | 207 | 189 | 289 | 182 | 217 |
| 3265 | 123 | 71 | 0,201 | 207 | 189 | 288 | 181 | 217 |
| 3266 | 123 | 71 | 0,201 | 206 | 189 | 288 | 181 | 217 |
| 3267 | 123 | 71 | 0,201 | 206 | 189 | 288 | 181 | 216 |
| 3268 | 123 | 71 | 0,201 | 205 | 189 | 288 | 181 | 216 |
| 3269 | 123 | 71 | 0,201 | 205 | 189 | 288 | 181 | 216 |
| 3270 | 123 | 71 | 0,201 | 205 | 189 | 288 | 181 | 216 |
| 3271 | 123 | 71 | 0,201 | 205 | 189 | 288 | 181 | 216 |
| 3272 | 122 | 71 | 0,201 | 204 | 189 | 288 | 180 | 216 |

APPENDIX 5: Participants

Danick Power ing.
v-p operation
Services Polytests inc.
450.741.3636
www.polytests.com

Maxime Martin
Technicien
Services Polytests inc.
450.741.3636
www.polytests.com

Paul Hodges
Eng. manager
Wolf Steel sld

Ryan De Rose
R&D Lab Technician | Research & Development
Wolf Steel sld

APPENDIX 6: Drawings and specifications

APPENDIX 7: Operator's manual

This wood appliance needs periodic inspection and repair. It is against United States federal regulations to operate this wood appliance in a manner inconsistent with the operating instructions in this manual.



INSTALLATION AND OPERATION MANUAL

Timberwolf® Economizer Series (2200-1 leg model illustrated)

INSTALLER:

Leave this manual with the appliance.

CONSUMER:

Retain this manual for future reference.

SAFETY INFORMATION

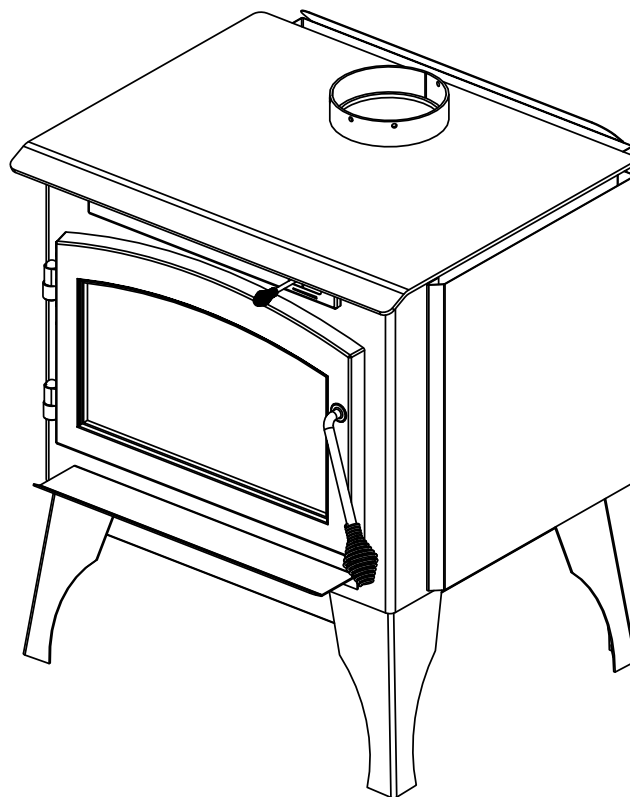
! WARNING

If the information in these instructions are not followed exactly, a fire or explosion may result causing property damage, personal injury or death. Please read the entire manual before you install and use your appliance. This heater has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into the heater.

- This heater can be very hot when burning.
- Combustible materials such as firewood, wet clothing, etc. placed too close can catch fire.
- Children and pets must be kept from touching the heater when it is hot.
- The chimney must be sound and free of cracks. Before installing this appliance, contact the local building or fire authority and follow their guidelines.
- Operate only with the doors tightly closed.
- Burn wood behind the log retainer directly on the firebricks.
- Do not use an elevated grate or otherwise raise the fire.
- This appliance is designed to burn natural wood only. Higher efficiencies and lower emissions generally result when burning air dried seasoned hardwoods, as compared to softwoods or to green or freshly cut hardwoods.
- Do not start a fire with chemicals or fluids such as gasoline, engine oil, etc.
- Do not burn trash or garbage, lawn clippings/waste, rubber, waste petroleum products, paints or paint thinners/solvents, plastic, materials containing asbestos, construction debris, railroad ties or treated wood, manure or animal remains, salt water driftwood or salted materials, unseasoned wood, coal, charcoal, coloured paper, cardboard, plywood or particleboard. Burning these materials may result in release of toxic fumes or render the appliance ineffective and cause smoke.
- Do not let the appliance become hot enough for any part to glow red.

Wood Stoves ONLY

- At least 14 squares inches (90.3 square centimeters) of outside air must be admitted to the room or directly to the appliance through a 4" (101.6mm) diameter pipe.
- KEEP THE STOVE TOP TEMPERATURE BELOW 700°F (371°C). Attempts to achieve heat output rates that exceed design specifications can result in steel distortion and damage.



FOR INDOOR USE ONLY

U.S. ENVIRONMENTAL PROTECTION AGENCY (E.P.A.) CERTIFIED TO COMPLY WITH 2020 PARTICULATE EMISSION STANDARDS USING CORD WOOD. THIS APPLIANCE HAS BEEN TESTED BY POLYTESTS AND LISTED BY OMNI-TEST LABORATORIES, INC. TO STANDARDS: CSA B366.2, ULC S627, AND UL1482.

APPLY SERIAL NUMBER LABEL FROM CARTON



Wolf Steel Ltd., 24 Napoleon Rd., Barrie, ON, L4M 0G8 Canada / 103 Miller Drive, Crittenden, Kentucky, USA, 41030
Phone 1 (866) 820-8686 • www.timberwolffireplaces.com • ask@timberwolffireplaces.com


WARNING

- This appliance is hot when operated and can cause severe burns if contacted.
- Any changes or alterations to this appliance or its controls can be dangerous and is prohibited.
- Do not operate appliance before reading and understanding operating instructions. Failure to operate appliance according to operating instructions could cause fire or injury.
- Before installing this appliance, contact the local building or fire authority and follow their guidelines.
- This appliance must be installed by a qualified installer. Never try to repair or replace any part of the appliance unless instructions are given in this manual. All other work should be done by a trained technician.
- Risk of burns. The appliance should be turned off and cooled before servicing.
- Do not operate without fully assembling all components. Do not install damaged, incomplete or substitute components.
- Do not let the appliance become hot enough for any part to glow red.
- Risk of cuts and abrasions. Wear protective gloves, footwear and safety glasses during installation. Sheet metal edges may be sharp.
- All wiring should be done by a qualified electrician and shall be in compliance with local codes. In the absence of local codes, use the current CSA22.1 Canadian Electric Code in Canada or the current National Electric Code ANSI/NFPA No. 70 in the United States.
- If equipped, burning your appliance with the ash dump door ajar creates a fire hazard that may result in discoloration to the door, internal damage to the appliance or a house and/or chimney fire.
- Do not connect this appliance to a chimney flue serving another appliance.
- Clothing or other flammable material should not be placed on or near the appliance. Objects placed in front of the appliance must be kept a minimum of 48" (121.9cm) away from the front face of the appliance.
- Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.
- Even after the appliance is off, it will remain hot for an extended period of time.
- Any safety screen or guard removed for servicing must be replaced prior to operating the appliance.
- Under no circumstances should this appliance be modified.
- This appliance must not be connected to a chimney flue pipe servicing a separate solid fuel burning appliance.
- Do not operate the appliance with the glass door removed, cracked or broken. Replacement of the glass should be done by a licensed or qualified service person.
- Do not strike or slam shut the appliance glass door.
- Only doors / optional fronts certified with the appliance are to be installed on the appliance.
- If the appliance is not properly installed, a house fire may result. Do not expose the appliance to the elements (ex. rain, etc.) and keep the appliance dry at all times. Wet insulation will produce an odour when the appliance is used.
- The chimney must be sound and free of cracks. Clean your chimney a minimum of twice a year and as required.
- Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or clothing ignition.
- Young children should be carefully supervised when they are in the same room as the appliance. Toddlers, young children and others may be susceptible to accidental contact burns. A physical barrier is recommended if there are at risk individuals in the house. To restrict access to an appliance or stove, install an adjustable safety gate to keep toddlers, young children and other at risk individuals out of the room and away from hot surfaces.
- Ensure you have incorporated adequate safety measures to protect infants/toddlers from touching hot surfaces.
- Check with your local hearth specialty dealer for safety screens and hearth guards to protect children from hot surfaces. These screens and guards must be fastened to the floor.
- Keep the packaging material out of reach of children and dispose of the material in a safe manner. As with all plastic bags, these are not toys and should be kept away from children and infants.
- Do not start a fire with chemicals or fluids such as gasoline, engine oil, etc.



 **WARNING**

- Your appliance requires periodic maintenance and cleaning. Failure to maintain your appliance may lead to smoke spillage in your home.
- Ashes must be disposed in a metal container with a tight lid and placed on a non-combustible surface well away from the home or structure until completely cool.
- Ensure clearances to combustibles are maintained when building a mantel or shelves above the appliance. Elevated temperatures on the wall or in the air above the appliance can cause melting, discolouration or damage to decorations, a T.V. or other electronic components.

 **WARNING:** This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer, and chemicals including carbon monoxide, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

For wood appliances:

- Lower emissions generally result when burning air dried seasoned hardwoods, as compared to softwoods or too green or freshly cut hardwoods. Burning wet unseasoned wood can cause excessive creosote accumulation. When this is ignited it can cause a chimney fire that may result in a serious house fire.
- This appliance is designed to burn natural wood only. Do not burn trash or garbage, lawn clippings / waste, rubber, waste petroleum products, paints or paint thinners / solvents, plastic, materials containing asbestos, construction debris, railroad ties or treated wood, manure or animal remains, salt water driftwood or salted materials, unseasoned wood, coal, charcoal, coloured paper, gift wrapping, cardboard, plywood or particleboard. Burning these materials may result in release of toxic fumes or render the appliance ineffective and cause smoke.
- Burn wood directly on the firebricks. Do not elevate grate or otherwise raise the fire.
- Do not store wood within appliance installation clearances or within the space required for re-fueling and ash removal.
- If equipped, the catalyst must be installed and in good working order. It is recommended that the catalyst is inspected at least three times per heating season.

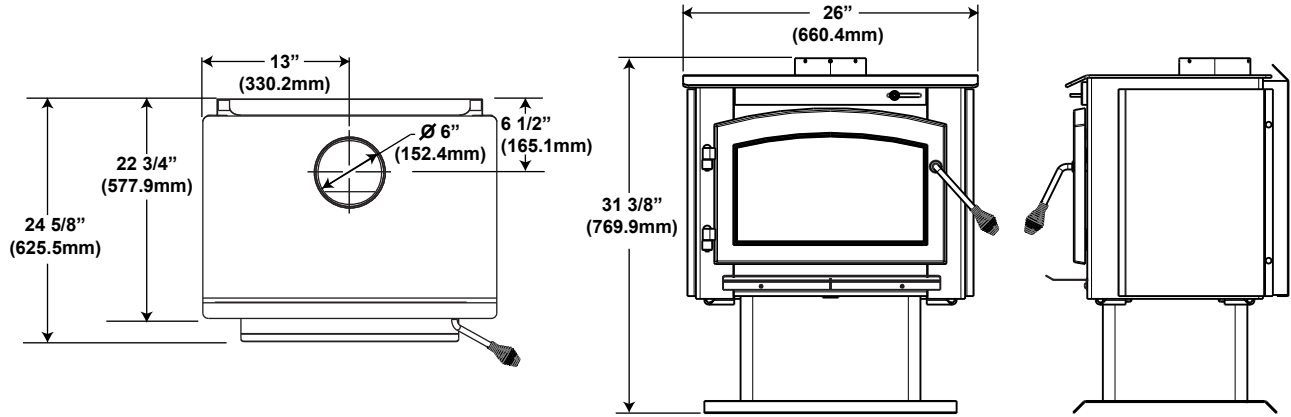
table of contents

| | | | | | |
|------------|-----------------------------------|-----------|-------------|---|-----------|
| 1.0 | general information | 5 | 6.0 | operation | 27 |
| 1.1 | dimensions | 5 | 6.1 | optimum burn method | 28 |
| 1.2 | specifications | 5 | 6.2 | air control | 28 |
| 1.3 | general instructions | 6 | 6.3 | fire extinguishers / smoke & carbon monoxide detectors | 28 |
| 1.4 | general information | 7 | 6.4 | fuel | 29 |
| 1.5 | EPA compliance | 7 | 6.5 | lighting a fire | 29 |
| 1.6 | rating plate information | 8 | 6.5.1 | flash fire | 29 |
| 2.0 | installation planning | 9 | 6.5.2 | extended fire | 30 |
| 2.1 | appliance placement | 9 | 6.6 | smoking | 30 |
| 2.2 | minimum clearance to combustibles | 9 | 7.0 | maintenance | 31 |
| 2.3 | alcove installation | 9 | 7.1 | ash removal procedures | 31 |
| 2.4 | floor protection | 10 | 7.1.1 | ash removal with ash drawer | 31 |
| 2.5 | outside air | 10 | 7.2 | creosote formation and removal | 32 |
| 3.0 | installation | 11 | 7.3 | runaway or chimney fire | 32 |
| 3.1 | chimney | 12 | 7.4 | chimney cleaning | 32 |
| 3.1.1 | chimney connection | 13 | 7.5 | door glass replacement | 33 |
| 3.1.2 | adding sections | 14 | 7.6 | gasket replacement | 33 |
| 3.1.3 | typical through the ceiling | 15 | 7.7 | care of glass | 33 |
| 3.1.4 | typical through the wall | 16 | 7.8 | wood | 34 |
| 3.1.5 | typical existing masonry | 17 | 8.0 | replacement parts | 35 |
| 4.0 | finishing | 18 | 8.1 | overview | 36 |
| 4.1 | leg installation | 18 | 9.0 | accessories | 37 |
| 4.2 | pedestal installation | 19 | 10.0 | troubleshooting | 38 |
| 4.3 | door removal | 19 | 11.0 | warranty | 39 |
| 4.4 | door handle installation | 20 | | | |
| 4.5 | secondary air tubes | 21 | | | |
| 4.6 | brick and baffle installation | 22 | | | |
| 4.7 | ash lip installation | 23 | | | |
| 5.0 | optional installation | 24 | | | |
| 5.1 | blower kit installation | 24 | | | |
| 5.2 | ash drawer kit (EP20LAD) | 25 | | | |
| 5.3 | ash pan kit (EP20PAD) | 26 | | | |

note:

The information throughout this manual is believed to be correct at the time of printing. Wolf Steel Ltd. reserves the right to change or modify any information within this manual at any time without notice. Changes, other than editorial, are denoted by a vertical line in the margin.

1.1 dimensions



1.2 specifications

| Specifications | 2200-1 |
|--------------------------|--|
| Width | 26" (660mm) |
| Depth | 24 5/8" (549mm) |
| Flue center line to rear | 6 1/2" (165mm) |
| Flue center line to side | 13" (330mm) |
| Height pedestal model | 29 7/8" (759mm) |
| Height leg model | 31 3/8" (800mm) |
| Chamber (D.W.H) | 14 5/8" x 20 7/8" x 11 5/8" (372mm x 530mm x 295mm) |
| Capacity | 1.9 cubic feet (0.05 cubic meters) |
| Approx. area heated** | 800-1800 square feet (74-167m ²) |
| Maximum heat output*** | 53,127 BTU /Hr |
| Heat output* | 12,944 - 53,127 BTU /Hr |
| Duration low fire** | 8 hours |
| Weight w/o bricks | 210 lbs (95kg) |
| Weight of bricks | 60 lbs (27kg) |
| Ideal wood length | 16" (406mm) |
| Efficiency Standard | B415.1-10 |

* As tested using test method ALT-125.

** Figures will vary considerably with individual conditions.

*** Wolf Steel Ltd. estimated realistic BTU/hr with hardwood logs and regular refueling.

1.3 general instructions

WARNING

- All wiring should be done by a qualified electrician and shall be in compliance with local codes. In the absence of local codes, use the current CSA C22.1 Canadian Electric Code (in Canada) or the ANSI / NFPA N° 70 National Electric Code in the United States.
 - Burning your appliance with the ash well open or the ash door ajar creates a fire hazard and may cause internal damage to the appliance or a house and/or chimney fire.
 - Do not connect this appliance to a chimney flue serving another appliance. Do not connect to any air distribution duct or system.
 - Provide adequate clearance for servicing and operating the appliance.
 - Provide adequate ventilation.
 - Never obstruct the front opening of the appliance.
 - Objects placed in front of the appliance must be kept a minimum of 48" (121.9cm) from the front face of the appliance.
 - Do not install in a mobile home.
-
- Before beginning your installation, consult with your local building code agency or fire officials and insurance representative to ensure compliance.
 - Non-toxic smoke will be emitted during the paint curing process, to help dissipate the smoke open a window near the appliance.
 - Remove any dust or debris off the top of the appliance before firing the appliance as the paint will become soft as the appliance heats up and will harden as the appliance cures. To cure the paint on your appliance burn your appliance moderately hot during the first few fires.
 - To keep the gasket from sticking to the appliance as the paint is curing, periodically open the door every 5-10 minutes.
 - For the first two weeks use generous amounts of fuel and burn the appliance with the damper wide open for an hour as the appliance goes through a process of eliminating moisture in the steel and firebricks. The initial heat output will be reduced while the moisture is being drawn from the appliance and it will be necessary to build several hot fires to remove this moisture. **DURING THIS PROCESS DO NOT OVERFIRE THE APPLIANCE. REDUCE THE AMOUNT OF AIR COMING INTO THE APPLIANCE IF THE APPLIANCE OR CHIMNEY BECOMES RED.**

1.4 general information

! WARNING

- Do not operate this appliance without the legs or pedestal installed.

This appliance was specifically designed over many months of research to meet the 2020 U.S.A. EPA particulate emission standards and has been extensively tested in Canadian and American laboratories. This system is the most efficient, simple and trouble-free we know and works as follows:

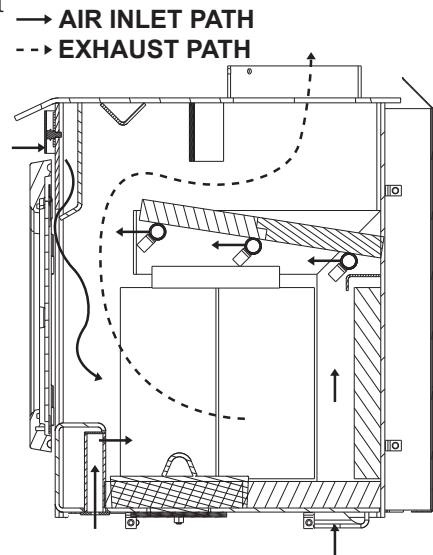
Secondary air from the rear hole travels up the back in the secondary air housing to the manifold located at the top and shoots out laterally to oxidize the gases below the smoke exit.

The lower combustion chamber is lined with high temperature firebricks on 2 sides, the back and across the bottom, with a layer of fibre baffles at the top to maintain a high temperature in the combustion chamber so that gases mixing with the preheated air from the secondary air manifold tube are easily ignited and burned. The appliance sides and back are shielded to direct the heat upwards and forwards into the room.

Be sure to provide sufficient combustion air. There are many other appliances in your home competing for air such as: a kitchen range hood, forced air heating devices, clothes dryer or a bathroom exhaust fan.

After extended periods of non-operation such as following a vacation or a warm weather season, the appliance may emit a slight odour for a few hours. This is caused by dust particles on the firebox burning off. Open a window to sufficiently ventilate the room.

If you experience smoking problems, you may need to open a door, a window or otherwise provide some method of supplying combustion air to the appliance.



1.5 EPA compliance

Do not use makeshift compromises during installation. Do not block or restrict air, grille or louvre openings! Do not add a hood.

Burning your appliance with the door open or ajar creates a fire hazard that may result in a house and/or chimney fire.

All venting connections must be in compliance with the chimney manufacturers installation instructions. Clearances referred to throughout this manual are the minimum requirements.

Your appliance must be installed in accordance with all national and local building code standards and the standard of Chimney and Appliances, Vents and Solid Fuel Burning Appliances NFPA #211. Consult the authority having jurisdiction (such as municipal building department, fire department, fire prevention bureau, etc.) to determine the need to obtain a permit. If you are in doubt about the proper installation for your situation, contact your dealer or local building or fire official. The manufacturer does not guarantee that this appliance and its options will completely heat your entire home.

Expansion / contraction noises during heating up and cooling down cycles are normal and to be expected.

It is recommended that in all cases, the appliance be secured to the floor. Use the pallet packing brackets to accomplish this.



