Carrier

Turn to the experts

Product Data

WeatherMaster® Packaged Rooftop Units with Electric Heat

3 to 12.5 Nominal Tons

WeatherMaster®

50HC Sizes 04 to 14
Packaged Rooftop Units with Electric Heat, Optional EnergyX® Energy Recovery Device, and *Comfort*Link Controls

Features/Benefits

Carrier WeatherMaster® 3 to 12.5 Ton rooftop units (RTU) were designed by customers for customers. With "no-strip" screw collars, handled access panels, and more, we've made your unit easy to install, easy to maintain, easy to use, and reliable.

Easy to install

All WeatherMaster® units are field-convertible from vertical to horizontal airflow, which makes it easy to adjust to unexpected job-site complications. Lighter units make easy replacement. Most of Carrier's 3 to 12.5 ton 50HC rooftops fit on existing Carrier curbs dating back to 1989. Also, our large control box gives you room to work and room to mount Carrier accessory controls.

Easy to maintain

Easy access handles by Carrier provide quick and easy access to all normally serviced components. Our "no-strip" screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit's metal. Take accurate pressure readings by reading condenser pressure with panels on (3 to 5 ton units only). Simply remove the black, composite plug, route your gage line(s) through the hole, and connect them to the refrigeration service valve(s). Now, you can take refrigeration system pressure readings without affecting the condenser airflow.

Easy to use

The newly designed, central terminal, board by Carrier puts all your connections and troubleshooting points in one convenient place, standard. Most low voltage connections are made to the same board and make it easy to find what you're looking for and easy to access it. Carrier rooftops have high and low pressure switches, a filter drier, and 2-in. (51 mm) filters standard.

Reliable

Each unit comes with precision sized and tested scroll compressor that is internally protected from over temperature and pressures. In addition, each refrigerant circuit is further protected with a high pressure and low pressure switch as well as containing a liquid line filter drier. Each unit is factory tested prior to shipment to help ensure unit's operation once properly installed.

Key features

- Single-stage cooling capacity control on 04-07 models
- Two-stage cooling capacity control on 07-14 models
- SEER up to 15.6
- EER up to 13.0
- IEERs up to 14.2 with single speed indoor fan motor and up to 16.2 with SAV™ (Staged Air Volume) 2-speed/VFD indoor fan motor system
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE 62 Standard, sloping design; side or center drain
- Single point electrical connection
- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- TXV refrigerant metering system on each circuit
- Fully insulated cabinet
- Cooling operating range up to 125°F (52°C), and down to 35°F (2°C), 0°F (–18°C) on 11 size standard
- Access panels with easy grip handles
- Innovative, easy starting, no-strip screw feature on unit access panels
- Two-inch disposable return air filters
- Tool-less filter access door
- Belt drive evaporator-fan motor and pulley combinations available on all three phase models
- Electric Drive X13 (5 speed/torque) motor on 04 to 06 models
- New terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement
- Field convertible airflow (3 to 12.5 ton). Being able to convert a unit from vertical airflow to horizontal makes it easy to overcome job site complications. 12.5 ton models require a simple supply air duct cover to field convert from factory vertical to horizontal
- Provisions for thru-the-bottom power entry capability as standard
- Full perimeter base rail with built-in rigging adapters and fork truck slots
- Scroll compressors with internal line-break overload protection
- 24-volt control circuit protected with resettable circuit breaker
- Permanently lubricated evaporator-fan motor
- Totally enclosed condenser motors with permanently lubricated bearings
- Low-pressure switch and high-pressure switch protection
- Liquid line filter drier on each circuit
- Factory-installed Humidi-MiZer® adaptive dehumidification system on all sizes, includes Motormaster® controller
- Standard Warranty: 5 years electric heater exchanger, 5 years compressor, 1 year parts
- Optional Staged Air Volume (SAV) system utilizes a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed between cooling stages. Available on 2-stage cooling models 07-14 with electro-mechanical, *Comfort*Link or RTU Open controls

Table of contents

Model number nomenclature

50HC MODEL NUMBER NOMENCLATURE

50 HC B E 09 A 2 A 6 A 0 A 3 B 0

Unit Heat Type
50 - Electric Heat Packaged Rooftop

Model Series - WeatherMaster®
HC - High Efficiency

Heat Options***
— = Standard (No Electric Heat)
A = Low Electric Heat
B = Medium Electric Heat
C = High Electric Heat

Refrig. Systems Options
A = Single stage cooling models
B = Single stage cooling models with Humidi-MiZer®
D = Two stage cooling models
E = Two stage cooling models with Humidi-MiZer
F = Single stage cooling models with Motormaster® Low Ambient Controller
G = Two stage cooling models with Motormaster Low Ambient Controller

Cooling Tons
04 - 3 ton
05 - 4 ton
06 - 5 ton
07 - 6 ton
08 - 7.5 ton
09 - 8.5 ton
11 - 10 ton (12.0 EER)*
12 - 10 ton (11.7 EER)*
14 - 12.5 ton

Sensor Options
A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO_2
F = RA Smoke Detector and CO_2
G = SA Smoke Detector and CO_2
H = RA + SA Smoke Detector and CO_2
J = Condensate Overflow Switch (electro-mechanical controls only)
K = Condensate Overflow Switch and RA Smoke Detectors
L = Condensate Overflow Switch and RA + SA Smoke Detectors

Indoor Fan Options 3, 4, 5 Ton Models Only*
0 = Electric (Direct) Drive x13 Motor
2 = Medium Static Option - Belt Drive
3 = High Static Option - Belt Drive
Indoor Fan Options 6-12.5 Ton Models Only
1 = Standard Static Option - Belt Drive
2 = Medium Static Option - Belt Drive
3 = High Static Option - Belt Drive
C = High Static Option with High-Efficiency Motor, Belt Drive (Size 14 only)

Coil Options (RTPF) (Outdoor – Indoor – Hail Guard)
A = Al/Cu – Al/Cu
B = Precoat Al/Cu – Al/Cu
C = E-coat Al/Cu – Al/Cu
D = E-coat Al/Cu – E-coat Al/Cu
E = Cu/Cu – Al/Cu
F = Cu/Cu – Cu/Cu
M = Al/Cu – Al/Cu – Louvered Hail Guard
N = Precoat Al/Cu – Al/Cu – Louvered Hail Guard
P = E-coat Al/Cu – Al/Cu – Louvered Hail Guard
Q = E-coat Al/Cu – E-coat Al/Cu – Louvered Hail Guard
R = Cu/Cu – Al/Cu – Louvered Hail Guard
S = Cu/Cu – Cu/Cu – Louvered Hail Guard

Factory Assigned
0 = Standard
1 = LTL
3 = California Seismic Complaint - OSHPD
4 = California Seismic Complaint - OSHPD plus LTL

Electrical Options†
A = None
B = HACR Breaker
C = Non-Fused Disconnect
D = Thru-The-Base Connections
E = HACR and Thru-The Base Connections
F = Non-Fused Disconnect and Thru-The-Base Connections
G = 2-Speed Indoor Fan (VFD) Controller
H = 2-Speed Fan Controller (VFD) and HACR Breaker
J = 2-Speed Fan Controller (VFD) and Non-Fused Disconnect
K = 2-Speed Fan Controller (VFD) and Thru-The-Base Connections
L = 2-Speed Fan Controller (VFD) w/ HACR Breaker and Thru-The Base Connections
M = 2-Speed Fan Controller (VFD) with Non-Fused Disconnect and Thru-The-Base Connections

Service Options
0 = None
1 = Unpowered Convenience Outlet
2 = Powered Convenience Outlet
3 = Hinged Panels
4 = Hinged Panels and Unpowered Convenience Outlet
5 = Hinged Panels and Powered Convenience Outlet
C = Foil Faced Insulation
D = Foil Faced Insulation with Unpowered Convenience Outlet
E = Foil Faced Insulation with Powered Convenience Outlet
F = Foil Faced Insulation and Hinged Panels
G = Foil Faced Insulation and Hinged Panels with Unpowered Convenience Outlet
H = Foil Faced Insulation and Hinged Panels with Powered Convenience Outlet

Intake / Exhaust Options
A = None
B = Temperature Economizer w/ Barometric Relief
F = Enthalpy Economizer w/ Barometric Relief
K = 2-Position Damper
Q = EnergyX® only
R = EnergyX + Economizer only**
S = EnergyX + Frost Protection Only**
T = EnergyX + Economizer + Frost Protection**
U = Low Leak Temperature Economizer w/ Barometric Relief
W = Low Leak Enthalpy Economizer w/ Barometric Relief

Base Unit Controls
0 = Electromechanical Controls can be used with W7212 EconoMi$er® (Non-Fault Detection and Diagnostic)
1 = PremierLink™ Controller
2 = RTU Open Multi-Protocol Controller
6 = Electro-mechanical w/ 2-speed fan and W7220 Econo controller controls. Can be used with W7220 EconoMi$er X (w/ Fault Detection & Diagnostic)
D = ComfortLink Controls (Not available on 2-stage cooling 07 size models)

Design Revision
A = Factory Design Revision

Voltage††
1 = 575/3/60
3 = 208-230/1/60
5 = 208-230/3/60
6 = 460/3/60

* Staged Air Volume (SAV) is required on size 11 and 12 units to meet DOE-2018 minimum efficiency requirements.
† Units sold in the US require a 2-speed fan.
** Includes ComfortLink controls
†† On single phase models (-3 voltage code), the following are not available as factory-installed options:
- Humidi-MiZer
- Coated Coils or Cu Fin Coils
- Louvered Hail Guards
- Economizer or 2-Position Damper
- Powered 115 v Convenience Outlet

*** On units with the EnergyX option, electric heat is only available as a field-installed accessory.

Puron

ASHRAE 90.1 COMPLIANT

AHRI capacity ratings

AHRI RATINGS

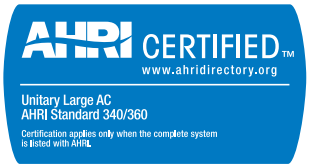
50HC UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NOMINAL COOLING CAPACITY (TONS)	TOTAL POWER (kW	SEER	EER	IPLV	IEER	IEER WITH 2-SPEED INDOOR MOTOR
A04	1	3.0	35.4	2.8	15.0	12.50	N/A	N/A	N/A
A05	1	4.0	48.5	3.7	15.6	13.00	N/A	N/A	N/A
A06	1	5.0	57.5	4.6	15.2	12.45	N/A	N/A	N/A
A07	1	6.0	73.0	6.0	N/A	12.20	N/A	13.2	N/A
D07	2	6.0	72.0	5.9	N/A	12.20	N/A	14.2	16.2
D08	2	7.5	89.0	7.3	N/A	12.20	13.2	13.2	14.0
D09	2	8.5	97.0	8.0	N/A	12.20	13.2	13.2	14.0
D11	2	10.0	111.0	9.3	N/A	12.00	N/A	12.6	14.5
D12	2	10.0	115.0	9.8	N/A	11.70	N/A	12.2	12.9
D14	2	12.5	146.0	11.8	N/A	12.40	N/A	13.2	14.1

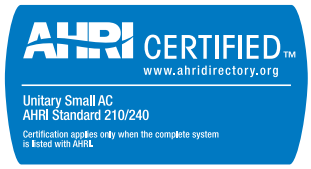
LEGEND

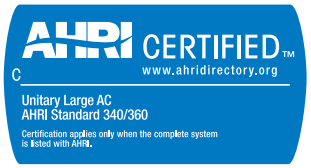
AHRI — Air-Conditioning, Heating and Refrigeration Institute
COP — Coefficient of Performance
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio
SEER— Seasonal Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standards 210/240 (sizes 04-06) and 340/360 (sizes 07-14).
2. Ratings are based on:
   Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temp and 95°F (35°C) db outdoor air temp.
   IEER Standard: A measure that expresses cooling part-load EER efficiency for commercial unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
3. All 50HC units comply with ASHRAE 90.1-2016 Energy Standard for minimum SEER and EER requirements.
4. 50HC units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.







SOUND RATINGS TABLE

50HC UNIT	COOLING STAGES	OUTDOOR SOUND (dB) AT 60 HZ								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
A04	1	76	78.2	78.0	74.2	73.3	70.6	66.0	62.4	56.9
A05	1	78	84.7	83.6	77.1	74.6	72.3	68.3	64.7	60.9
A06	1	77	87.5	82.5	76.1	73.6	71.3	67.1	64.1	60.0
A07	1	82	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7
D07	2	82	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7
D08	2	82	90.6	84.3	80.2	79.3	77.1	72.2	67.4	63.7
D09	2	82	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3
D11	2	87	85.9	87.9	85.6	84.4	82.8	78.5	74.9	72.5
D12	2	87	85.9	87.9	85.6	84.4	82.8	78.5	74.9	72.5
D14	2	83	89.3	86.0	82.9	80.7	78.5	73.6	69.6	64.5

LEGEND

dB — Decibel

NOTES:

1. Outdoor sound data is measured in accordance with AHRI standards 270 and 370.
1. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
2. A-weighted sound ratings filter out very high and very low frequencies, to better approximate the response of “average” human ear. A-weighted measurements for Carrier units are taken in accordance with AHRI.

MINIMUM - MAXIMUM AIRFLOW RATINGS (CFM) — ELECTRIC HEAT

50HC UNIT	COOLING				ELECTRIC HEATING	
	Minimum	Minimum 2-Speed Fan Motor (at High Speed)	Minimum 2-Speed Fan Motor (at Low Speed)	Maximum	Minimum	Maximum
04	900	—	—	1500	900	1500
05	1200	—	—	2000	1200	2000
06	1500	—	—	2500	1500	2500
07	1800	1800	1200	3000	1800	3000
08	2250	2535	1690	3750	2250	3750
09	2550	2550	1700	4250	2550	4250
11	3000	3380	2253	5000	3000	5000
12	3000	3380	2253	5000	3000	5000
14	3750	4056	2704	6250	3750	6250

— Not Available

Physical data

50HC 3 TO 6 TON PHYSICAL DATA

50HC UNIT	50HC**04	50HC**05	50HC**06	50HC*A07	50HC*D07
NOMINAL TONS	3	4	5	6	6
BASE UNIT OPERATING WT (lb)	505	590	600	925	925
REFRIGERATION SYSTEM					
No. Circuits/No. Compressors/Type	1/1/Scroll	1/1/Scroll	1/1/Scroll	1/1/Scroll	1/1/2-Stage Scroll
Puron® Refrigerant Charge (lb-oz)	9-0	12-8	13-8	14-0	14-0
Humidi-Mizer® Puron Refrigerant Charge	11-0	19-12	20-0	22-8	—
Metering Device	TXV	TXV	TXV	TXV	TXV
High Pressure Trip/Reset (psig)	630/505	630/505	630/505	630/505	630/505
Low Pressure Trip/Reset (psig)	54/117	54/117	54/117	54/117	54/117
EVAPORATOR COIL					
Material (Tube Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al	Cu/Al
Coil Type	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF
Rows/FPI	3/15	3/15	4/15	3/15	3/15
Total Face Area (ft²)	5.5	7.3	7.3	8.9	8.9
Condensate Drain Connection Size	3/4-in.	3/4-in.	3/4-in.	3/4-in.	3/4-in.
HUMIDI-MIZER COIL					
Material (Tube Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al	—
Coil type	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	—
Rows/FPI	1/17	2/17	2/17	2/17	—
Total Face Area (ft²)	3.9	5.2	5.2	5.2	—
EVAPORATOR FAN MOTOR					
STANDARD STATIC 1 PHASE					
Motor Quantity/Drive Type	1/Direct	1/Direct	1/Direct	—	—
Max BHP	1.0	1.0	1.0	—	—
RPM Range	600-1200	600-1200	600-1200	—	—
Motor Frame Size	48	48	48	—	—
Fan Quantity/Type	1/Centrifugal	1/Centrifugal	1/Centrifugal	—	—
Fan Diameter (in.)	10 x 10	10 x 10	10 x 10	—	—
STANDARD STATIC 3 PHASE					
Motor Quantity/Drive Type	1/Direct	1/Direct	1/Direct	1/Belt	1/Belt
Max BHP	1.0	1.0	1.0	1.7	1.7
RPM Range	600-1200	600-1200	600-1200	489-747	489-747
Motor Frame Size	48	48	48	56	56
Fan Quantity/Type	1/Centrifugal	1/Centrifugal	1/Centrifugal	1/Centrifugal	1/Centrifugal
Fan Diameter (in.)	10 x 10	10 x 10	11 x 10	15 x 15	15 x 15
MEDIUM STATIC 3 PHASE					
Motor Quantity/Drive Type			1/Belt		
Max BHP	1.7	1.7	2.4	2.9	2.9
RPM Range	770-1175	920-1303	1035-1466	733-949	733-949
Motor Frame Size	48	56	56	56	56
Fan Quantity/Type	1/Centrifugal	1/Centrifugal	1/Centrifugal	1/Centrifugal	1/Centrifugal
Fan Diameter (in.)	10x10	10x10	10x10	15x15	15x15

50HC 3 TO 6 TON PHYSICAL DATA (cont)

50HC UNIT	50HC**04	50HC**05	50HC**06	50HC*A07	50HC*D07
HIGH STATIC 3 PHASE					
Motor Quantity/Drive Type	1/Belt	1/Belt	1/Belt	1/Belt	1/Belt
Max BHP	2.4	2.9	2.9	4.7	4.7
RPM Range	1035-1466	1208-1639	1303-1687	909-1102	909-1102
Motor Frame Size	56	56	56	14	14
Fan Quantity/Type	1/Centrifugal	1/Centrifugal	1/Centrifugal	1/Centrifugal	1/Centrifugal
Fan Diameter (in.)	10x10	10x10	10x10	15x15	15x15
CONDENSER COIL					
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al	Cu/Al
Coil Type	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF
Rows/FPI	2/17	2/17	2/17	2/17	2/17
Total Face Area (ft²)	12.7	21.3	21.3	20.5	20.5
CONDENSER FAN/MOTOR					
Quantity/Motor Drive Type	1/Direct	1/Direct	1/Direct	1/Direct	2/Direct
Motor HP/RPM	1/8 / 825	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan Diameter (in.)	22	22	22	22	22
FILTERS					
RA Filter Qty / Size (in.)	2 / 16x25x2	1 / 16x16x2	4 / 16x16x2	4 / 16x20x2	4 / 16x20x2
OA Inlet Screen #/Size (in.)	1 / 20x24x1	1 / 20x24x1	1 / 20x24x1	1 / 20x36x1	1 / 20x36x1
ENERGYX RECOVERY WHEEL					
Type	Enthalpy Lightweight Polymer with Silica Gel Desiccant Coating				
Model (AirXchange)	ERC-1904	ERC-2513C	ERC-2513C	ERC-2513C	ERC-2513C
Size (Dia. X Depth) (in.)	19 x 1	25 x 3	25 x 3	25 x 3	25 x 3
Nominal Drive Motor HP	0.1	0.1	0.1	0.1	0.1
ENERGYX SUPPLY FAN #1					
Qty - Type	1 - Backward Curved	1 - Backward Curved	1 - Backward Curved	1 - Backward Curved	1 - Backward Curved
Drive Type	Direct	Direct	Direct	Direct	Direct
Blower Size (Diameter) [in. (mm)]	9.8 (250)	15.75 (400)	15.75 (400)	15.75 (400)	15.75 (400)
Nominal Motor HP	0.2	1.2	1.2	1.2	1.2
ENERGYX EXHAUST FAN #1					
Qty - Type	1 - Backward Curved	1 - Backward Curved	1 - Backward Curved	1 - Backward Curved	1 - Backward Curved
Drive Type	Direct	Direct	Direct	Direct	Direct
Blower Size [in. (mm)]	15.75 (400)	15.75 (400)	15.75 (400)	15.75 (400)	15.75 (400)
Nominal Motor Hp	1.2	1.2	1.2	1.2	1.2
ENERGYX WHEEL FILTERS					
TYPE	2-in. Pleated, 30% Efficiency				
Outside Air (Qty) - Size (in.)	(1) 10 x 20 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2
Exhaust Air (Qty) - Size (in.)	(1) 10 x 20 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2	(1) 16 x 25 x 2
TYPE	Aluminum Water Filter	Aluminum Water Filter	Aluminum Water Filter	Aluminum Water Filter	Aluminum Water Filter
Water Entrapment (Qty) - Size (in.)	(1) 28.75 x 12.25 x 1	(1) 28.75 x 14.75 x 1	(1) 28.75 x 14.75 x 1	(1) 35.75 x 15.25 x 1	(1) 35.75 x 15.25 x 1

LEGEND

BHP — Brake Horsepower
FPI — Fins Per Inch
OA — Outdoor Air
RA — Return Air
RTPF — Round Tube, Plate Fin
TXV — Thermostatic Expansion Valve
— — Not Available

Physical data (cont)

50HC 7.5 TO 12.5 TON PHYSICAL DATA

50HC UNIT	50HC**08	50HC**09	50HC**11	50HC**12	50HC**14
NOMINAL TONS	7.5	8.5	10	10	12.5
BASE UNIT OPERATING WT (lb)	925	925	1090	1090	1430
REFRIGERATION SYSTEM					
No. Circuits/No. Compressors/Type	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
Puron® Refrigerant Charge A/B (lb-oz)	9-10 / 9-10	9-14 / 9-14	12-10 / 13-0	12-11 / 12-5	16-7 / 15-5
Humidi-MiZer® Puron Refrigerant Charge A/B	17-0 / 17-0	15-2 / 15-2	18-0 / 18-0	18-3 / 17-3	25-8 / 22-8
Metering Device	TXV	TXV	TXV	TXV	TXV
High Pressure Trip/Reset (psig)	630 / 505	630 / 505	630 / 505	630 / 505	630 / 505
Low Pressure Trip/Reset (psig)	54 / 117	54 / 117	54 / 117	54 / 117	54 / 117
Compressor Capacity Staging (%)	50% / 100%	50% / 100%	50% / 100%	50% / 100%	50% / 100%
EVAPORATOR COIL					
Material (Tube Fin)	Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil Type	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF
Rows/FPI	4 / 15	4 / 15	4 / 15	4 / 15	4 / 15
Total Face Area (ft²)	11.1	11.1	11.1	11.1	17.5
Condensate Drain Connection Size	3/4-in.	3/4-in.	3/4-in.	3/4-in.	3/4-in.
HUMIDI-MIZER COIL					
Material (Tube Fin)	Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF	3/8-in. RTPF
Rows/FPI	2 / 17	2 / 17	2 / 17	2 / 17	1 / 17
Total Face Area (ft²)	6.3	8.4	8.6	8.6	13.8
EVAPORATOR FAN MOTOR					
STANDARD STATIC 3 PHASE					
Motor Quantity/Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	1.7	1.7	2.4	2.4	2.9
RPM Range	518-733	518-733	591-838	591-838	591-838
Motor Frame Size	56	56	56	56	56Y
Fan Quantity/Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in.)	15 x 15	15 x 15	15 x 15	15 x 15	18 x 18
MEDIUM STATIC 3 PHASE					
Motor Quantity/Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
Max BHP	2.4	2.4	3.7	3.7	3.7
RPM Range	690-936	690-936	838-1084	838-1084	609-778
Motor Frame Size	56	56	56HZ	56HZ	56HZ
Fan Quantity/Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Fan Diameter (in.)	15 x 15	15 x 15	15 x 15	15 x 15	18 x 18
HIGH STATIC 3 PHASE*					
Motor Quantity/Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	—
Max BHP	3.7	3.7	4.9	4.9	—
RPM Range	838-1084	838-1084	1022-1240	1022-1240	—
Motor Frame Size	56	56	145TY	145TY	—
Fan Quantity/Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	—
Fan Diameter (in.)	15 x 15	15 x 15	15 x 15	15 x 15	—
HIGH STATIC – HIGH EFFICIENCY 3 PHASE					
Motor Quantity/Drive Type	—	—	—	—	1 / Belt
Max BHP	—	—	—	—	6.5 / 6.9 / 7.0 / 8.3
RPM Range	—	—	—	—	776-955
Motor Frame Size	—	—	—	—	S184T
Fan Quantity/Type	—	—	—	—	1/Centrifugal
Fan Diameter (in.)	—	—	—	—	18 x 18

50HC 7.5 TO 12.5 TON PHYSICAL DATA (cont)

50HC UNIT	50HC**08	50HC**09	50HC**11	50HC**12	50HC**14
CONDENSER COIL					
Material (Tube/Fin)	Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil Type	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF
Rows/FPI	2 / 17	2 / 17	3 / 17	3 / 17	2 / 17
Total Face Area (ft²)	25.1	25.1	25.1	25.1	2 at 23.1
CONDENSER FAN/MOTOR					
Quantity/Motor Drive Type	2 / Direct	2 / Direct	1 / Direct ECM	1 / Direct	3 / Direct
Motor HP/RPM	1/4 / 1100	1/4 / 1100	1 / 1050	1 / 1175	3/4 / 1100
Fan Diameter	22	22	30	30	22
FILTERS					
RA Filter # / Size (in.)	4 / 20 x 20 x 2				6 / 18 x 24 x 2
OA Inlet Screen # / Size (in.)	1 / 20 x 24 x 1				V - 2 / 24 x 27 x 1 H - 1 / 30 x 39 x 1
ENERGYX UNIT TYPE	Modulating Air Flow Capacity				
ENERGYX WHEEL MAXIMUM AIRFLOW (CFM)	900-2000				
ENERGYX RECOVERY WHEEL					
Type	Enthalpy Lightweight Polymer with Silica Gel Desiccant Coating				
Model (AirXchange)	ERC-3019C	ERC-3019C	ERC-3019C	ERC-3019C	ERC-3628C
Size (dia x depth)	30 x 3	30 x 3	30 x 3	30 x 3	36 x 3
Nominal Drive Motor HP	.1	.1	.1	.1	1/20
ENERGYX SUPPLY FAN					
Qty - Type	1 — Backward Curve				
Drive Type	Direct	Direct	Direct	Direct	Direct
Blower Size (dia) [in. (mm)]	15.75 (400)	15.75 (400)	15.75 (400)	15.75 (400)	15.75 (400)
Nominal Motor HP	1.179	1.179	1.179	1.179	3.7
ENERGYX EXHAUST FAN					
Qty - Type	1 — Backward Curve				
Drive Type	Direct	Direct	Direct	Direct	Direct
Blower size [in. (mm)]	17.7 (450)	17.7 (450)	17.7 (450)	17.7 (450)	17.7 (450)
Nominal Motor HP	3.619	3.619	3.619	3.619	3.7
ENERGYX FILTERS					
Type	2-in. Pleated, 30% Efficiency				
Outside Air (Qty) - Size (in.)	(2) 16 x 16 x 2	(2) 16 x 16 x 2	(2) 16 x 16 x 2	(2) 16 x 16 x 2	(2) 20 x 24 x 2
Exhaust Air (Qty) - Size (in.)	(2) 16 x 16 x 2	(2) 16 x 16 x 2	(2) 16 x 16 x 2	(2) 16 x 16 x 2	(2) 20 x 24 x 2
Type	Aluminum Water Filter				
Water Entrapment (Qty) – Size (in.)	(1) 35.75 x 17.5 x 1	(1) 35.75 x 17.5 x 1	(1) 35.75 x 17.5 x 1	(1) 35.75 x 17.5 x 1	(1) 48.25 x 17.15 x 1

LEGEND

BHP — Brake Horsepower
EAT — Entering Air Temperature
ERV — Energy Recovery Ventilator
FPI — Fins Per Inch
OA — Outdoor Air
RA — Return Air

* Humidi-MiZer® models only.