We suggest that our woodburning hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Woodburning Specialists or who are certified in Canada by Wood Energy Technical Training (WETT).



This illustration is for reference only. Refer to the rating plate on the appliance for accurate information

note:

The rating plate must remain with the appliance at all times. It must not be removed.

Tested & Listed By  Portland Oregon USA
OMNI Test Laboratories, Inc.

LISTED SOLID FUEL BURNING SPACE HEATER / POËLE À COMBUSTIBLE SOLIDE HOMOLOGUÉE.
TESTED TO: / TESTÉ SELON: UL1482 - 2010 / ULC S627 - 00
MODEL / MODÈLE: 2200

This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual. / Ce poêle à bois doit inspection périodique et la réparation pour un fonctionnement correct. Consultez le manuel du propriétaire pour plus d'informations. Il est contre les règlements fédéraux pour faire fonctionner ce poêle à bois d'une manière incompatible avec les instructions de fonctionnement dans le manuel du propriétaire.

REPORT NO. / NUMÉRO DE RAPPORT 415-S-02-2

INSTALL AND USE ONLY IN ACCORDANCE WITH WOLF STEEL LTD'S INSTRUCTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA. MINIMUM CEILING HEIGHT: 7'11" (2.13m)

HEARTH EXTENSION / COMBUSTIBLE FLOOR PROTECTION: IF INSTALLED ON A COMBUSTIBLE FLOOR, UNIT MUST BE PLACED ON A NON-COMBUSTIBLE FLOOR PROTECTOR EXTENDING 18" (455mm) IN FRONT AND 8" (203mm) TO THE SIDES AND BACK.

CHIMNEY TYPE: MINIMUM 6" (152mm) DIAMETER LISTED (UL 103HT) RESIDENTIAL CHIMNEY.

CHIMNEY CONNECTOR: 6" (152mm) DIAMETER MINIMUM 24 GAUGE STEEL. MINIMUM CLEARANCE FROM HORIZONTAL CONNECTOR AND CEILING 18" (455mm).

DO NOT OBSTRUCT SPACE UNDER HEATER.

SPECIAL METHODS ARE REQUIRED WHEN PASSING A CHIMNEY THROUGH A WALL OR CEILING. SEE INSTRUCTIONS AND BUILDING CODES.

DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

FUEL: FOR USE WITH SOLID WOOD FUEL ONLY. DO NOT USE GRATE OR ELEVATE FIRE. BUILD WOOD FIRE DIRECTLY ON HEARTH.

WARNING: RISK OF SMOKE SPILLAGE. OPERATE ONLY WITH DOOR FULLY CLOSED.

REPLACE GLASS ONLY WITH CERAMIC GLASS.

DO NOT OVERFIRE. IF HEATER OR CHIMNEY CONNECTORS GLOW, YOU ARE OVERFIRING. INSPECT AND CLEAN CHIMNEY FREQUENTLY. UNDER CERTAIN CONDITIONS OF USE CREOSOTE BUILD-UP MAY OCCUR RAPIDLY.

OPTIONAL LEGS: IF TO BE INSTALLED WITH OPTIONAL LEGS, LEGS MUST BE INSTALLED PRIOR TO OPERATION.

OPTIONAL BLOWER KIT: EP-65, 115V, 60HZ, 0.82AMP. ROUTE CORD AWAY FROM UNIT.

DANGER: RISK OF ELECTRICAL SHOCK. DISCONNECT POWER BEFORE SERVICING UNIT.

POUR INSTALLATION ET UTILISATION CONFORMÉMENT AUX INSTRUCTIONS DE WOLF STEEL LTD. RENSEIGNEZ-VOUS AUPRÈS DES AUTORITÉS LOCALES DU BÂTIMENT OU DU SERVICE DES INCENDIES AU SUJET DES RESTRICTIONS ET DES INSPECTIONS D'INSTALLATION DANS VOTRE RÉGION.

HAUTEUR DE PLAFOND MINIMAL 7' (2,13m).

PROLONGEMENT D'ÂTRE / PROTECTION DU PLANCHER COMBUSTIBLE: SI INSTALLÉ SUR UN PLANCHER COMBUSTIBLE, L'APPAREIL DOIT ÊTRE PLACÉ SUR UNE PLAQUE PROTECTRICE INCOMBUSTIBLE S'ÉTENDANT SUR 18" (455mm) À L'AVANT ET 8" (203mm) À L'ARRIÈRE ET SUR LES CÔTÉS.

TYPE DE CHIMÉE: CHIMÉE RÉSIDENNELLE DE 6" DE DIAMÈTRE (152 mm) HOMOLOGUÉE (UL 103HT).

RACCORD DE CHIMÉE: DIAMÈTRE DE 6" (152mm) D'ACIER DE CALIBRE 24. MINIMUM 18" (455mm) DE DÉGAGEMENT MINIMAL ENTRE LE RACCORD HORIZONTAL ET LE PLAFOND.

NE RIEN ENTREPOSER SOUS L'APPAREIL.

DES MÉTHODES SPÉCIALES SONT REQUISES LORSQU'UNE CHIMÉE TRAVARSE UN MUR OU UN PLAFOND. VOIR LES INSTRUCTIONS ET LES CODES DU BÂTIMENT.

NE PAS RACCORDER À LA CHIMÉE D'UN AUTRE APPAREIL.

COMBUSTIBLE: POUR USAGE AVEC LE BOIS SEULEMENT. N'UTILISEZ PAS DE CHENET OU NE SURELÈVEZ PAS LE BOIS. PRÉPAREZ LE FEU DIRECTEMENT SUR L'ÂTRE.

AVERTISSEMENT: RISQUE D'ÉCHAPPEMENT DE FUMÉE. TENIR LA PORTE FERMÉE LORSQUE LE POËLE FONCTIONNE. REMPLACEZ LA VITRE PAR UNE VITRE EN CÉRAMIQUE SEULEMENT.

NE SURCHAUFFEZ PAS L'APPAREIL. SI L'APPAREIL OU LES RACCORDS ROUGEOTENT, L'APPAREIL SURCHAUFFE. INSPECTEZ ET NETTOYEZ LA CHIMÉE FREQUÉMENT. DANS CERTAINES CONDITIONS, DES DÉPÔTS DE CREOSOTE PEUVENT SE FORMER RAPIDEMENT.

PATTES OPTIONNELLES: SI LES PATTES OPTIONNELLES SONT INSTALLÉES, ELLES DOIVENT ÊTRE INSTALLÉES AVANT DE FAIRE FONCTIONNER L'APPAREIL.

SOUFFLERIE OPTIONNELLE: EP-62, 115V, 60HZ, 0.82A. TENEZ LE CORDON ÉLECTRIQUE LOIN DE L'APPAREIL.

DANGER: RISQUE DE SECOURS ÉLECTRIQUE. DÉBRANCHEZ AVANT DE PROCÉDER À L'ENTRETIEN.




| PARALLÈLE & CORNER / PARALLÈLE & COIN | SINGLE WALL CONNECTOR / TUYAU DE RACCORDEMENT À PAROI SIMPLE | DOUBLE WALL CONNECTOR / TUYAU DE RACCORDEMENT À PAROI DOUBLE | |
|--|--|--|--------------------|
| Backwall / mur de côté (A) | 19" (48.3cm) | 19" (48.3cm) | |
| Side wall / mur de côté à la base (B) | 28 7/8" (73.3cm) | 28 7/8" (73.3cm) | |
| Backwall / mur arrière (C) | 17 1/2" (44.5cm) | 12 1/2" (31.8cm) | |
| Backwall height / mur arrière à la base (D) | 21" (53.3cm) | 18" (45.7cm) | |
| Corner / coin (E) | 11" (27.9mm) | 7" (17.8mm) | |
| Ceiling / plafond (F) | 84" (213.4cm) | 75" (190.5cm) | |
| | ALCOVE / ALCÔVE | | |
| Ceiling / plafond (G) | N/A | 75" (190.5cm) | |
| MINIMUM FLOOR PROTECTION / PROTECTION MINIMAL DU PLANCHER | | | |
| | FRONT / DEVANT (H) | SIDES / CÔTÉS (I) | BACK / ARRIÈRE (J) |
| CANADA | 18" (45.7cm) | 8" (203mm) | 8" (203mm) |
| USA / É.U. | 18" (45.7cm) | 8" (203mm) | 8" (203mm) |

Clearances can be reduced with shielding acceptable to local authorities. Reduced installation must comply with NFPA 211 or CAN/CSA-B365. / Il est possible de réduire les dégagements à l'aide d'un protecteur conforme aux normes des autorités locales. Une installation réduite doit être conforme aux normes NFPA 211 ou au CAN/CSA B365.

MANUFACTURE DATE: / DATE DE FABRICATION:

YEAR: 2015 2016 2017 2018 2019 2020

MONTH: 1 2 3 4 5 6 7 8 9 10 11 12



CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.

ATTENTION: QUAND L'APPAREIL FONCTIONNE, LA SURFACE DEVIENT CHAUDE. NE PAS TOUCHER. TENIR LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES À L'ÉCAR. LE CONTACT PEUT CAUSER DES BRÛLURES À LA PEAU. VOIR LA PLAQUE D'HOMOLOGATION ET LES INSTRUCTIONS.

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood. Certifié conforme à la norme d'émission de particules de 2020 en utilisant bois de corde. 40 CFR Part 60, Subpart AAA
2.25 Grams Per Hour / 2020 Cordwood / 2.25 Grammes par heure / Bois de Corde 2020

WOLF STEEL LTD.
24 NAPOLEON ROAD, BARRIE, ON,
L4M 0G8 CANADA

NAC GUANGZHOU P.R.C.
NO.69 HEFENG ROAD, GUANGZHOU, CHINA

2200

W385-2028 / A

2.1 appliance placement

Have an authorized dealer install the appliance. If you install the appliance yourself, have your dealer review your installation plans and/or installation. Draw out a detailed plan of the installation including dimensions and verify the dimensions with the requirements listed in this manual.

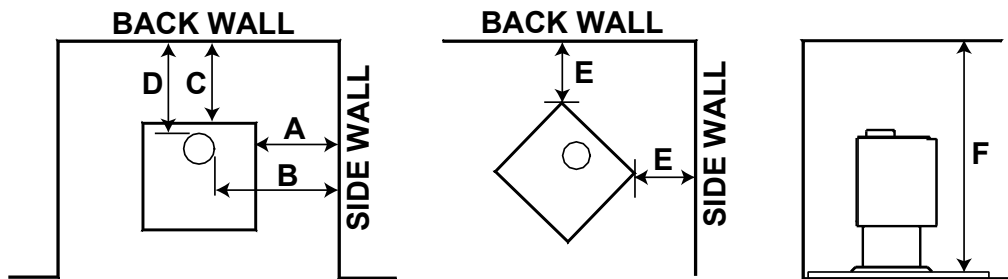
You may wish to adjust the appliance position slightly to ensure the vent does not intersect with a framing member. Appliance must be positioned so that no combustibles are within, or can swing within (e.g. drapes, doors), 48" (121.9cm) of the front of the appliance.

Inserts only: This appliance is equipped with levelling screws, level the appliance before installing into the final position. Levelling the appliance will eliminate rocking or excessive noise when the fan is in operation. Once the appliance is level, move it partially into place to allow for all connections to be made. It is not practical to level the appliance once it has been installed. Determine the required depth prior to installing the appliance and adjust the levelling screws accordingly.

2.2 minimum clearance to combustibles

! WARNING

- Do not install into any area having less than 7 feet (2.1m) (ceiling to appliance bottom, excluding hearth height).

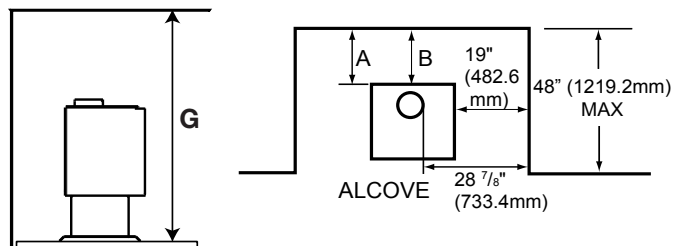


| PARALLEL & CORNER | SINGLE WALL CONNECTOR | DOUBLE WALL CONNECTOR |
|----------------------|-----------------------|-----------------------|
| Sidewall (A) | 19" (48.3cm) | 19" (48.3cm) |
| Sidewall to flue (B) | 28 7/8" (73.3cm) | 28 7/8" (73.3cm) |
| Backwall (C) | 17 1/2" (44.5cm) | 12 1/2" (31.8cm) |
| Backwall to flue (D) | 21" (53.3cm) | 16" (40.6cm) |
| Corner (E) | 11" (279mm) | 7" (178mm) |
| Ceiling (F) | 84" (213.4cm) | 75" (190.5cm) |

Clearances can be reduced with shielding acceptable to local authorities. Reduced installation must comply with NFPA 211 or CAN/CSA-B365.

2.3 alcove installation

Your appliance may be installed, using a listed double wall connector, such as Security DL6 in Canada, the Simpson Duravent Plus DVL in the USA or an equivalent double wall connector, into an alcove having a depth of no more than 4 feet and a height of at least 6'3". The minimum clearances are as shown.



| ALCOVE | | |
|-------------------|-----------------------|-----------------------|
| PARALLEL & CORNER | SINGLE WALL CONNECTOR | DOUBLE WALL CONNECTOR |
| Ceiling (G) | N/A | 75" (190.5cm) |

NOTE: Minimum width 64" (162.6cm), Minimum depth 32" (81.3cm)

installation planning

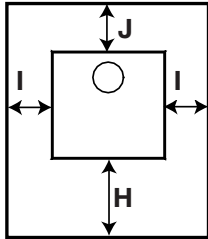
2.4 floor protection

If the appliance is to be installed on top of a combustible floor, it must be placed on an approved non-combustible hearth pad, that extends 8" (203mm) beyond the appliance sides and back and 18" (45.7cm) to the front. The reduced clearance from the back of the appliance may result in the appliance pad terminating shorter than 8" (203mm) beyond the appliance.

note:

Floor protection is required for spark and ash shielding, but not for limiting floor temperatures from the radiant heat of the appliance. The appliance was designed and safety-tested so that without any protection, the floor would not overheat.

Refer to local building codes for suitable floor protection materials.



| MINIMUM FLOOR PROTECTION | | | |
|--------------------------|--------------|------------|------------|
| | FRONT (H) | SIDES (I) | BACK (J) |
| CANADA | 18" (45.7cm) | 8" (203mm) | 8" (203mm) |
| USA | 16" (40.6cm) | 8" (203mm) | 8" (203mm) |

note:
If a section of horizontal chimney connector is used, floor protection is required under the chimney connector and 2" (51mm) beyond each side.

2.5 outside air

The following are signs that fresh air may be required:

- When there is combustion present: Wood burns poorly, smoke spills, back-draft takes place and your chimney does not draw steadily.
- In the winter there is too much condensation on the windows.
- Opening a window seems to alleviate the above symptoms.
- A ventilation system is installed in the house.
- Other devices are present that exhaust house air.
- The house has tight fitting windows and/or is equipped with a well-sealed vapour barrier.

Systems such as HRV's are designed to bring fresh air into your home and will resolve these related performance issues with your appliance.

! WARNING

- Wear gloves, protective footwear and safety glasses for protection.
- Carefully follow the instructions for assembly of the pipe and other parts needed to install the appliance. Failure to do so may result in a fire, especially if combustibles are too close to the appliance or chimney and air spacers are blocked, preventing the free movement of cooling air.
- Do not draw outside air from garage spaces. Exhaust products of gasoline engines are hazardous. Do not install outside air ducts such that the air may be drawn from attic spaces, basements or above the roofing where other heating appliances or fans and chimneys exhaust or utilize air. These precautions will reduce the possibility of appliance smoking or air flow reversal. The outside air inlet must remain clear of leaves, debris, ice and/or snow. It must be unrestricted while appliance is in use to prevent room air starvation which can cause smoke spillage and an inability to maintain a fire. Smoke spillage can also set off smoke alarms.
- Negative pressure within your home may inadvertently affect your appliance.
- To prevent contact with sagging or loose insulation, the appliance must not be installed against vapour barriers or exposed insulation. Localized overheating could occur and a fire could result.
- Do not use makeshift compromises during installation. Do not block or restrict air, grille or louvre openings. Do not add a hood.
- To prevent personal injury, keep hand tools in good condition, sharpen cutting edges and make sure tool handles are secure.
- Always maintain the minimum air space required in the enclosure to prevent fires.
- Check with local building officials for any permits required for installation of this appliance and notify your insurance company prior to proceeding.

3.1 chimney**! WARNING**

- Never install a single wall slip section or smoke pipe in a chase structure. The higher temperature of this single wall pipe may radiate sufficient heat to combustible chase materials to cause a fire.
- Do not connect this appliance to a chimney system serving another appliance.
- To avoid danger of fire, all instructions must be strictly followed, including the provision of air space clearance between chimney system and enclosure. To protect against the effects of corrosion on those parts exposed to the weather, we recommend that the chase top be painted with a rust-resistant paint.
- Do not fill any framed space around the chimney with insulation or any other material. Insulation placed in this area could cause adjacent combustibles to overheat.
- Maintain a minimum 2" (51mm) air clearance to all parts of the chimney system at all times (this excludes the chimney connection). Failure to maintain this 2" (51mm) air clearance will cause a structure fire. Never fill this space with any type of material.
- Detailed instructions for installation of the chase top, storm collar and termination cap are packaged with these parts.
- Do not cut rafters or ceiling joists without first consulting a building official to ensure structural integrity is not compromised.
- Firestop spacers must be used whenever the chimney penetrates a ceiling/floor area.
- The total horizontal vent length should not exceed 40% of the chimney height above the appliance all horizontal smoke pipe must slope slightly upwards a minimum of 1/4" (6.4mm) per foot and all connections must be tight and secured by three sheet metal screws equally spaced. An uninsulated smoke pipe shall not pass through an attic, roof space, closet or similar concealed space, or through a floor, ceiling, wall or partition, or any combustible constructions.
- Do not use any makeshift materials during installation.

Your appliance may be connected to a factory built or masonry chimney. If you are using a factory built chimney, it must comply with ULCS629 (Canada) or UL103 (USA) standards. It must therefore be a 6" (152mm) HT Type (2100°F) chimney. It is extremely important that it be installed according to the manufacturer's specifications. The manufacturer's installation instructions and specified clearances should always be followed in accordance with local and national codes. In Canada the CSA B365 and the CSA C22.1 installation codes are to be followed. In the USA the ANSI NFPA 70 and ANSI NFPA 211 installation codes are to be followed.

Chimney and chimney connector must be in good condition and kept clean.

3.1.1 chimney connection

Your chimney connector and chimney must have the same diameter as the appliance's exhaust flue outlet. The appliance pipe must be made of aluminized or cold roll steel with a minimum 24 gauge (0.6mm) thickness. It is strictly forbidden to use galvanized steel.

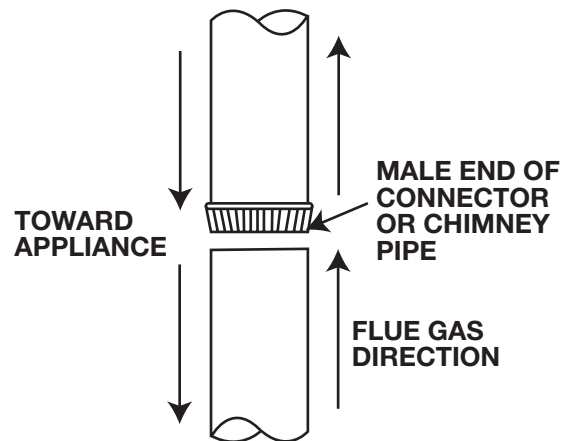
A 6" (152.4mm) diameter single or double wall chimney connector, used to connect the appliance to the chimney, must be installed with the crimped end toward the appliance. This will ensure that the moisture which condenses from the burning wood will flow back into the fire chamber. Each joint in the chimney connector must be secured with at least three sheet metal screws, equally spaced around the circumference.

For installation of your chimney connector, the following recommendations may be useful.

- The chimney connector must be short and straight. For optimum performance, it is recommended that all horizontal runs have a minimum 1/4" (6.4mm) rise per foot (0.3m), with the higher end of the section toward the chimney. For safe and proper operation of the appliance, see "INSTALLATION" instructions.
- To ensure a good draft, the total horizontal length of the connector should never exceed 8' (2.4m) to 10' (3.1m). In the case of vertical installation, the total length of the connector can be longer and connected without problem to the chimney at the ceiling level.
- There should never be more than two 90° elbows in the entire connector and chimney system. Never start with a 90° elbow. Always go up vertically for at least 2 feet (0.6m) from the flue collar before using a 90° elbow.
- The connector must not pass through any combustible material, nor may it pass through a concealed space (such as an attic, roof space, or closet). If passing through a wall, ceiling or into a masonry chimney, use either chimney components listed for that specific use, or means acceptable to local authorities having jurisdiction over the installation.

This appliance must be connected to:

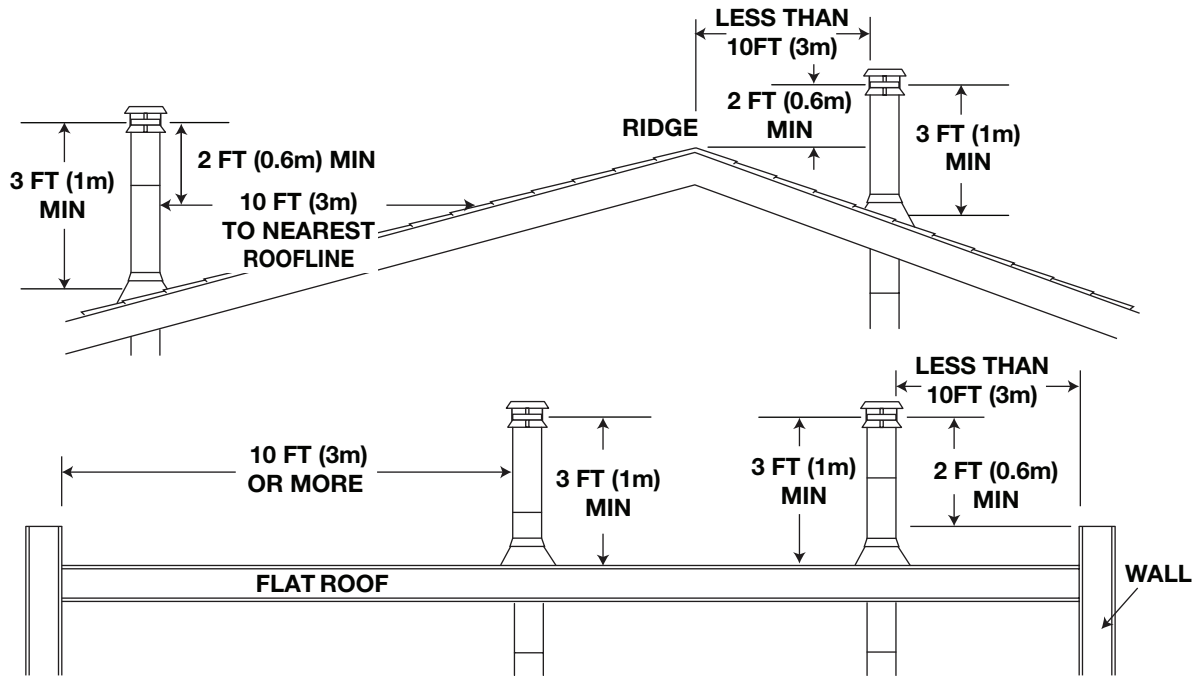
- A chimney complying with the requirements for Type HT chimneys in the Standard for Chimneys, Factory-Built, Residential Type and Building Heating Appliance, or
- A code-approved masonry chimney with a flue liner. Vent the stove into a masonry chimney or an approved, insulated solid-fuel stainless-steel chimney with as short and straight a length of 6" (152.4mm) diameter chimney connector as possible. Connection to a masonry thimble cemented in place.



installation

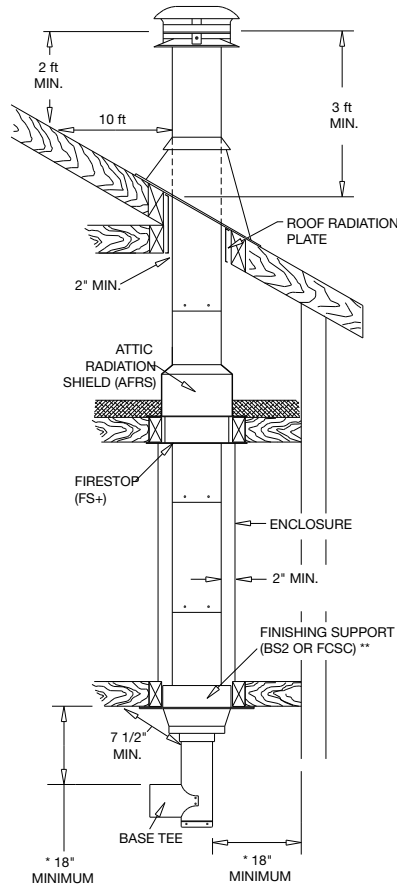
3.1.2 adding sections

Add chimney sections, according to the manufacturers installation instructions. If the chimney system passes through an attic space a rafter radiation shield or attic insulation shield is required. The chimney must extend at least 3ft (0.9m) above its point of contact with the roof and at least 2ft (0.6m) higher than any wall, roof or building within 10ft (3.1m). If the chimney extends more than 5ft (1.5m) above the roof, it must be secured using a roof brace or guide wires. A raincap must be installed to avoid internal damage and corrosion.



note:

This illustration is for wood appliances only.



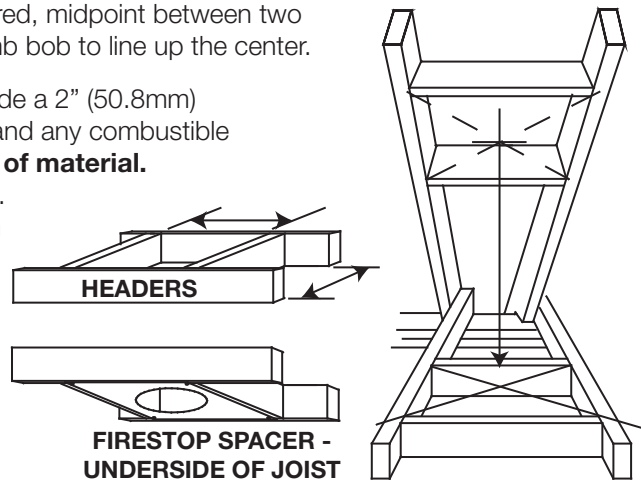
An insulated stainless steel chimney must be supported at the ceiling or roof and its installation must comply with its manufacturer's instructions.

* CLEARANCE CAN BE REDUCED IF A LISTED CHIMNEY CONNECTOR IS USED.

** CLEARANCES CAN BE LESS THAN 2" WHERE ESTABLISHED BY THE SUPPORT.

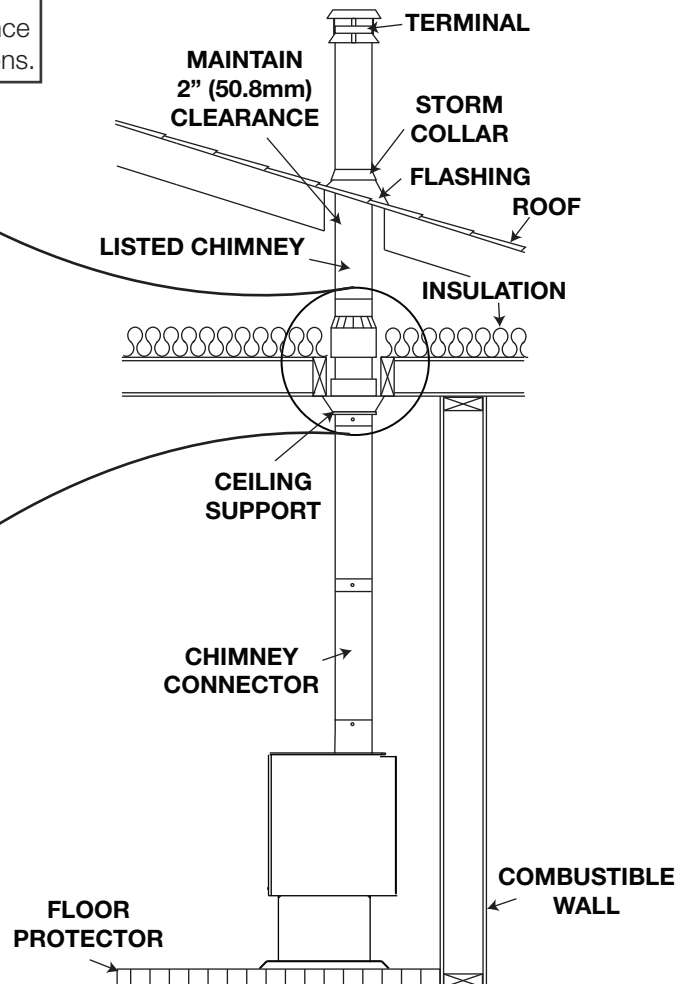
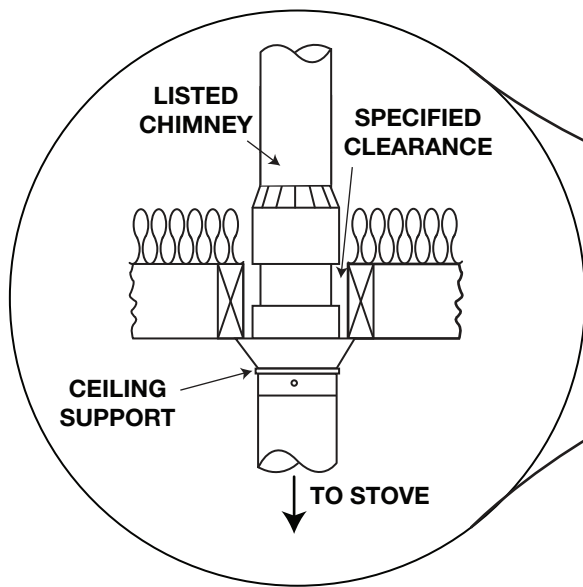
3.1.3 typical through the ceiling

- A. Move the stove into position with the flue centered, midpoint between two joists to prevent having to cut them. Use a plumb bob to line up the center.
- B. Cut and frame an opening in the ceiling to provide a 2" (50.8mm) clearance between the outside of the chimney and any combustible material. **Do not fill this space with any type of material.** Nail headers between the joist for extra support. Firestop spacers must be placed on the bottom of each framed opening in any floor or ceiling that the chimney passes through. If your chimney system is enclosed within the attic area, a rafter radiation shield is required.
- C. Hold a plumb bob from the underside of the roof to determine where the opening in the roof should be. Cut and frame the roof opening to maintain proper 2" (50.8mm) clearances.



note:

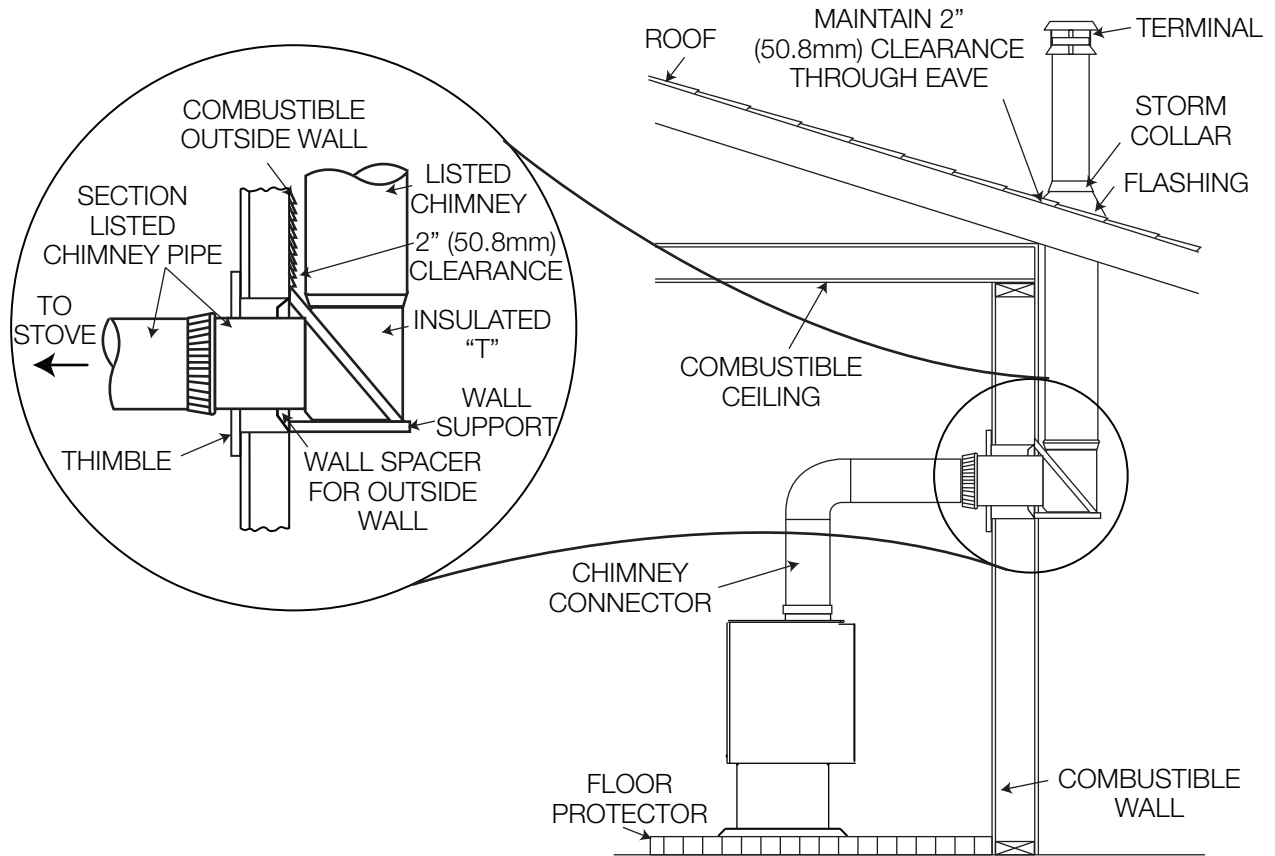
The chimney must be supported at the ceiling or roof so that its weight does not rest on the appliance and must comply with its manufacturer's instructions.



3.1.4 typical through the wall

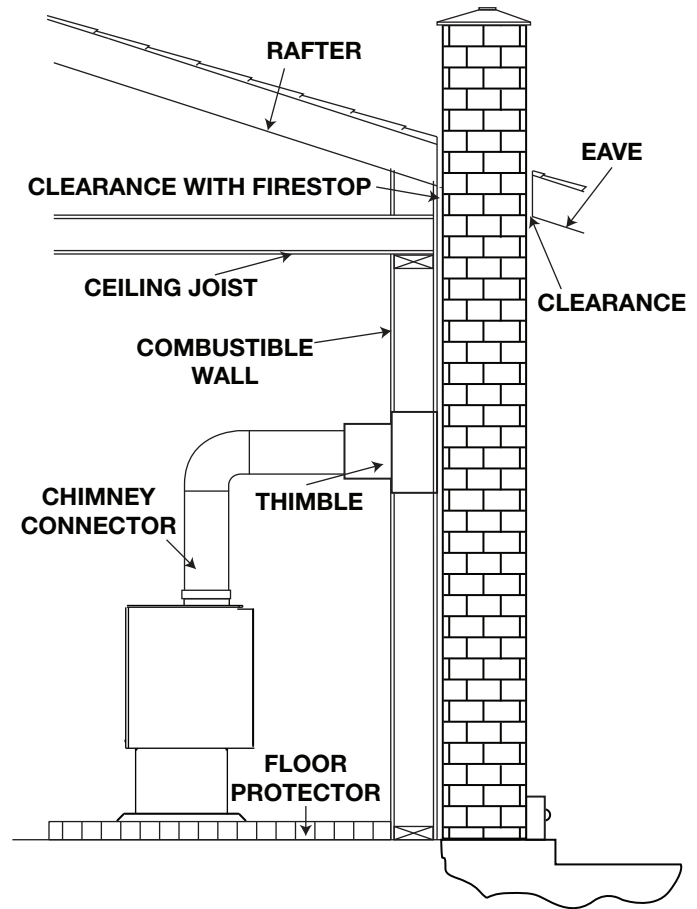
If possible, design the installation so that the connector does not pass through a combustible wall. If during your installation you must pass through a combustible wall, check with your building inspector before you begin. Also check with the chimney connector manufacturer for any specific requirements.

Consult with your dealer regarding special connection components available for use for wall pass-throughs. Use only parts that have been tested and listed for use in a wall pass-through.



3.1.5 typical existing masonry

You can also install your appliance using your existing masonry chimney. To do so, use the following guidelines. Use a factory-built thimble, or construct your own brick thimble. If you are using a masonry chimney, it is important that it be built in compliance with the specifications of the Building Code in your region. It must normally be lined with fire clay bricks, metal or clay tiles sealed together with fire cement. (Round flues are the most efficient). The maximum flue size is 8" (203.2mm) x 8" (203.2mm) square or 6" (152.4mm) round. For greater diameters it is necessary to install a 6" (152.4mm) stainless steel liner.



4.0 finishing

4.1 leg installation

! WARNING

- Do **not** remove knockout unless installing the optional ash drawer kit.

To avoid being damaged during shipping, the appliance has been bolted to the pallet and must be unbolted before the appliance can be installed.

note:

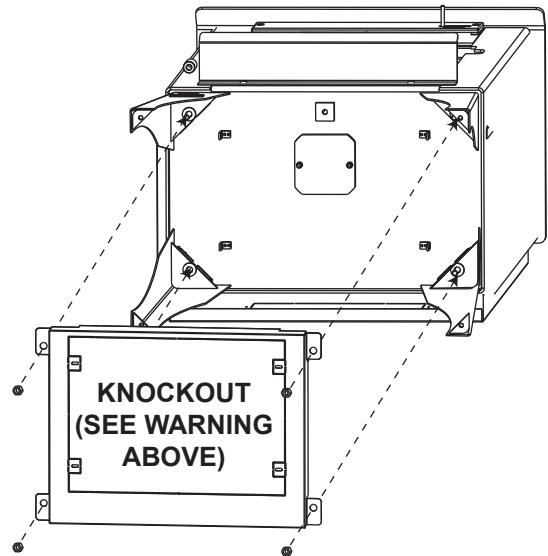
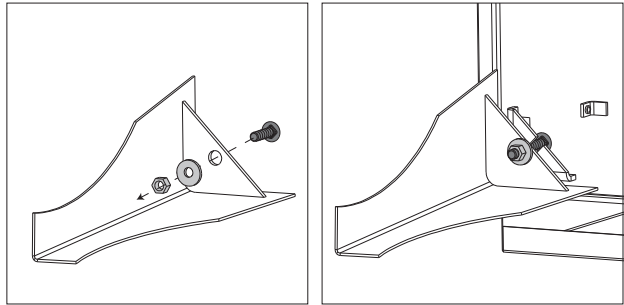
If installing the optional ash drawer, see “optional ash drawer kit (EP20LAD)” section prior to heat shield and leg installation. Legs may need to be adjusted in order to properly align with the heat shield holes.

- A.** With the bolt through the legs, feed the washer and lock washer onto the bolt. Thread the nut a thread or two onto the bolt and slide the leg onto the slot on appliance as illustrated.

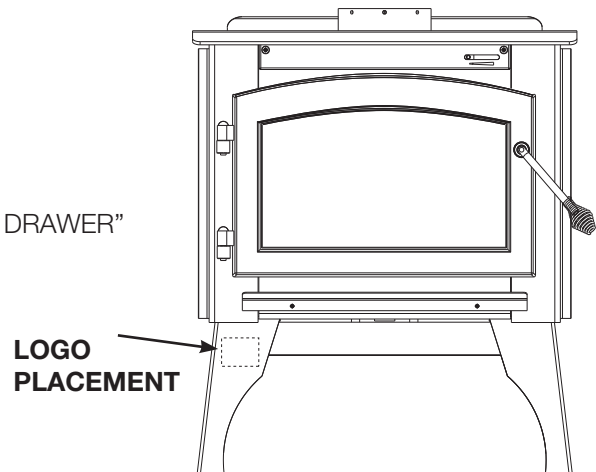
note:

Bolts must be tight prior to heat shield installation.

- B.** Slide the heat shield over the four bolts. Finally, secure the heat shield in place using the remaining nuts.
- C.** Lift the appliance up and gently set down on all four legs. Do not pivot appliance up on its legs, as this could result in damage to the legs.



For additional logo placement locations, see “OPTIONAL ASH DRAWER” section.