Options and accessories

ITEM	OPTION*	ACCESSORY†
ENERGYX SYSTEM		
EnergyX	X	
EnergyX with Economizer	X	
EnergyX with Frost Protection	X	
EnergyX with Frost Protection and Economizer	X	
EnergyX Filter Maintenance Sensor		X
EnergyX Motor Status Sensor		X
CABINET		
Thru-the-base electrical connections	X	X
Hinged access panels	X	
Supply duct cover (Model 14 only)		X
Foil faced insulation throughout entire cabinet	X	
COIL OPTIONS		
Cu/Cu indoor and/or outdoor coils[1]	X	
Pre-coated outdoor coils[1]	X	
Premium, E-coated outdoor coils[1]	X	
HUMIDITY CONTROL		
Humidi-MiZer Adaptive Dehumidification System[1]	X	
CONDENSER PROTECTION		
Condenser coil hail guard (louvered design)[1]	X	X
CONTROLS		
Thermostats, temperature sensors, and subbases		X
PremierLink™ DDC communicating controller	X	X
RTU Open Multi-Protocol Controller	X	
*Comfort*Link Controls	X	
Smoke detector (supply and/or return air)	X	
Horn/Strobe Annunciator[10]		X
Time Guard II compressor delay control circuit		X
Phase Monitor		X
Condensate overflow switch	X	X
ECONOMIZERS AND OUTDOOR AIR DAMPERS		
EconoMi$er IV for electro-mechanical controls - Non FDD (Low air leak damper models)[1, 8]	X	X
EconoMi$er2 for DDC controls (Low Leak and Ultra Low Leak air damper models)[1, 9]	X	X
Motorized 2 position outdoor-air damper[1]	X	X
Manual outdoor-air damper (25% and 50%)		X
Barometric relief[2]	X	X
Power exhaust - prop design		X
EconoMi$er X for electro-mechanical controls, complies with FDD (Low Leak and Ultra Low Leak air damper models)[1, 8]	X	X

ITEM	OPTION*	ACCESSORY†
ECONOMIZER SENSORS AND IAQ DEVICES		
Single dry bulb temperature sensors[3]	X	X
Differential dry bulb temperature sensors[3]		X
Single enthalpy sensors[3]	X	X
Differential enthalpy sensors[3]		X
CO2 sensor (wall, duct, or unit mounted)[3]	X	X
ELECTRIC HEAT		
Electric Resistance Heaters	X	X
Single Point Kit	X	X
INDOOR MOTOR AND DRIVE		
Multiple motor and drive packages	X	
Staged Air Vol (SAV™) system w/VFD controller (2-stage cool only with electro-mechanical and RTU Open controls)	X	
Display Kit for SAV system with VFD		X
LOW AMBIENT CONTROL		
Winter start kit[4]		X
Motormaster head pressure controller to –20°F (–29°C)[4]		X
Cooling Low Ambient Controller to 0°F/ –18°C (except 11 size)[4]	X	
POWER OPTIONS		
Convenience outlet (powered)[1,5]	X	
Convenience outlet (unpowered)	X	
HACR circuit breaker[6]	X	
Non-fused disconnect[7]	X	
ROOF CURBS		
Roof curb 14-in. (356 mm)		X
Roof curb 24-in. (610 mm)		X

* Factory-installed option.

† Field-installed accessory.

1. Not available as factory-installed option on single phase (208/230/1/60) models. Use field-installed accessory where available.
2. Included with economizer.
3. Sensors used to optimize economizer performance, standard on all EnergyX economizers.
4. See application data for assistance.
5. Powered convenience outlet is not available on 11 size models with 460/3/60 or 575/3/60 voltage.
6. HACR circuit breaker cannot be used when unit MOCP electrical rating exceeds:
   04-12 sizes - 208/230/1/60 and 208/230/3/60 = 100 amps, 460/3/60 = 90 amps, 575/3/60 = 70 amps.
   14 size - 208/230/3/60 = 200 amps, 460/3/60 = 90 amps, 575/3/60 = 80 amps.
   HACR circuit breaker on 575 volt can only be used on Wye power supply. Delta power supply is prohibited. Carrier RTUBuilder automatically selects the amp limitations.
7. Non-fused disconnect switch (04-12 sizes) cannot be used when unit electrical rating exceeds:
   Without factory-installed electric heat:
   208/230/1/60 and 208/230/3/60 = 80 amps (FLA),
   460/3/60 and 575/3/60 = 80 amps (FLA).
   With factory-installed electric heat:
   208/230/1/60 and 208/230/3/60 = 100 amps (FLA),
   460/3/60 and 575/3/60 = 80 amps (FLA).
   Non-fused disconnect switch (14 size) cannot be used when unit electrical rating exceeds:
   Without factory-installed electric heat:
   208/230/3/60 = 115 amps (MCA)
   460/3/60 and 575/3/60 = 100 amps (FLA).
   With factory-installed electric heat:
   208/230/2/60 = 200 amps (FLA)
   460/3/60 and 575/3/60 = 100 amps (FLA). Carrier RTUBuilder automatically selects the amp limitations.
8. FDD - (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
9. Models with *Comfort*Link and RTU Open DDC controls comply with California Title 24 Fault Detection and Diagnostic (FDD). PremierLink in non FDD.
10. Requires a field-supplied 24V transformer for each application. See price pages for details.

Factory-Installed Options

Economizer (dry-bulb or enthalpy)

Economizers save money. They bring in fresh, outside air for ventilation and provide cool, outside air to cool your building. This is the preferred method of low-ambient cooling. When coupled to CO_2 sensors, economizers can provide even more savings by coupling the ventilation air to only that amount required.

Economizers are available, installed and tested by the factory, with either enthalpy or dry-bulb temperature inputs. Additional sensors are available as accessories to optimize the economizers. Economizers include a powered exhaust system to help equalize building pressures.

Economizers include gravity-controlled barometric relief that helps equalize building pressure and ambient air pressures. This can be a cost effective solution to prevent building pressurization. Economizers are available in ultra low leak and low leak versions. Economizers can be factory-installed or easily field-installed.

CO_2 Sensor

The CO_2 sensor works with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO_2 sensor detects their presence through increasing CO_2 levels and opens the economizer appropriately.

When the occupants leave, the CO_2 levels decrease, and the sensor appropriately closes the economizer. This intelligent control of the ventilation air, called Demand Controlled Ventilation (DCV), reduces the overall load on the rooftop, saving money. Also available as a field-installed accessory.

Smoke Detectors

Trust the experts. Smoke detectors make your application safer and your job easier. Carrier smoke detectors immediately shut down the rooftop unit when smoke is detected. They are available, installed by the factory, for supply air, return air, or both.

Louvered Hail Guards

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact. Also available as a field-installed accessory.

Convenience Outlet (powered or un-powered)

Reduce service and/or installation costs by including a convenience outlet in your specification. Carrier will install this service feature at our factory. Provides a convenient, 15 amp, 115v GFCI receptacle with "Wet in Use" cover. The "powered" option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The "unpowered" option is to be powered from a separate 115/120v power source.

Non-fused Disconnect

This OSHA-compliant, factory-installed, safety switch allows a service technician to locally secure power to the rooftop. When selecting a factory-installed non-fused disconnect, note they are sized for the unit as ordered from the factory. The sizing of these do not accommodate field-installed items such as power exhaust devices, etc. If field installing electric heat with factory-installed non-fused disconnect switch, a single point kit may or may not be required.

PremierLink™ DDC Controller

This CCN (Carrier Comfort Network®) controller regulates your rooftop's performance to tighter tolerances and expanded limits, as well as facilitating zoning systems and digital accessories. It also unites your Carrier HVAC equipment together on one, coherent CCN network. The PremierLink controller can be factory-installed, or easily field-installed.

RTU Open, Multi-Protocol Controller

Connect the rooftop to an existing BAS (building automation system) without needing complicated translators or adapter modules using the RTU Open controller. The RTU Open controller speaks the 4 most common building automation system languages (BACnet[1], Modbus[2], N2, and LonWorks[3]). Use this controller when you have an existing BAS. Besides the 4 protocols, it also communicates with a Carrier Open system (i-Vu® and VVT).

Motorized 2-Position Damper

The Carrier 2-position, motorized outdoor air damper admits up to 100% outside air. Using reliable, gear-driven technology, the 2-position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration.

Manual OA Damper

Manual outdoor air dampers are an economical way to bring in ventilation air. The dampers are available in 25% and 50% versions.

Optional Humidi-MiZer® Adaptive Dehumidification System

Carrier's Humidi-MiZer adaptive dehumidification system is an all-inclusive factory-installed option that can be ordered with any WeatherMaster® 50HC04-14 rooftop unit, with the exception of single phase voltage (208-230/1/60) units.

This system expands the envelope of operation of Carrier's WeatherMaster rooftop products to provide unprecedented flexibility to meet year round comfort conditions.

The Humidi-MiZer adaptive dehumidification system has a unique dual operational mode setting. The Humidi-MiZer system provides greater dehumidification of the occupied space by two modes of dehumidification operations in addition to its normal design cooling mode.

The WeatherMaster 50HC04-14 rooftop coupled with the Humidi-MiZer system is capable of operating in normal design cooling mode, subcooling mode, and hot gas reheat mode. Normal design cooling mode is when the unit will operate under its normal sequence of operation by cycling compressors to maintain comfort conditions.

Subcooling mode will operate to satisfy part load type conditions when the space requires combined sensible and a higher proportion of latent load control. Hot Gas Reheat mode will operate when outdoor temperatures diminish and the need for latent capacity is required for sole humidity control. Hot Gas Reheat mode will provide neutral air for maximum dehumidification operation.

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1. BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).
2. Modbus is a registered trademark of Schneider Electric.
3. LonWorks is a registered trademark of Echelon Corporation.

Options and accessories (cont)

Staged Air Volume (SAV™) Indoor Fan Speed System

Carrier's Staged Air Volume (SAV) system saves energy and installation time by utilizing a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed in sequence with the units cooling operation. Per ASHRAE 90.1 standard, during the first stage of cooling operation, the VFD will adjust the fan motor to provide 66% of the total cfm established for the unit. When a call for the second stage of cooling is required, the VFD will allow the total cfm for the unit established (100%). During the heating mode, the VFD will allow total design cfm (100%) operation and during the ventilation mode, the VFD will allow operation to 66% of total cfm. Units size 07-14 meet ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers), DOE-2018 (Department of Energy), and IECC-2015 (International Energy Conservation Code) minimum efficiency requirements when equipped with SAV system.

Compared to single speed indoor fan motor systems, Carrier's SAV system can save substantial energy (25%+) versus single speed indoor fan motor systems.

IMPORTANT: Data based on 0.10 ($/kWh) in an office application utilizing Carrier's HAP 4.6 simulation software program.

The VFD used in Carrier's SAV system has soft start capabilities to slowly ramp up the speeds, thus eliminating any high inrush air volume during initial start-up. It also has internal overcurrent protection for the fan motor and a field-installed display kit that allows adjustment and in depth diagnostics of the VFD.

This SAV system is available on models with 2-stage cooling operation with electro-mechanical or RTU Open (multi protocol) controls. Both space sensor and conventional thermostats controls can be used to provide accurate control in any application.

The SAV system is very flexible for initial fan performance set up and adjustment. The standard factory shipped VFD is pre-programmed to automatically stage the fan speed between the first and second stage of cooling. The unit fan performance static pressure and cfm can be easily adjusted using the traditional means of pulley adjustments. The other means to adjust the unit static and cfm performance is to utilize the field-installed display kit and adjust the frequency and voltage in the VFD to required performance requirements. In either case, once set up, the VFD will automatically adjust the speed between the cooling stage operations.

A display kit for the SAV is available as a field-installed accessory.

Hinged Access Panels

Allows access to unit's major components with specifically designed hinged access panels. Panels allow access to: filter, control box, fan motor and compressor.

Alternate Motors and Drives

Some applications need larger horsepower motors, some need more airflow, and some need both. Regardless of the case, your Carrier expert has a factory-installed combination to meet your application. A wide selection of motors and pulleys (drives) are available, factory-installed, to handle nearly any application.

Thru-the-Base Connections

Thru-the-base connections, available as either an accessory or as a factory option, are necessary to ensure proper connection and seal when routing wire and piping through the rooftop's basepan and curb. These couplings eliminate roof penetration and should be considered for main power lines, as well as control power.

Electric Heaters

Carrier offers a full-line of factory and field-installed accessory heaters. The heaters are very easy to use, install and are all pre-engineered and certified.

*Comfort*Link Controls

Models with the optional Carrier *Comfort*Link Controls allow added unit diagnostics and operation setup capabilities. *Comfort*Link comes standard with units equipped with EnergyX® system.

The *Comfort*Link control is your link to a world of simple and easy to use rooftop units that offer outstanding performance and value. It optimizes the performance of the refrigeration circuits as conditions change, resulting in the following features:

- Better control of temperature and humidity
- Superior reliability
- Automatic redundancy
- Low ambient cooling operation to 0°F (–18°C)
- More accurate diagnostics, at unit or remote

The *Comfort*Link Scrolling Marquee is very easy to use. The messages are displayed in easy to understand English; no decoding is required. A scrolling readout provides detailed explanations of control information. Only four, large, easy-to-use buttons are required to maneuver through the entire menu. The readout is designed to be visible even in the brightest sunlight. A handheld Navigator™ accessory or wall-mounted System Pilot™ accessory can be used for added service flexibility.

The *Comfort*Link control provides unparalleled service diagnostic information. Temperature and pressure can be read directly from the display with no need for separate gages. Other data, such as compressor cycles, unit run time hours, current alarms, can also be accessed. A history of alarms is also available for viewing.

The service run test can be very helpful when troubleshooting. The user can run test major components to determine the root cause of a problem. The unit can be run-tested before an installation is complete to ensure satisfactory start-up. To ensure reliability, the *Comfort*Link control prevents reverse compressor rotation. No laptop computers are required for start-up.

Time schedules are built in and the Scrolling Marquee display provides easy access to setpoints. The *Comfort*Link control accepts input from a CO_2 sensor and a smoke detector. Both are available as factory-installed options or as field-installed accessories.

HACR Breaker

These manual reset devices provide overload and short circuit protection for the unit. Factory wired and mounted with the units with access cover to help provide protection from the environment.

On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.

Foil Faced Insulated Cabinet

Cabinet is fully insulated with non-fibrous, foil faced cleanable insulation that is mechanically secured and encapsulated in unit design.

Low Ambient Controller

The low ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to 0°F (–18°C) ambient conditions. (Not available on 11 size models as standard unit cooling operation down to 0°F /–18°C.)

Condensate Overflow Switch

(Factory-Installed Option) This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:

- Indicator light - solid red (more than 10 seconds on water contact - compressors disabled), blinking red (sensor disconnected)
- 10 second delay to break - eliminates nuisance trips from splashing or waves in pan (sensor needs 10 seconds of constant water contact before tripping)
- Disables the compressor(s) operation when condensate plug is detected, but still allows fans to run for Economizer.

EnergyX ® System

EnergyX System is a factory-installed Energy Recovery Ventilator (ERV) module on a Carrier packaged rooftop unit. It is integrated with the base rooftop unit structurally, electrically and with regard to controls operation.

EnergyX with Economizer (3-phase models only)

Allows true modulating economizer capability when OA is suitable for free cooling.

- operates as a true wheel bypass
- uses stop/jog operation for wheel required when using CO_2 sensor for DCV operation
- economizer integrated into EnergyX unit

EnergyX with Frost Protection (3-phase models only)

Senses pressure differential across the energy recovery cassette. Uses exhaust air to defrost the wheel when necessary.

California OSHPD Seismic Certification Label

Units meet the seismic requirements of the International Code Council Evaluation Service (ICC-ES) document AC156 (Acceptance Criteria for Seismic Qualification by Shake-Table Testing of Nonstructural Components and Systems) and per International Building Code (IBC 2009) at an SDS (g) value of 2.00 z/h=1.0, Ip=1.5 and certified by independent structural engineers. A certification label is applied to the unit that meets the CA OSHPD Special Seismic Certification pre-approval labeling requirements on the external chassis of the unit.

OSHPD not available on units with factory-installed Humidi-MiZer®, HACR breaker, low ambient controls, hail guards, or EnergyX system.

Options and accessories (cont)

Field-Installed Accessories

Motormaster® Head Pressure Controller

The Motormaster motor controller is a low ambient, head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling, not when economizer usage is either not appropriate or desired. The Motormaster controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model.

Motormaster controller allows cooling operation down to –20°F (–29°C) ambient conditions.

Power Exhaust

Superior internal building pressure control. This field-installed accessory may eliminate the need for costly, external pressure control fans.

Time Guard II Control Circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with PremierLink™ controller, RTU Open controller, or authorized commercial thermostats.

Winter Start Kit

The winter start kit by Carrier extends the low ambient limit of your rooftop to 25°F (–4°C). The kit bypasses the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

OPTIONS AND ACCESSORY WEIGHTS

OPTION / ACCESSORY NAME	50HC UNIT WEIGHT																	
	04		05		06		07		08		09		11		12		14	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
EnergyX® System	464	210	560	254	650	295	670	304	869	394	869	394	869	394	869	394	1155	524
Humidi-MiZer® System*	50	23	55	25	55	25	80	36	80	36	80	36	85	39	85	39	90	41
Power Exhaust - Vertical	50	23	50	23	50	23	75	34	75	34	75	34	75	34	75	34	85	39
Power Exhaust - Horizontal	30	14	30	14	30	14	30	14	30	14	30	14	30	14	30	14	75	34
EconoMi$er® (X, IV or 2)	50	23	50	23	50	23	75	34	75	34	75	34	75	34	75	34	132	60
Two Position damper	39	18	39	18	39	18	58	26	58	26	58	26	58	26	58	26	65	29
Manual Dampers	12	5	12	5	12	5	18	8	18	8	18	8	18	8	18	8	25	11
Hail Guard (louvered)	16	7	16	7	16	7	34	15	34	15	34	15	34	15	34	15	45	20
Cu/Cu Condenser Coil	35	16	35	16	35	16	95	43	95	43	95	43	170	77	170	77	190	86
Cu/Cu Cond. & Evap. Coils	60	27	60	27	90	41	140	64	140	64	195	88	270	122	270	122	280	127
Roof Curb (14-in. curb)	115	52	115	52	115	52	143	65	143	65	143	65	143	65	143	65	180	82
Roof Curb (24-in. curb)	197	89	197	89	197	89	245	111	245	111	245	111	245	111	245	111	255	116
CO_2 sensor	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Optional Indoor Motor/Drive	10	5	10	5	10	5	15	7	15	7	15	7	15	7	15	7	45	20
Motormaster® Controller	35	16	35	16	35	16	35	16	35	16	35	16	35	16	35	16	40	18
Low Ambient Controller	5	2	5	2	5	2	5	2	5	2	5	2	8	3	10	5	30	14
Return Smoke Detector	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Supply Smoke Detector	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Fan/Filter Status Switch	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Non-Fused Disconnect	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7
HACR Circuit Breaker	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7
Powered Convenience Outlet	35	16	35	16	35	16	35	16	35	16	35	16	35	16	35	16	35	16
Non-Powered Convenience Outlet	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2	5	2
Enthalpy Sensor	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1
SAV System with VFD	—	—	—	—	—	—	20	9	20	9	20	9	20	9	20	9	20	9

LEGEND

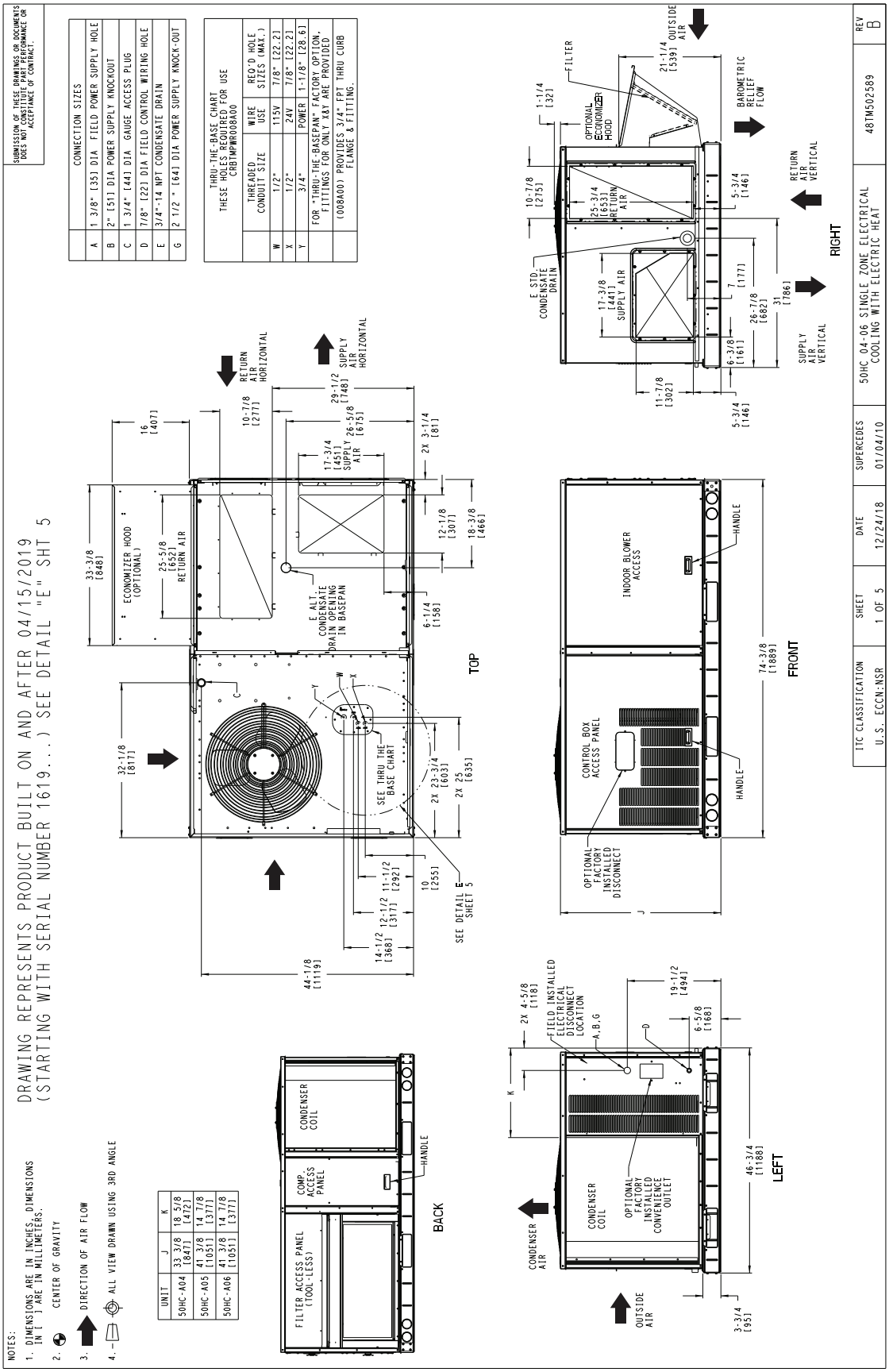
— Not Available

* For Humidi-MiZer system and Motormaster controller.

NOTE: Where multiple variations are available, the heaviest combination is listed.

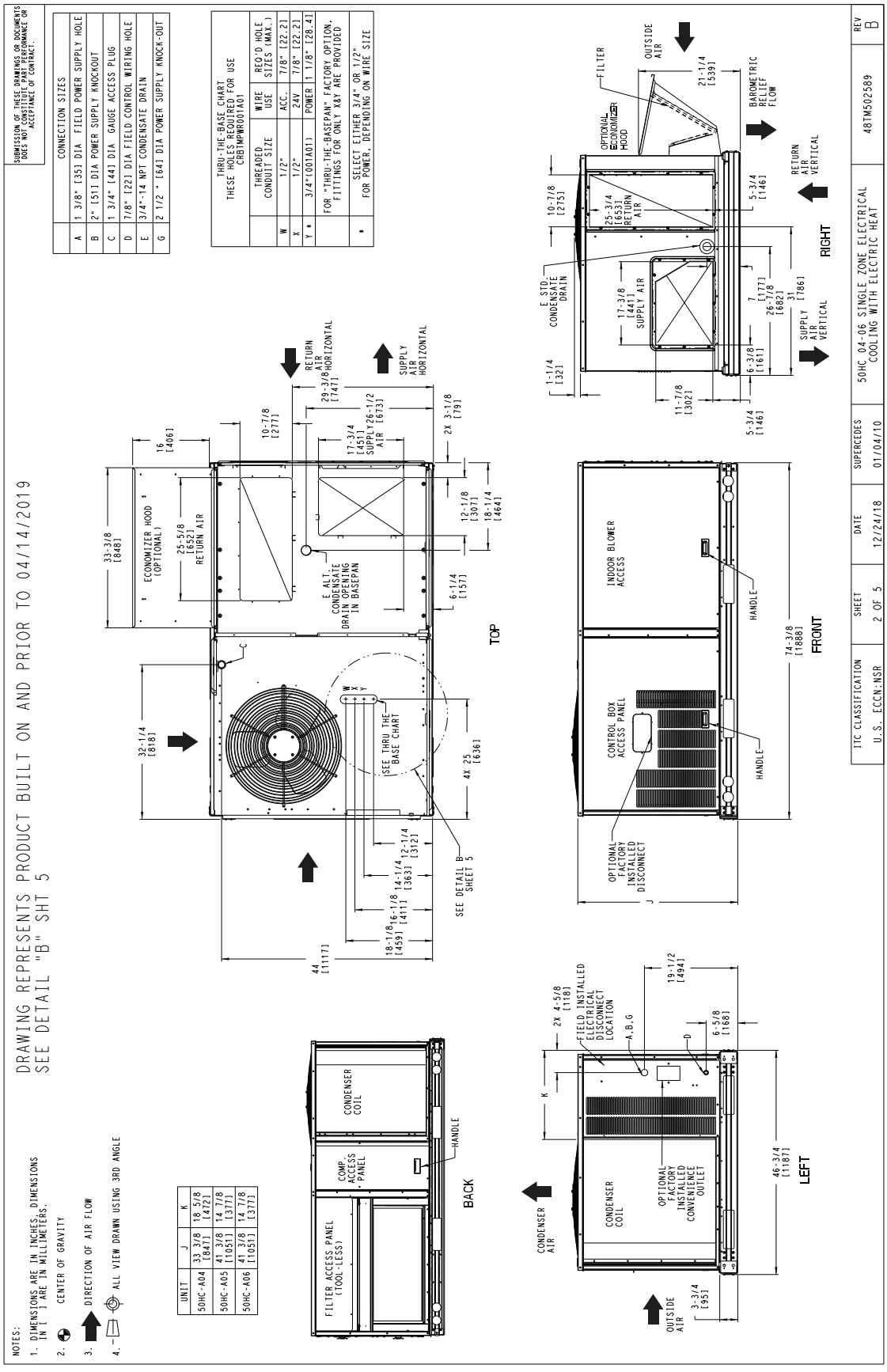
Base unit dimensions

DIMENSIONAL DRAWING OF 50HC**04-06 UNITS BUILT ON AND AFTER 4/15/2019



Base unit dimensions (cont)