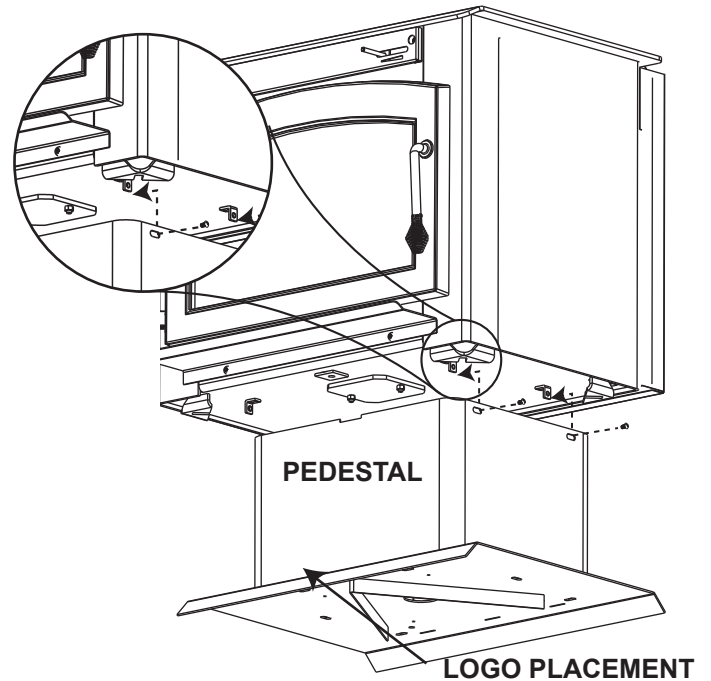
4.2 pedestal installation

note:

If an optional ash drawer kit is to be installed, ensure open side of pedestal is at the front of the appliance. If not, opening should be at the back.

To avoid being damaged during shipping, the appliance has been bolted to the pallet and must be unbolted before the appliance can be installed.

- A. Using the machine screws supplied, secure the pedestal to the four brackets on the bottom of the firebox.
- B. Lift the appliance up and gently set down on pedestal. Do not pivot appliance up as it could result in damage to the pedestal.

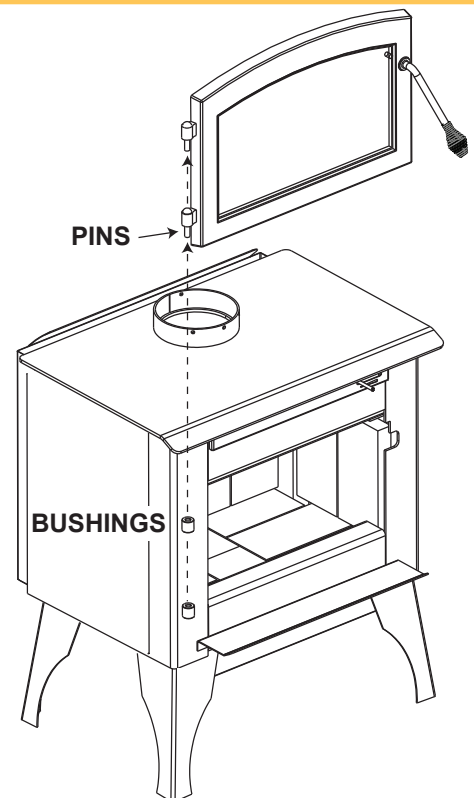


4.3 door removal

! WARNING

- Burning your appliance in with the doors open or ajar creates a fire hazard that may result in a house and/or chimney fire.
- Do not strike or slam door.
- Never remove the door when the appliance is hot.

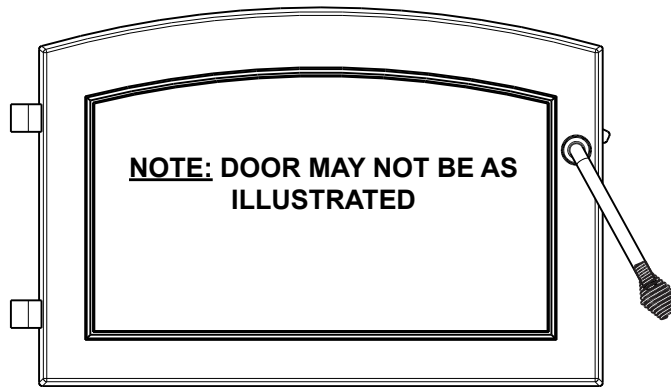
Pivot the door open and lift the door and pins off the bushings. Set the door aside being careful not to scratch the paint.



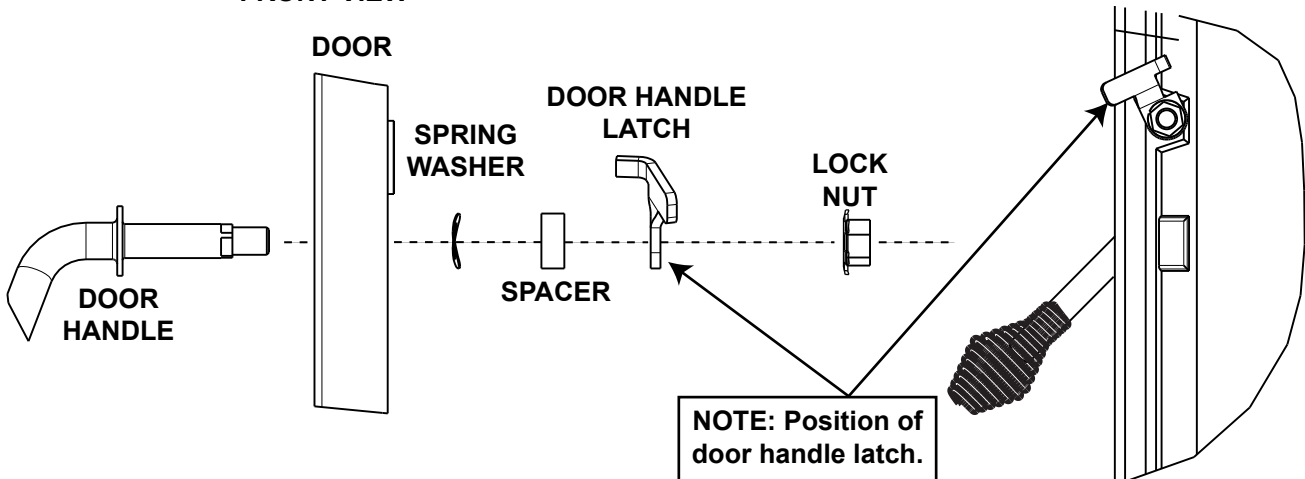
4.4 door handle installation

! WARNING

- Burning your appliance in with the doors open or ajar creates a fire hazard that may result in a house and/or chimney fire.
- Do not strike or slam door.
- Never remove the door when the appliance is hot.



FRONT VIEW



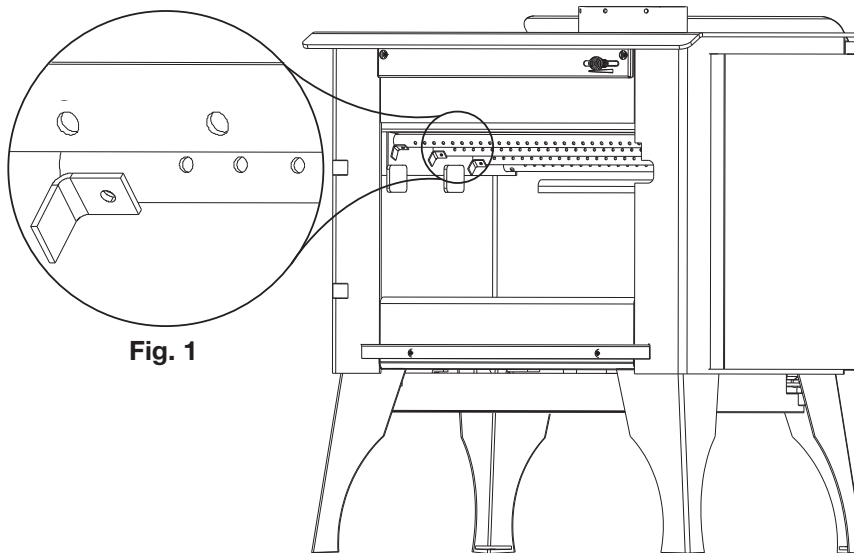
Twist the large wire handle over the end of the handle rod. Twist the smaller wire handle over the end of the air damper rod below the door.

4.5 secondary air tubes

1. Start at the back working forwards by sliding the secondary air tube in the firebox and inserting the tube into the hole.
2. Slide the tube into the opposite hole. With the holes on the secondary air tube pointing forward, align the tube with the tube retainer and insert the cotter pin.
3. Spread the cotter pin to retain.

note:

There are 4 secondary air tubes. One of the tubes has larger holes. This tube is to be located closest to the front of the appliance (**Fig. 1**).



4.6 brick and baffle installation

! WARNING

- Operation of the appliance without the baffles can result in excessive temperatures that could damage the appliance, chimney and the surrounding enclosure.

With the appliance and chimney installation completed, move the bricks into place as illustrated below.

- Install the nine (A) bricks and one (B) brick, working from the back of the appliance forward (**Fig. 1**).
- Install four (A) bricks along both sides of the appliance. Install the four (A) bricks and one (E) brick along the back wall by pivoting the bricks up under the brick retainer (**Fig. 1**).

note:

Place narrow brick in center.

- Carefully pivot fibre baffles (F) up onto the secondary air tubes as illustrated (**Fig. 2**). Ensure that the top baffles are pushed all the way to the rear of the firebox, leaving a minimum of a 1 inch gap along the front. This will allow the flue gases to escape the firebox. Ensure overlap joint (**Fig 2**) is tight.
- Install the two (D) bricks along the front (**Fig. 1**).

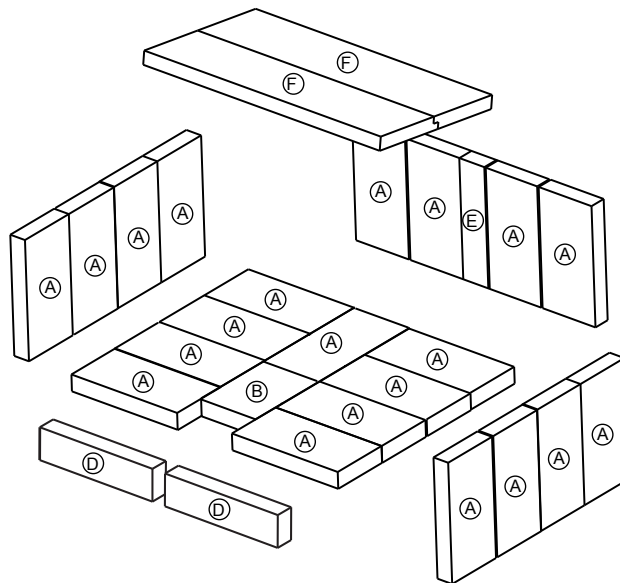


Fig. 1

note:

The fibre baffles are shipped in a box inside the firebox and must be removed from all special packaging prior to installation.

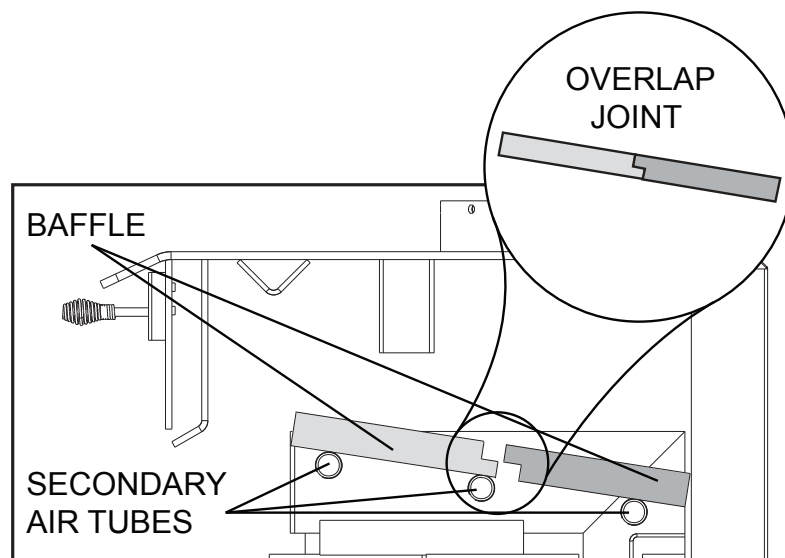
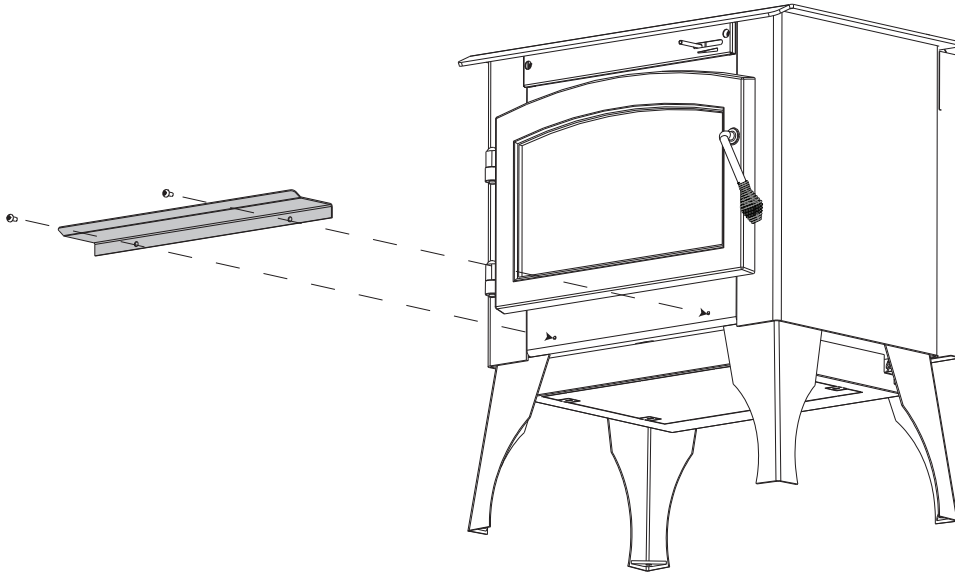


Fig. 2

4.7 ash lip installation

To avoid damage during transport, the ash lip has been shipped in the firebox. Using the two screws that secured the appliance to the shipping bracket, attach the ash lip as illustrated.



5.0 optional installation

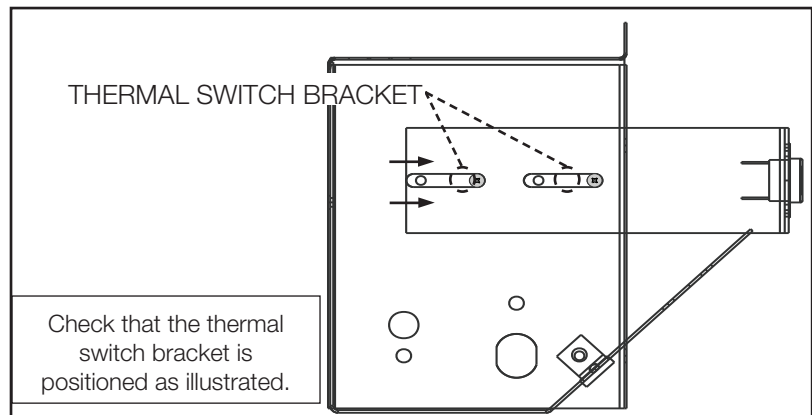
5.1 blower kit installation

! WARNING

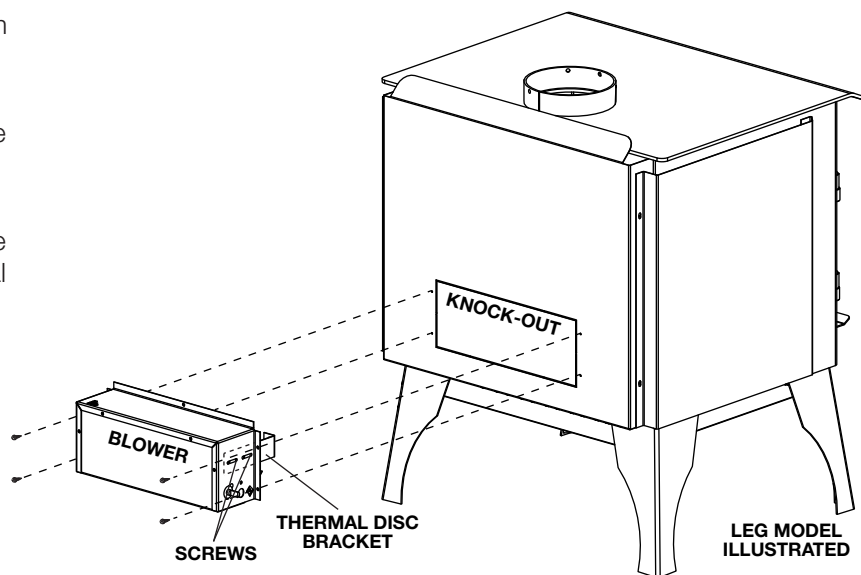
- Risk of fire and electrical shock!
- Turn off the gas and electrical power before servicing this appliance.
- Use only Wolf Steel approved optional accessories and replacement parts with this appliance. Using non-listed accessories (blowers, doors, louvres, trims, gas components, venting components, etc.) could result in a safety hazard and will void the warranty and certification.
- Ensure that the fan's power cord is not in contact with any surface of the appliance to prevent electrical shock or fire damage. Do not run the power cord beneath the appliance.
- The wire harness provided in the blower kit is a universal harness. When installed, ensure that any excess wire is contained, prevent it from making contact with moving or hot objects.

Drywall dust will penetrate into the blower bearings, causing irreparable damage. Care must be taken to prevent drywall dust from coming into contact with the blower or its compartment. Any damage resulting from this condition is not covered by the warranty policy. Use of the blower increases the output of heat.

Provisions have been made on this appliance to install an optional blower kit (EPT70) that comes complete with a variable speed switch to turn the blower ON/OFF, as well as adjusting the blower speed.



- Ensure the thermal disc bracket is in the correct position.
- Remove the knock-out from the back of the appliance.
- Install the blower and housing as shown using the 4 screws supplied.
- Loosen the thermal disc bracket (2 screws) and slide the bracket until the thermal disc is touching the rear of the firebox and secure.



5.2 ash drawer kit (EP20LAD)

! WARNING

- Failure to achieve a good seal between the ash opening and ash plug will result in an over-fire condition that could cause damage to the appliance.

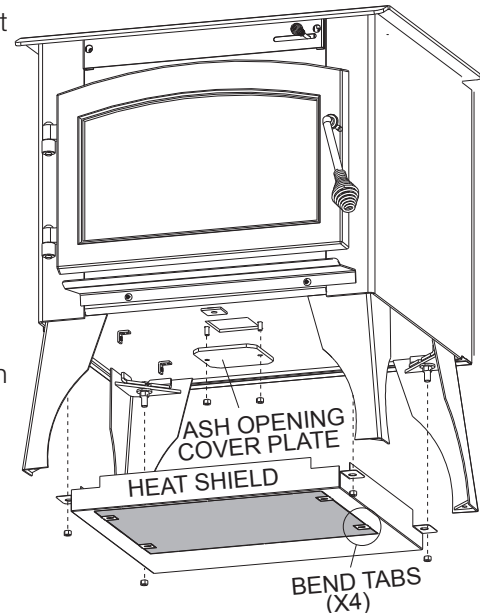
Provisions have been made on the appliance to install an optional ash drawer kit. The kit allows for convenient removal of excess ash.

- If the appliance has been previously operated, the appliance must be cold and the ashes must be removed in order to access the ash plug.

note:

Place the ash drawer from the kit underneath the appliance to catch falling ashes during the installation.

- From the underside of the appliance, remove the nuts that secures the heat shield and the ash opening cover plate.
- Remove the small light weight brick that is covering the ash opening, and discard. It is important that the area around the ash opening be cleaned well to ensure that a proper seal is created between the new ash plug and the ash opening.
- Once the area surrounding the opening has been cleaned, place the new ash plug (supplied) over the opening.
- Carefully remove the knock out from the heat shield by breaking the micro tabs.
- Bend out the four bend tabs at a 90 ° angle from the heat shield.
- Align the slots in the ash drawer housing with the four bend tabs. Secure using the four screws supplied.
- Secure the heat shield and ash drawer housing to the appliance using the nuts removed in step 2.
- Slide the ash drawer into the ash housing.



optional installation

5.3 ash pan kit (EP20PAD)

! WARNING

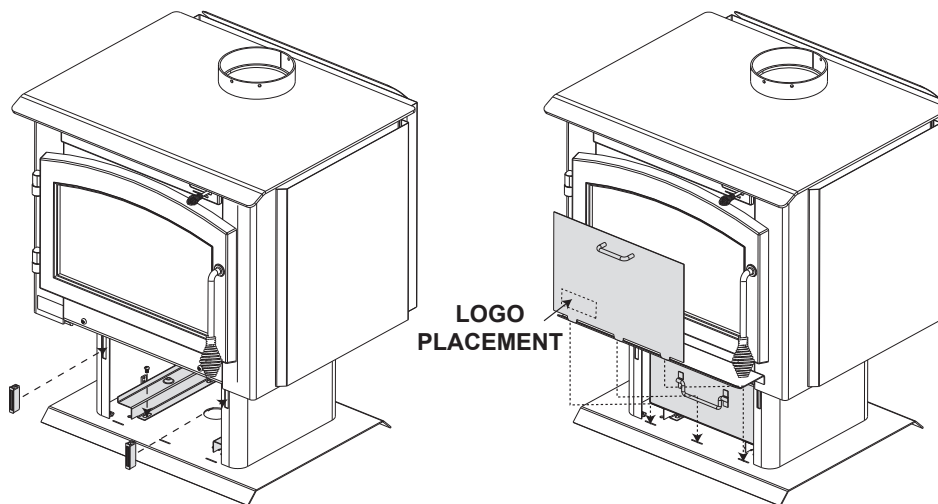
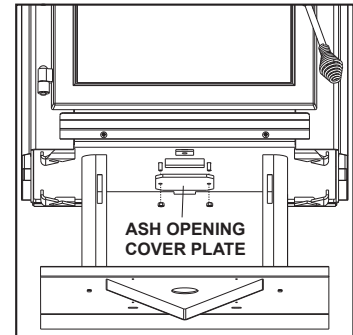
- Failure to achieve a good seal between the ash opening and ash plug will result in an over-fire condition that could cause damage to the appliance.

**Provisions have been made on the appliance to install an optional ash drawer kit.
The kit allows for convenient removal of excess ash.**

note:

It is recommended to install the rails on the pedestal base prior to installing the pedestal assembly to the firebox.

- If the appliance has been previously operated, it must be cold and the ashes must be removed in order to access the ash plug.
- If the pedestal has been installed with the opening to the back, it will be necessary to lay the appliance onto its back, remove the pedestal and re-install it with the opening to the front. It is recommended all fire brick, including baffles, be removed prior to placing the appliance on its back.
- From the underside of the appliance, remove the nuts that secure the ash opening cover plate.
- Install the ash pan rails using the screws provided.
- Snap the magnets into place.
- Slide the ash drawer into the ash housing.
- Install the handle using the screws provided and affix the logo to the ash pan housing cover as illustrated.
- Place the ash pan housing cover in front of the opening, engaging it into the slots.
- Remove the small light weight brick that was covering the ash opening and discard. It is important that the area around the ash opening be cleaned well to ensure that a proper seal is created between the new ash plug and the ash opening.
- Once the area surrounding the opening has been cleaned, place the new ash plug (supplied) over the opening, allowing the protrusion on the brick to recess into the opening on the bottom of the firebox.



WARNING

- Always operate this appliance with the door closed and latched except during startup and re-fueling. Always wear gloves to prevent injury. Do not leave the fire unattended when the door is unlatched as unstable wood could fall out of the fire chamber creating a fire hazard to your home.
- Never leave your children unattended when there is a fire burning in the appliance.
- Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this appliance. Keep all such liquids well away from the appliance while it is in use.
- Objects placed in front of the appliance should be kept a minimum of 48" (121.9cm) from the front face.
- Any modification of the appliance that has not been approved in writing by the testing authority is considered breaching CSA B365 (Canada) and ANSI/NFPA 211 (USA).
- Open air control (and damper when fitted) before opening firing door.
- Hot while in operation. Keep children, clothing and furniture away. Contact may cause skin burns. Wear gloves to operate your appliance.
- Burning your appliance with the doors open or ajar creates a fire hazard that may result in a house and/or chimney fire.
- This wood appliance has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations in the United States to alter this setting or otherwise operate this wood appliance in a manner inconsistent with operating instructions in this manual.

Your Timberwolf EPA listed product is a Hi-tech appliance, designed with the most advanced technology. The appliance is extremely airtight.

The first fire(s) in your appliance will be difficult to get going and keep going with little amount of heat being generated. This is a result of the moisture being driven out of the fire brick. During the break-in period (the first 2 or 3 fires) create only small, fires using kindling; this will allow the firebrick to cure. Do not be alarmed if small hairline cracks develop in the firebrick. This is a normal occurrence and does not pose a safety hazard. The paint may also smell a little for the first few fires as it cures and you may wish to open a door or window to alleviate the smell.

To start, a brisk fire is required. Place loosely crumpled paper on the floor of the appliance and cover with dry kindling. Open the air control fully by sliding control all the way to the right. Light the paper and leave the door slightly ajar (1"/25.4mm) until all kindling is burning. To maintain a brisk fire, a hot coal bed must be established and sustained.

Slowly add larger wood (2x4 size pieces). Lay the pieces lengthwise from side to side in the hot coal bed with a shallow trench between, so that the primary air can flow directly into this trench and ignite the fuel above. When the fire seems to be at its peak, medium sized logs may be added. Once these logs have caught fire, carefully close the door. (Closing the door too quickly after refueling will reduce the firebox temperature and result in an unsatisfactory burn.) Remember it is more efficient to burn medium sized wood, briskly, and refuel frequently than to load the appliance with large logs that result in a smouldering, inefficient fire and dirty glass.

As soon as the door is closed, you will observe a change in the flame pattern. The flames will get smaller and lazier because less oxygen is getting into the combustion chamber. The flames, however, are more efficient. The flames will remain lazy but become larger again as soon as the firebricks have been heated thoroughly and the chimney becomes heated and provides a good draft. At this point, the roaring fire that you see when the door is opened is wastefully drawing heated room air up the chimney, certainly not desirable. Always operate with the door fully closed once the medium sized logs have caught fire.

You can now add larger pieces of wood and operate the appliance normally. Once the appliance is entirely hot, it will burn very efficiently with little smoke from the chimney. There will be a bed of orange coals in the firebox and secondary flames flickering just below the top baffles. You can safely fill the firebox with wood to the top of the door and will get best burns if you keep the appliance pipe temperatures between 250°F (120°C) and 450°F (270°C). A surface thermometer will help regulate this.

Without an appliance thermometer, you are working blindly and have no idea of how the appliance is operating! An appliance thermometer offers a guide to performance and should be located 18" (457mm) above the flue collar. Install the thermometer according to manufacturers instructions.

Can't get the fire going?

Use more kindling and paper. Assuming the chimney and vent are sized correctly and there is sufficient combustion air, the lack of sufficiently dry quantities of small kindling is the problem. Thumb size is a good gauge for small kindling diameter.

Can't get heat out of the appliance?

One of two things may have happened. The appliance door may have been closed prematurely and the appliance itself has not reached optimum temperature. Re-open the door and/or draft control to re-establish a brisk fire. The other problem may have been wet wood. The typical symptom is sizzling wood and moisture being driven from the wood.

operation

6.1 optimum burn method

For optimal emissions performance and efficiency follow these simple guidelines when using your appliance:

- A. Maintain a 2" (51mm) deep, hot, glowing red coal bed.
- B. Burn dry seasoned wood with less than 20% moisture content and burn so that the glass door remains clean.
- C. A stove thermometer 18" (457mm) up on the single wall stove pipe should indicate 350°F (176°C) as an average temperature.
- D. Maintain a minimal trace of smoke coming from the chimney when the appliance is burning as intended.
- E. Inspect and replace all necessary components such as gaskets, manifolds, glass and other components which may affect the overall appliance performance.
- F. Ensure an adequate draft to control burn rate and temperature.

Refer to **"OPERATION"** and **"MAINTENANCE"** sections for detailed information.

6.2 air control

WARNING

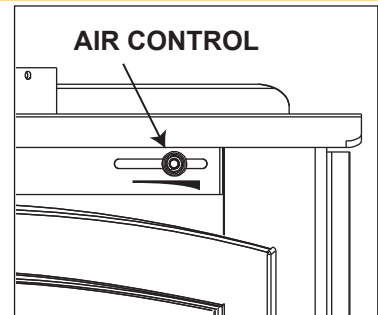
- This wood appliance has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations in the United States to alter the setting or otherwise operate this wood appliance in a manner inconsistent with operating instructions in this manual.

Draft is the force which moves air from the firebox up through the chimney. The amount of draft in your chimney depends on the length and diameter of chimney, local geography, nearby obstructions and other factors including the amount of heat generated by the fire which can be measured by an appliance thermometer.

Adjusting the air control all the way to the left reduces the temperature. The draft can be adjusted from low to high by moving the handle from left to right.

Inadequate draft may cause back-puffing into the room through the appliance and chimney connector points and may cause plugging of the chimney. Too much draft may cause an excessive temperature in the appliance, glowing red appliance parts or chimney connectors or an uncontrollable burn which can lead to a chimney fire or permanent damage to the appliance.

Do not operate your appliance for longer than 30 minutes with the draft control on "HIGH" (fully open).



6.3 fire extinguishers / smoke & carbon monoxide detectors

note:

Always check your smoke and CO detectors are working properly.

All homes with a solid fuel burning appliance should have at least one fire extinguisher in a central location, known to all, at least one smoke detector and carbon monoxide (CO) detector in the room containing the appliance. If the smoke detector sounds an alarm, correct the cause but do not deactivate or relocate the smoke detector. If the carbon monoxide detector sounds an alarm, immediately vent the area, evacuate and call your local fire department.

6.4 fuel

! WARNING

- Do not store fuel within the clearance to combustibles, or in the space required for re-fueling and ash removal.
- Burning wet, unseasoned wood can cause excessive creosote accumulation. When ignited, it can cause a chimney fire that may result in a serious house fire.

When loading the appliance, ensure that the two upper fibre baffles are not lifted up and off their ledge. For maximum efficiency, when the appliance is thoroughly hot, load it fully to the top of the door opening and burn at a medium low setting. Maximum heat for minimum fuel (optimum burn) occurs when the appliance top temperature is between 500°F (260°C) and 600°F (315°C). The bricks will be nearly all white and the glass mostly clear. The whiteness of the bricks and the cleanliness of the glass are good indicators of your operating efficiency. Not enough heat is produced when only one or two pieces of wood are burned or the wood may not burn completely. A minimum of three pieces are needed to encase a bed of coals that sustains the fire.

note:

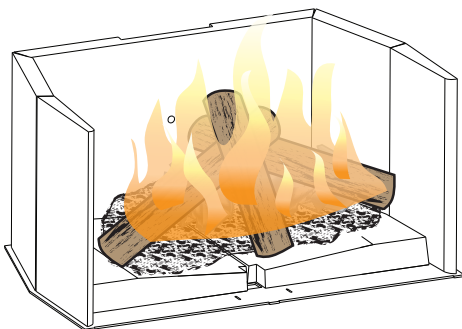
When loading the appliance, ensure to keep fuel back from the glass. If coals are to accumulate on the front lip, there is a chance they will fall out when the door is opened.

Loosely stacked wood burns quicker than a tightly packed load. Wood burns in cycles rather than giving a steady output of heat. It is best to plan these cycles around your household routine so that only enough coals are left to start the next load. In the evening, load your appliance, at least, a half-hour before bed to ensure a good fire, hot enough to close the draft control for an overnight burn.

Burn only dry seasoned wood with less than 20% moisture content. It produces more heat and less soot or creosote. Do not burn ocean beach wood. Its salt content can produce a metal-eating acid. When refueling open the door slowly to prevent smoke spillage. Use a pair of long gloves (barbecue gloves) when feeding the fire. Because these appliances burn at the front, they are clean and efficient, but they are also very hot and gloves are useful. Keep a small steel shovel nearby to use as a poker and to remove ashes. Do not store the wood within 3 feet (1m) of the appliance.

6.5 lighting a fire

6.5.1 flash fire



A flash fire is a small fire burned quickly when you don't need much heat. After your kindling has "caught", load at least 3 pieces of wood, stacked loosely. Burn with the draft control fully open or closed only slightly.

operation

6.5.2 extended fire

Load your larger pieces of wood so they are tightly packed, close enough to prevent the flames from penetrating it completely. After approximately 30 minutes, depending on the size of the load, close the draft control completely making sure that the fire is not extinguished.

DO NOT OVERFIRE THE APPLIANCE!

Overfiring can occur by:

- A.** Burning large amounts of smaller wood pieces such as furniture scraps, skids or treated wood;
- B.** Vigorously burning large loads of wood with the draft control on "HIGH" (fully open) for long periods of time (one or two hours).
- C.** Operating the appliance with the ash dump door blocked open or a poor gasket seal on the main door.

6.6 smoking

A properly installed appliance should not smoke. If yours does, check the following:

- Has the chimney had time to get hot?
- Is the smoke passage blocked anywhere in the appliance, chimney connector or chimney?
- Is the room too airtight and the air intake not connected to the outside? Try with a window partly open.
- Is the smoke flow impeded by too long a horizontal pipe or too many bends?
- Is it a weak draft perhaps caused by a leaky chimney, a cold outside chimney, too large a diameter of a chimney, too short a chimney, or a chimney too close to trees or a higher roof?
- Is the moisture content of the wood greater than 20%?
- If equipped, has the catalyst bypass been closed or closed prematurely?

! WARNING

- Turn off the power before servicing the appliance.
- Appliance may be hot, do not service until appliance has cooled.
- Do not use abrasive cleaners.

Check your chimney and chimney connector for creosote and soot buildup weekly until a safe frequency for cleaning is established.

If accumulation is excessive, disconnect the appliance and clean both the chimney and the appliance. You may want to call a professional chimney sweep to clean them. Both have to be cleaned at least once a year or as often as necessary.

Remove fibre baffles and clean above them once a year.
Replace any broken bricks.

7.1 ash removal procedures**! WARNING**

- Improper disposal of ashes result in fires. Do not discard ashes in cardboard boxes, dump in backyards, or store in garages.
- If using a vacuum to clean up ashes, be sure the ashes are entirely cooled. Using a vacuum to clean up warm ashes could cause a fire inside the vacuum.
- Never operate your appliance with the grate cover removed.
- Failure to achieve a good seal between the ash opening, ash plug or ash well door will result in an over-fire condition that could cause damage to the appliance.

Allow the ashes in your firebox to accumulate to a depth of two or three inches; they tend to burn themselves up. When the fire has burned down and cooled, remove any excess ashes but leave an ash bed approximately 1 inch (25mm) deep on the firebox bottom to help maintain a hot charcoal bed.

DISPOSAL OF ASHES: Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a non-combustible floor or ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

7.1.1 ash removal with ash drawer

- To remove the ashes, clear the ash away from the ash plug.
- Remove the ash plug. **It is recommended to use a poker.**
- Rake the excess ash into the ash drawer.
- **Do not overfill the ash drawer. Ash should not accumulate higher than the sides of the drawer.**
- Before removing the drawer, ensure that the area around the ash opening is clean. Tap the ash from the chute into the drawer, then place the ash plug back over opening. Only operate your appliance with a well sealed ash plug.

7.2 creosote formation and removal

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cooler chimney flue or a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire.

The chimney connector and chimney should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred.

If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

7.3 runaway or chimney fire**! WARNING**

- A chimney fire can permanently damage your chimney system. This damage can only be repaired by replacing the damaged component parts. Chimney fires are not covered by the lifetime limited warranty.

CAUSES:

- Using incorrect fuel, or small fuel pieces which would normally be used as kindling.
- Creosote build up in chimney.
- Leaving the door ajar too long and creating extreme temperatures as the air rushes in the open door.
- If equipped, burning your appliance with the ash plug not securely seated.

SOLUTIONS:

- Do not burn treated, painted, artificial, paper or processed wood logs, coal, charcoal, coloured paper or cardboard.
- Have chimney regularly cleaned.
- Be careful not to over-fire the appliance by leaving the door open too long after initial start-up. A thermometer on the chimney connector and/or appliance top helps to indicate the appliance operating temperature.
- If equipped, always operate the appliance with the ash plug properly installed.

IN CASE OF A CHIMNEY FIRE:

- Close glass door and air control (and damper, when equipped).
- Have a well understood plan for evacuation and a place outside for everyone to meet. Prepare to evacuate to ensure everyone's safety.
- Call local fire department. Have a fire extinguisher handy. Contact local authorities for further information on how to handle a chimney fire.
- After the chimney fire is out, clean and inspect the chimney or chimney liner for stress and cracks prior to lighting another fire. Also check combustibles around the chimney and the roof.

7.4 chimney cleaning

Both the chimney and the appliance must be inspected and cleaned if necessary at least once a year. For serious wood burners, chimney cleaning must be done as needed to avoid chimney fires; the venting systems for controlled combustion appliances may need cleaning as often as once a month. These rates, however, depend on the burning habits of the individual operating the appliance. For example, it is possible to clog a solid fuel appliance chimney in a few days if slow, smoldering fires are burned and the chimney is cold.

note:

Appliances burned consistently without hot fires may result in significant creosote accumulations in the chimney.

Certain items and considerations are important in chimney cleaning:

- Proper tools should be used, including a brush specifically designed for chimney cleaning.
- The chimney connector and dampers as well as the chimney should be cleaned.
- The appliance's firebox and baffle system should be cleaned if needed.
- The chimney should be inspected and repairs made if needed, preferably by a qualified chimney sweep or mason.

7.5 door glass replacement

WARNING

- Do not use substitute materials.
- Glass may be hot. Do not touch glass until cooled.
- Care must be taken when removing and disposing of any broken door glass or damaged components. Be sure to vacuum up any broken glass from inside appliance before operation.
- Do not strike, slam, or scratch. Do not operate appliance with glass removed, cracked, broken, or scratched.

Replacement glass/frame assembly shall be replaced as a complete unit as supplied by the appliance manufacturer.

note:

Care must be taken when removing and disposing of any broken glass or damaged components. Be sure to vacuum up any broken glass from inside the appliance before operation.

7.6 gasket replacement

At the end of each burning season inspect the shield and gasket below the manifold for warping or deterioration. Replace if necessary. Both are held to the manifold with machine screws. The shield and the 1/8" (3.2mm) fibre cloth gasket are available from your Wolf Steel Ltd. dealer. At this time also check that the door gasket is not worn or loose. Replace with 3/8" (9.5mm) high density fiberglass rope if necessary.

The airwash gasket and shield above the door should also be inspected and replaced if deteriorated

note:

Do not operate the appliance if the manifold shield or fibre baffle is deteriorated or missing.

7.7 care of glass

WARNING

- Do not clean glass when hot! Do not use abrasive cleaners to clean glass.

If the glass is not kept clean, permanent discolouration and/or blemishes may result. Normally a hot fire will clean the glass. The most common reasons for dirty glass include:

- Not using sufficient fuel to get the appliance thoroughly hot.
- Using green or wet wood.
- Closing the draft so far that there is insufficient air for complete combustion.



If it is necessary to clean the glass, buff lightly with a clean dry cloth and non-abrasive cleaner. Clean the glass after the first 10 hours of operation with a recommended appliance glass cleaner. Thereafter, clean as required.

The glass is very strong, but do not let burning fuel rest or fall against it and always close the door gently.

NEVER FORCE OR SLAM IT SHUT!

Do not operate the appliance with broken glass, as leakage of flue gases may result.

Contact your local authorized dealer/distributor for complete cleaning instructions.

If the glass should ever crack or break while the fire is burning, do not open the door until the fire is out. Do not operate the appliance until the glass has been replaced. Contact your local authorized dealer/distributor for replacement parts. **DO NOT SUBSTITUTE MATERIALS.**

! WARNING

- This appliance is designed to burn natural wood only. Do not burn treated wood, coal, charcoal, coloured paper, cardboard, solvents or garbage. This appliance has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into the appliance.
- Higher efficiencies and lower emissions generally result when burning air dried seasoned hardwoods, as compared to softwoods or too green or freshly cut hardwoods.
- Burning wet, unseasoned wood can cause excessive creosote accumulation. When ignited, it can cause a chimney fire that may result in a serious house fire.
- Do not store fuel within the clearance to combustibles, or in the space required for re-fueling and ash removal.

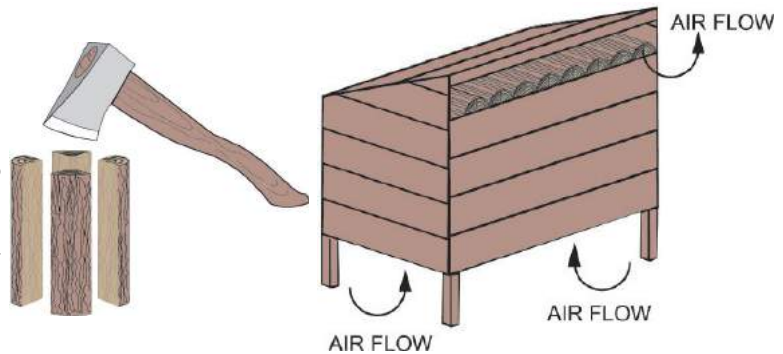
Before loading the appliance, ensure all required insulation and baffles are installed and situated properly. For maximum efficiency, when the appliance is thoroughly hot, load it fully to the specified maximum amount and burn at a medium low setting (if equipped). The whiteness of the bricks and the cleanliness of the glass are good indicators of your operating efficiency. Not enough heat is produced when only a few pieces of wood are burned or the wood may not burn completely.

NOTE: When loading the appliance, ensure to keep fuel back from the glass. If coals are to accumulate on the front lip, there is a chance they will fall out when the door is opened.