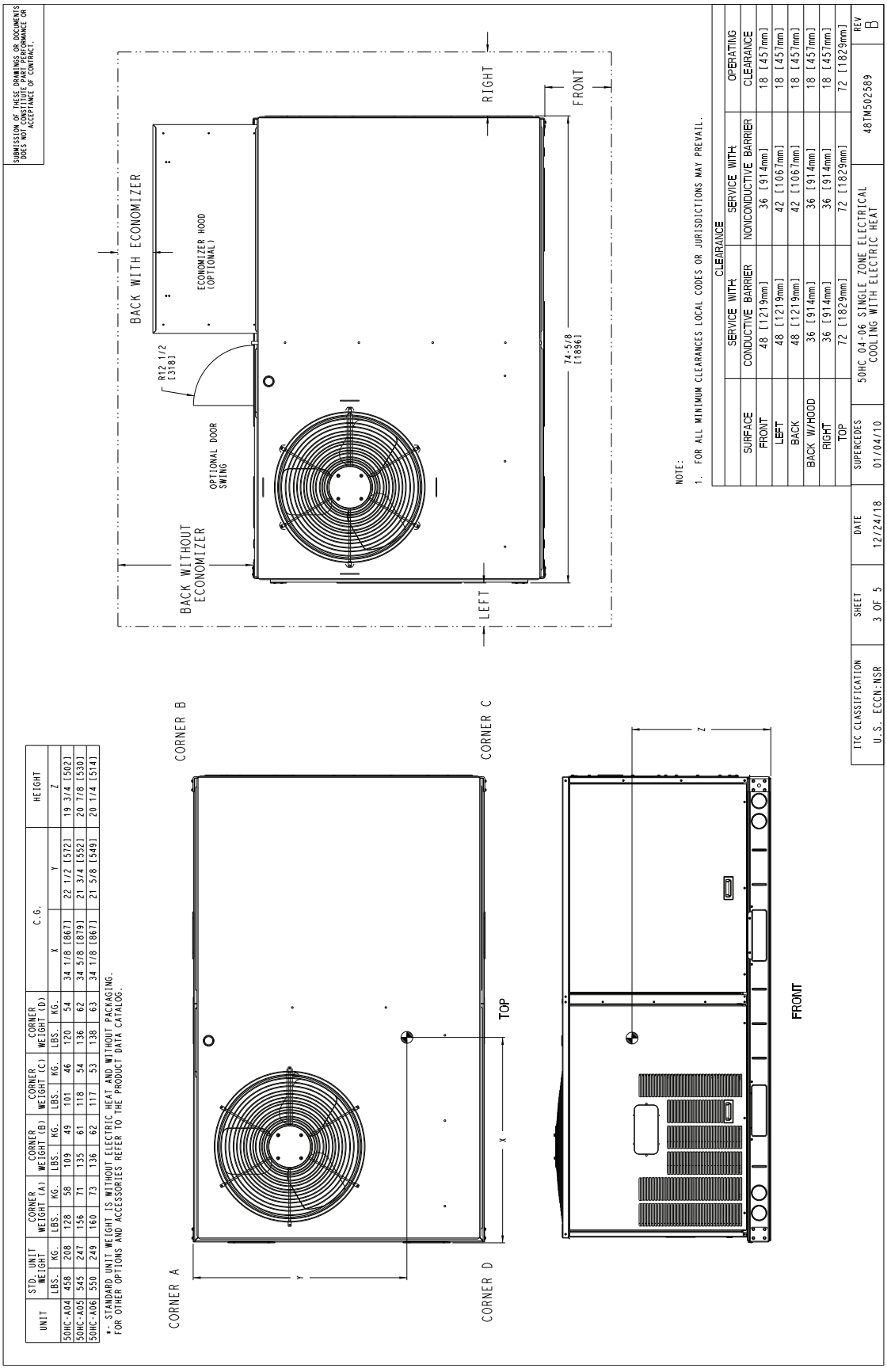
DIMENSIONAL DRAWING OF 50HC**04-06 UNITS BUILT PRIOR TO 4/15/2019



50HC**04-06 CORNER WEIGHTS AND CLEARANCES

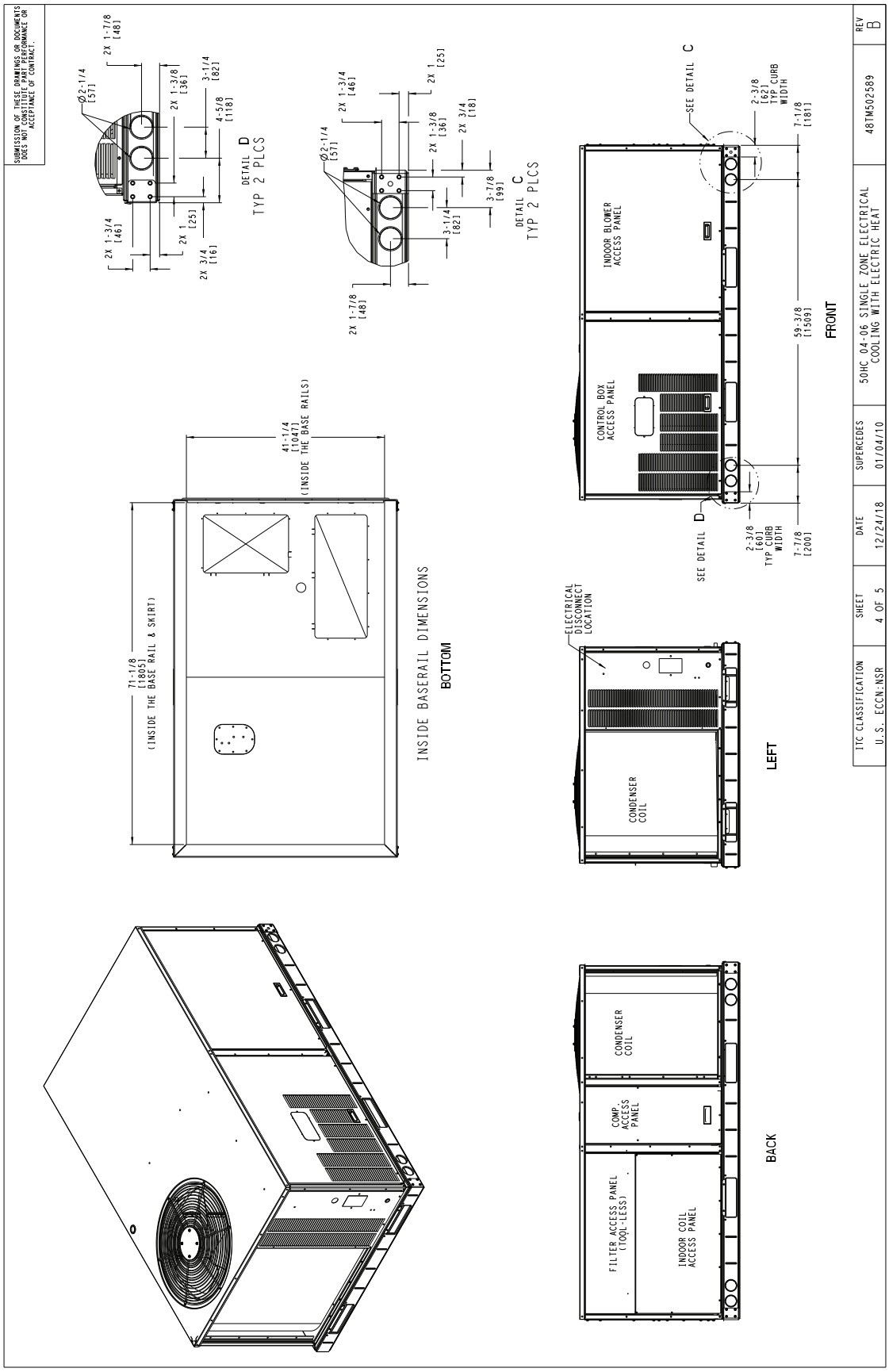
UNIT	STD. UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC-A04	458	208	128	58	109	49	101	46	120	54	34 1/8 [867]	22 1/2 [572]	19 3/4 [502]
50HC-A05	545	247	156	71	135	61	118	54	136	62	34 5/8 [879]	21 3/4 [552]	20 7/8 [530]
50HC-A06	550	249	160	73	136	62	117	53	138	63	34 1/8 [867]	21 5/8 [549]	20 1/4 [514]

* - STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.

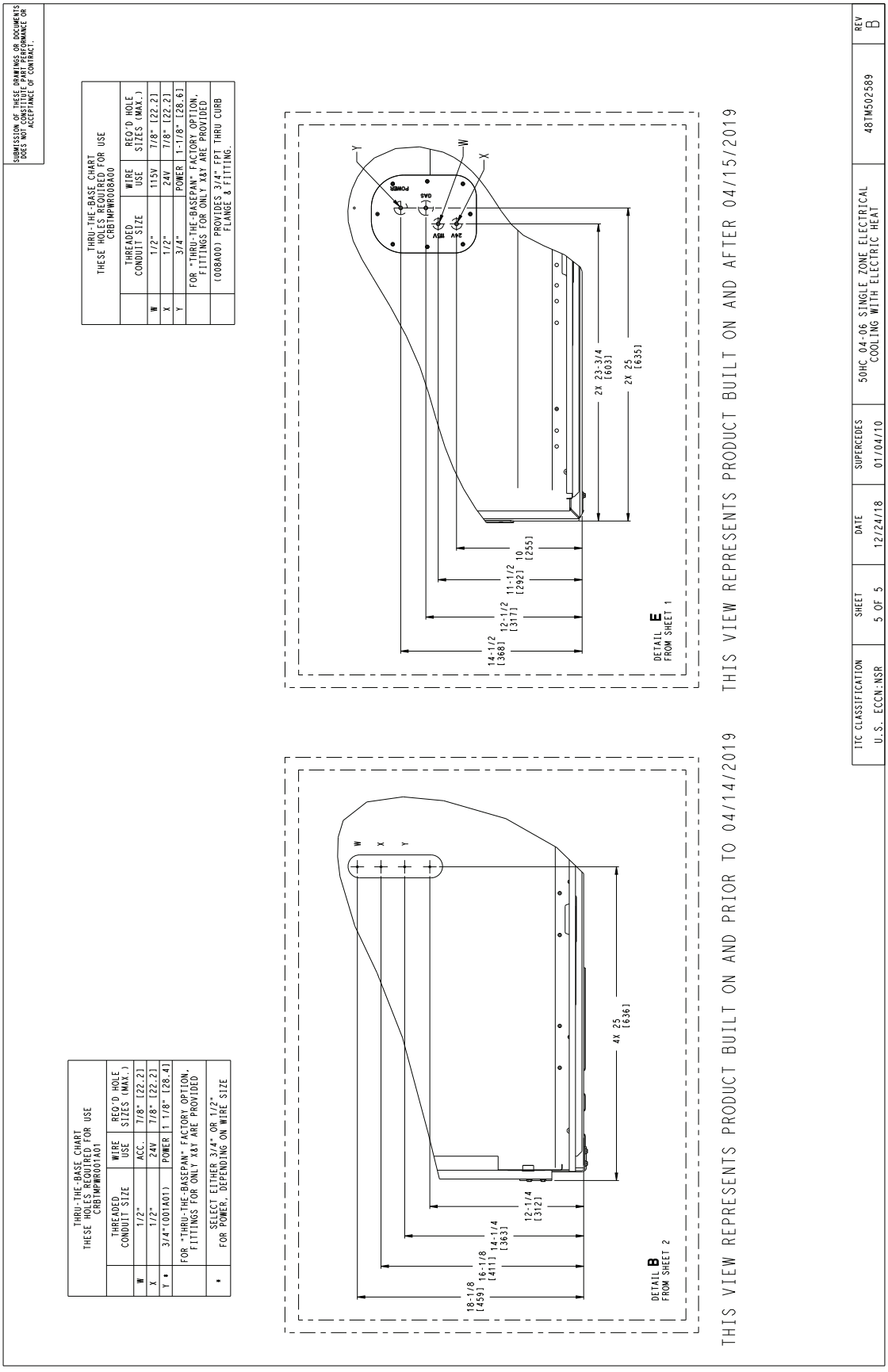


Base unit dimensions (cont)

50HC**04-06 BASE RAIL DETAILS

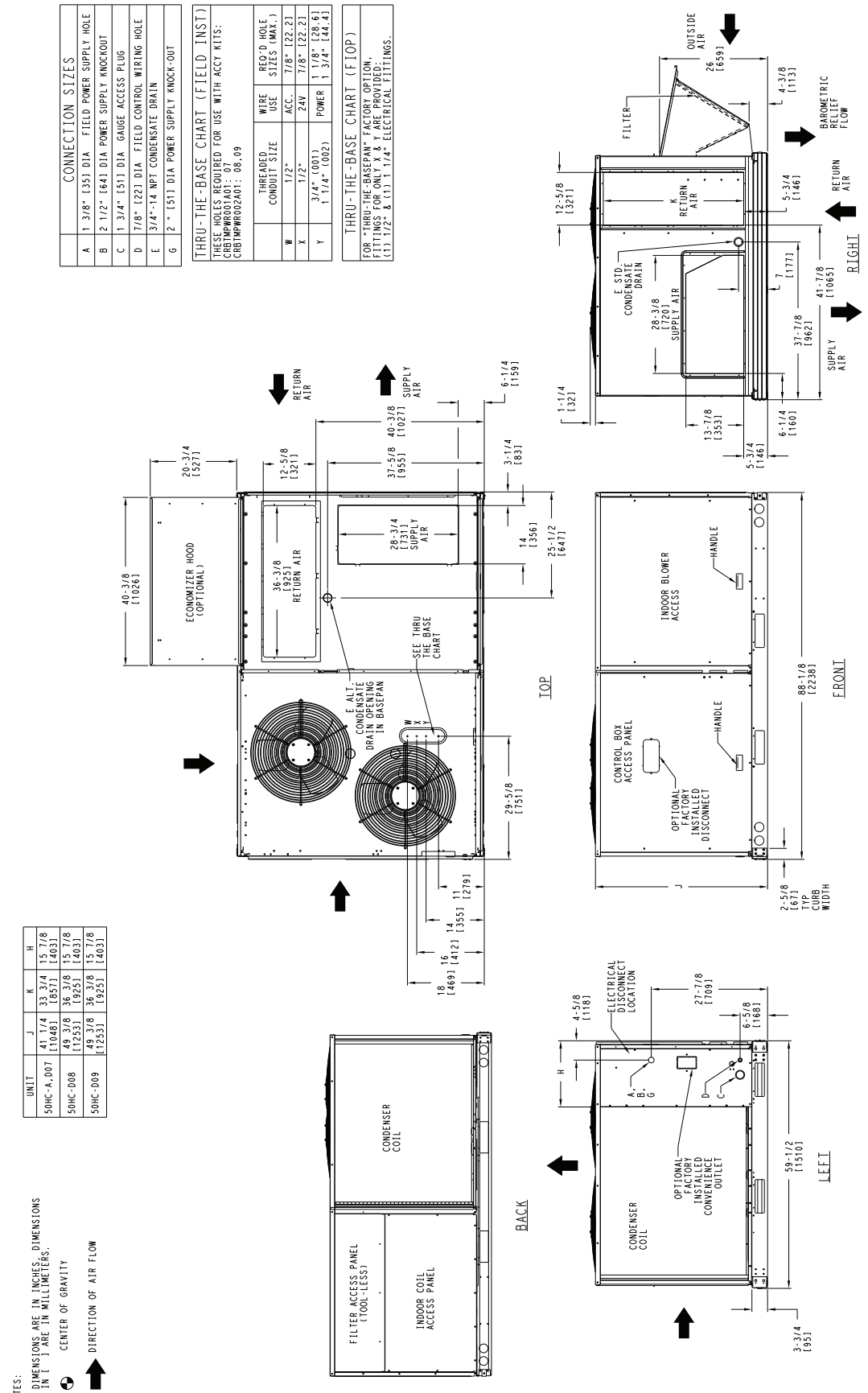


50HC**04-06 THRU-THE-BASE CHARTS



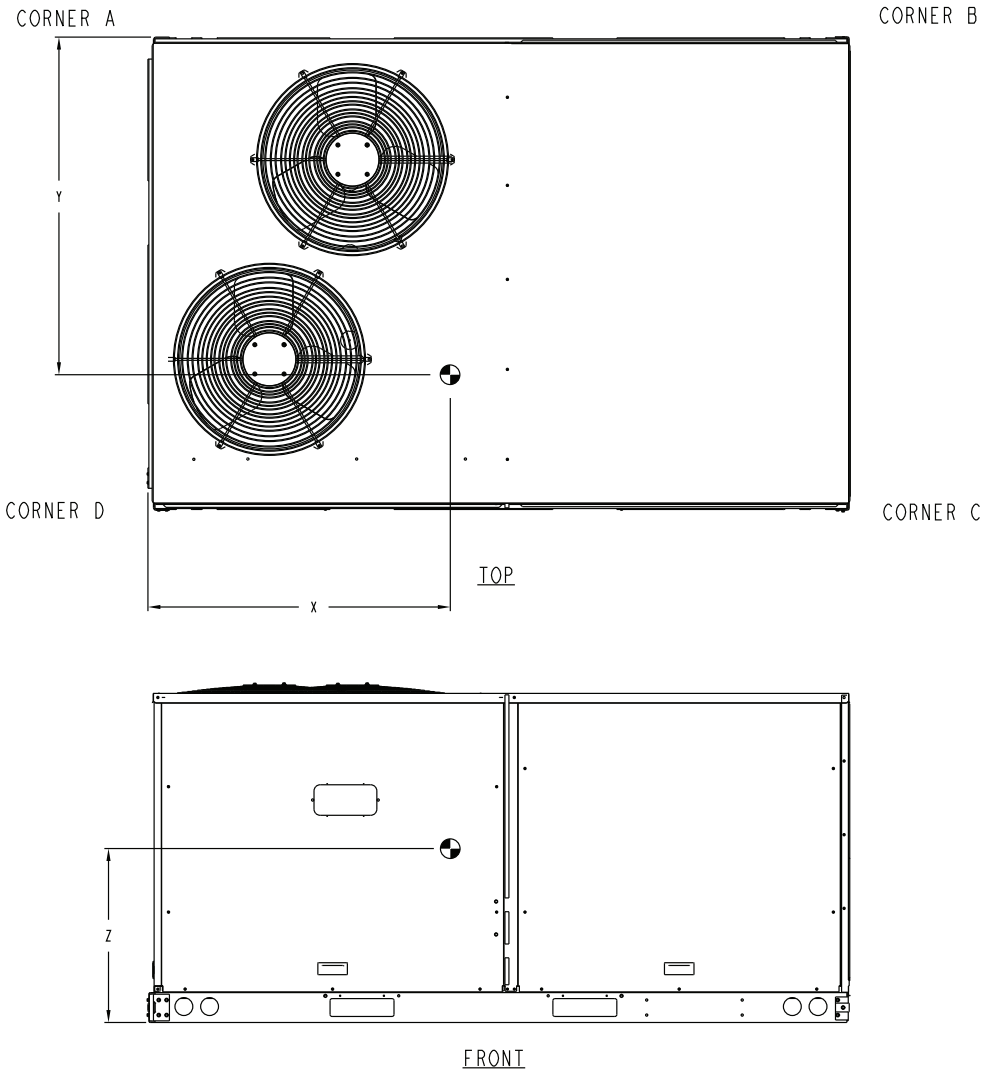
Base unit dimensions (cont)

50HC**07-09 BASE UNIT DIMENSIONS



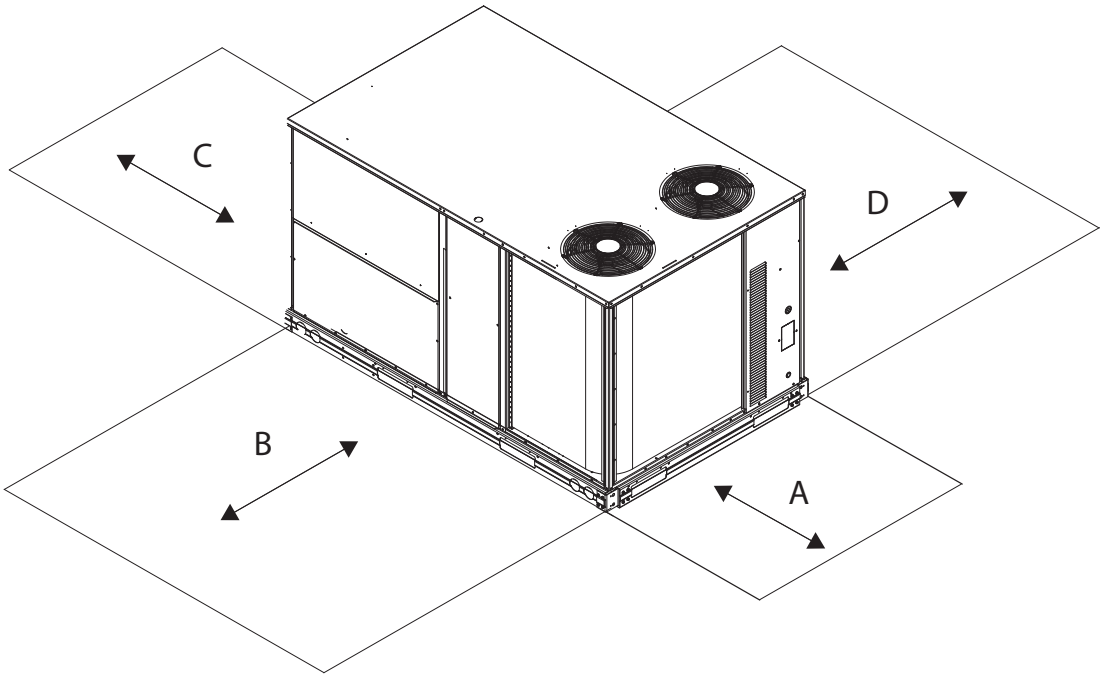
50HC**07-09 CORNER WEIGHTS

UNIT	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC-A,D07	715	324.3	161.3	73.2	142.4	64.6	192.9	87.5	218.5	99.1	41 3/8 [1051]	34 1/4 [870]	20 1/2 [521]
50HC-D08	860	390	199.4	90.4	176.4	80	227.3	103	256.9	116.5	41 3/8 [1051]	33 1/2 [851]	23 3/4 [603]
50HC-D09	860	390	199.4	90.4	176.4	80	227.3	103	256.9	116.5	41 3/8 [1051]	33 1/2 [851]	23 3/4 [603]



Base unit dimensions (cont)

50HC07-09 — SERVICE CLEARANCES**



LOCATION	DIMENSION (in. [mm])	CONDITION
A	48 (1219) 18 (457) 18 (457) 12 (305)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	42 (1067) 36 (914) Special	Surface behind servicer is grounded (e.g., metal, masonry wall) Surface behind servicer is electrically non-conductive (e.g. wood, fiberglass) Check for sources of flue products within 10 ft. of unit fresh air intake hood.
C	36 (914) 18 (457)	Side condensate drain is used Minimum clearance
D	42 (1067) 36 (914)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

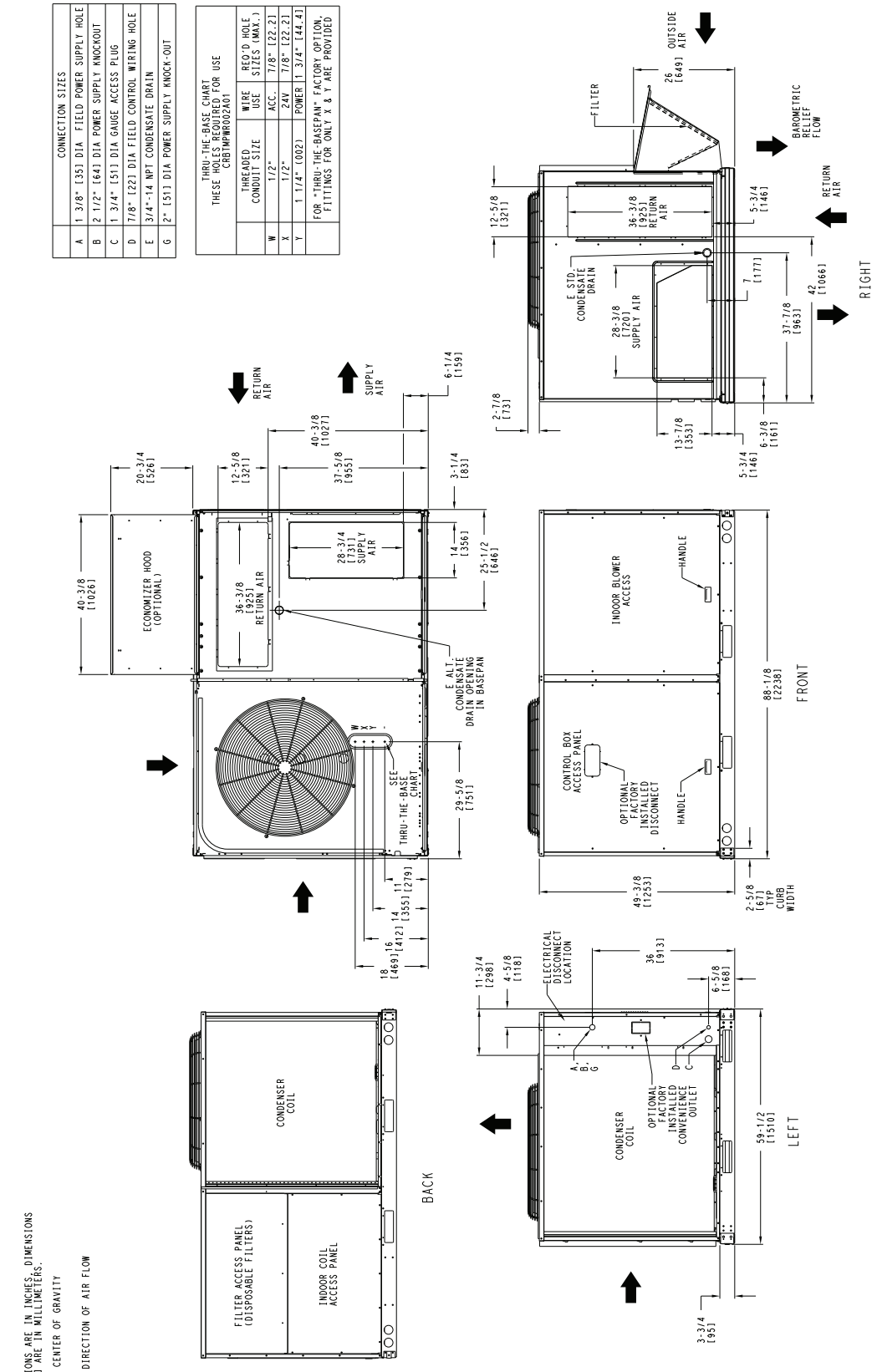
NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

50HC**11-12 BASE UNIT DIMENSIONS

	CONNECTION SIZES
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2" [51] DIA POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART
THESE HOLES REQUIRED FOR USE CRBTMPWR002A01

	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	1 1/4" (002)	POWER	1 3/4" [44.4]
	FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED		

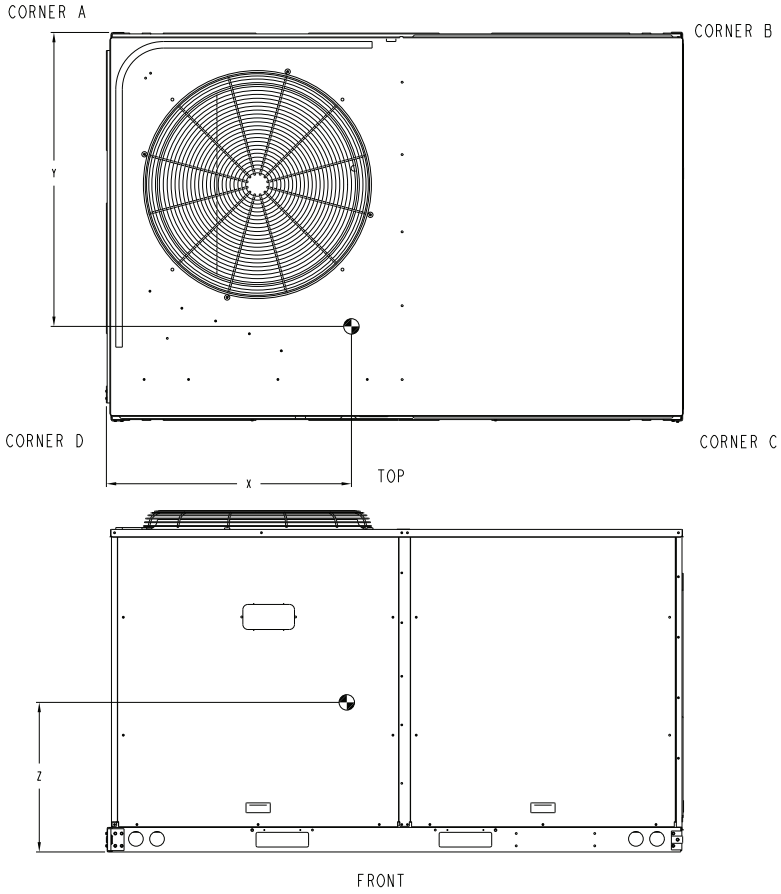


NOTES:
1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW

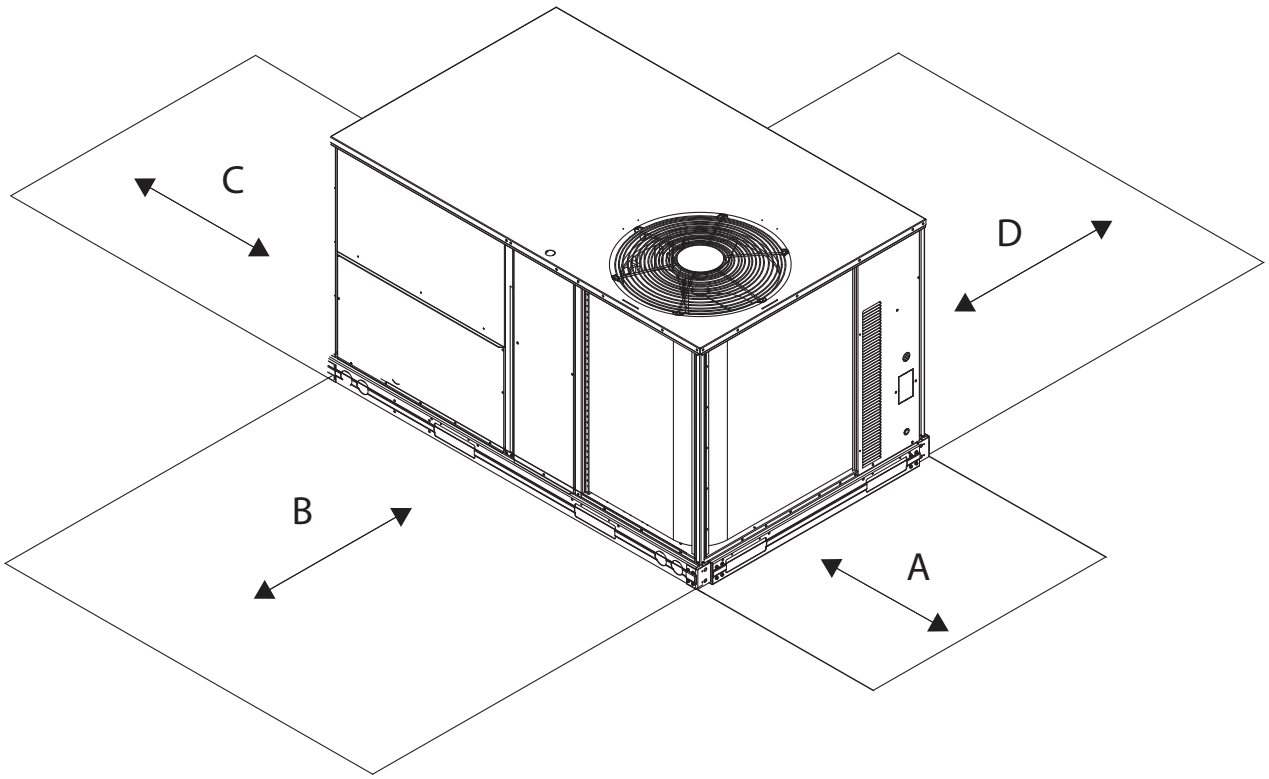
Base unit dimensions (cont)