TYPES OF WOOD

Both hardwood and softwood burn equally well in this appliance but hardwood is denser, will weigh more per cord and burn a little slower and longer.

Manufactured firelogs made by compressing 100% natural wood fibre can be safely used as fuel. Do not use manufactured firelogs if they contain additives such as paraffin, wax, binders etc. Never burn more than two manufactured firelogs at a time.



MOISTURE CONTENT

Burn only dry, clean unpainted wood that has been seasoned. It produces more heat and less soot or creosote. Freshly cut wood contains about 50% moisture while after proper seasoning only about 20% of the water remains. As wood is burned, this water boils off consuming energy that should be used in heating. The wetter the wood, the less heat is given off and the more creosote is produced. Dry firewood has cracks in the end of the grain.

STORING WOOD

Firewood should be split and stacked in a manner that allows for full air circulation and covered in early spring to be ready for burning that fall. Dry firewood has cracks in the end grain.

Cut the wood so that it will fit horizontally, front to back, making for easier loading and less of a likelihood that the wood will roll onto the glass.

Fuel for the appliance must not be stored closer than the required clearances to combustibles (heat sensitive material).

NEVER STORE WOOD IN THE ASH PAN COMPARTMENT (if applicable).

! WARNING

- Failure to position the parts in accordance with this manual or failure to use only parts specifically approved with this appliance may result in property damage or personal injury.

Contact your dealer for questions concerning prices and policies on replacement parts. Normally, all parts can be ordered through your Authorized dealer / distributor.

For warranty replacement parts, a photocopy of the original invoice will be required to honour the claim.

When ordering replacement parts always give the following information:

- Model & Serial Number of appliance
- Installation date of appliance
- Part number
- Description of part
- Finish

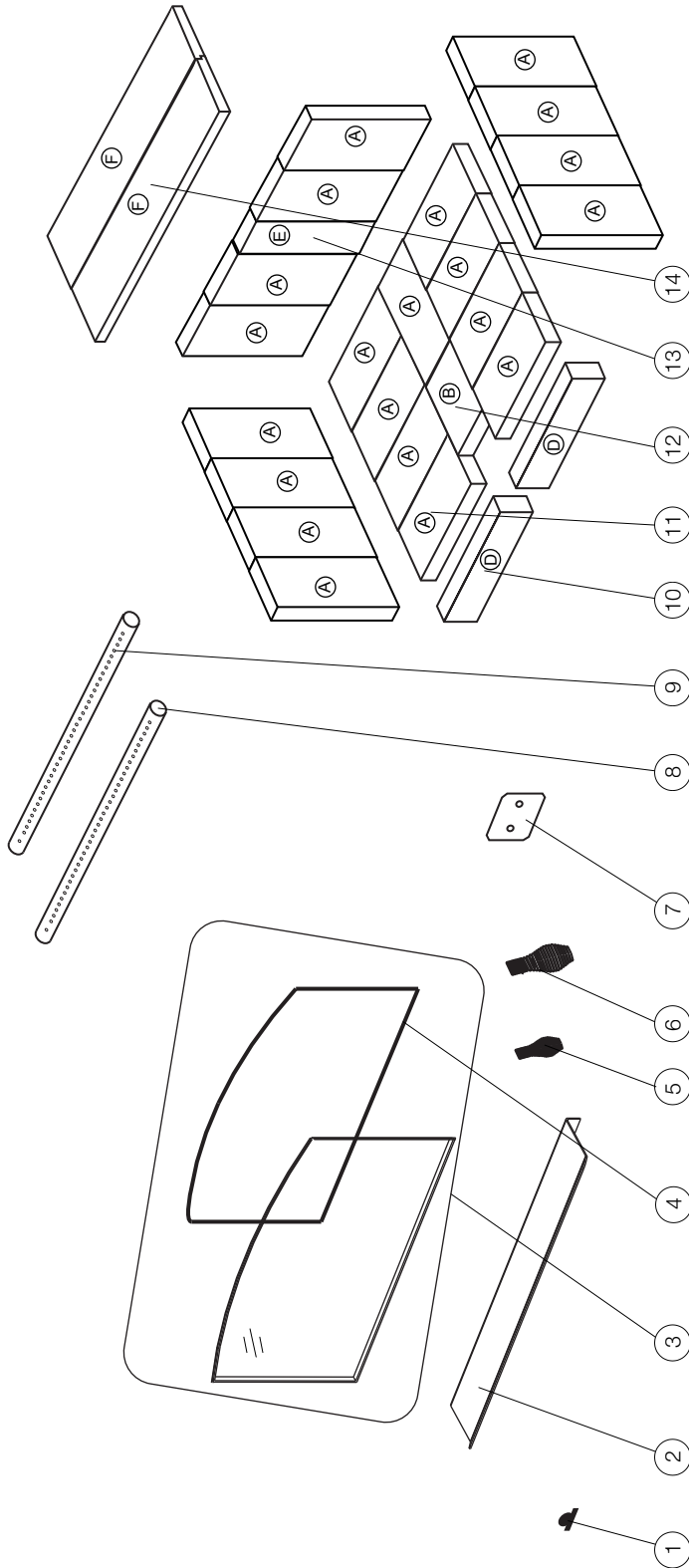
Parts, part numbers, and availability are subject to change without notice.

Parts identified as stocked will be delivered within 2 to 5 business days for most delivery destinations.

Parts not identified as stocked will be delivered within a 2 to 4 week period, for most cases.

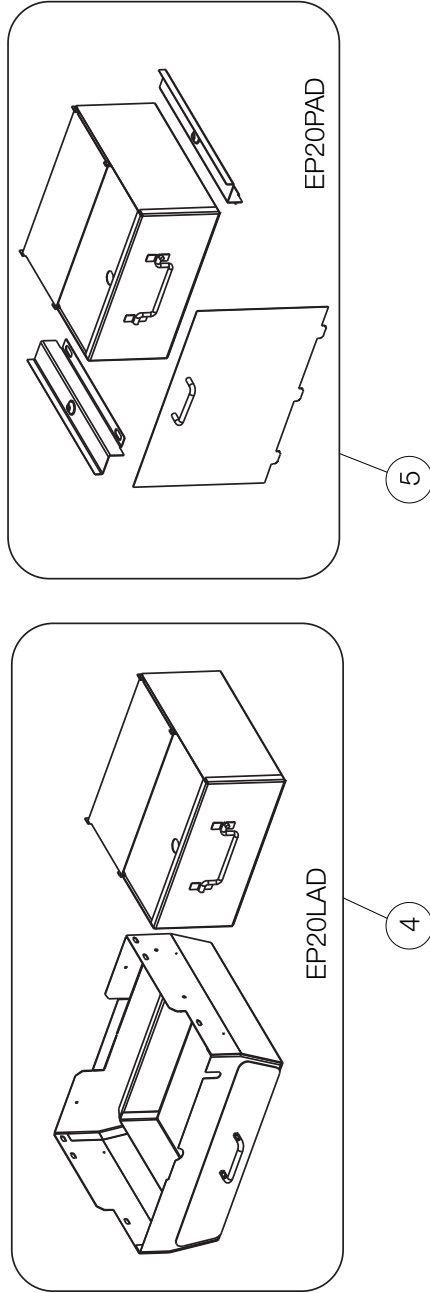
Parts identified as 'SO' are special order and can take up to 90 days for delivery.

8.1 overview



Items may not appear exactly as illustrated.

| Ref. No. | Part Number | Description | Stocked | Ref. No. | Part Number | Description | Stocked |
|----------|---------------|-------------------------|---------|----------|-------------|--------------------------------|---------|
| 1 | W385-0487 | Timberwolf logo | Yes | 8 | W720-0135 | Front secondary air tube | Yes |
| 2 | W710-0025 | Ash lip | | 9 | W720-0155 | Rear secondary air tube | Yes |
| 3 | W010-2325 | Glass / gasket assembly | Yes | 10 | W090-0018 | Brick D (2.25" x 1.25" x 9") | Yes |
| 4 | W370-0121 | Gasket kit | | 11 | W090-0015 | Brick A (4.5" x 1.25" x 9") | Yes |
| 5 | W325-0042 | Spring handle (Small) | Yes | 12 | W090-0168 | Brick B (4.5" x 1.25" x 6.25") | Yes |
| 6 | W325-0043 | Spring handle (Large) | Yes | 13 | W090-0179 | Brick E (2.625" x 1.25" x 9") | Yes |
| 7 | W510-0013-SER | Ash plug | | 14 | W010-3563 | Top fibre baffle (X2) | Yes |



Items may not appear exactly as illustrated.

| Ref. No. | Part Number | Description | Stocked |
|----------|-------------|------------------------------------|---------|
| 1 * | EPT70 | Blower kit | |
| 2 * | EP20P | Pedestal kit | |
| 3 * | EP22L | Leg kit | |
| 4 | EP20PAD | Ash pan kit for EP20P pedestal kit | |
| 5 | EP20LAD | Ash pan kit for EP22L leg kit | |

* Parts not illustrated.

10.0 troubleshooting

WARNING

- Turn off the appliance completely and let cool before servicing. Only a qualified service person should service and repair this electric appliance.
- Appliance may be hot, do not service until appliance has cooled.
- Do not use abrasive cleaners.
- When checking connections, installing jumper wires (for test purposes only) or replacing components, unplug appliance from the receptacle to prevent electrical shock or damage to the component.

| symptom | test solution |
|--------------------------------|---|
| Can't get the fire started. | Not enough kindling / paper? Add more. |
| | Not enough air? Ensure air control is fully open. Also ensure that the air opening is not obstructed. |
| | Cold air blockage? Burn a piece of paper to establish a draft. |
| | Use dry seasoned wood with 20% moisture content. |
| Smokes when door is open. | Flue blockage? Inspect chimney. |
| | Cold air blockage? Burn a piece of paper to establish a draft. |
| | Insufficient draft? Add more pipe. |
| | Let air stabilize before opening door. |
| Appliance emits odour. | Ensure baffles are positioned correctly. |
| | Negative pressure? Open a window near the appliance. |
| Stove doesn't burn hot enough. | Paint curing, see "general instructions" section. |
| | Wood has more than 20% moisture. |
| | Insufficient draft? Add more pipe. |
| Wood burns too fast. | Not enough air? Ensure air control is fully open. Also ensure that the air opening is not obstructed. |
| | Air control may need to be adjusted down. |
| | Check to see ash plug is properly seated (if equipped). |
| | Check door gasket for adequate seal. |
| Dirty glass. | Wood may be extremely dry. |
| | Air control may be closed too far. |
| | Burn hotter, smaller fires. |
| Blower does not run. | Use well seasoned wood with 20% moisture content. |
| | Appliance may not be up to temperature. |
| | Ensure blower has power. |

TIMBERWOLF products are manufactured under the strict Standard of the World Recognized ISO 9001 : 2015 Quality Management System.

TIMBERWOLF products are designed with superior components and materials, assembled by trained craftsmen who take great pride in their work. The complete appliance is thoroughly inspected by a qualified and authorized installer, service agency or supplier before packaging to ensure that you, the customer, receives the quality product that you expect from TIMBERWOLF.

TIMBERWOLF WOOD APPLIANCE LIMITED WARRANTY

The following materials and workmanship in your new TIMBERWOLF appliance are warranted against defects as defined below:

The combustion chamber is warranted against defects for a period of 5 years.

The secondary air tubes are warranted against defects for a period of 5 years.

Electrical (110V) components and wearable parts are covered and TIMBERWOLF will provide replacement parts free of charge during the first year of the limited warranty. This covers: blowers, thermal switches, switches, wiring, rheostats, firebrick, ceramic glass (thermal breakage only), fibre baffles and gasketing.*

Any labour related to warranty repair is not covered.

* Construction of models vary. Warranty applies only to components included with your specific appliance.

CONDITIONS AND LIMITATIONS

Wolf Steel warrants its TIMBERWOLF products against manufacturing defects to the original purchaser only. Registering your warranty is not necessary. Simply provide your proof of purchase along with the model and serial number to make a warranty claim. Provided that the purchase was made through an authorized TIMBERWOLF dealer your appliance is subject to the following conditions and limitations:

Warranty coverage begins on the date of original installation.

This factory warranty is non-transferable and may not be extended whatsoever by any of our representatives.

The appliance must be installed by a qualified and authorized installer, service agency or supplier. Installation must be done in accordance with the installation instructions included with the product and all local and national building and fire codes.

This limited warranty does not cover damages caused by misuse, lack of maintenance, accident, alterations, abuse or neglect. Operating the appliance on high for extended periods of time, is neglect. Parts installed from other manufacturers will nullify this warranty.

This limited warranty further does not cover any scratches, dents, corrosion or discoloring caused by excessive heat, abrasive and chemical cleaners nor chipping on porcelain enamel parts, nor any venting components used in the installation of the appliance.

In the first year only, this warranty extends to the repair or replacement of warranted parts which are defective in material or workmanship provided that the product has been operated in accordance with the operation instructions and under normal conditions.

After the first year, with respect to the TIMBERWOLF'S Limited Warranty, Wolf Steel may, at its discretion, fully discharge all obligations with respect to this warranty by refunding to the original warranted purchaser the wholesale price of any warranted but defective parts.

After the first year, Wolf Steel Ltd. will not be responsible for installation, labour or any other costs or expenses related to the reinstallation of a warranted part, and such expenses are not covered by this warranty.

Notwithstanding any provisions contained in the TIMBERWOLF'S Limited Warranty, Wolf Steel's responsibility under this warranty is defined as above and it shall not in any event extend to any incidental, consequential or indirect damages.

This warranty defines the obligations and liability of Wolf Steel with respect to the TIMBERWOLF appliance and any other warranties expressed or implied with respect to this product, its components or accessories are excluded.

Wolf Steel neither assumes, nor authorizes any third party to assume, on its behalf, any other liabilities with respect to the sale of this product.

Wolf Steel will not be responsible for: over-firing, downdrafts, spillage caused by environmental conditions such as rooftops, buildings, nearby trees, hills, mountains, inadequate vents or ventilation, excessive venting configurations, insufficient makeup air, or negative air pressures which may or may not be caused by mechanical systems such as exhaust blowers, furnaces, clothes dryers, etc.

Any damages to appliance, combustion chamber, heat exchanger or other components due to water, weather damage, long periods of dampness, condensation, damaging chemicals or cleaners will not be the responsibility of Wolf Steel.

Regular cleaning of the fine ash generated during the operation of this appliance is a necessary part of maintaining your appliance. Failure of any components, which is attributed to poor maintenance, is not warrantable and will not be covered by this policy.

Wolf Steel reserves the right to have its representative inspect any TIMBERWOLF product or part thereof prior to honouring any warranty claim.

All parts replaced under the Limited Warranty Policy are subject to a single claim.

During the first 10 years Wolf Steel Ltd. will replace or repair the defective parts covered by the lifetime warranty at our discretion free of charge. From 10 years to life, Wolf Steel Ltd. will provide replacement parts at 50% of the current retail price.

All parts replaced under the warranty will be covered for a period of 90 days from the date of their installation.

The manufacturer may require that defective parts or products be returned or that digital pictures be provided to support the claim.

Returned products are to be shipped prepaid to the manufacturer for investigation. If a product is found to be defective, the manufacturer will repair or replace such defect.

Before shipping your appliance or defective components, your dealer must obtain an authorization number. Any merchandise shipped without authorization will be refused and returned to sender.

Shipping costs are not covered under this warranty.

Additional service fees may apply if you are seeking warranty service from a dealer.

Labour, travel, diagnostic tests, shipping and other related charges are not covered by this warranty.

ALL SPECIFICATIONS AND DESIGNS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE DUE TO ON-GOING PRODUCT IMPROVEMENTS.

NAPOLEON CELEBRATING OVER 40 YEARS OF HOME COMFORT PRODUCTS



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napoleonproducts.com

C

72%

**TESTED OVERALL
EFFICIENCY**

MODEL: 2200

WOLF STEEL HAS HAD THIS BIO-MASS BURNING
HEATER INDEPENDENTLY TESTED. IT HAS BEEN
DETERMINED THAT ITS THERMAL EFFICIENCY MEETS
OR EXCEEDS THE REQUIREMENTS OF SECTION 25C OF
THE INTERNAL REVENUE SERVICE CODE.

Manufactured by:



W385-0472 / C

SPECIFICATIONS: BLACK ON WHITE
90 LB BOND PAPER
5" x 7"
HELVETIA TYPE

WOLF STEEL

TITLE: LABEL, EFFICIENCY (2200)

DWG #: W385-0472

REV: C: UPDATED EFFICIENCY || 11.05.18_

DATE: 06.18.09

LISTED SOLID FUEL BURNING SPACE HEATER / POËLE À COMBUSTIBLE SOLIDE HOMOLOGUÉ.

TESTED TO: / TESTÉ SELON:

UL1482 - 2010 / ULC S627 - 00

MODEL / MODÈLE: 2200

This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual. / Ce poêle à bois doit inspection périodique et la réparation pour un fonctionnement correct. Consultez le manuel du propriétaire pour plus d'informations. Il est contre les règlements fédéraux pour faire fonctionner ce poêle à bois d'une manière incompatible avec les instructions de fonctionnement dans le manuel du propriétaire.

REPORT NO. / NUMÉRO DE RAPPORT 415-S-02-2

INSTALL AND USE ONLY IN ACCORDANCE WITH WOLF STEEL LTD'S INSTRUCTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA. MINIMUM CEILING HEIGHT: 7FT (2.13m)

HEARTH EXTENSION / COMBUSTIBLE FLOOR PROTECTION: IF INSTALLED ON A COMBUSTIBLE FLOOR, UNIT MUST BE PLACED ON A NON-COMBUSTIBLE FLOOR PROTECTOR EXTENDING 18" (455mm) IN FRONT AND 8" (205mm) TO THE SIDES AND BACK.

CHIMNEY TYPE: MINIMUM 6" (152mm) DIAMETER LISTED (UL 103HT) RESIDENTIAL CHIMNEY.

CHIMNEY CONNECTOR: 6" (152mm) DIAMETER MINIMUM 24 GAUGE STEEL MINIMUM CLEARANCE FROM HORIZONTAL CONNECTOR AND CEILING 18" (455mm).

DO NOT OBSTRUCT SPACE UNDER HEATER.

SPECIAL METHODS ARE REQUIRED WHEN PASSING A CHIMNEY THROUGH A WALL OR CEILING. SEE INSTRUCTIONS AND BUILDING CODES.

DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

FUEL: FOR USE WITH SOLID WOOD FUEL ONLY. DO NOT USE GRATE OR ELEVATE FIRE. BUILD WOOD FIRE DIRECTLY ON HEARTH.

WARNING: RISK OF SMOKE SPILLAGE. OPERATE ONLY WITH DOOR FULLY CLOSED.

REPLACE GLASS ONLY WITH CERAMIC GLASS.

DO NOT OVERFIRE. IF HEATER OR CHIMNEY CONNECTORS GLOW, YOU ARE OVERFIRING. INSPECT AND CLEAN CHIMNEY FREQUENTLY. UNDER CERTAIN CONDITIONS OF USE CREOSOTE BUILD-UP MAY OCCUR RAPIDLY.

OPTIONAL LEGS: IF TO BE INSTALLED WITH OPTIONAL LEGS, LEGS MUST BE INSTALLED PRIOR TO OPERATION.

OPTIONAL BLOWER KIT: EP-65, 115V, 60HZ, 0.82AMP. ROUTE CORD AWAY FROM UNIT.

DANGER: RISK OF ELECTRICAL SHOCK. DISCONNECT POWER BEFORE SERVICING UNIT.

POUR INSTALLATION ET UTILISATION CONFORMÉMENT AUX INSTRUCTIONS DE WOLF STEEL LTÉE. RENSEIGNEZ-VOUS AUPRÈS DES AUTORITÉS LOCALES DU BÂTIMENT OU DU SERVICE DES INCENDIES AU SUJET DES RESTRICTIONS ET DES INSPECTIONS D'INSTALLATION DANS VOTRE RÉGION.

HAUTEUR DE PLAFOND MINIMAL 7' (2,13mm).

PROLONGEMENT D'ÂTRE/PROTECTION DU PLANCHER COMBUSTIBLE: SI INSTALLÉ SUR UN PLANCHER COMBUSTIBLE, L'APPAREIL DOIT ÊTRE PLACÉ SUR UNE PLAQUE PROTECTRICE INCOMBUSTIBLE S'ÉTENDANT SUR 18" (455mm) À L'AVANT ET 8" (205mm) À L'ARRIÈRE ET SUR LES CÔTÉS.

TYPE DE CHIMNÉE: CHEMINÉE RÉSIDENIELLE DE 6" DE DIAMÈTRE (152 mm) HOMOLOGUÉE (UL 103HT).

RACCORD DE CHEMINÉE: DIAMÈTRE DE 6" (152mm) D'ACIER DE CALIBRE 24 MINIMUM. 18" (455mm) DE DÉGAGEMENT MINIMAL ENTRE LE RACCORD HORIZONTAL ET LE PLAFOND.

NE RIEN ENTREPOSER SOUS L'APPAREIL.

DES MÉTHODES SPÉCIALES SONT REQUISES LORSQUE UNE CHEMINÉE TRAVERSE UN MUR OU UN PLAFOND. VOIR LES INSTRUCTIONS ET LES CODES DU BÂTIMENT. NE PAS RACCORDER À LA CHEMINÉE D'UN AUTRE APPAREIL.

COMBUSTIBLE: POUR USAGE AVEC LE BOIS SEULEMENT. N'UTILISEZ PAS DE CHENET OU NE SURÉLEVEZ PAS LE BOIS. PRÉPAREZ LE FEU DIRECTEMENT SUR L'ÂTRE.

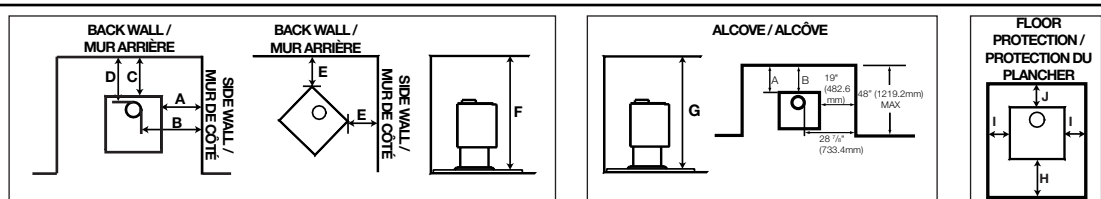
AVERTISSEMENT: RISQUE D'ÉCHAPPEMENT DE FUMÉE. TENIR LA PORTE FERMÉE LORSQUE LE POËLE FONCTIONNE. REMPLACEZ LA VITRE PAR UNE VITRE EN CÉRAMIQUE SEULEMENT.

NE SURCHAUFFEZ PAS L'APPAREIL. SI L'APPAREIL OU LES RACCORDS ROUGEIOENT, L'APPAREIL SURCHAUFFE. INSPECTEZ ET NETTOYEZ LA CHEMINÉE FRÉQUEMMENT. DANS CERTAINES CONDITIONS, DES DÉPÔTS DE CRÉOSOTE PEUVENT SE FORMER RAPIDEMENT.

PATTE OPTIONNELLES: SI LES PATTE OPTIONNELLES SONT INSTALLÉES, ELLES DOIVENT ÊTRE INSTALLÉES AVANT DE FAIRE FONCTIONNER L'APPAREIL.

SOUFFLERIE OPTIONNELLE: EP-62, 115V, 60HZ, 0,82A. TENEZ LE CORDON ÉLECTRIQUE LOIN DE L'APPAREIL.

DANGER: RISQUE DE SECOURS ÉLECTRIQUE. DÉBRANCHEZ AVANT DE PROCÉDER À L'ENTRETIEN.



| | PARALLEL & CORNER / PARALLÈLE & COIN | SINGLE WALL CONNECTOR / TUYAU DE RACCORDEMENT À PAROI SIMPLE | DOUBLE WALL CONNECTOR / TUYAU DE RACCORDEMENT À PAROI DOUBLE |
|--|--------------------------------------|--|--|
| Sidewall / mur de côté (A) | 19" (48.3cm) | 19" (48.3cm) | 19" (48.3cm) |
| Sidewall to flue / mur de côté à la buse (B) | 28 7/8" (73.3cm) | 28 7/8" (73.3cm) | 28 7/8" (73.3cm) |
| Backwall / mur arrière (C) | 17 1/2" (44.5cm) | 12 1/2" (31.8cm) | 12 1/2" (31.8cm) |
| Backwall to flue / mur arrière à la buse (D) | 21" (53.3cm) | 16" (40.6cm) | 16" (40.6cm) |
| Corner / coin (E) | 11" (27.9mm) | 7" (17.8mm) | 7" (17.8mm) |
| Ceiling / plafond (F) | 84" (213.4cm) | 75" (190.5cm) | 75" (190.5cm) |
| ALCOVE / ALCÔVE | | | |
| Ceiling / plafond (G) | N/A | 75" (190.5cm) | 75" (190.5cm) |
| MINIMUM FLOOR PROTECTION / PROTECTION MINIMAL DU PLANCHER | | | |
| | FRONT / DEVANT (H) | SIDES / CÔTÉS (I) | BACK / ARRIÈRE (J) |
| CANADA | 18" (45.7cm) | 8" (203mm) | 8" (203mm) |
| USA / É-U | 16" (40.6cm) | 8" (203mm) | 8" (203mm) |

Clearances can be reduced with shielding acceptable to local authorities. Reduced installation must comply with NFPA 211 or CAN/CSA-B365. / Il est possible de réduire les dégagements à l'aide d'un protecteur conforme aux normes des autorités locales. Une installation réduite doit être conforme aux normes NFPA 211 ou au CAN/CSA B365.

MANUFACTURE DATE: / DATE DE FABRICATION:

YEAR: 2015 2016 2017 2018 2019 2020

MONTH: 1 2 3 4 5 6 7 8 9 10 11 12



CAUTION:

ATTENTION:

HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.

QUAND L'APPAREIL FONCTIONNE, LA SURFACE DEVIENT CHAUDE. NE PAS TOUCHER. TENIR LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES À L'ÉCAR. LE CONTACT PEUT CAUSER DES BRÛLURES À LA PEAU. VOIR LA PLAQUE D'HOMOLOGATION ET LES INSTRUCTIONS.

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood. Certifié conforme à la norme d'émission de particules de 2020 en utilisant bois de corde. 40 CFR Part 60, Subpart AAA 2.25 Grams Per Hour / 2020 Cordwood / 2.25 Grammes par heure / Bois de Corde 2020

WOLF STEEL LTD.
 24 NAPOLEON ROAD, BARRIE, ON,
 L4M 0G8 CANADA

NAC GUANGZHOU P.R.C.
 NO.69 HEFENG ROAD, GUANGZHOU, CHINA

2200

W385-2028 / A

MAXIMUM SIZE: 6" x 11.125"

SILVER ON BLACK BACKGROUND

CLASS III A-1 PERMANENT LABEL

WATERPROOF, NONWATER SOLUBLE ADHESIVE CAPABLE OF WITHSTANDING 300°F/149°C TEMPERATURES

SERIAL NUMBER TO BE ASCENDING FROM 2200 017696

CAUTION MINIMUM LETTER SIZE (18 POINT TYPE) AND 0.12" (8.64 POINT TYPE) FOR THE REMAINDER OF

THAT WARNING WITH VERTICAL SPACING BETWEEN LINES OF 0.046" (3.312 POINT TYPE).

LOG / FIRE WARNING SYMBOL TO BE RED

WOLF STEEL LTD

TITLE: RATING PLATE LABEL 2200

REVISION: A: UPDATED WORDING/REQUIREMENTS TO MEET 2020 PARTICULATE EMISSION STANDARDS || 11.06.18

DWG#: W385-2028

DATE: 07.09.15_R.T.

Manufactured by WOLF STEEL LTD.

Model: Timberwolf 2200

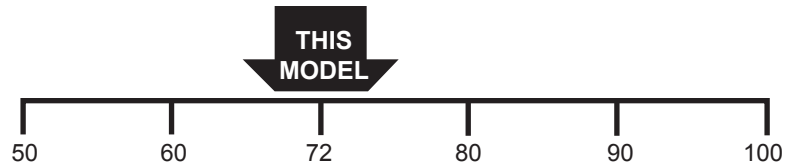
US ENVIRONMENTAL PROTECTION AGENCY

MEETS EPA PARTICULATE MATTER (SMOKE) CONTROL REQUIREMENTS FOR NONCATALYTIC WOOD HEATERS BUILT ON OR AFTER JULY 1, 1990

SMOKE



EFFICIENCY*



Wood heaters with higher efficiencies cost less to operate.

*(NOT TESTED FOR EFFICIENCY, THE VALUE INDICATED IS FOR SIMILAR NONCATALYTIC WOOD HEATERS.)

HEAT OUTPUT

12,944 TO 54,127 Btu/Hr

Use this to choose the right size appliance for your needs.

ASK DEALER FOR HELP

This wood heater will achieve low smoke output and high efficiency only if properly operated and maintained. See owner's manual.

W385- 2250

SPECIFICATIONS: BLACK ON WHITE
90 LB BOND PAPER
5" x 7"
ARIAL TYPE

WOLF STEEL

TITLE: LABEL, EPA HANG TAG (2200)

DWG #: W385-2250

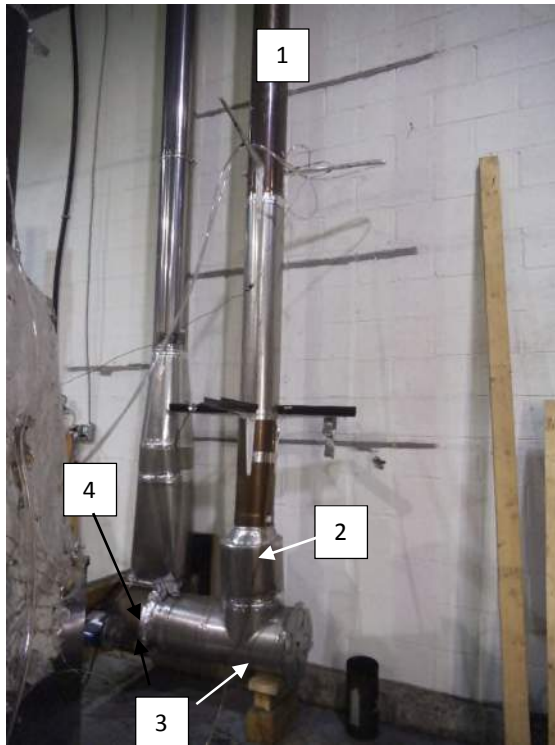
REV:

DATE: 11.06.18_

APPENDIX 8: Photographs of test set up

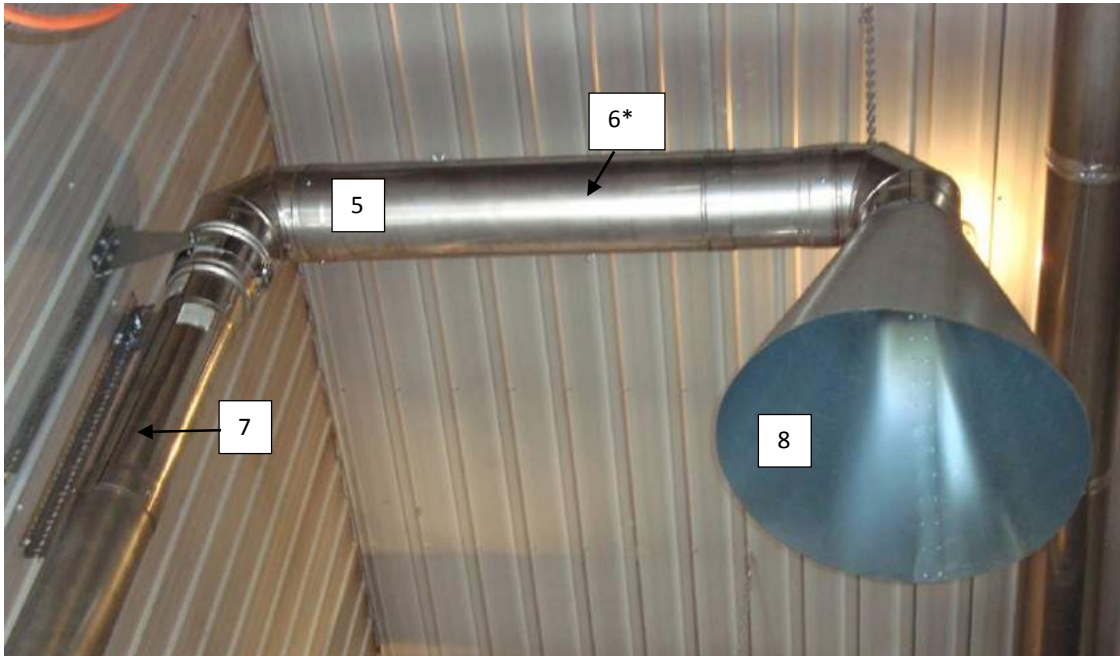
Dilution picture Dia 8

Picture 1: Sampling system



- 1 : 8 in dia Stainless steel pipe
- 2 : 16 in. Between sampling probe and lower elbow
- 3 : Air intake with damper to adjust flow rate
- 4 : Exhaust blower

Picture 2: Hood and mixing baffle



*The arrow point the deflectors inside of the pipe

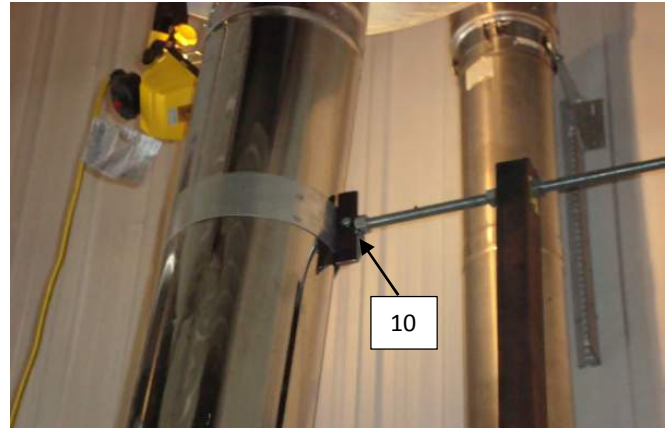
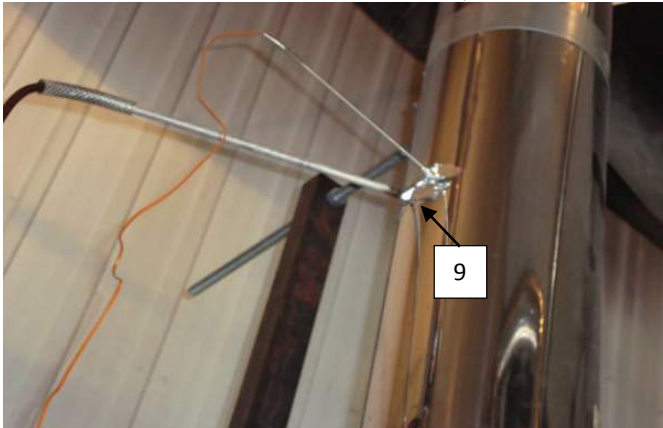
- 5 : 8 in. dia. Stainless steel pipe
- 6 : Mixing baffle (2) location 1 foot between baffles
- 7 : 10 feet long between velocity port and upper elbow
- 8 : 48 in. dia. Galvanized steel smoke captures hood

Picture 3: Stack sampling



Picture 3.1: Gas analysis and temperature probe

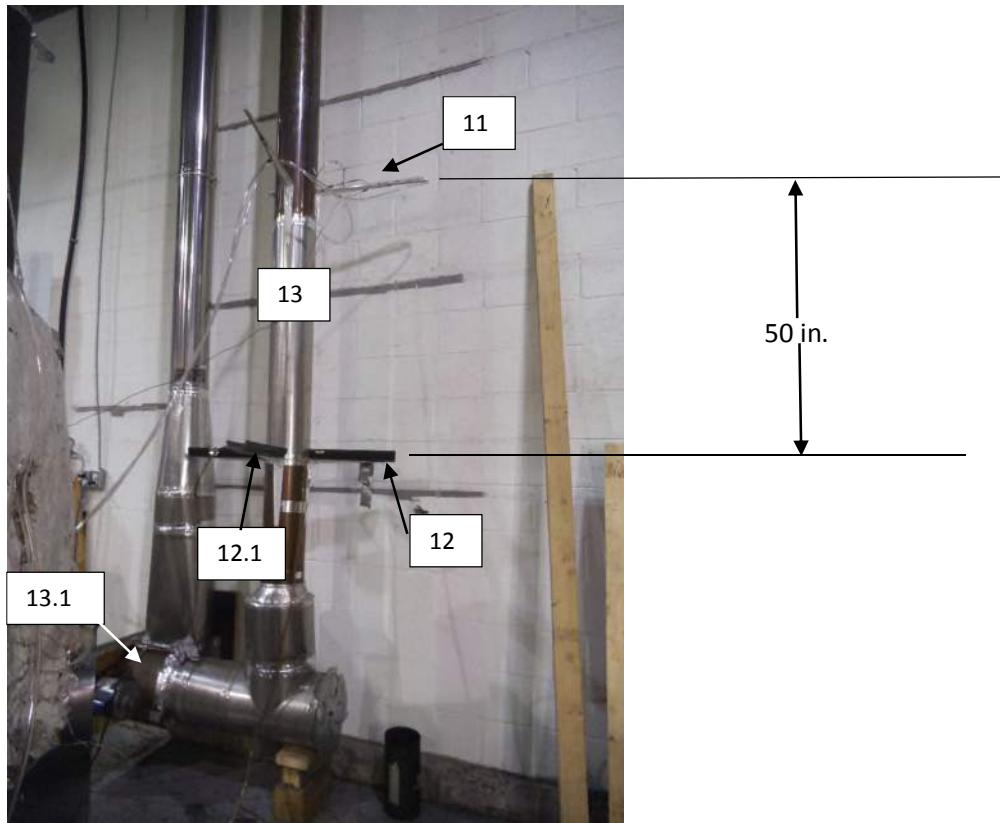
Picture 3.2: chimney support



9 : Temperature and gas analyser sampling ports located 9 feet above platform

10 : Exhaust system support bracket

Picture 4: Tunnel flow measurement and sampling probe



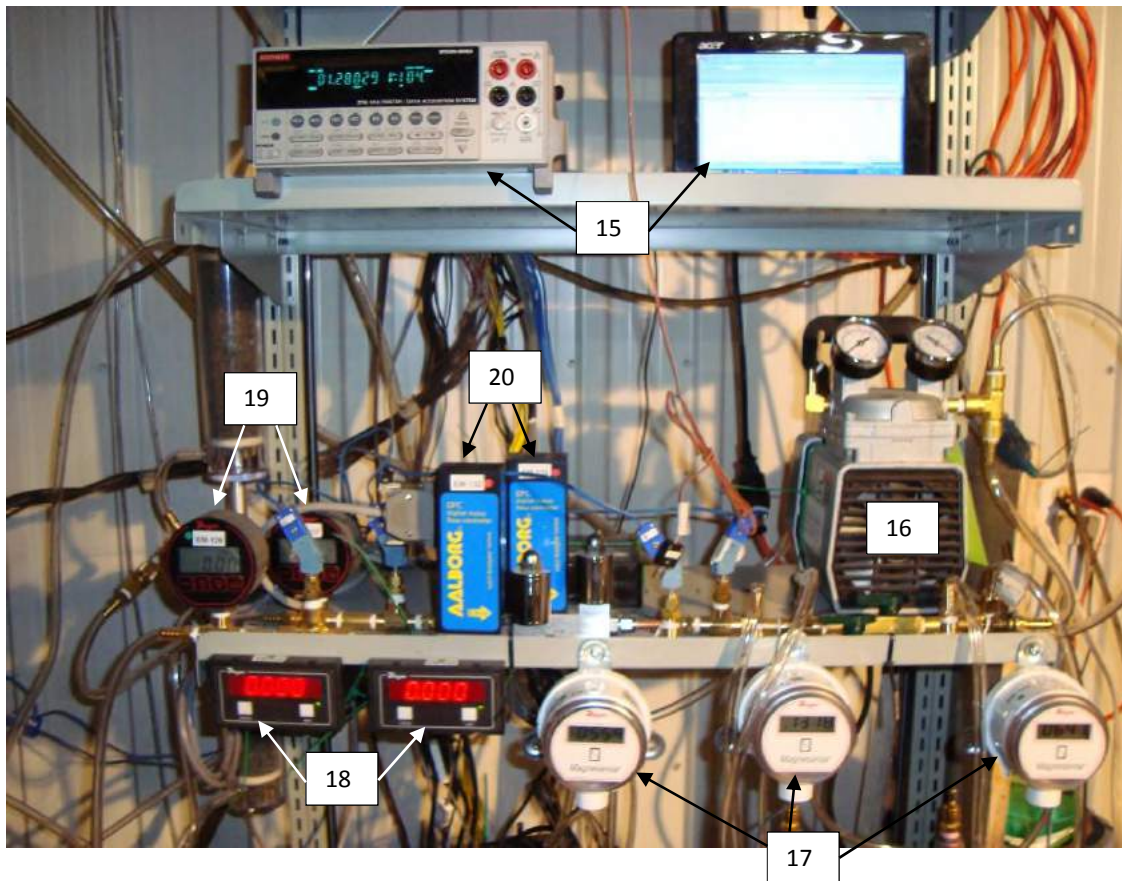
- 11 : Velocity port
- 12 : Sampling port, 2 sampling probes with 2x48 mm. dia.filter each. Filter used: Millipore AP4004700
- 12.1 : Sampling port, sampling probes with 2x48 mm. dia.filter each. Filter used: Millipore AP4004700, for first hour sampling
- 13 : 18 feet long dilution tunnel
- 13.1 : Extraction blower