50HC**11-12 CORNER WEIGHTS

UNIT	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC-D12	1025	466	308	140	146	66	184	84	387	176	28 3/8 [721]	33 1/8 [841]	21 3/8 [543]
50HC-D11	1025	466	308	140	146	66	184	84	387	176	28 3/8 [721]	33 1/8 [841]	21 3/8 [543]



50HC**11-12 — SERVICE CLEARANCES

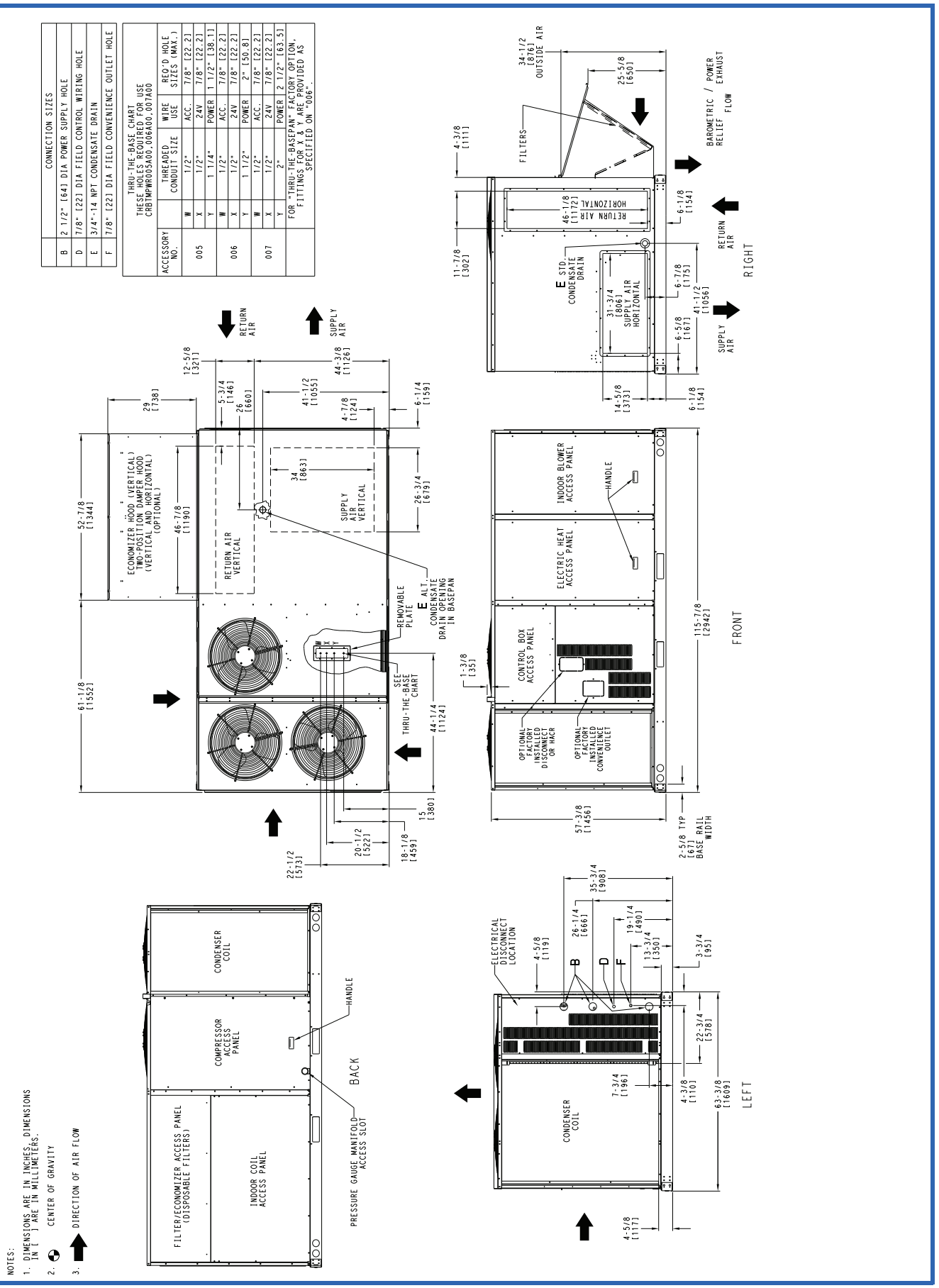


LOCATION	DIMENSION (in. [mm])	CONDITION
A	48 (1219) 18 (457) 18 (457) 12 (305)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	42 (1067) 36 (914) Special	Surface behind servicer is grounded (e.g., metal, masonry wall) Surface behind servicer is electrically non-conductive (e.g. wood, fiberglass) Check for sources of flue products within 10 ft. of unit fresh air intake hood.
C	36 (914) 18 (457)	Side condensate drain is used Minimum clearance
D	42 (1067) 36 (914)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

Base unit dimensions (cont)

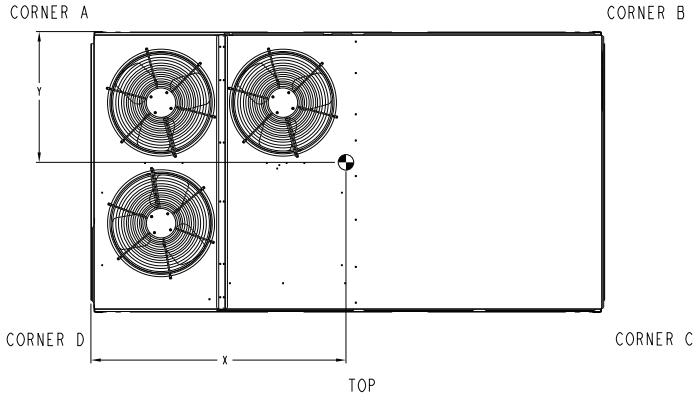
50HC**14 BASE UNIT DIMENSIONS

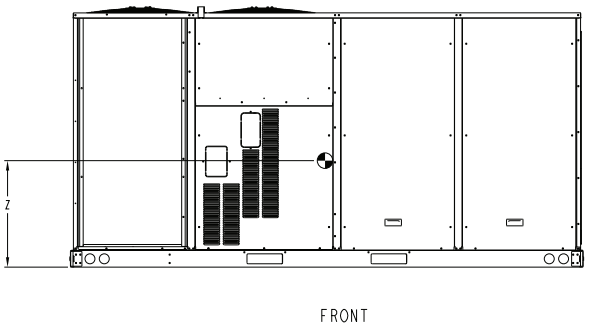


50HC**14 CORNER WEIGHTS

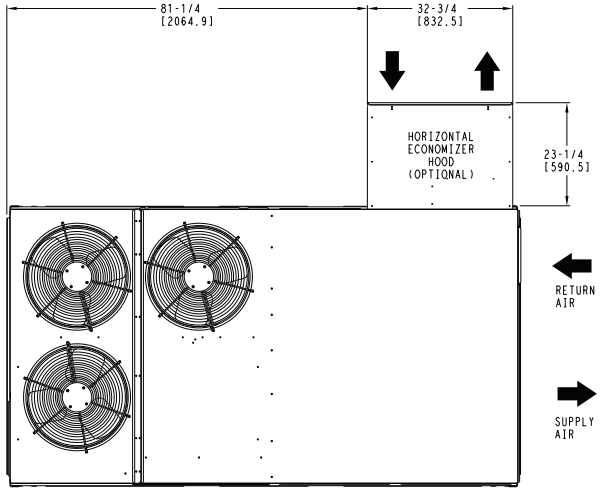
UNIT	STD UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC 14	1360	617	335	151	361	164	344	156	320	145	60 1/8 [1527]	31 [787]	21 1/8 [536]

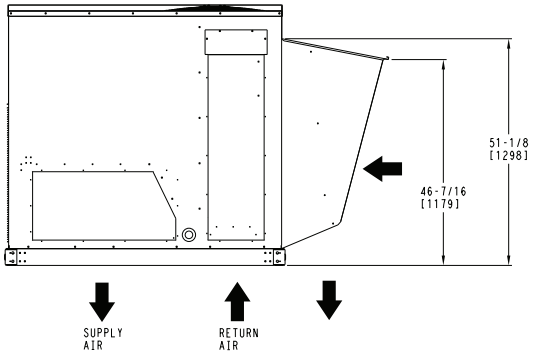
STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT & WITHOUT PACKAGING.
FOR OPTIONS & ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.





VERTICAL ECONOMIZER

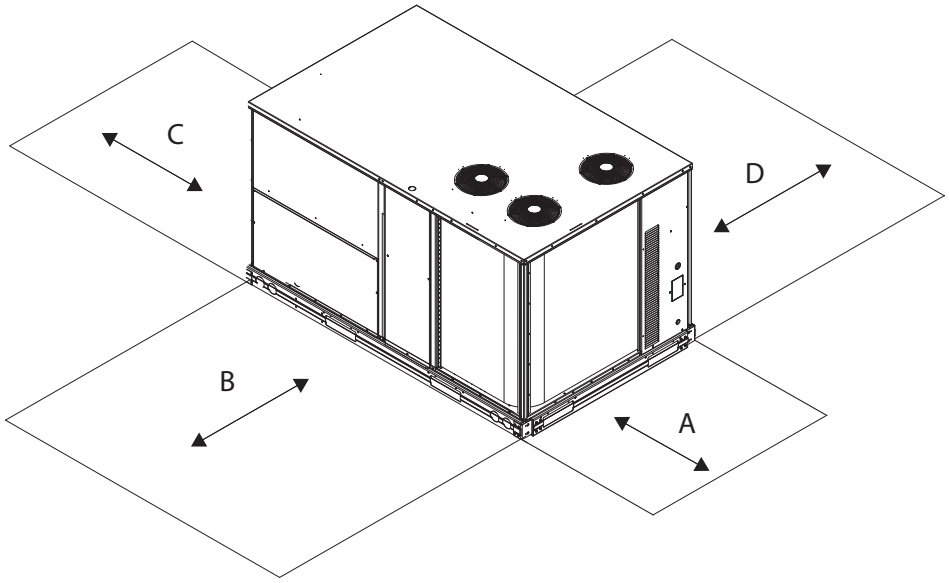




HORIZONTAL ECONOMIZER

Base unit dimensions (cont)

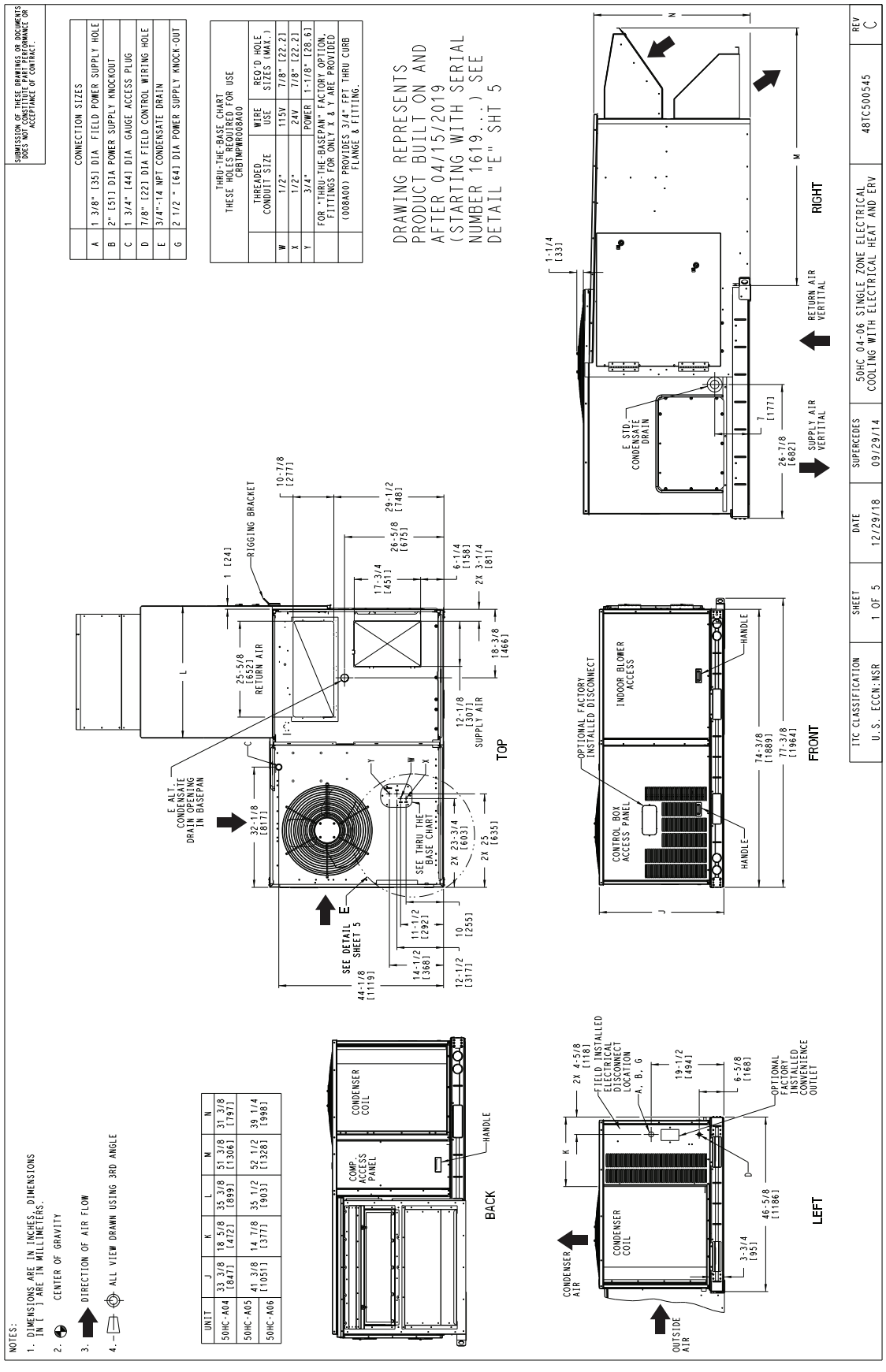
50HC14 — SERVICE CLEARANCES**



LOCATION	DIMENSION (in. [mm])	CONDITION
A	48 (1219) 18 (457) 18 (457) 12 (305)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	42 (1067) 36 (914) Special	Surface behind servicer is grounded (e.g., metal, masonry wall) Surface behind servicer is electrically non-conductive (e.g. wood, fiberglass) Check for sources of flue products within 10 ft. of unit fresh air intake hood.
C	36 (914) 18 (457)	Side condensate drain is used Minimum clearance
D	42 (1067) 36 (914)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

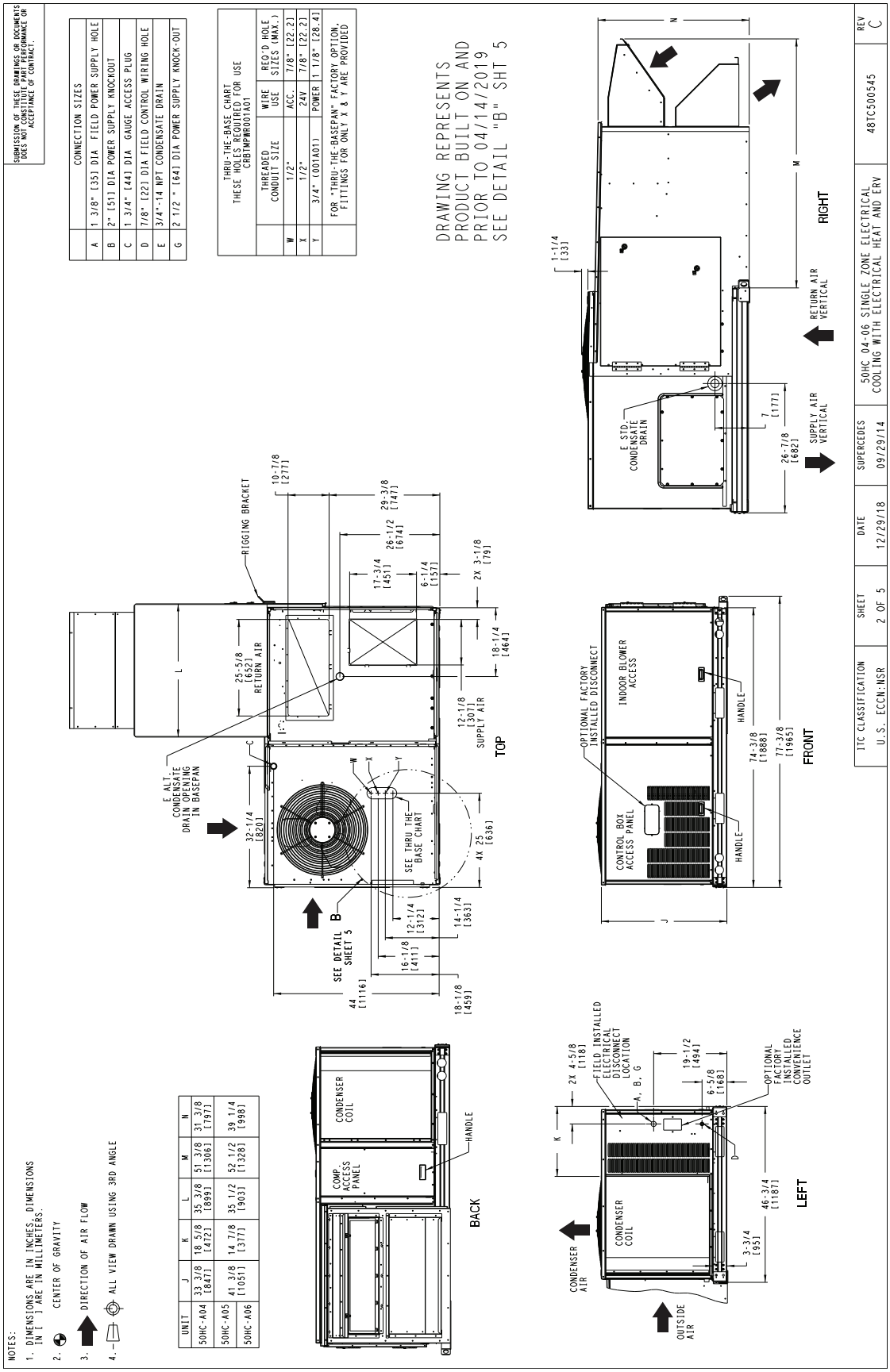
NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

DIMENSIONAL DRAWING FOR 50HC**04-06 UNITS WITH EnergyX SYSTEM BUILT ON OR AFTER 4/15/2019



Base unit dimensions (cont)

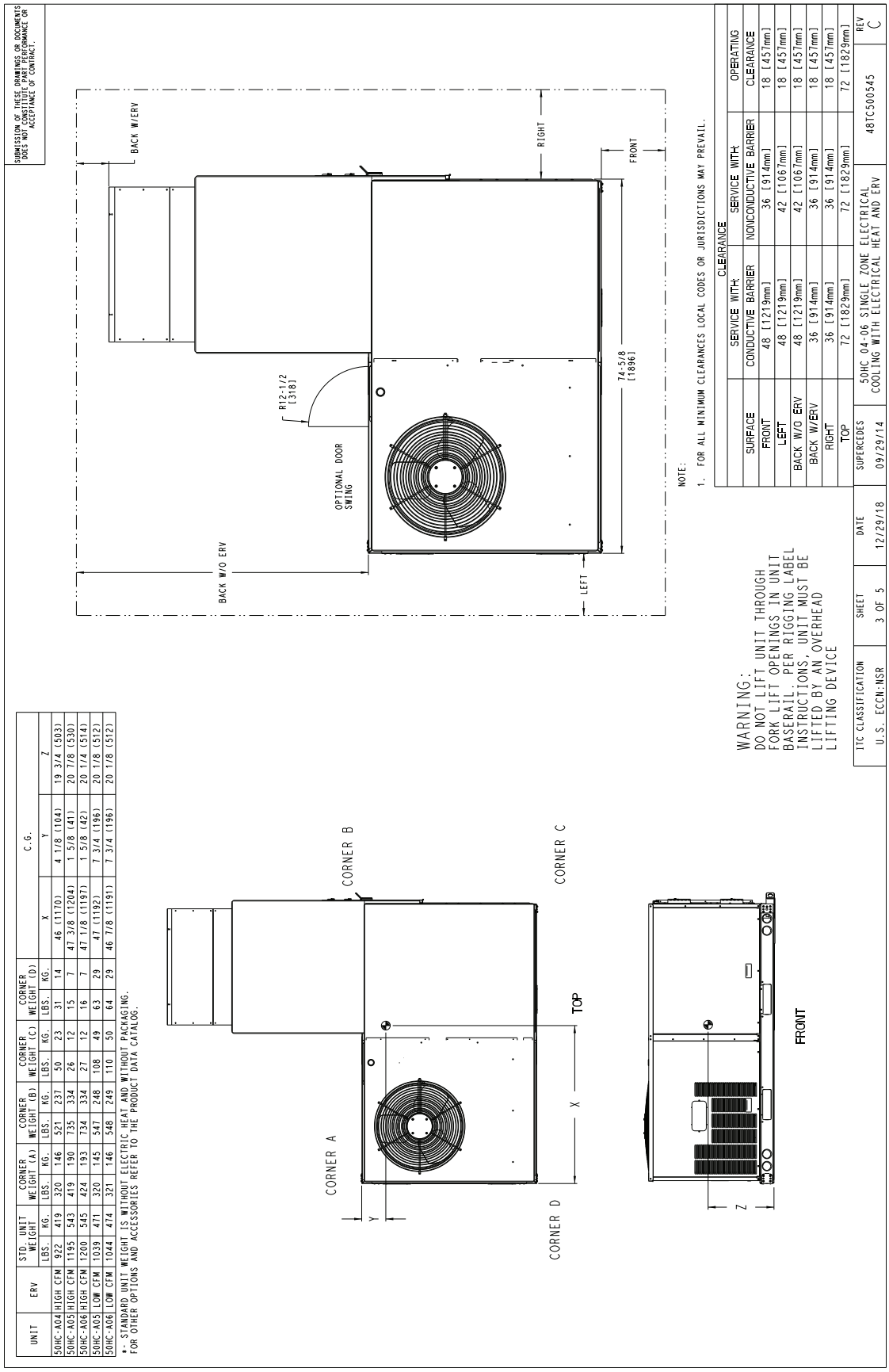
DIMENSIONAL DRAWING FOR 50HC**04-06 UNITS WITH EnergyX SYSTEM BUILT PRIOR TO 4/15/2019



CORNER WEIGHTS AND CLEARANCES - 50HC**04-06 UNITS WITH EnergyX SYSTEM

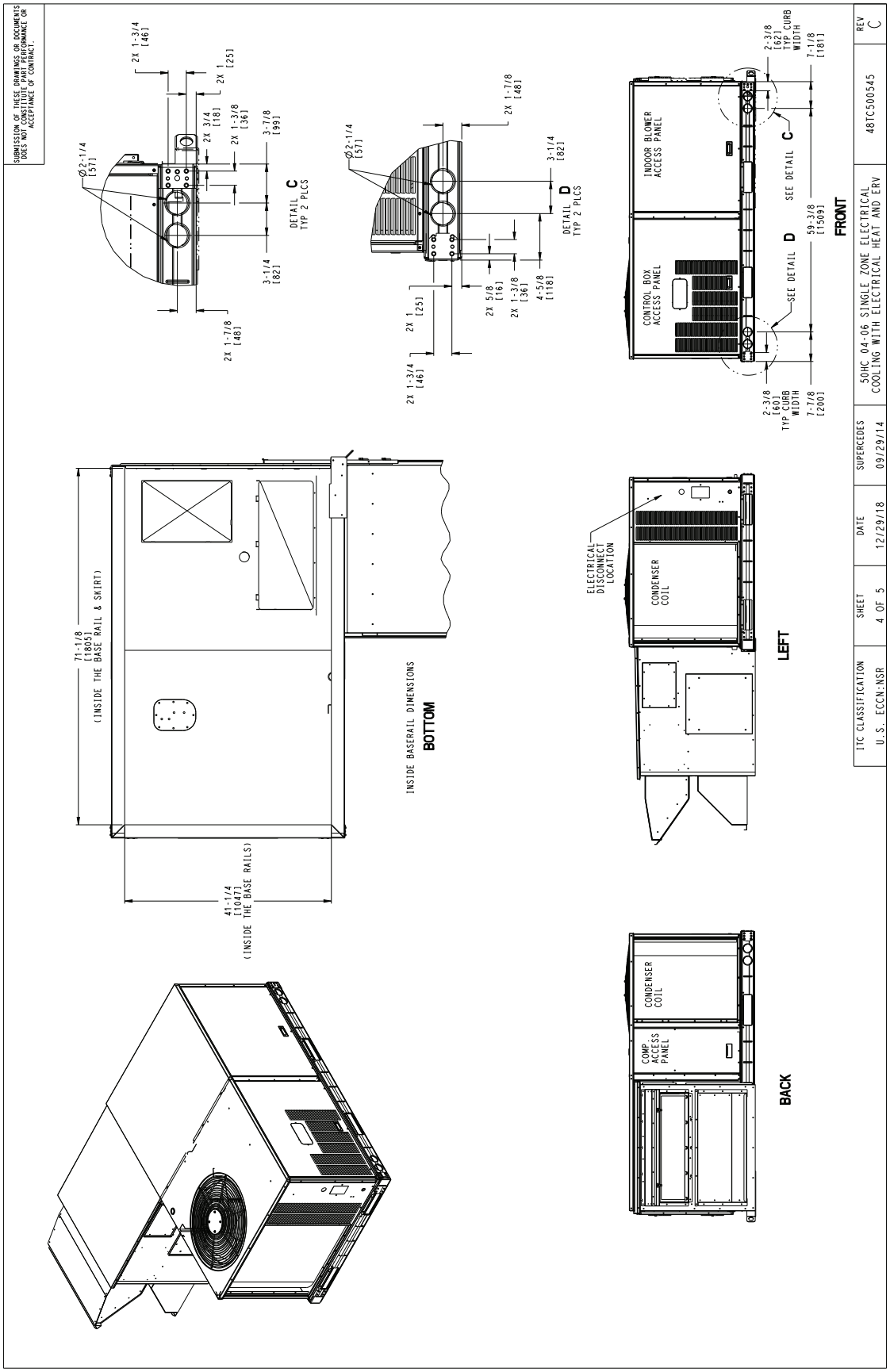
UNIT	ERV	STD. UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC-A04	HIGH CFM	922	419	320	146	521	237	50	23	31	14	46 (1170)	4 1/8 (104)	19 3/4 (503)
50HC-A05	HIGH CFM	1195	543	419	190	735	334	26	12	15	7	47 3/8 (1204)	1 5/8 (41)	20 7/8 (530)
50HC-A06	HIGH CFM	1200	545	424	193	734	334	27	12	16	7	47 1/8 (1197)	1 5/8 (42)	20 1/4 (514)
50HC-A05	LOW CFM	1039	471	320	145	547	248	108	49	63	29	47 (1192)	7 3/4 (196)	20 1/8 (512)
50HC-A06	LOW CFM	1044	474	321	146	548	249	110	50	64	29	46 7/8 (1191)	7 3/4 (196)	20 1/8 (512)

#- STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.

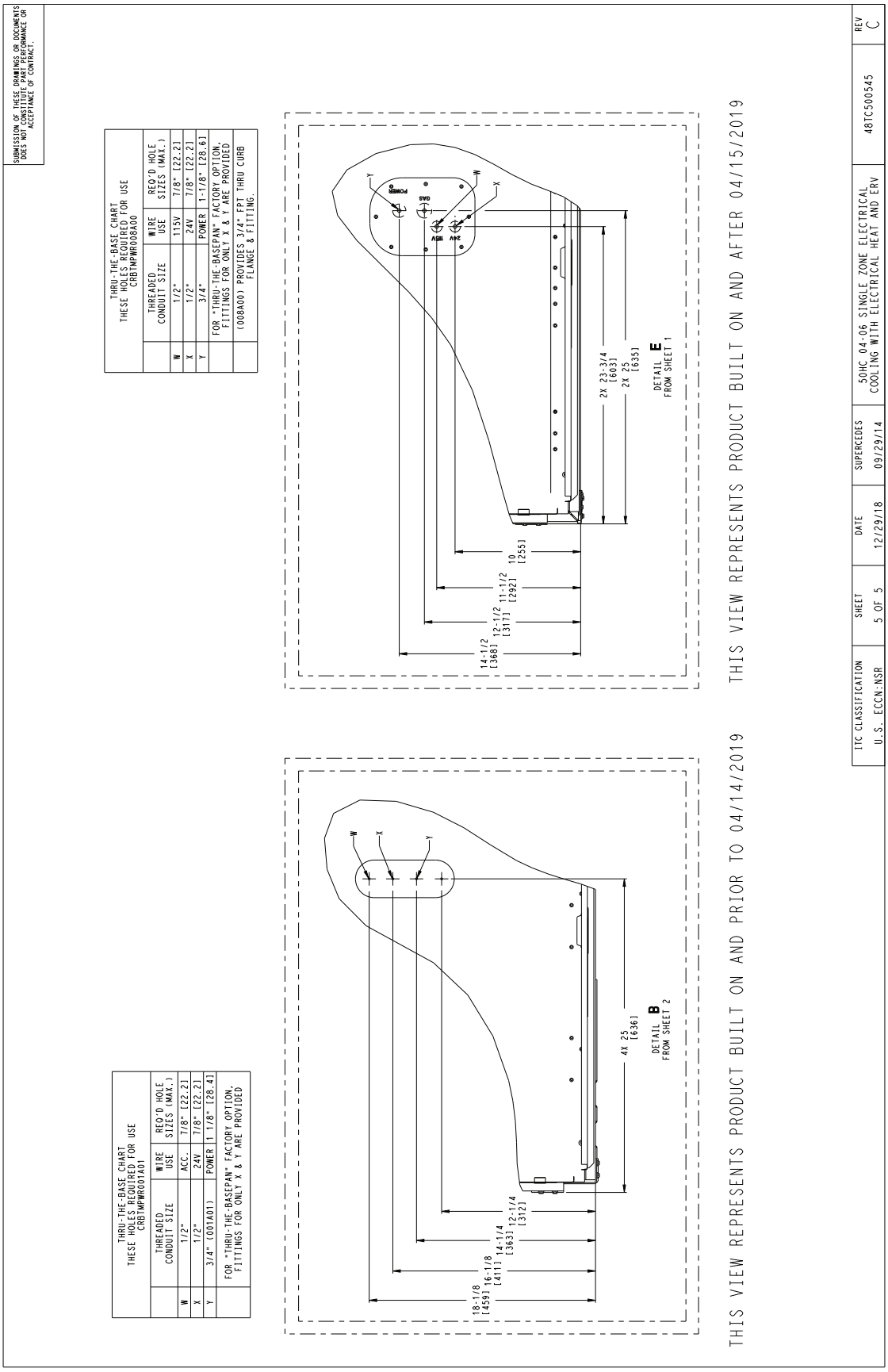


Base unit dimensions (cont)

BASE RAIL DETAILS - 50HC**04-06 UNITS WITH EnergyX SYSTEM

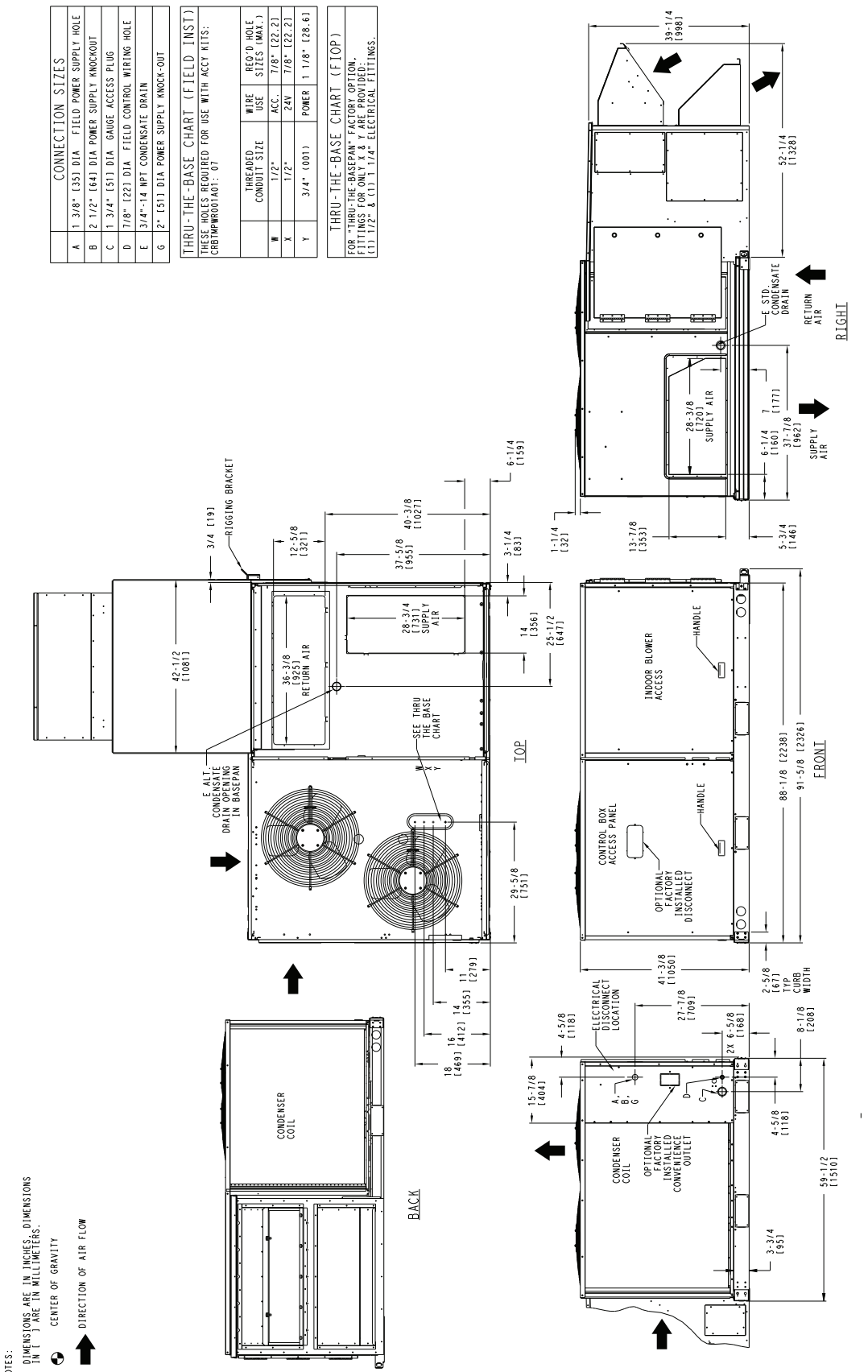


THRU THE BASE CHARTS - 50HC**04-06 UNITS WITH EnergyX® SYSTEM



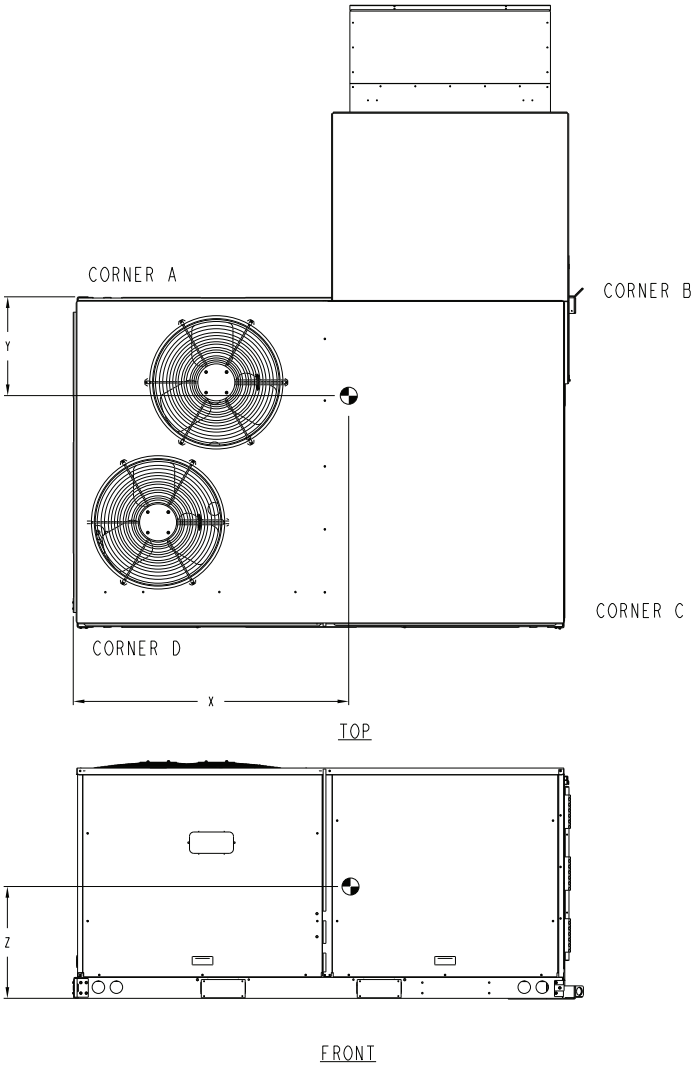
Base unit dimensions (cont)

50HC**07 UNIT DIMENSIONS WITH EnergyX® SYSTEM



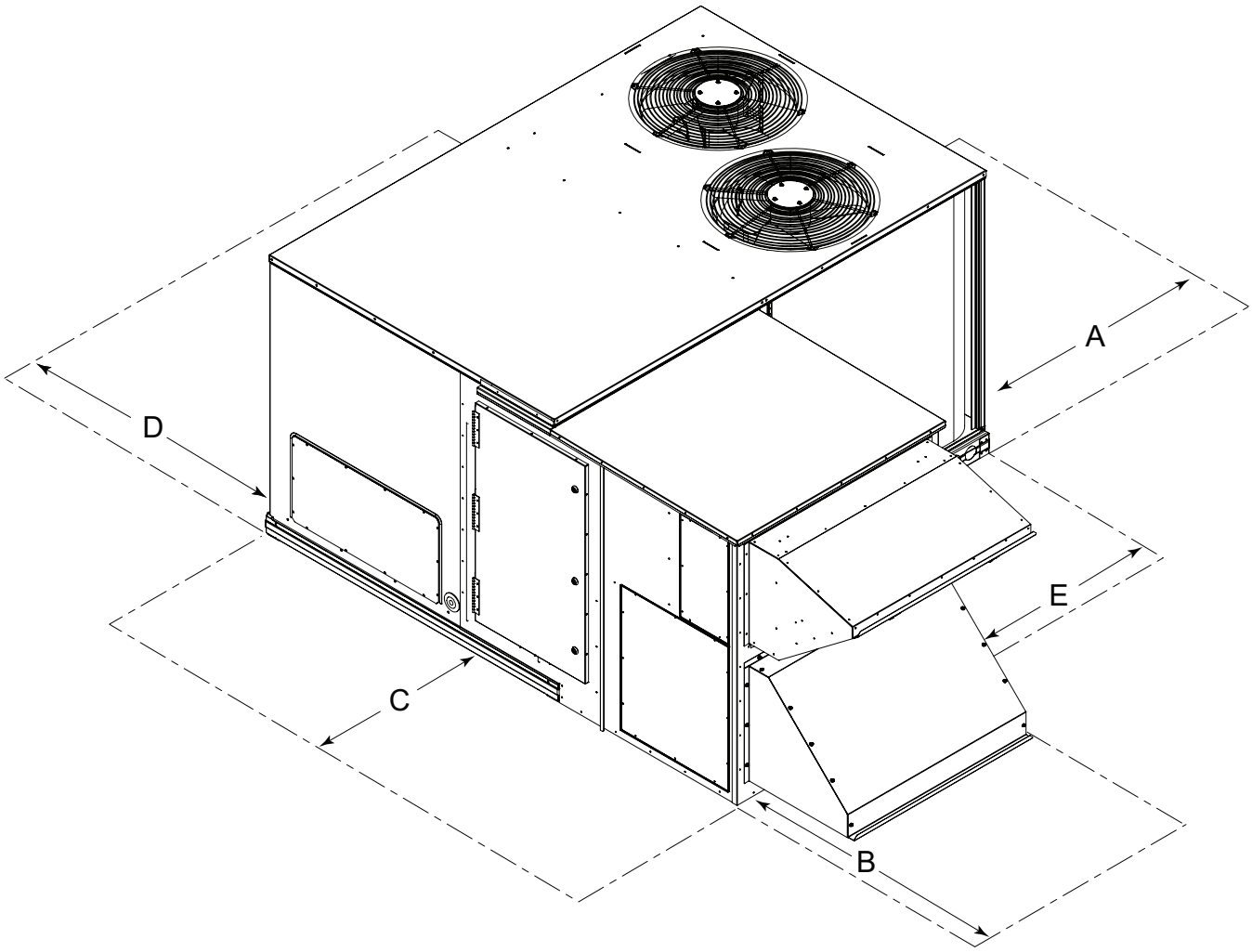
50HC**07 CORNER WEIGHTS WITH EnergyX® SYSTEM

UNIT	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC-A07	1385	630	437	198	669	304	169	77	110	50	53 3/8 (1354)	12 (305)	20 1/2 (520)



Base unit dimensions (cont)

50HC07 SERVICE CLEARANCES WITH EnergyX SYSTEM**



LOCATION	DIMENSION (in. [mm])	CONDITION
A	48 (1219) 18 (457) 18 (457) 12 (305)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	36 (914)	**Recommended service clearance.**
C	36 (914)	**Recommended service clearance.**
D	48 (1219) 42 (1067) 36 (914) Special	No flue discharge accessory installed, surface is combustible material Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass) Check for adjacent units or building fresh air intakes within 10 ft (3 m) of this unit's flue outlet
E	36 (914)	**Recommended service clearance.**

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

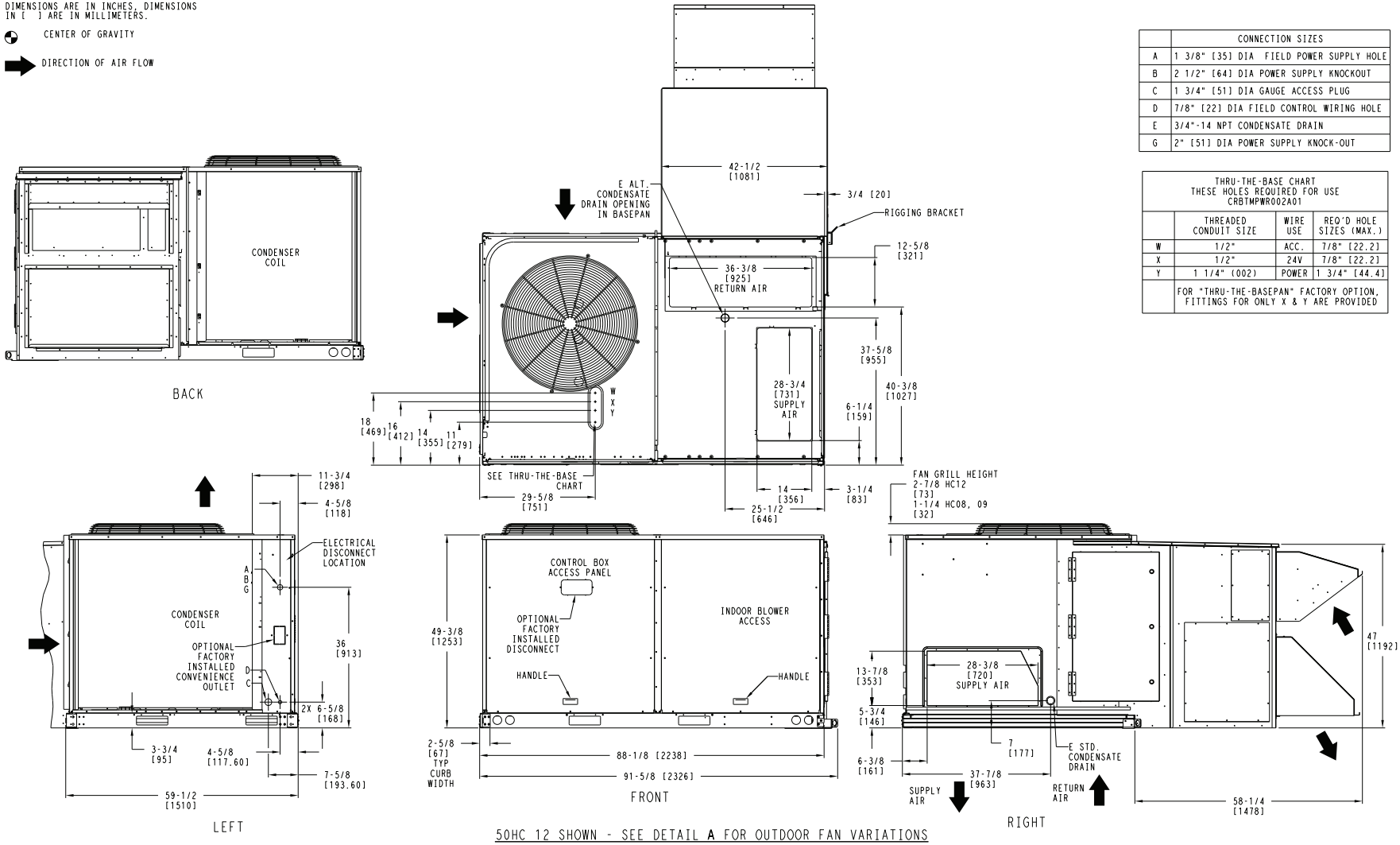
50HC**08-12 UNIT DIMENSIONS WITH EnergyX® SYSTEM

NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. ⊕ CENTER OF GRAVITY
3. ➡ DIRECTION OF AIR FLOW

	CONNECTION SIZES
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2" [51] DIA POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART THESE HOLES REQUIRED FOR USE CRBTMPWR002A01			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	1 1/4" (002)	POWER	1 3/4" [44.4]
	FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED		

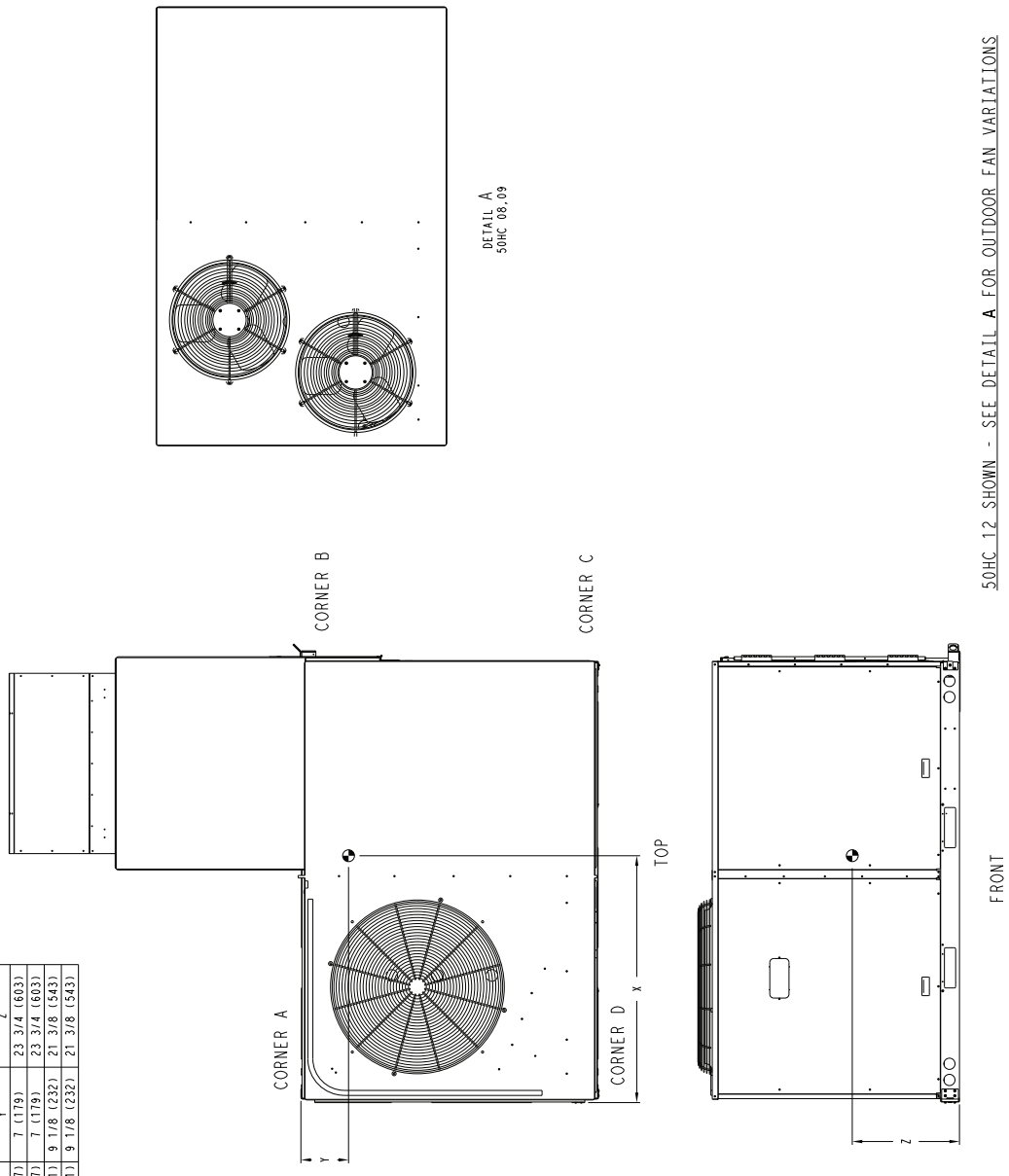


50HC 12 SHOWN - SEE DETAIL A FOR OUTDOOR FAN VARIATIONS

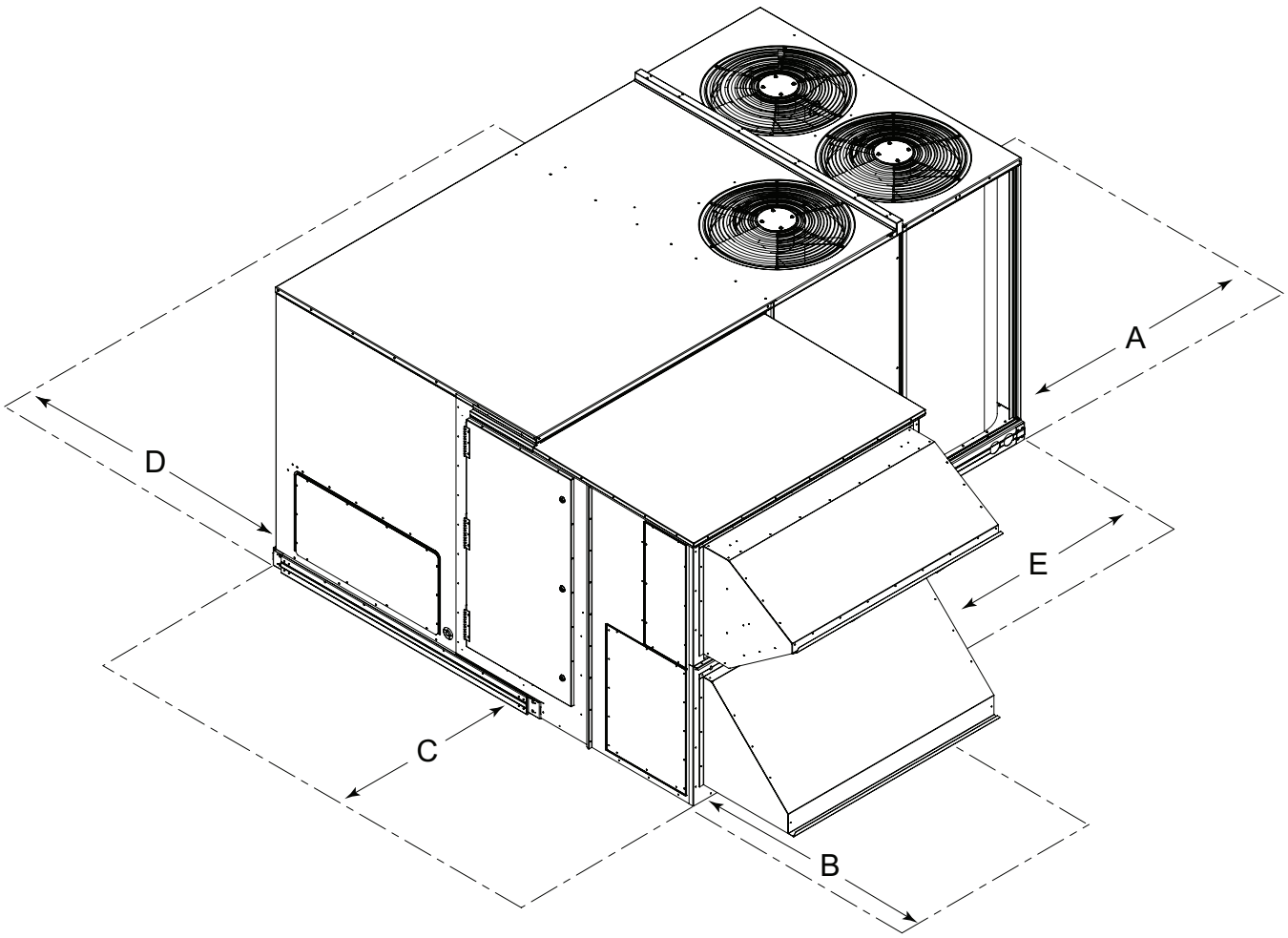
Base unit dimensions (cont)

50HC**08-12 CORNER WEIGHTS WITH EnergyX SYSTEM

UNIT	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HC-D08	1729	786	594	270	931	423	125	57	80	36	53 7/8 (1367)	7 (179)	23 3/4 (603)
50HC-D09	1729	786	594	270	931	423	125	57	80	36	53 7/8 (1367)	7 (179)	23 3/4 (603)
50HC-D11	1894	861	772	351	831	378	151	69	140	64	45 3/4 (1161)	9 1/8 (232)	21 3/8 (543)
50HC-D12	1894	861	772	351	831	378	151	69	140	64	45 3/4 (1161)	9 1/8 (232)	21 3/8 (543)