Picture 5: Draft sampling



14 : Draft sampling port located 6 in. from the flue outlet

Picture 6: Equipments



- 15 : Acquisition system
- 16 : Vacuum pump
- 17 : Digital manometer
- 18 : Digital read out for mass flow meter
- 19 : Digital vacuum gage
- 20 : Mass flow meter

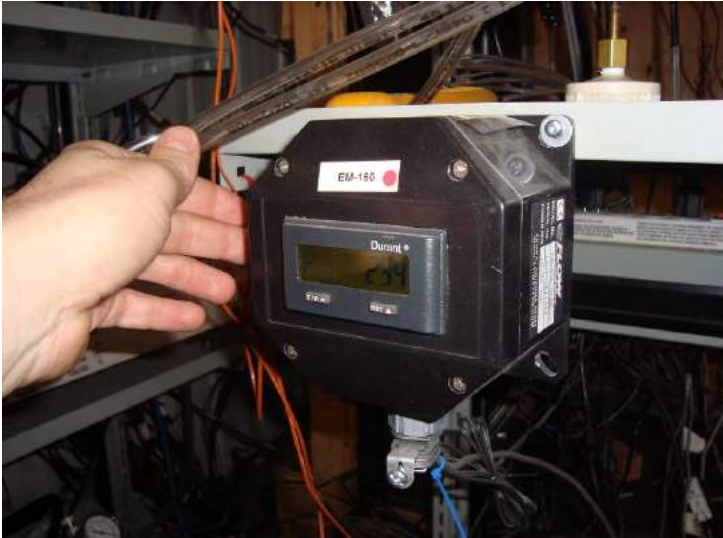
Picture 7: Gaz analyser



Picture 8: Reference dry gas meter



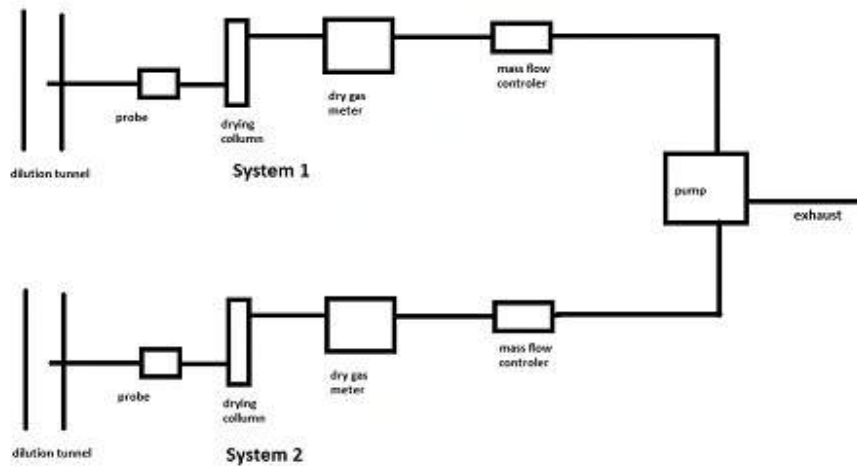
Picture 10: Water flow meter



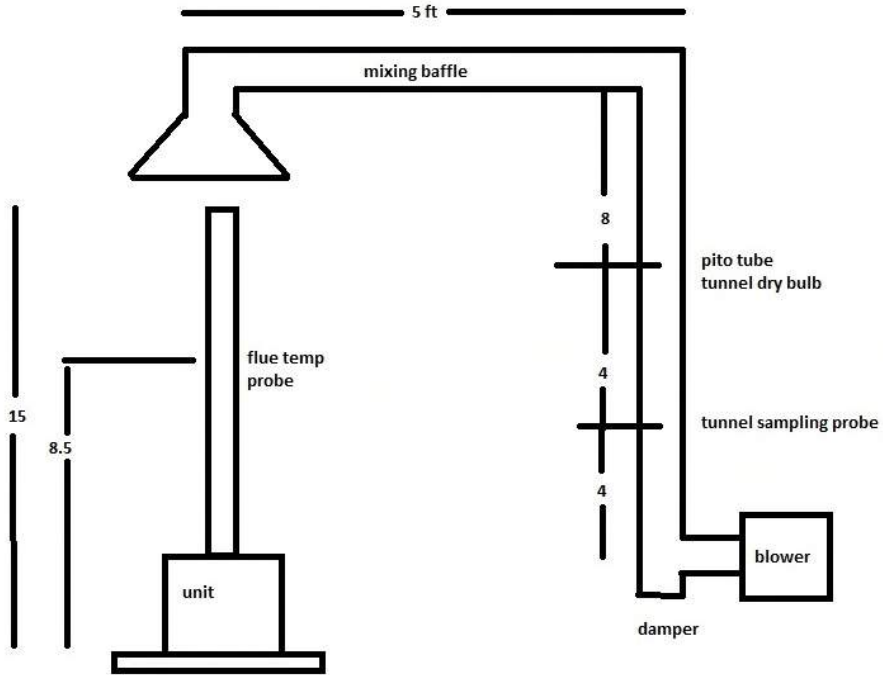
Picture 11: Dry gas meter



Picture 12 : Dilution tunnel sample system



Picture 13: Dilution tunnel



APPENDIX 9: Test load photographs

Run 1.1



Run 1.2



Run 2.1



APPENDIX 10: Laboratory Operating Procedures

APPENDIX 13: Operating instruction

Operating instruction for High burn rate Cord wood method ALT-125, ASTM E3053

- Start the fire with approximately 8.6 lbs. of startup fuel, 4 lbs. of kindling.
- After one minute close the door.
- When left approximately 3 lbs. from the startup load, the high burn rate load can be inserted.
- The high burn rate load can be up to 20.1 lbs. open the door, load the stove with high burn load.
- Close the door after two minutes.
- After 40 minutes the convection fan can be started.

Operating instruction for Medium burn rate Cord wood method ALT-125, ASTM E3053

- From the high burn rate coal bed, when 4 lbs. left, the load can be inserted in the firebox.
- open the door
- Insert the 21 lbs. load in the wood heater
- Keep the door slightly open for five minutes following load insertion
- Keep the combustion air damper fully open for 13 minutes, then gradually close to air damper to the medium setting
- At 15 minutes close the combustion air damper to the medium setting.
- No fan for the medium setting.

Operating instruction for Low burn rate Cord wood method ALT-125, ASTM E3053

- From the high burn rate coal bed, when 4 lbs. left, the load can be inserted in the firebox.
- open the door
- Insert the 21 lbs. load in the wood heater
- Keep the door slightly open for five minutes following load insertion
- Keep the combustion air damper fully open for 13 minutes, then gradually close to air damper to the minimum setting
- At 15 minutes fully close the combustion air damper (lowest setting).
- No fan for the minimum setting.

APPENDIX 14: Drawing Air flow pattern

APPENDIX 15: Application for wood stove program

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
2015 Standards of Performance for New Residential Wood Heaters, New Residential
Hydronic Heaters and Forced-Air Furnaces Application
40 CFR PART 60 SUBPARTS AAA AND QQQQ

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, Sections 60.533(b), 60.5475(b), and Appendix A-8. This document may be revised periodically without public notice. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Contents

| | |
|---|------------------------------------|
| Application for US EPA certification | 2 |
| Wood Burning Heaters..... | 7 |
| I. Test Method 28R for Certification and Auditing of Wood Heaters | 7 |
| A. <i>Summary Results – Adjustable Wood Burning Heaters</i> | 7 |
| B. <i>Summary Results – Single Burn Rate Wood Burning Heaters</i> | Erreur ! Signet non défini. |
| C. <i>Summary Results – Pellet Heaters</i> | Erreur ! Signet non défini. |
| Hydronic Heaters..... | Erreur ! Signet non défini. |
| II. Test Method 28WHH for Measurement of Particulate Emissions and Heating Efficiency of Wood-Fired Hydronic Heating Appliances Erreur ! Signet non défini. | |
| Table 1A. Data Summary Part A | Erreur ! Signet non défini. |
| | Erreur ! Signet non défini. |
| Table 1B. Data Summary Part B..... | Erreur ! Signet non défini. |
| Table 1C: Additional (Hangtag) Information..... | Erreur ! Signet non défini. |
| Table 2. Annual Weighting..... | Erreur ! Signet non défini. |
| III. Test Method 28WHH for Certification of Cord Wood-Fired Hydronic Heating Appliances With Partial Thermal Storage... Erreur ! Signet non défini. | |
| Table 2A. Data Summary Part A | Erreur ! Signet non défini. |
| Table 2B. Data Summary Part B..... | Erreur ! Signet non défini. |
| Table 3C. Data Summary Part D..... | Erreur ! Signet non défini. |
| Forced-Air Furnaces..... | Erreur ! Signet non défini. |
| IV. Forced-Air Furnaces | Erreur ! Signet non défini. |

**APPLICATION FOR A CERTIFICATE OF COMPLIANCE PURSUANT TO 40 CFR
PART 60 SUBPARTS AAA AND QQQQ
2015 STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW
RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES**

GENERAL INFORMATION

Manufacturer's Name: Wolf Steel Ltd

| | | | | | | |
|--|---|--------------|--|-----------------|--------------------|--------|
| Heater Type (Circle One): | Adjustable Burn Rate Wood Heater | Pellet Stove | Single Burn Rate Heater | Hydronic Heater | Forced Air Furnace | Other: |
| Hydronic Heater Type (Circle One): | Traditional | Full Storage | Partial Storage | Indoor/Outdoor | Other: | |
| Forced-Air Furnace Type (Circle One): | Small (less than 65,000 BTU/hr heat output) | | Large (greater than 65,000 BTU/hr heat output) | | Other: | |
| Fuel Tested: | Crib | Pellet | Cordwood | Wood Chips | Other: | |

Test Method(s): ALT-125 ; AMSTE3053 ; ASTME2515 Catalyst: no

Model Name and Design Number (The model name and design number must clearly distinguish one model from another. The name and design number cannot include the EPA symbol or logo or name or derivatives such as "EPA): Timberwolf 2200, Timberwolf EPI22, Napoleon S20, Napoleon S20-i, Napoleon 2020-S, Napoleon 2020-Si.

Physical Address (Street number and Address, not P.O. Box): 9 NAPLOEON ROAD Mailing Address: 9 NAPLOEON ROAD

| | | |
|----------------------------|--|--|
| City: BARRIE | State: ON | ZIP Code: L4M 0G8 |
| Phone: 705-721-1212 | Email: PHODGES@NAPOLEONPRODUCTS.COM | Website: WWW.NAPOLEONPRODUCTS.COM |

EPA Submission Date of 30 day Notice:

MANUFACTURER'S AUTHORIZED REPRESENTATIVE INFORMATION

Name: PAUL HODGES

Position/Title: ENGINEERING MANAGER – EARTH R&D

Address: 9 NAPLOEON ROAD

| | | |
|----------------------------|---|--|
| City: BARRIE | State: ON | ZIP Code: L4M 0G8 |
| Phone: 705-721-1212 | E-mail: PHODGES@NAPOLEONPRODUCTS.COM | Website: WWW.NAPOLEONPRODUCTS.COM |

Remarks:

**APPLICATION FOR A CERTIFICATE OF COMPLIANCE PURSUANT TO 40 CFR
PART 60 SUBPARTS AAA AND QQQQ
2015 STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW
RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES**

EPA-APPROVED TEST LABORATORY

Name of Test Laboratory:
Polytests Services inc.

Name of Person Authorized or Responsible for Conducting Compliance Test: Danick Power

Position/Title: VP operation

Address: 695-B Gaudette,

City: St-Jean-sur-Richelieu

State: Quebec, Canada

ZIP Code: J3B 7S7

Phone: 450 741-3636

Email: dpower@polytests.com

Website: www.polytests.com

Remarks:

EPA-Approved Third Party Certifier

Name of Certifier Entity: Omni

Name of Person Authorized or Responsible for Reviewing Test Report and/or Issuing Certification of Conformity:
Ken Morgan

Position/Title: Project Manager

Address: 13327 NE Airport Way

City: Portland

State: OR

ZIP Code: 97230

Phone: 503 643-3788

Email:
kmorgan@omni-test.com

Website:
Omni-test.com

Remarks:

| | | |
|--|--|--|
| | | |
| | | |
| | | |

COMPLIANCE STATEMENTS AND ACKNOWLEDGEMENTS – SECTIONS 60.533(B) AND 60.5475(B)

INSTRUCTIONS: PLEASE READ THE BELOW STATEMENTS AND AFFIRMATIONS AND ADDRESS ACCORDINGLY.

FOR EMISSIONS DATA SUMMARY TABLES SEE ATTACHMENTS

1. Engineering Drawings Statement

Engineering drawings and specifications of components that may affect emissions (including specifications for each component listed in paragraphs (k)(2), (3) and (4) of 60.533(b) and 60.5475(b). Manufacturers may use assembly or design drawings that have been prepared for other purposes, but must designate on the drawings the dimensions of each component listed in paragraph (k) of this section. Manufacturers must identify tolerances of components listed in paragraph (k)(2) of 60.533(b) and 60.5475(b) that are different from those specified in that paragraph, and show that such tolerances cannot reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits. The drawings must identify how the emission-critical parts, such as air tubes and catalyst, can be readily inspected and replaced.

All components include dimensions and production tolerances which meet or exceed the prescribed requirements and facilitate inspection. Replacement procedures are clearly documented in service kits.

2. Firebox Statement Requirement

A statement whether the firebox or any firebox component (including the materials listed in paragraph (k)(3) of 60.533(b) and 60.5475(b) will be composed of material different from the material used for the firebox or firebox component in the wood heater on which certification testing was performed, a description of any such differences and demonstration that any such differences may not reasonably be anticipated to adversely affect emissions or efficiency.

No – the firebox and any firebox component will not be made of different materials than what was used in the certification testing.

3. CBI

Clear identification of any claimed confidential business information (CBI). Submit such information under separate cover to the EPA CBI Office; Attn: Residential Wood Heater Compliance Program Lead, 1200 Pennsylvania Ave., NW, Room 7138, MS:2227A, Washington, DC 20460. **Note that all emissions data, including all information necessary to determine emission rates in the format of the standard, cannot be claimed as CBI.**

CBI was sent to EPA Testing Laboratory Polytest INC.

4. Valid Certification Statement

All documentation pertaining to a valid certification test, including the complete test report and, for all test runs: Raw data sheets, laboratory technician notes, calculations and test results. Documentation must include the items specified in the applicable test methods. Documentation must include discussion of each test run and its appropriateness and validity, and must include detailed discussion of all anomalies, whether all burn rate categories were achieved, any data not used in the calculations and, for any test runs not completed, the data collected during the test run and the reason(s) that the test run was not completed and why. The burn rate for the low burn rate category must be no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer. The test report must include a summary table that clearly presents the individual and overall emission rates, efficiencies and heat outputs. Submit the test report and all associated required information, according to the procedures for electronic reporting specified in § 60.537(f) and 60.5475(f).

Yes all requirements in the above section is covered as per the requirements in the test report.

5. Warranties

A copy of the warranties for the model line, which must include a statement that the warranties are void if the unit is used to burn materials for which the unit is not certified by the EPA and void if not operated according to the owner's manual.

All warranty data is included in the manual and includes the necessary statements as per this section.

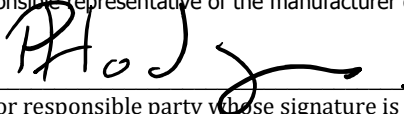
6. Q/A Statement

A statement that the manufacturer will conduct a quality assurance program for the model line that satisfies the requirements of paragraph (m) of this section.

Yes, included with the report is Wolf Steel's SOP on quality assurance inspection program.

| | |
|--|--|
| <p>7. Laboratory Sealing of Unit</p> <p>A statement describing how the tested unit was sealed by the laboratory after the completion of certification testing and asserting that such unit will be stored by the manufacturer in the sealed state until 5 years after the certification test.</p> <p>The unit has been sealed at the testing facility by the technicians performing the test. There is metal banding encasing the unit preventing the door from being opened and modifications made. The unit is clearly permanently labeled as the EPA test unit.</p> | |
| <p>8. Statements that the wood heaters manufactured under this certificate will be—</p> <p>(i) Similar in all material respects that would affect emissions as defined in § 60.531 to the wood heater submitted for certification testing, and labeled as prescribed in § 60.536 and 60.5478.</p> <p>(ii) Accompanied by an owner’s manual that meets the requirements in § 60.536 and 60.5478. In addition, a copy of the owner’s manual must be submitted to the Administrator and be available to the public on the manufacturer’s web site.</p> <p>Yes, the wood heater manufactured will be of similar material to the wood heater tested. Each unit will be accompanied by its owner’s manual and will be available on the Timberwolf and Napoleon websites.</p> | |
| <p>9. Third Party Certification Statement</p> <p>A statement that the manufacturer has entered into contracts with an approved laboratory and an approved third-party certifier that satisfy the requirements of paragraph (f) of this section.</p> <p>Yes, Wolf Steel has entered into a contract with Polytest as an approved EPA laboratory and Omni as a third party certifier.</p> | |
| <p>10. Approved laboratory/third party Statement</p> <p>A statement that the approved laboratory and approved third-party certifier are allowed to submit information on behalf of the manufacturer, including any claimed to be CBI.</p> <p>Yes, both the approved laboratory and third party certifier have been given permission to submit information on behalf of Wolf Steel.</p> | |
| <p>11. Manufacturer’s Website Certification Test Reports Availability Statement</p> <p>A statement that the manufacturer will place a copy of the certification test report and summary on the manufacturer’s web site available to the public within 30 days after the Administrator issues a certificate of compliance.</p> <p>We will place a copy of the certification test and summary on the Timberwolf and Napoleon websites within 30 days of the certificate.</p> | |
| <p>12. Transferability Acknowledgement Statement</p> <p>A statement of acknowledgment that the certificate of compliance cannot be transferred to another manufacturer or model line without written approval by the Administrator.</p> <p>We acknowledge that the certificate of compliance cannot be transferred to another manufacturer or model line without notification and written approval by the administrator.</p> | |
| <p>13. Statement about Selling Wood Heaters without an EPA Certificate</p> <p>A statement acknowledging that it is unlawful to sell, distribute or offer to sell or distribute an affected wood heater without a valid certificate of compliance.</p> <p>We acknowledge that we cannot sell, distribute or offer to sell the wood heater without a valid certificate of compliance.</p> | |
| <p>Print Name and Title: PAUL HODGES, ENGINEERING MANAGER – HEARTH R&D</p> | <p>Date: 12TH NOVEMBER 2018.</p> |

Signature of responsible representative of the manufacturer certifying the accuracy of the above statements:

A handwritten signature in black ink, appearing to be "H. J. [unclear]", written over a horizontal line.

The authorized or responsible party whose signature is above is certifying that the manufacturer has complied with and will continue to comply with all requirements of the 2015 NSPS for compliance certification and that the manufacturer remains responsible for compliance regardless of any error by the test laboratory or third-party certifier.

Attachments

Instructions: Please complete the section applicable to your certification request. You may substitute your own data tables in lieu of the ones shown below provided that all the information is captured.

WOOD BURNING HEATERS

I. Test Method 28R for Certification and Auditing of Wood Heaters

A. SUMMARY RESULTS – ADJUSTABLE WOOD BURNING HEATERS

| | | | |
|--|-----------------|-------|-------|
| Model name / number | Timberwolf 2200 | | |
| Usable Firebox volume | 1,91 | | |
| Convection air Fan (no, Standard, option) | optional | | |
| average for each test run category | L | M | H |
| burn rate kg/h DB | 0,99 | 1,24 | 4,14 |
| PM Emission rate - g/h | 2,80 | 1,29 | 3,10 |
| Co emission rate - g/h | 129,02 | 95,42 | 97,73 |
| Overall Efficiency - CSA B 415,1 | | | |
| % HHV Basis | 72,0% | 72,7% | 71,0% |
| % LHV Basis | 77,4% | 78,2% | 76,4% |
| Heat output - Btu/hr | 12944 | 17310 | 54127 |
| Category weighting | 0,4 | 0,4 | 0,2 |

WEIGHTED AVERAGE FINAL RESULTS

| | | | |
|---------------------------------|--------|----|-------|
| ASTM E 3053 Weighted averages | | | |
| PM Emission Rate - g/h | 2,25 | | |
| CO Emission Rate g/h | 109,3 | | |
| Overall Efficiency - CSA B415,1 | | | |
| % HHV Basis | 72,06% | | |
| % LHV Basis | 77,54% | | |
| Heat output range - Btu/h | 12 944 | to | 54127 |
| Co Arithmetic average g/min | 1.79 | | |