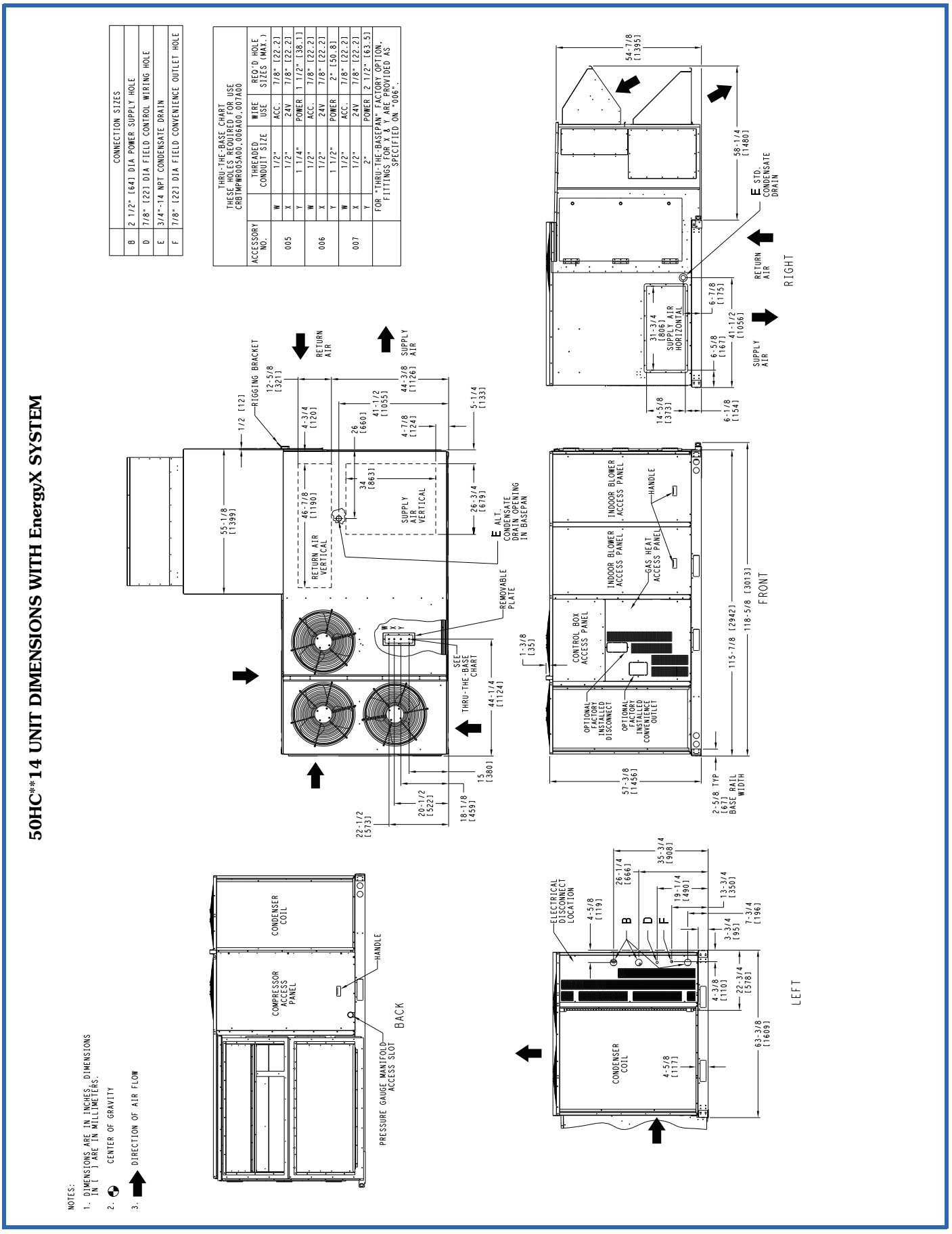
50HC**08-12 SERVICE CLEARANCES WITH EnergyX® SYSTEM



LOCATION	DIMENSION (in. [mm])	CONDITION
A	48 (1219) 18 (457) 18 (457) 12 (305)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	36 (914)	**Recommended service clearance.**
C	36 (914)	**Recommended service clearance.**
D	48 (1219) 42 (1067) 36 (914) Special	No flue discharge accessory installed, surface is combustible material Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass) Check for adjacent units or building fresh air intakes within 10 ft (3 m) of this unit's flue outlet
E	36 (914)	**Recommended service clearance.**

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

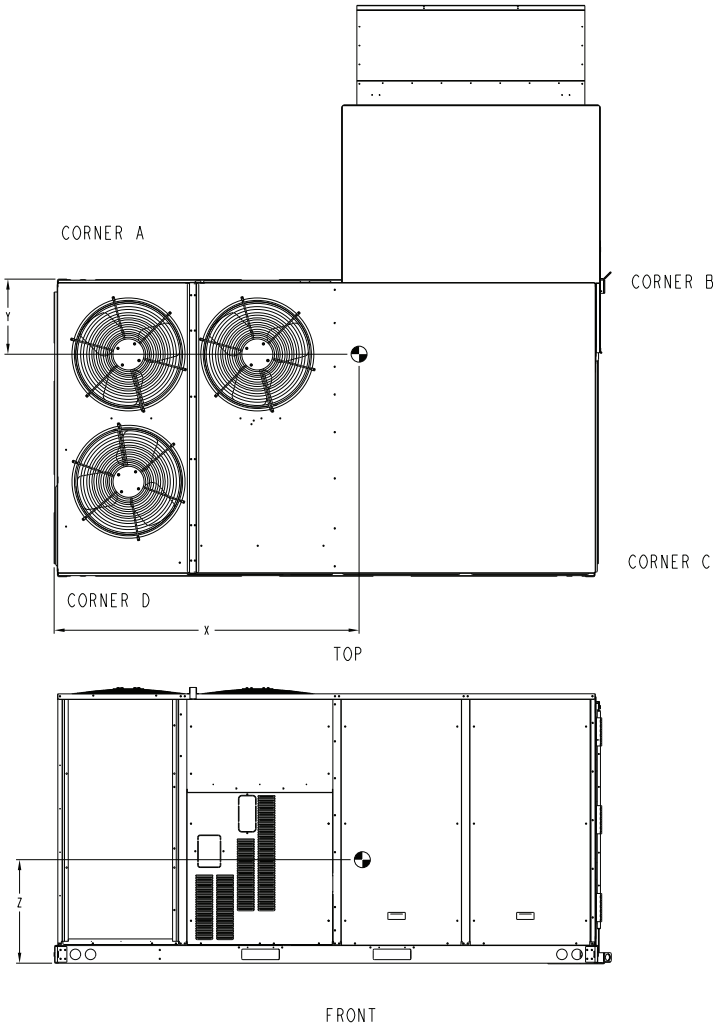
Base unit dimensions (cont)



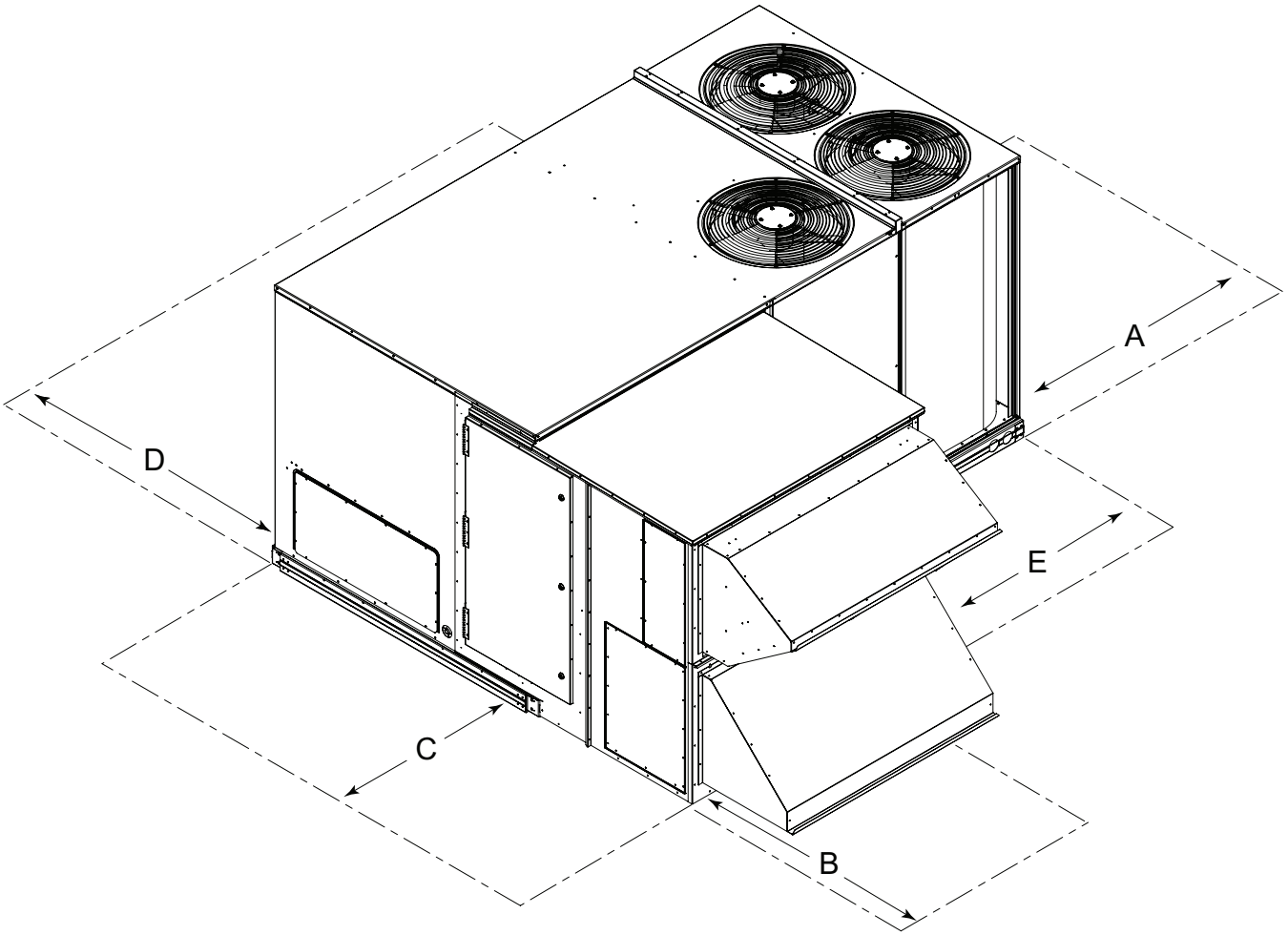
50HC**14 CORNER WEIGHTS WITH EnergyX® SYSTEM

UNIT	STD UNIT WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50HCD 14	2515	1143	792	360	1363	620	228	104	132	60	73 3/8 (1864)	9 1/8 (231)	21 1/8 (537)

STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT & WITHOUT PACKAGING.
FOR OPTIONS & ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



50HC**14 SERVICE CLEARANCES WITH EnergyX SYSTEM



LOCATION	DIMENSION (in. [mm])	CONDITION
A	48 (1219) 18 (457) 18 (457) 12 (305)	Unit disconnect is mounted on panel No disconnect, convenience outlet option Recommended service clearance Minimum clearance
B	36 (914)	**Recommended service clearance.**
C	36 (914)	**Recommended service clearance.**
D	48 (1219) 42 (1067) 36 (914) Special	No flue discharge accessory installed, surface is combustible material Surface behind servicer is grounded (e.g., metal, masonry wall, another unit) Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass) Check for adjacent units or building fresh air intakes within 10 ft (3 m) of this unit's flue outlet
E	36 (914)	**Recommended service clearance.**

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

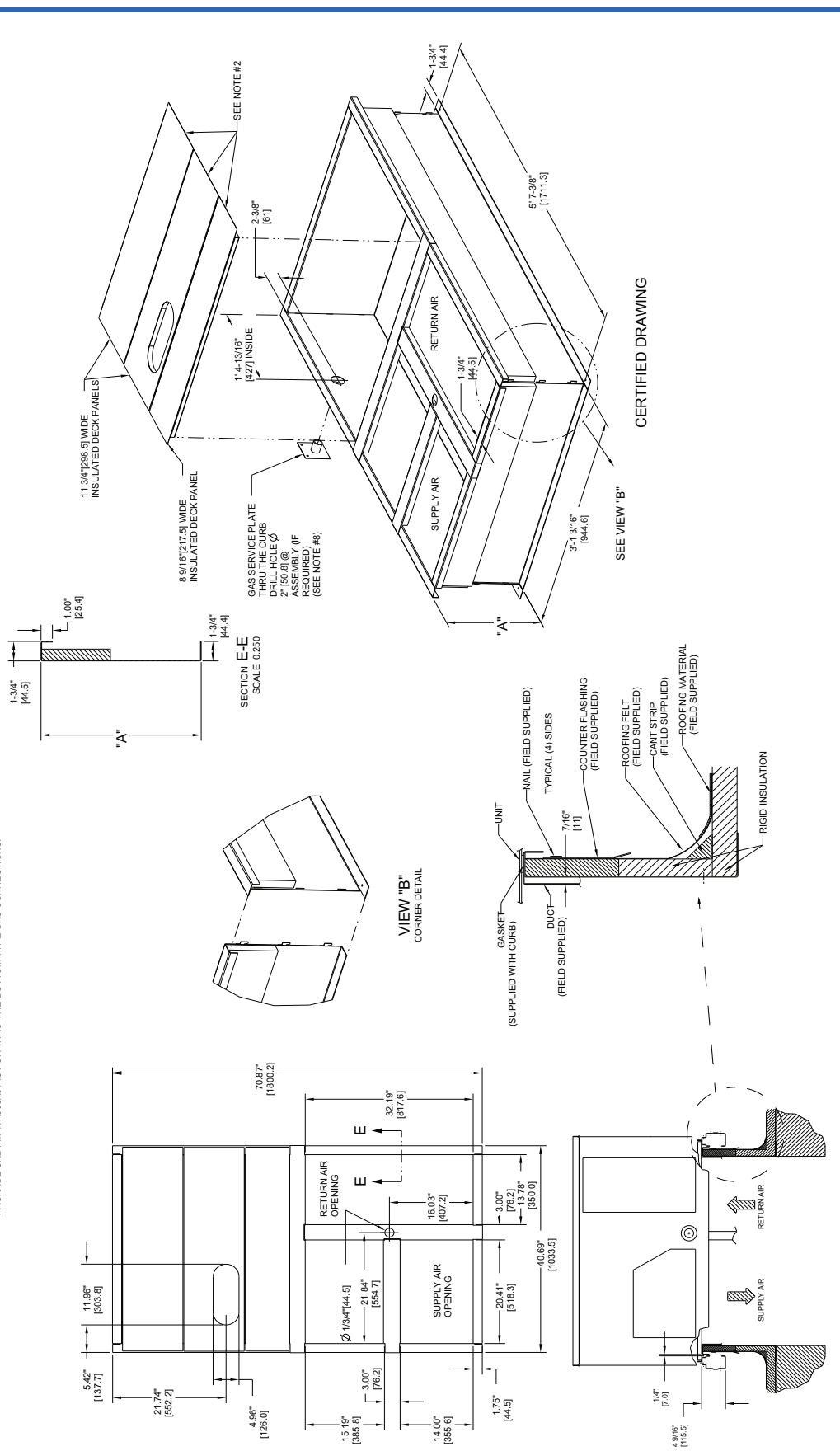
Accessory dimensions

50HC**04-06 — ROOF CURB DIMENSIONS

CONNECTOR PKG. ACC.	GAS CONNECTION TYPE	GAS FITTING	POWER WIRING FITTING	CONTROL WIRING FITTING	ACCESSORY CONVENIENCE OUTLET WIRING CONNECTOR
CRBTMPWR001A01	THRU THE CURB	3/4" [19] NPT	3/4" [19] NPT	1/2" [12.7] NPT	1/2" [12.7] NPT
CRBTMPWR003A01	THRU THE BOTTOM	1/2" [12.7] NPT			

ROOF CURB ACCESSORY #	A
CRRFCURB001A01	14" [356]
CRRFCURB002A01	24" [610]

NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 25.4 [1"] THK. POLYURETHANE FOAM, 44.5 [1-3/4] # DENSITY.
3. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4. ROOFCURB: 18 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FEET ON EACH SIDE.
7. 2"[50.8] INSULATION ON BOTTOM.
8. CONNECTOR PACKAGE CRBTMPWR001A01 IS FOR THRU-THE-CURB GAS TYPE. PACKAGE CRBTMPWR003A01 IS FOR THRU-THE-BOTTOM TYPE GAS CONNECTIONS.



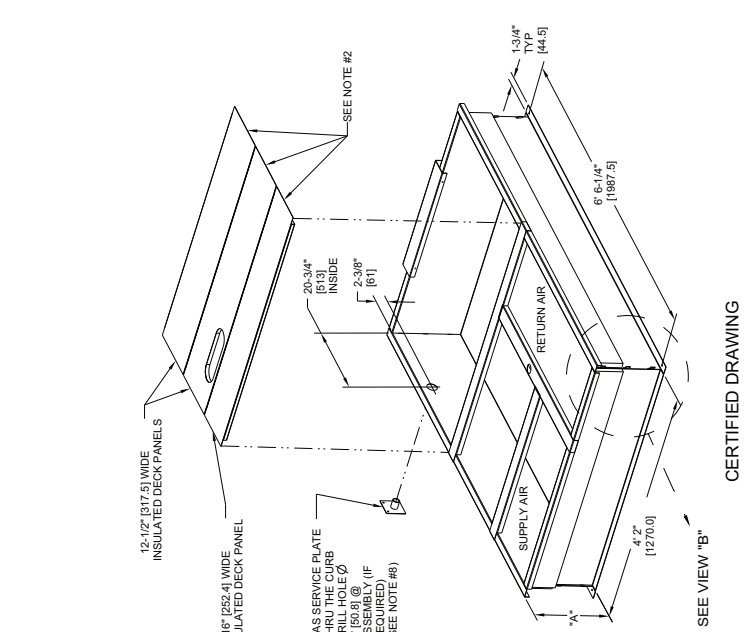
Accessory dimensions (cont)

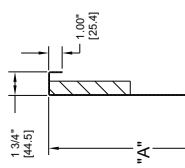
50HC**07-12 UNITS — ROOF CURB DIMENSIONS

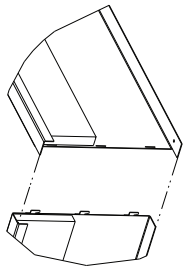
ROOF CURB ACCESSORY #	A
CRRFCURB003A01	14" [356]
CRRFCURB004A01	24" [610]

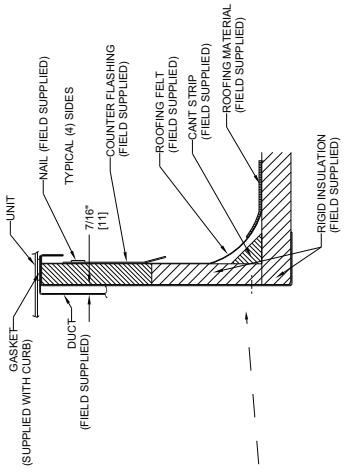
NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 25.4 [1"] THK. POLYURETHANE FOAM, 44.5 [1-3/4] # DENSITY.
3. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4. ROOFCURB: 18 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FEET ON EACH SIDE.
7. DIRECTION OF AIR FLOW.
8. CONNECTOR PACKAGE CRBTMPWR002A01 IS FOR THRU-THE-CURB GAS TYPE PACKAGE CRBTMPWR004A01 IS FOR THRU-THE-BOTTOM TYPE GAS CONNECTIONS.

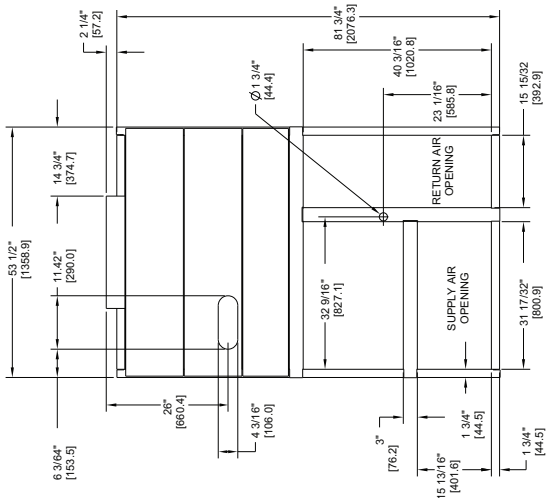
CONNECTOR PKG. ACC.	GAS CONNECTION TYPE	GAS FITTING	POWER WIRING FITTING	CONTROL WIRING FITTING	ACCESSORY CONVENIENCE OUTLET WIRING CONNECTOR
CRBTMPWR002A01	THRU THE CURB	3/4" [19] NPT	1 1/4" [31.7] NPT	1/2" [12.7] NPT	1/2" [12.7] NPT
CRBTMPWR004A01	THRU THE BOTTOM				

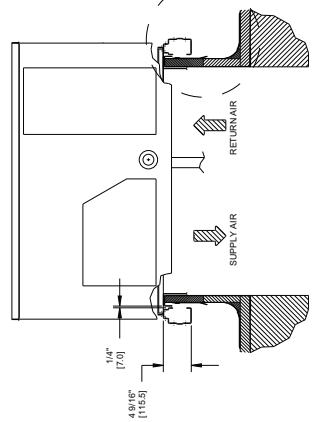








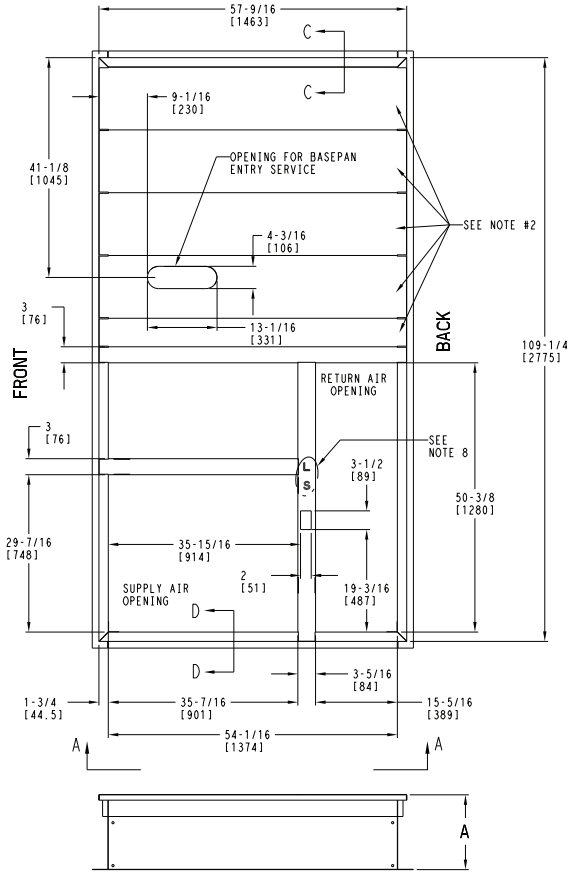


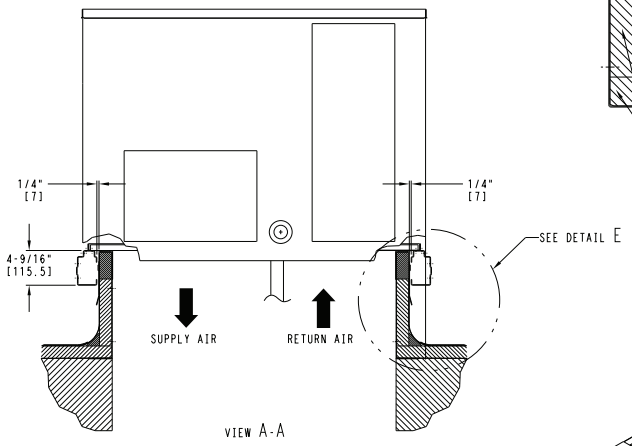


50HC**14 UNITS — ROOF CURB DIMENSIONS

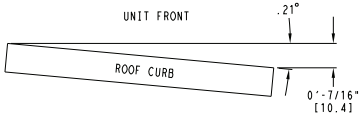
ROOF CURB ACCESSORY #	A
CRRFCURB074A00	14" [356]
CRRFCURB075A00	24" [610]

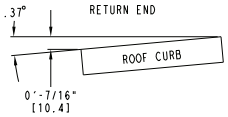
NOTES:
1. ROOFCURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 1/2" THK. NEOPRENE FOAM, 1.0# DENSITY.
3. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4. ROOFCURB SIDEWALLS: 16 GAGE STEEL.
5. ATTACH DUCTWORK TO CURB. (FLANGES OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FT ON EACH SIDE.
7. ➡ DIRECTION OF AIR FLOW.
8. "L" & "S" DESIGNATIONS DENOTE LOCATION OF COMMON CROSS RAIL. (POSITION "L" FOR LARGE DUCT OPENING CURB).



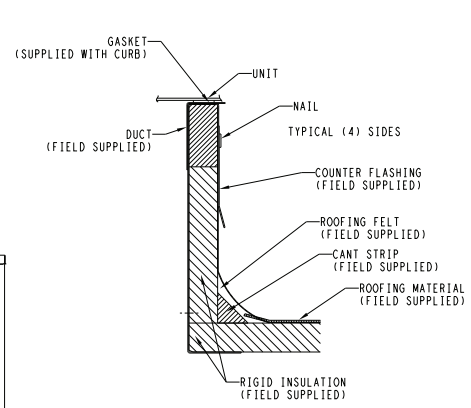


VIEW A-A

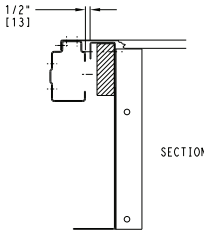




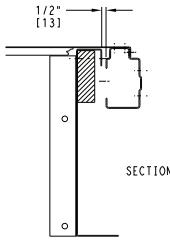
MAX CURB LEVELING TOLERANCES



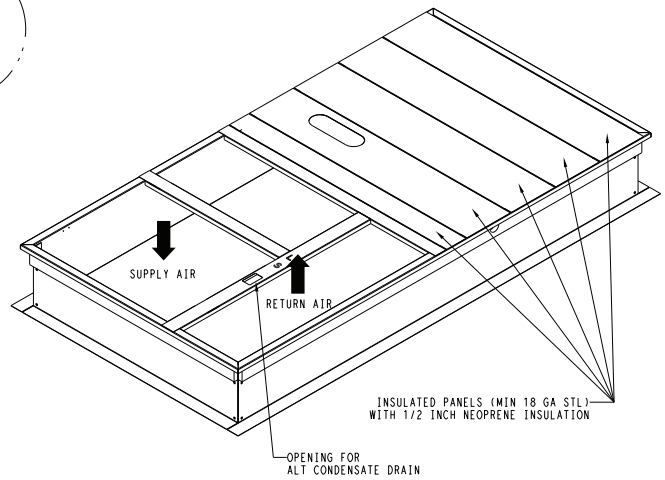
DETAIL E



SECTION C-C



SECTION D-D



Selection procedure

I Determine cooling and heating loads.

Given:

Mixed Air Dry Bulb	80°F (27°C)
Mixed Air Wet Bulb	67°F (19°C)
Ambient Dry Bulb	95°F (35°C)
TC_{LOAD}	69.0 MBH
SHC_{LOAD}	51.0 MBH
Horizontal Supply Air	2100 CFM
External Static Pressure	0.66 in. wg
Electrical Characteristics	230-3-60

II Make an initial guess at cooling tons.

Refrig. tons = TC_{Load} / 12 MBH per ton

Refrig. tons = 69.0 / 12 = 5.75 tons

In this case, start by looking at the 50HC*A07.

III Look up the rooftop's TC and SHC.

Cooling Capacity Table shows that, at the application's supply air CFM, mixed air and ambient temperatures, the 50HC*A07 supplies:

TC = 73.6 MBH
SHC = 53.3 MBH.

IV Calculate the building Latent Heat Load.

$LC_{Load} = TC_{Load} - SHC_{Load}$

LC_{Load} = 69.0 MBH – 51.0 MBH = 18.0 MBH

V Calculate RTU Latent Heat Capacity

LC = TC – SHC

LC = 73.6 MBH – 53.3 MBH = 20.3 MBH

VI Compare RTU capacities to loads.

Compare the rooftop's SHC and LC to the building's Sensible and Latent Heat Loads.

VII Select factory options (FIOP)

Local code requires an economizer for any unit with TC larger than 65.0 MBH.

VIII Calculate the total static pressure.

External static pressure	0.66 in. wg
Sum of FIOP/Accessory static	+0.05 in. wg
Total Static Pressure	=0.71 in. wg

IX Look up the Indoor Fan RPM and BHP.

The table on page 82 shows, at 2100 CFM and ESP= 0.8, (horizontal supply)

RPM = 681 and BHP = 1.01

X Interpolate real BHP

At 0.71 in. wg, real BHP = 0.906.

XI Convert BHP (Step IX) into fan motor heat.

$$\text{Fan motor heat} = \frac{(2.546\ \text{MBtuh/HP})\ (0.906\ \text{BHP})}{0.80\ \text{motor efficiency}} = 2.88\ \text{MBH}$$

Fan Motor Heat = 2.88 MBH

Deduct this value from the gross capacity values for net capacity.

XII Determine electrical requirements

MCA/MOCP table on page 110 shows the MCA and MOCP of a 50HC*A07 (without convenience outlet) as:

MCA = 33 amps and Breaker size = 50 amps

Min. Disconnect Size: FLA = 32 and LRA = 161.

Consult Carrier RTUBuilder for more information.

Performance data

50HC*A04 — 3 TON — SINGLE STAGE COOLING CAPACITIES

50HC*A04				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
900 Cfm	EAT (wb)	58	TC	32.1	32.1	36.3	30.8	30.8	34.9	29.4	29.4	33.4	28.0	28.0	31.7	26.3	26.3	29.8	
			SHC	27.8	32.1	36.3	26.7	30.8	34.9	25.5	29.4	33.4	24.2	28.0	31.7	22.8	26.3	29.8	
		62	TC	34.0	34.0	34.3	32.3	32.3	33.5	30.6	30.6	32.6	28.7	28.7	31.7	26.6	26.6	30.6	
			SHC	25.0	29.7	34.3	24.2	28.9	33.5	23.4	28.0	32.6	22.5	27.1	31.7	21.5	26.0	30.6	
		67	TC	37.3	37.3	37.3	35.5	35.5	35.5	33.6	33.6	33.6	31.5	31.5	31.5	29.2	29.2	29.2	
			SHC	20.7	25.4	30.0	20.0	24.6	29.3	19.2	23.8	28.4	18.3	22.9	27.6	17.4	22.0	26.6	
		72	TC	40.8	40.8	40.8	38.9	38.9	38.9	36.9	36.9	36.9	34.6	34.6	34.6	32.2	32.2	32.2	
			SHC	16.3	21.0	25.7	15.6	20.3	25.0	14.8	19.5	24.1	13.9	18.6	23.3	13.0	17.7	22.3	
		76	TC	—	43.9	43.9	—	41.8	41.8	—	39.6	39.6	—	37.2	37.2	—	34.6	34.6	
			SHC	—	17.4	22.4	—	16.7	21.7	—	15.9	20.8	—	15.1	19.9	—	14.2	19.0	
1050 Cfm	EAT (wb)	58	TC	33.8	33.8	38.4	32.5	32.5	36.8	31.0	31.0	35.1	29.4	29.4	33.3	27.6	27.6	31.3	
			SHC	29.3	33.8	38.4	28.1	32.5	36.8	26.9	31.0	35.1	25.5	29.4	33.3	23.9	27.6	31.3	
		62	TC	35.1	35.1	37.5	33.3	33.3	36.6	31.5	31.5	35.7	29.6	29.6	34.5	27.7	27.7	32.6	
			SHC	26.9	32.2	37.5	26.0	31.3	36.6	25.1	30.4	35.7	24.1	29.3	34.5	22.7	27.7	32.6	
		67	TC	38.4	38.4	38.4	36.5	36.5	36.5	34.5	34.5	34.5	32.3	32.3	32.3	29.9	29.9	29.9	
			SHC	22.0	27.3	32.7	21.2	26.5	31.9	20.3	25.7	31.0	19.4	24.8	30.1	18.5	23.8	29.1	
		72	TC	42.0	42.0	42.0	40.0	40.0	40.0	37.8	37.8	37.8	35.5	35.5	35.5	32.9	32.9	32.9	
			SHC	16.9	22.3	27.6	16.1	21.5	26.9	15.3	20.7	26.0	14.4	19.8	25.1	13.5	18.8	24.2	
		76	TC	—	45.0	45.0	—	42.9	42.9	—	40.6	40.6	—	38.0	38.0	—	35.3	35.3	
			SHC	—	18.1	23.8	—	17.4	23.0	—	16.6	22.2	—	15.7	21.3	—	14.8	20.3	
1200 Cfm	EAT (wb)	58	TC	35.3	35.3	40.0	33.9	33.9	38.4	32.3	32.3	36.6	30.6	30.6	34.7	28.7	28.7	32.5	
			SHC	30.6	35.3	40.0	29.4	33.9	38.4	28.0	32.3	36.6	26.5	30.6	34.7	24.9	28.7	32.5	
		62	TC	35.9	35.9	40.5	34.2	34.2	39.4	32.4	32.4	38.1	30.6	30.6	36.1	28.7	28.7	33.9	
			SHC	28.6	34.5	40.5	27.7	33.6	39.4	26.6	32.4	38.1	25.2	30.6	36.1	23.6	28.7	33.9	
		67	TC	39.3	39.3	39.3	37.3	37.3	37.3	35.2	35.2	35.2	32.9	32.9	32.9	30.5	30.5	31.6	
			SHC	23.1	29.1	35.2	22.3	28.3	34.4	21.4	27.5	33.5	20.5	26.6	32.6	19.5	25.6	31.6	
		72	TC	42.9	42.9	42.9	40.8	40.8	40.8	38.5	38.5	38.5	36.1	36.1	36.1	33.4	33.4	33.4	
			SHC	17.3	23.4	29.5	16.6	22.6	28.7	15.7	21.8	27.9	14.8	20.9	27.0	13.9	19.9	26.0	
		76	TC	—	45.9	45.9	—	43.7	43.7	—	41.3	41.3	—	38.7	38.7	—	35.9	35.9	
			SHC	—	18.8	25.1	—	18.0	24.3	—	17.2	23.4	—	16.3	22.5	—	15.4	21.5	
1350 Cfm	EAT (wb)	58	TC	36.6	36.6	41.5	35.1	35.1	39.7	33.4	33.4	37.9	31.6	31.6	35.8	29.6	29.6	33.6	
			SHC	31.7	36.6	41.5	30.4	35.1	39.7	28.9	33.4	37.9	27.4	31.6	35.8	25.7	29.6	33.6	
		62	TC	36.7	36.7	43.2	35.1	35.1	41.3	33.4	33.4	39.4	31.6	31.6	37.3	29.6	29.6	34.9	
			SHC	30.2	36.7	43.2	28.8	35.1	41.3	27.5	33.4	39.4	26.0	31.6	37.3	24.4	29.6	34.9	
		67	TC	39.9	39.9	39.9	37.9	37.9	37.9	35.8	35.8	35.9	33.4	33.4	34.9	30.9	30.9	33.9	
			SHC	24.2	30.9	37.6	23.4	30.1	36.8	22.5	29.2	35.9	21.6	28.3	34.9	20.6	27.2	33.9	
		72	TC	43.6	43.6	43.6	41.4	41.4	41.4	39.1	39.1	39.1	36.6	36.6	36.6	33.9	33.9	33.9	
			SHC	17.8	24.5	31.3	17.0	23.7	30.5	16.1	22.9	29.6	15.2	22.0	28.7	14.3	21.0	27.7	
		78	TC	—	46.7	46.7	—	44.4	44.4	—	41.9	41.9	—	39.2	39.2	—	36.3	36.3	
			SHC	—	19.4	26.3	—	18.6	25.5	—	17.8	24.6	—	16.9	23.7	—	15.9	22.7	
1500 Cfm	EAT (wb)	58	TC	37.7	37.7	42.7	36.1	36.1	40.9	34.3	34.3	38.9	32.5	32.5	36.8	30.4	30.4	34.4	
			SHC	32.6	37.7	42.7	31.3	36.1	40.9	29.8	34.3	38.9	28.1	32.5	36.8	26.3	30.4	34.4	
		62	TC	37.7	37.7	44.4	36.1	36.1	42.5	34.4	34.4	40.5	32.5	32.5	38.3	30.4	30.4	35.8	
			SHC	31.0	37.7	44.4	29.7	36.1	42.5	28.3	34.4	40.5	26.7	32.5	38.3	25.0	30.4	35.8	
		67	TC	40.5	40.5	40.5	38.4	38.4	39.1	36.2	36.2	38.2	33.8	33.8	37.2	31.2	31.2	36.1	
			SHC	25.2	32.6	40.0	24.4	31.7	39.1	23.5	30.8	38.2	22.5	29.9	37.2	21.5	28.8	36.1	
		72	TC	44.2	44.2	44.2	41.9	41.9	41.9	39.6	39.6	39.6	37.0	37.0	37.0	34.2	34.2	34.2	
			SHC	18.2	25.6	33.0	17.4	24.8	32.2	16.5	23.9	31.3	15.6	23.0	30.4	14.7	22.0	29.4	
		76	TC	—	47.2	47.2	—	44.9	44.9	—	42.3	42.3	—	39.6	39.6	—	36.7	36.7	
			SHC	—	19.9	27.5	—	19.1	26.7	—	18.3	25.8	—	17.4	24.9	—	16.4	23.9	

LEGEND

— — Points are outside SST and SDT operating range
Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

Performance data (cont)

50HC*B04 — 3 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	44.6	40.3	36.5	47.0	43.0	39.1	48.8	44.3	40.8
	SHC	19.8	24.5	29.3	22.6	29.1	35.3	25.4	33.0	40.4
	kW	2.02	1.97	1.93	1.96	2.00	2.05	2.08	2.02	1.98
75	TC	42.1	38.1	34.4	44.6	40.5	36.9	46.1	41.9	38.6
	SHC	17.5	22.5	27.4	20.4	26.8	33.2	22.9	30.8	38.2
	kW	2.28	2.23	2.19	2.22	2.26	2.31	2.33	2.28	2.24
70	TC	39.6	35.8	32.3	41.9	38.0	34.5	43.2	39.3	36.2
	SHC	15.2	20.3	25.5	17.8	24.5	31.1	20.2	28.4	35.9
	kW	2.56	2.51	2.47	2.50	2.54	2.60	2.62	2.56	2.52
60	TC	36.8	33.2	30.0	38.9	35.3	32.0	40.2	36.5	33.6
	SHC	12.7	18.1	23.4	15.1	22.0	28.8	17.5	25.8	33.6
	kW	2.88	2.83	2.79	2.82	2.86	2.91	2.93	2.88	2.84
50	TC	33.9	30.5	27.5	35.8	32.4	29.4	37.0	33.5	30.9
	SHC	10.1	15.7	21.2	12.3	19.5	26.4	14.5	23.1	30.9
	kW	3.23	3.19	3.15	3.17	3.21	3.26	3.28	3.23	3.19
40	TC	30.8	27.7	24.9	32.5	29.3	26.5	33.5	30.3	27.9
	SHC	7.3	13.1	18.9	9.4	16.7	23.9	11.4	20.3	27.9
	kW	3.62	3.59	3.56	3.57	3.60	3.65	3.66	3.62	3.59

50HC*B04 — 3 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	16.46	17.15	17.74	16.66	17.23	17.79	16.85	17.74	18.29
	SHC	5.10	6.60	8.15	3.21	4.33	5.61	1.59	2.75	3.83
	kW	1.94	2.01	2.02	2.04	2.13	2.15	2.12	2.14	2.16
75	TC	16.61	17.52	18.09	17.18	18.09	18.67	17.69	18.61	19.19
	SHC	5.24	6.96	8.48	3.71	5.15	6.45	2.40	3.59	4.69
	kW	1.98	2.00	2.01	1.99	2.01	2.02	2.00	2.02	2.03
70	TC	17.00	18.06	18.63	17.56	18.46	19.40	18.41	19.35	20.10
	SHC	5.62	7.47	9.00	4.08	5.50	7.16	3.09	4.31	5.58
	kW	1.96	1.94	1.96	1.97	2.00	1.94	1.91	1.94	1.92
60	TC	17.63	18.49	19.37	18.17	19.38	19.95	18.66	19.52	20.46
	SHC	6.21	7.89	9.71	4.66	6.39	7.68	3.31	4.45	5.90
	kW	1.93	1.96	1.92	1.95	1.92	1.94	1.97	2.00	1.96
50	TC	17.82	18.59	19.72	18.31	19.73	20.26	18.76	20.21	20.73
	SHC	6.40	7.99	10.05	4.79	6.71	7.97	3.40	5.11	6.16
	kW	1.98	2.03	1.94	2.01	1.94	1.97	2.03	1.96	1.99
40	TC	17.70	19.38	19.85	19.10	20.30	20.34	19.53	20.76	21.26
	SHC	6.30	8.74	10.17	5.54	7.26	8.05	4.13	5.64	6.67
	kW	2.07	1.95	1.99	1.93	1.91	2.02	1.96	1.94	1.97

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*A05 — 4 TON — SINGLE STAGE COOLING CAPACITIES

50HC*A05				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
1200 Cfm	EAT (wb)	58	TC	43.2	43.2	49.1	41.5	41.5	47.2	39.7	39.7	45.1	37.7	37.7	42.9	35.6	35.6	40.4	
			SHC	37.3	43.2	49.1	35.9	41.5	47.2	34.3	39.7	45.1	32.6	37.7	42.9	30.7	35.6	40.4	
		62	TC	45.9	45.9	46.0	43.7	43.7	45.0	41.3	41.3	43.8	38.8	38.8	42.6	36.0	36.0	41.2	
			SHC	33.5	39.8	46.0	32.5	38.7	45.0	31.3	37.6	43.8	30.1	36.3	42.6	28.8	35.0	41.2	
		67	TC	50.5	50.5	50.5	48.0	48.0	48.0	45.4	45.4	45.4	42.6	42.6	42.6	39.6	39.6	39.6	
			SHC	27.9	34.1	40.4	26.8	33.1	39.4	25.7	32.0	38.2	24.5	30.8	37.1	23.2	29.5	35.8	
		72	TC	55.4	55.4	55.4	52.7	52.7	52.7	49.9	49.9	49.9	46.8	46.8	46.8	43.5	43.5	43.5	
			SHC	22.0	28.4	34.7	21.0	27.3	33.7	19.9	26.2	32.5	18.7	25.0	31.3	17.4	23.8	30.1	
		76	TC	—	59.7	59.7	—	56.8	56.8	—	53.7	53.7	—	50.4	50.4	—	46.8	46.8	
			SHC	—	23.6	30.2	—	22.6	29.2	—	21.5	28.1	—	20.3	26.8	—	19.1	25.5	
1400 Cfm	EAT (wb)	58	TC	45.6	45.6	51.9	43.8	43.8	49.8	41.9	41.9	47.6	39.7	39.7	45.1	37.3	37.3	42.4	
			SHC	39.4	45.6	51.9	37.9	43.8	49.8	36.2	41.9	47.6	34.3	39.7	45.1	32.3	37.3	42.4	
		62	TC	47.4	47.4	50.5	45.1	45.1	49.3	42.6	42.6	48.0	40.0	40.0	46.5	37.4	37.4	44.2	
			SHC	36.0	43.2	50.5	34.9	42.1	49.3	33.7	40.9	48.0	32.4	39.5	46.5	30.6	37.4	44.2	
		67	TC	52.1	52.1	52.1	49.5	49.5	49.5	46.7	46.7	46.7	43.7	43.7	43.7	40.5	40.5	40.5	
			SHC	29.5	36.8	44.0	28.4	35.7	42.9	27.3	34.5	41.8	26.0	33.3	40.5	24.7	32.0	39.2	
		72	TC	57.1	57.1	57.1	54.3	54.3	54.3	51.2	51.2	51.2	48.0	48.0	48.0	44.5	44.5	44.5	
			SHC	22.8	30.1	37.4	21.7	29.0	36.3	20.5	27.8	35.1	19.3	26.6	33.9	18.0	25.3	32.6	
		76	TC	—	61.4	61.4	—	58.3	58.3	—	55.1	55.1	—	51.6	51.6	—	47.8	47.8	
			SHC	—	24.6	32.2	—	23.5	31.1	—	22.4	29.9	—	21.2	28.7	—	19.9	27.4	
1600 Cfm	EAT (wb)	58	TC	47.7	47.7	54.2	45.8	45.8	52.0	43.7	43.7	49.6	41.3	41.3	47.0	38.8	38.8	44.1	
			SHC	41.2	47.7	54.2	39.5	45.8	52.0	37.7	43.7	49.6	35.7	41.3	47.0	33.5	38.8	44.1	
		62	TC	48.7	48.7	54.5	46.3	46.3	53.2	43.7	43.7	51.7	41.4	41.4	48.9	38.8	38.8	45.9	
			SHC	38.3	46.4	54.5	37.1	45.2	53.2	35.8	43.7	51.7	33.9	41.4	48.9	31.8	38.8	45.9	
		67	TC	53.3	53.3	53.3	50.6	50.6	50.6	47.7	47.7	47.7	44.6	44.6	44.6	41.2	41.2	42.6	
			SHC	31.0	39.2	47.5	29.9	38.1	46.3	28.7	37.0	45.2	27.5	35.7	43.9	26.2	34.4	42.6	
		72	TC	58.4	58.4	58.4	55.4	55.4	55.4	52.3	52.3	52.3	48.9	48.9	48.9	45.2	45.2	45.2	
			SHC	23.4	31.7	39.9	22.3	30.6	38.8	21.1	29.4	37.6	19.9	28.2	36.4	18.6	26.8	35.1	
		76	TC	—	62.7	62.7	—	59.5	59.5	—	56.1	56.1	—	52.5	52.5	—	48.6	48.6	
			SHC	—	25.5	34.0	—	24.4	32.9	—	23.2	31.7	—	22.0	30.4	—	20.7	29.1	
1800 Cfm	EAT (wb)	58	TC	49.5	49.5	56.2	47.4	47.4	53.9	45.2	45.2	51.3	42.7	42.7	48.5	40.1	40.1	45.5	
			SHC	42.8	49.5	56.2	41.0	47.4	53.9	39.0	45.2	51.3	36.9	42.7	48.5	34.6	40.1	45.5	
		62	TC	49.8	49.8	58.1	47.5	47.5	56.1	45.2	45.2	53.4	42.8	42.8	50.5	40.1	40.1	47.4	
			SHC	40.4	49.2	58.1	38.8	47.5	56.1	37.0	45.2	53.4	35.0	42.8	50.5	32.8	40.1	47.4	
		67	TC	54.3	54.3	54.3	51.5	51.5	51.5	48.5	48.5	48.5	45.3	45.3	47.1	41.8	41.8	45.7	
			SHC	32.5	41.7	50.8	31.4	40.5	49.7	30.2	39.3	48.5	28.9	38.0	47.1	27.5	36.6	45.7	
		72	TC	59.4	59.4	59.4	56.3	56.3	56.3	53.1	53.1	53.1	49.6	49.6	49.6	45.8	45.8	45.8	
			SHC	24.0	33.2	42.4	22.9	32.1	41.3	21.7	30.9	40.1	20.4	29.6	38.8	19.1	28.3	37.5	
		78	TC	—	63.8	63.8	—	60.5	60.5	—	57.0	57.0	—	53.2	53.2	—	49.2	49.2	
			SHC	—	26.3	35.8	—	25.2	34.6	—	24.0	33.4	—	22.8	32.1	—	21.5	30.8	
2000 Cfm	EAT (wb)	58	TC	51.0	51.0	58.0	48.8	48.8	55.5	46.5	46.5	52.8	43.9	43.9	49.9	41.1	41.1	46.7	
			SHC	44.1	51.0	58.0	42.2	48.8	55.5	40.2	46.5	52.8	37.9	43.9	49.9	35.5	41.1	46.7	
		62	TC	51.1	51.1	60.4	48.9	48.9	57.8	46.5	46.5	55.0	44.0	44.0	51.9	41.1	41.1	48.6	
			SHC	41.8	51.1	60.4	40.0	48.9	57.8	38.1	46.5	55.0	36.0	44.0	51.9	33.7	41.1	48.6	
		67	TC	55.1	55.1	55.1	52.1	52.1	52.9	49.1	49.1	51.6	45.8	45.8	50.2	42.3	42.3	48.7	
			SHC	33.9	44.0	54.1	32.7	42.8	52.9	31.5	41.5	51.6	30.2	40.2	50.2	28.8	38.8	48.7	
		72	TC	60.3	60.3	60.3	57.1	57.1	57.1	53.7	53.7	53.7	50.1	50.1	50.1	46.3	46.3	46.3	
			SHC	24.5	34.7	44.8	23.4	33.5	43.6	22.2	32.3	42.4	21.0	31.1	41.2	19.6	29.7	39.8	
		76	TC	—	64.6	64.6	—	61.2	61.2	—	57.6	57.6	—	53.8	53.8	—	49.7	49.7	
			SHC	—	27.1	37.5	—	26.0	36.3	—	24.8	35.1	—	23.5	33.8	—	22.2	32.4	

LEGEND

— — DB/WB combo not possible
Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

Performance data (cont)

50HC*B05 — 4 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	57.8	52.3	47.2	61.5	55.6	50.6	63.7	57.9	0.0
	SHC	24.2	30.5	36.8	27.9	35.9	44.0	31.2	40.9	0.0
	kW	2.50	2.47	2.44	2.46	2.48	2.51	2.53	2.50	0.00
75	TC	54.1	48.9	44.1	57.1	52.0	47.3	59.6	54.0	49.5
	SHC	20.7	27.3	33.9	23.9	32.6	41.0	27.3	37.3	47.1
	kW	2.81	2.78	2.76	2.78	2.80	2.82	2.84	2.81	2.79
70	TC	50.1	45.3	40.8	53.3	48.2	43.7	55.2	50.1	45.8
	SHC	17.0	24.0	30.9	20.4	29.1	37.7	23.3	33.6	43.6
	kW	3.16	3.14	3.12	3.13	3.15	3.18	3.19	3.16	3.14
60	TC	45.7	41.1	37.2	48.6	43.8	39.8	50.5	45.5	41.8
	SHC	12.9	20.1	27.6	16.0	25.0	34.1	19.0	29.4	39.9
	kW	3.56	3.54	3.52	3.54	3.55	3.58	3.59	3.56	3.55
50	TC	41.1	37.0	33.2	43.5	39.2	35.5	45.4	41.1	37.5
	SHC	8.7	16.4	23.9	11.3	20.7	30.1	14.3	25.4	35.8
	kW	4.02	4.01	4.00	4.00	4.01	4.03	4.04	4.03	4.01
40	TC	36.3	32.5	29.0	38.6	34.7	31.2	40.2	36.1	32.9
	SHC	4.3	12.2	20.1	6.8	16.6	26.2	9.4	20.8	31.5
	kW	4.54	4.53	4.53	4.53	4.54	4.54	4.55	4.54	4.54

50HC*B05 — 4 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	18.64	19.95	20.78	19.35	20.71	21.51	20.00	21.37	22.33
	SHC	0.78	4.36	8.24	–1.95	1.01	4.29	–4.33	–1.91	0.99
	kW	2.66	2.68	2.69	2.67	2.69	2.69	2.68	2.69	2.68
75	TC	19.37	21.21	22.15	20.47	21.97	22.92	21.15	22.78	23.65
	SHC	1.48	5.52	9.49	–0.91	2.18	5.57	–3.26	–0.61	2.20
	kW	2.62	2.54	2.54	2.56	2.55	2.55	2.56	2.55	2.56
70	TC	19.92	21.63	22.64	20.77	22.52	23.61	21.70	23.39	24.26
	SHC	2.01	5.94	9.98	–0.61	2.70	6.23	–2.72	–0.02	2.78
	kW	2.60	2.56	2.54	2.58	2.54	2.53	2.54	2.52	2.54
60	TC	20.11	21.27	22.23	20.75	23.15	23.43	22.49	23.78	24.55
	SHC	2.24	5.70	9.70	–0.57	3.35	6.15	–1.95	0.40	3.13
	kW	2.69	2.74	2.73	2.72	2.58	2.68	2.56	2.60	2.63
50	TC	21.56	22.70	23.37	22.18	23.33	24.01	22.75	23.90	25.40
	SHC	3.61	7.03	10.76	0.78	3.57	6.73	–1.67	0.57	3.96
	kW	2.57	2.63	2.66	2.60	2.66	2.69	2.63	2.69	2.62
40	TC	21.67	23.23	24.04	22.76	23.82	25.57	23.28	24.34	26.13
	SHC	3.74	7.56	9.89	1.35	4.06	8.17	–1.15	1.01	4.67
	kW	2.64	2.64	2.69	2.61	2.67	2.58	2.64	2.70	2.61

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*A06 — 5 TON — SINGLE STAGE COOLING CAPACITIES

50HC*A06				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
1500 Cfm	EAT (wb)	58	TC	53.4	53.4	60.6	51.3	51.3	58.2	49.0	49.0	55.6	46.5	46.5	52.7	43.7	43.7	49.5	
			SHC	46.3	53.4	60.6	44.5	51.3	58.2	42.5	49.0	55.6	40.3	46.5	52.7	37.9	43.7	49.5	
		62	TC	55.6	55.6	58.2	52.9	52.9	56.9	50.0	50.0	55.5	46.9	46.9	53.9	43.8	43.8	51.6	
			SHC	42.0	50.1	58.2	40.7	48.8	56.9	39.4	47.4	55.5	37.9	45.9	53.9	36.0	43.8	51.6	
		67	TC	60.8	60.8	60.8	57.8	57.8	57.8	54.6	54.6	54.6	51.1	51.1	51.1	47.4	47.4	47.4	
			SHC	34.4	42.6	50.7	33.2	41.3	49.4	31.8	39.9	48.1	30.4	38.5	46.6	28.9	37.0	45.1	
		72	TC	66.6	66.6	66.6	63.2	63.2	63.2	59.7	59.7	59.7	55.9	55.9	55.9	51.8	51.8	51.8	
			SHC	26.7	34.8	43.0	25.4	33.6	41.7	24.1	32.2	40.4	22.6	30.8	38.9	21.1	29.3	37.4	
		76	TC	—	71.4	71.4	—	67.9	67.9	—	64.0	64.0	—	59.9	59.9	—	55.5	55.5	
			SHC	—	28.5	36.7	—	27.2	35.5	—	25.9	34.2	—	24.5	32.7	—	23.0	31.3	
1750 Cfm	EAT (wb)	58	TC	56.3	56.3	63.8	54.0	54.0	61.2	51.5	51.5	58.3	48.7	48.7	55.2	45.7	45.7	51.8	
			SHC	48.8	56.3	63.8	46.8	54.0	61.2	44.6	51.5	58.3	42.2	48.7	55.2	39.6	45.7	51.8	
		62	TC	57.3	57.3	64.0	54.5	54.5	62.5	51.6	51.6	60.7	48.8	48.8	57.5	45.8	45.8	53.9	
			SHC	45.3	54.7	64.0	44.0	53.3	62.5	42.4	51.6	60.7	40.1	48.8	57.5	37.6	45.8	53.9	
		67	TC	62.5	62.5	62.5	59.3	59.3	59.3	55.9	55.9	55.9	52.3	52.3	52.3	48.3	48.3	49.7	
			SHC	36.6	46.0	55.4	35.3	44.7	54.1	33.9	43.3	52.7	32.4	41.8	51.3	30.9	40.3	49.7	
		72	TC	68.3	68.3	68.3	64.8	64.8	64.8	61.0	61.0	61.0	57.0	57.0	57.0	52.7	52.7	52.7	
			SHC	27.5	37.0	46.5	26.2	35.7	45.2	24.9	34.4	43.8	23.4	32.9	42.4	21.9	31.4	40.8	
		76	TC	—	73.2	73.2	—	69.4	69.4	—	65.4	65.4	—	61.1	61.1	—	56.5	56.5	
			SHC	—	29.7	39.3	—	28.4	38.0	—	27.1	36.7	—	25.6	35.2	—	24.1	33.7	
2000 Cfm	EAT (wb)	58	TC	58.7	58.7	66.5	56.2	56.2	63.7	53.5	53.5	60.6	50.6	50.6	57.3	47.3	47.3	53.7	
			SHC	50.9	58.7	66.5	48.7	56.2	63.7	46.4	53.5	60.6	43.8	50.6	57.3	41.0	47.3	53.7	
		62	TC	58.8	58.8	69.2	56.3	56.3	66.3	53.6	53.6	63.1	50.6	50.6	59.6	47.4	47.4	55.8	
			SHC	48.3	58.8	69.2	46.3	56.3	66.3	44.0	53.6	63.1	41.6	50.6	59.6	39.0	47.4	55.8	
		67	TC	63.8	63.8	63.8	60.4	60.4	60.4	56.9	56.9	57.3	53.1	53.1	55.8	49.1	49.1	54.1	
			SHC	38.6	49.3	60.1	37.3	48.0	58.7	35.9	46.6	57.3	34.4	45.1	55.8	32.8	43.4	54.1	
		72	TC	69.6	69.6	69.6	65.9	65.9	65.9	62.1	62.1	62.1	57.9	57.9	57.9	53.5	53.5	53.5	
			SHC	28.4	39.1	49.9	27.0	37.8	48.6	25.7	36.4	47.2	24.2	35.0	45.7	22.6	33.4	44.2	
		76	TC	—	74.5	74.5	—	70.6	70.6	—	66.5	66.5	—	62.0	62.0	—	—	—	
			SHC	—	30.8	41.8	—	29.5	40.4	—	28.2	39.0	—	26.7	37.6	—	—	—	
2250 Cfm	EAT (wb)	58	TC	60.7	60.7	68.8	58.1	58.1	65.8	55.2	55.2	62.6	52.1	52.1	59.1	48.7	48.7	55.2	
			SHC	52.6	60.7	68.8	50.3	58.1	65.8	47.9	55.2	62.6	45.2	52.1	59.1	42.2	48.7	55.2	
		62	TC	60.8	60.8	71.6	58.1	58.1	68.5	55.3	55.3	65.1	52.2	52.2	61.4	48.7	48.7	57.4	
			SHC	50.0	60.8	71.6	47.8	58.1	68.5	45.4	55.3	65.1	42.9	52.2	61.4	40.1	48.7	57.4	
		67	TC	64.7	64.7	64.7	61.3	61.3	63.2	57.7	57.7	61.7	53.8	53.8	60.1	49.7	49.7	58.3	
			SHC	40.6	52.6	64.5	39.2	51.2	63.2	37.8	49.7	61.7	36.2	48.2	60.1	34.6	46.5	58.3	
		72	TC	70.6	70.6	70.6	66.8	66.8	66.8	62.8	62.8	62.8	58.6	58.6	58.6	54.0	54.0	54.0	
			SHC	29.1	41.2	53.3	27.8	39.9	51.9	26.4	38.4	50.5	24.9	37.0	49.0	23.3	35.4	47.4	
		78	TC	—	75.6	75.6	—	71.6	71.6	—	67.3	67.3	—	—	—	—	—	—	
			SHC	—	31.9	44.1	—	30.6	42.8	—	29.2	41.4	—	—	—	—	—	—	
2500 Cfm	EAT (wb)	58	TC	62.5	62.5	70.8	59.7	59.7	67.6	56.7	56.7	64.2	53.4	53.4	60.5	49.9	49.9	56.5	
			SHC	54.1	62.5	70.8	51.7	59.7	67.6	49.1	56.7	64.2	46.3	53.4	60.5	43.2	49.9	56.5	
		62	TC	62.5	62.5	73.6	59.7	59.7	70.3	56.7	56.7	66.8	53.5	53.5	63.0	49.9	49.9	58.8	
			SHC	51.4	62.5	73.6	49.1	59.7	70.3	46.6	56.7	66.8	43.9	53.5	63.0	41.0	49.9	58.8	
		67	TC	65.5	65.5	68.9	62.0	62.0	67.4	58.3	58.3	65.9	54.4	54.4	64.2	50.2	50.2	62.2	
			SHC	42.5	55.7	68.9	41.1	54.3	67.4	39.6	52.7	65.9	38.0	51.1	64.2	36.3	49.2	62.2	
		72	TC	71.4	71.4	71.4	67.5	67.5	67.5	63.4	63.4	63.4	59.1	59.1	59.1	54.4	54.4	54.4	
			SHC	29.9	43.2	56.5	28.5	41.8	55.2	27.1	40.4	53.7	25.6	38.9	52.2	24.0	37.3	50.6	
		76	TC	—	76.4	76.4	—	72.3	72.3	—	—	—	—	—	—	—	—	—	
			SHC	—	33.0	46.4	—	31.6	45.1	—	—	—	—	—	—	—	—	—	

LEGEND

— — DB/WB combo not possible
Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

Performance data (cont)

50HC*B06 — 5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	66.9	60.3	54.8	71.0	64.4	58.6	73.5	66.9	61.6
	SHC	25.8	34.1	43.0	30.5	41.7	52.6	35.0	48.6	61.2
	kW	3.11	3.06	3.03	3.05	3.09	3.16	3.16	3.11	3.07
75	TC	62.4	56.5	51.2	66.3	60.1	54.7	68.2	62.3	57.5
	SHC	21.5	30.6	39.6	26.1	37.6	49.0	29.9	44.2	57.2
	kW	3.47	3.43	3.39	3.42	3.46	3.51	3.52	3.48	3.44
70	TC	57.8	52.3	47.3	61.3	55.6	50.6	63.5	57.7	53.2
	SHC	17.2	26.6	35.9	21.4	33.3	45.1	25.6	39.9	53.2
	kW	3.89	3.85	3.80	3.83	3.88	3.93	3.95	3.90	3.86
60	TC	52.8	47.5	42.9	55.4	50.0	45.3	58.0	52.2	47.9
	SHC	12.5	22.1	31.7	15.8	28.1	40.1	20.4	34.7	47.9
	kW	4.36	4.31	4.26	4.29	4.33	4.38	4.42	4.36	4.32
50	TC	47.4	42.8	38.6	50.1	45.2	41.1	51.8	47.1	43.4
	SHC	7.4	17.7	27.8	11.0	23.6	36.1	14.7	30.0	43.4
	kW	4.88	4.83	4.78	4.81	4.86	4.91	4.93	4.88	4.84
40	TC	41.6	37.5	33.8	44.0	39.7	35.8	45.8	41.3	38.0
	SHC	2.1	12.8	23.3	5.3	18.6	31.2	9.1	24.7	38.0
	kW	5.44	5.39	5.35	5.37	5.42	5.47	5.49	5.44	5.40

50HC*B06 — 5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	25.29	27.61	28.72	26.81	28.62	29.71	27.68	29.53	30.63
	SHC	5.06	10.68	15.86	2.37	6.73	11.22	-0.40	3.30	7.17
	kW	3.23	3.12	3.13	3.12	3.13	3.14	3.12	3.14	3.15
75	TC	26.69	28.45	29.73	27.65	29.64	30.73	28.53	30.55	31.65
	SHC	6.39	11.52	16.85	3.20	7.72	12.20	0.43	4.29	8.16
	kW	3.08	3.11	3.09	3.10	3.09	3.11	3.11	3.10	3.12
70	TC	27.04	29.08	30.15	28.29	30.04	31.09	29.13	30.91	31.97
	SHC	6.76	12.14	17.28	3.82	8.14	12.60	1.02	4.67	8.51
	kW	3.15	3.12	3.15	3.11	3.14	3.17	3.13	3.16	3.18
60	TC	27.99	29.57	31.33	28.86	30.46	32.25	29.63	32.44	33.81
	SHC	7.70	12.66	18.45	4.41	8.60	13.74	1.54	6.16	10.28
	kW	3.17	3.23	3.15	3.21	3.26	3.18	3.23	3.12	3.10
50	TC	30.09	31.66	32.64	30.93	32.57	33.53	31.73	33.38	34.35
	SHC	9.72	14.66	19.72	6.40	10.61	14.99	3.56	7.10	10.85
	kW	3.01	3.07	3.11	3.04	3.10	3.15	3.07	3.14	3.18
40	TC	28.39	30.78	32.67	31.13	32.60	34.40	31.86	33.33	36.07
	SHC	8.17	13.89	19.80	6.63	10.69	15.85	3.72	7.10	12.51
	kW	3.39	3.32	3.24	3.14	3.23	3.15	3.18	3.27	3.08

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*A07 — 6 TON — SINGLE STAGE COOLING CAPACITIES

50HC*A07				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
1800 Cfm	EAT (wb)	58	TC	64.1	64.1	72.5	61.8	61.8	69.9	59.2	59.2	67.0	56.3	56.3	63.7	53.2	53.2	60.2	
			SHC	55.7	64.1	72.5	53.7	61.8	69.9	51.4	59.2	67.0	48.9	56.3	63.7	46.2	53.2	60.2	
		62	TC	67.9	67.9	68.5	64.9	64.9	67.0	61.5	61.5	65.3	57.9	57.9	63.5	54.0	54.0	61.4	
			SHC	50.2	59.4	68.5	48.8	57.9	67.0	47.1	56.2	65.3	45.4	54.4	63.5	43.4	52.4	61.4	
		67	TC	74.8	74.8	74.8	71.5	71.5	71.5	67.8	67.8	67.8	63.8	63.8	63.8	59.5	59.5	59.5	
			SHC	41.8	50.9	60.1	40.3	49.5	58.7	38.8	47.9	57.1	37.1	46.2	55.4	35.3	44.4	53.6	
		72	TC	82.2	82.2	82.2	78.7	78.7	78.7	74.7	74.7	74.7	70.4	70.4	70.4	65.6	65.6	65.6	
			SHC	33.0	42.3	51.6	31.6	40.9	50.2	30.1	39.3	48.6	28.4	37.7	46.9	26.7	35.9	45.1	
		76	TC		88.7	88.7		84.8	84.8		80.6	80.6		76.0	76.0		70.9	70.9	
			SHC		35.3	45.2		33.9	43.7		32.4	42.0		30.7	40.3		28.9	38.5	
2100 Cfm	EAT (wb)	58	TC	67.6	67.6	76.5	65.1	65.1	73.7	62.3	62.3	70.5	59.3	59.3	67.1	55.9	55.9	63.2	
			SHC	58.7	67.6	76.5	56.6	65.1	73.7	54.1	62.3	70.5	51.5	59.3	67.1	48.5	55.9	63.2	
		62	TC	70.1	70.1	74.9	67.0	67.0	73.2	63.5	63.5	71.3	59.7	59.7	69.1	56.0	56.0	65.8	
			SHC	53.9	64.4	74.9	52.4	62.8	73.2	50.6	61.0	71.3	48.7	58.9	69.1	46.2	56.0	65.8	
		67	TC	77.1	77.1	77.1	73.6	73.6	73.6	69.7	69.7	69.7	65.5	65.5	65.5	60.9	60.9	60.9	
			SHC	44.2	54.8	65.3	42.7	53.3	63.9	41.2	51.7	62.3	39.4	50.0	60.5	37.6	48.1	58.6	
		72	TC	84.7	84.7	84.7	80.9	80.9	80.9	76.8	76.8	76.8	72.2	72.2	72.2	67.2	67.2	67.2	
			SHC	34.2	44.8	55.5	32.7	43.4	54.0	31.1	41.8	52.4	29.5	40.1	50.7	27.6	38.2	48.8	
		76	TC		91.3	91.3		87.2	87.2		82.7	82.7		77.8	77.8		72.5	72.5	
			SHC		36.7	47.8		35.3	46.3		33.7	44.7		32.0	43.0		30.2	41.1	
2400 Cfm	EAT (wb)	58	TC	70.6	70.6	79.9	68.0	68.0	76.9	65.0	65.0	73.5	61.7	61.7	69.8	58.1	58.1	65.8	
			SHC	61.3	70.6	79.9	59.0	68.0	76.9	56.4	65.0	73.5	53.6	61.7	69.8	50.5	58.1	65.8	
		62	TC	72.0	72.0	80.6	68.7	68.7	78.7	65.2	65.2	76.6	61.8	61.8	72.6	58.2	58.2	68.4	
			SHC	57.3	69.0	80.6	55.6	67.2	78.7	53.7	65.2	76.6	50.9	61.8	72.6	48.0	58.2	68.4	
		67	TC	78.9	78.9	78.9	75.2	75.2	75.2	71.2	71.2	71.2	66.8	66.8	66.8	62.0	62.0	63.4	
			SHC	46.5	58.4	70.3	45.0	56.9	68.8	43.4	55.3	67.2	41.6	53.5	65.4	39.7	51.6	63.4	
		72	TC	86.6	86.6	86.6	82.7	82.7	82.7	78.3	78.3	78.3	73.6	73.6	73.6	68.4	68.4	68.4	
			SHC	35.2	47.2	59.2	33.7	45.7	57.7	32.1	44.1	56.0	30.4	42.3	54.3	28.5	40.5	52.4	
		76	TC		93.3	93.3		89.0	89.0		84.4	84.4		79.3	79.3		73.7	73.7	
			SHC		38.0	50.4		36.6	48.9		35.0	47.3		33.3	45.5		31.4	43.6	
2700 Cfm	EAT (wb)	58	TC	73.2	73.2	82.8	70.4	70.4	79.6	67.3	67.3	76.1	63.8	63.8	72.2	60.0	60.0	67.9	
			SHC	63.6	73.2	82.8	61.1	70.4	79.6	58.4	67.3	76.1	55.4	63.8	72.2	52.1	60.0	67.9	
		62	TC	73.7	73.7	85.5	70.5	70.5	82.8	67.3	67.3	79.1	63.9	63.9	75.1	60.1	60.1	70.6	
			SHC	60.2	72.9	85.5	58.1	70.5	82.8	55.5	67.3	79.1	52.7	63.9	75.1	49.5	60.1	70.6	
		67	TC	80.3	80.3	80.3	76.5	76.5	76.5	72.4	72.4	72.4	67.8	67.8	70.0	62.9	62.9	67.9	
			SHC	48.7	61.9	75.1	47.1	60.4	73.6	45.5	58.7	71.9	43.7	56.8	70.0	41.7	54.8	67.9	
		72	TC	88.2	88.2	88.2	84.0	84.0	84.0	79.6	79.6	79.6	74.6	74.6	74.6	69.3	69.3	69.3	
			SHC	36.1	49.4	62.7	34.6	47.9	61.2	33.0	46.2	59.5	31.2	44.5	57.7	29.3	42.6	55.8	
		78	TC		94.9	94.9		90.4	90.4		85.6	85.6		80.4	80.4		74.7	74.7	
			SHC		39.2	52.9		37.7	51.4		36.1	49.7		34.4	47.9		32.5	46.0	
3000 Cfm	EAT (wb)	58	TC	75.4	75.4	85.3	72.5	72.5	82.0	69.2	69.2	78.3	65.6	65.6	74.2	61.7	61.7	69.8	
			SHC	65.5	75.4	85.3	62.9	72.5	82.0	60.1	69.2	78.3	57.0	65.6	74.2	53.5	61.7	69.8	
		62	TC	75.5	75.5	88.7	72.5	72.5	85.3	69.3	69.3	81.4	65.7	65.7	77.2	61.7	61.7	72.5	
			SHC	62.2	75.5	88.7	59.8	72.5	85.3	57.1	69.3	81.4	54.1	65.7	77.2	50.9	61.7	72.5	
		67	TC	81.4	81.4	81.4	77.5	77.5	78.1	73.3	73.3	76.4	68.7	68.7	74.4	63.7	63.7	72.2	
			SHC	50.7	65.2	79.7	49.2	63.7	78.1	47.5	61.9	76.4	45.6	60.0	74.4	43.6	57.9	72.2	
		72	TC	89.4	89.4	89.4	85.2	85.2	85.2	80.5	80.5	80.5	75.5	75.5	75.5	70.1	70.1	70.1	
			SHC	36.9	51.5	66.1	35.4	50.0	64.6	33.8	48.3	62.9	32.0	46.5	61.1	30.1	44.6	59.1	
		76	TC		96.1	96.1		91.6	91.6		86.7	86.7		81.3	81.3		75.5	75.5	
			SHC		40.4	55.3		38.9	53.8		37.2	52.1		35.5	50.3		33.6	48.3	

LEGEND

Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

Performance data (cont)

50HC*D07 — 6 TON — 2- STAGE COOLING CAPACITIES

50HC*A08				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
1800 Cfm	EAT (wb)	58	TC	64.6	64.6	72.9	62.0	62.0	70.1	59.3	59.3	67.0	56.3	56.3	63.6	53.0	53.0	60.0	
			SHC	56.3	64.6	72.9	54.0	62.0	70.1	51.6	59.3	67.0	49.0	56.3	63.6	46.1	53.0	60.0	
		62	TC	68.3	68.3	68.9	65.0	65.0	67.1	61.5	61.5	65.2	57.8	57.8	63.2	53.8	53.8	60.9	
			SHC	50.8	59.8	68.9	49.1	58.1	67.1	47.3	56.3	65.2	45.3	54.3	63.2	43.2	52.1	60.9	
		67	TC	74.8	74.8	74.8	71.2	71.2	71.2	67.4	67.4	67.4	63.4	63.4	63.4	58.9	58.9	58.9	
			SHC	42.0	51.0	60.1	40.3	49.4	58.4	38.5	47.6	56.6	36.7	45.7	54.8	34.7	43.7	52.8	
		72	TC	82.0	82.0	82.0	78.1	78.1	78.1	73.9	73.9	73.9	69.4	69.4	69.4	64.7	64.7	64.7	
			SHC	33.0	42.1	51.3	31.3	40.5	49.6	29.6	38.7	47.9	27.7	36.8	46.0	25.8	34.9	44.0	
		76	TC		88.0	88.0		83.8	83.8		79.4	79.4		74.6	74.6		69.4	69.4	
			SHC		34.9	44.8		33.3	43.1		31.5	41.2		29.7	39.3		27.7	37.3	
2100 Cfm	EAT (wb)	58	TC	68.1	68.1	76.8	65.3	65.3	73.7	62.3	62.3	70.3	59.1	59.1	66.7	55.6	55.6	62.8	
			SHC	59.3	68.1	76.8	56.9	65.3	73.7	54.2	62.3	70.3	51.4	59.1	66.7	48.3	55.6	62.8	
		62	TC	70.4	70.4	75.2	66.9	66.9	73.3	63.3	63.3	71.2	59.5	59.5	68.8	55.6	55.6	65.3	
			SHC	54.5	64.9	75.2	52.7	63.0	73.3	50.8	61.0	71.2	48.6	58.7	68.8	45.9	55.6	65.3	
		67	TC	77.1	77.1	77.1	73.2	73.2	73.2	69.2	69.2	69.2	64.9	64.9	64.9	60.3	60.3	60.3	
			SHC	44.5	54.9	65.4	42.8	53.2	63.6	41.0	51.4	61.7	39.1	49.4	59.8	37.0	47.4	57.8	
		72	TC	84.3	84.3	84.3	80.2	80.2	80.2	75.8	75.8	75.8	71.1	71.1	71.1	66.1	66.1	66.1	
			SHC	34.1	44.6	55.2	32.4	42.9	53.4	30.6	41.1	51.6	28.8	39.2	49.6	26.8	37.2	47.6	
		76	TC		90.4	90.4		86.0	86.0		81.3	81.3		76.3	76.3		70.9	70.9	
			SHC		36.3	47.4		34.6	45.7		32.8	43.8		31.0	41.8		29.0	39.8	
2400 Cfm	EAT (wb)	58	TC	70.9	70.9	80.0	68.0	68.0	76.7	64.8	64.8	73.1	61.4	61.4	69.3	57.7	57.7	65.2	
			SHC	61.8	70.9	80.0	59.2	68.0	76.7	56.4	64.8	73.1	53.4	61.4	69.3	50.2	57.7	65.2	
		62	TC	72.1	72.1	80.9	68.6	68.6	78.6	64.9	64.9	76.1	61.4	61.4	72.1	57.7	57.7	67.8	
			SHC	57.9	69.4	80.9	55.9	67.3	78.6	53.7	64.9	76.1	50.8	61.4	72.1	47.7	57.7	67.8	
		67	TC	78.7	78.7	78.7	74.7	74.7	74.7	70.5	70.5	70.5	66.1	66.1	66.1	61.3	61.3	62.5	
			SHC	46.8	58.6	70.3	45.1	56.8	68.5	43.2	54.9	66.6	41.3	53.0	64.7	39.2	50.9	62.5	
		72	TC	86.0	86.0	86.0	81.7	81.7	81.7	77.2	77.2	77.2	72.3	72.3	72.3	67.1	67.1	67.1	
			SHC	35.2	47.0	58.8	33.4	45.2	57.0	31.6	43.4	55.1	29.7	41.4	53.1	27.7	39.4	51.1	
		76	TC		92.2	92.2		87.6	87.6		82.7	82.7		77.5	77.5		72.0	72.0	
			SHC		37.6	49.9		35.9	48.1		34.1	46.2		32.2	44.2		30.1	42.1	
2700 Cfm	EAT (wb)	58	TC	73.3	73.3	82.7	70.2	70.2	79.3	66.9	66.9	75.5	63.3	63.3	71.5	59.4	59.4	67.1	
			SHC	64.0	73.3	82.7	61.2	70.2	79.3	58.3	66.9	75.5	55.1	63.3	71.5	51.7	59.4	67.1	
		62	TC	73.6	73.6	86.1	70.3	70.3	82.3	67.0	67.0	78.5	63.4	63.4	74.3	59.5	59.5	69.8	
			SHC	61.0	73.6	86.1	58.2	70.3	82.3	55.4	67.0	78.5	52.4	63.4	74.3	49.1	59.5	69.8	
		67	TC	80.0	80.0	80.0	75.9	75.9	75.9	71.6	71.6	71.6	67.0	67.0	69.3	62.1	62.1	67.0	
			SHC	49.0	62.0	75.0	47.2	60.2	73.2	45.4	58.3	71.3	43.4	56.3	69.3	41.3	54.1	67.0	
		72	TC	87.4	87.4	87.4	83.0	83.0	83.0	78.3	78.3	78.3	73.3	73.3	73.3	68.0	68.0	68.0	
			SHC	36.1	49.2	62.2	34.3	47.4	60.4	32.5	45.5	58.5	30.6	43.5	56.5	28.5	41.4	54.3	
		78	TC		93.6	93.6		88.9	88.9		83.9	83.9		78.5	78.5		72.8	72.8	
			SHC		38.8	52.3		37.0	50.5		35.2	48.5		33.2	46.5		31.2	44.3	
3000 Cfm	EAT (wb)	58	TC	75.6	75.6	85.2	72.2	72.2	81.5	68.7	68.7	77.6	65.0	65.0	73.4	60.9	60.9	68.8	
			SHC	65.9	75.6	85.2	62.9	72.2	81.5	59.9	68.7	77.6	56.6	65.0	73.4	53.0	60.9	68.8	
		62	TC	75.6	75.6	88.5	72.3	72.3	84.6	68.8	68.8	80.6	65.0	65.0	76.3	60.9	60.9	71.5	
			SHC	62.7	75.6	88.5	59.9	72.3	84.6	57.0	68.8	80.6	53.8	65.0	76.3	50.4	60.9	71.5	
		67	TC	81.1	81.1	81.1	76.9	76.9	77.7	72.4	72.4	75.7	67.7	67.7	73.5	62.8	62.8	71.1	
			SHC	51.1	65.4	79.6	49.3	63.5	77.7	47.4	61.6	75.7	45.4	59.4	73.5	43.2	57.1	71.1	
		72	TC	88.6	88.6	88.6	84.0	84.0	84.0	79.2	79.2	79.2	74.1	74.1	74.1	68.7	68.7	68.7	
			SHC	37.0	51.3	65.5	35.2	49.4	63.7	33.3	47.5	61.7	31.4	45.5	59.7	29.3	43.4	57.5	
		76	TC		94.8	94.8		89.9	89.9		84.8	84.8		79.3	79.3		73.5	73.5	
			SHC		39.9	54.6		38.1	52.7		36.2	50.8		34.3	48.7		32.2	46.5	

LEGEND

Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

50HC*B07 — 6 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	85.70	77.40	70.00	91.10	82.60	74.90	94.50	85.70	78.40
	SHC	38.20	47.10	56.10	43.90	55.60	67.10	49.00	63.10	76.40
	kW	4.05	4.01	3.97	4.00	4.04	4.08	4.09	4.05	4.02
75	TC	80.90	73.10	66.00	85.90	77.90	70.60	89.20	80.90	73.90
	SHC	33.50	42.90	52.30	38.80	51.10	63.00	43.90	58.60	72.10
	kW	4.46	4.43	4.39	4.42	4.45	4.48	4.51	4.47	4.43
70	TC	75.70	68.40	61.70	80.60	72.90	66.00	83.60	75.70	69.10
	SHC	28.70	38.50	48.30	33.80	46.40	58.70	38.60	53.70	67.60
	kW	4.92	4.89	4.86	4.88	4.91	4.95	4.96	4.92	4.90
60	TC	70.20	63.30	57.00	74.70	67.50	61.10	77.50	70.10	64.00
	SHC	23.60	33.90	44.10	28.40	41.40	54.20	32.90	48.60	62.70
	kW	5.43	5.40	5.37	5.39	5.42	5.45	5.47	5.43	5.41
50	TC	64.30	57.80	52.00	68.40	61.70	55.70	71.00	64.10	58.30
	SHC	18.20	28.90	39.60	22.70	36.20	49.40	27.00	43.10	58.20
	kW	5.99	5.96	5.93	5.95	5.98	6.01	6.02	5.99	5.97
40	TC	57.90	52.00	46.60	61.60	55.40	49.90	64.00	57.50	52.40
	SHC	12.40	23.80	34.90	16.60	30.70	44.30	20.70	37.30	52.40
	kW	6.59	6.57	6.55	6.56	6.59	6.61	6.62	6.60	6.58

50HC*B07 — 6 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	24.17	25.88	26.92	25.35	27.08	28.15	26.39	28.18	29.25
	SHC	–1.44	2.99	7.86	–5.08	–1.55	2.50	–8.25	–5.47	–2.14
	kW	4.15	4.16	4.17	4.17	4.18	4.18	4.18	4.19	4.20
75	TC	26.03	27.87	28.95	27.27	29.11	30.21	28.36	30.24	31.35
	SHC	0.43	4.97	9.86	–3.12	0.49	4.56	–6.19	–3.36	–0.03
	kW	3.96	3.97	3.98	3.98	3.99	4.00	4.00	4.01	4.01
70	TC	26.50	28.76	30.07	27.92	29.99	31.34	29.45	31.67	33.23
	SHC	0.87	5.84	10.97	–2.49	1.35	5.68	–5.06	–1.85	1.94
	kW	3.97	3.93	3.91	3.96	3.95	3.93	3.92	3.89	3.87
60	TC	27.59	29.22	30.17	28.70	30.33	31.30	31.50	31.32	32.91
	SHC	1.91	6.25	11.02	–1.79	1.63	5.57	–3.31	–2.39	1.45
	kW	3.95	3.99	4.01	3.99	4.02	4.04	4.09	4.05	4.01
50	TC	27.77	29.18	30.03	28.75	30.18	32.02	29.63	32.07	32.96
	SHC	2.03	6.18	10.85	–1.80	1.43	6.25	–5.14	–1.69	1.45
	kW	4.03	4.08	4.11	4.07	4.12	4.05	4.12	4.06	4.09
40	TC	29.02	30.38	31.46	29.96	31.32	32.09	30.79	33.49	34.34
	SHC	3.26	7.34	10.07	–0.63	2.54	6.29	–4.01	–0.30	2.80
	kW	3.96	4.02	4.08	4.01	4.08	4.11	4.06	4.00	4.03

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

Performance data (cont)

50HC*E07 — 6 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	83.5	75.6	68.5	88.5	76.0	72.9	91.7	83.4	76.2
	SHC	37.0	47.0	55.4	43.6	51.9	65.6	47.9	62.0	74.2
	kW	3.49	3.50	3.45	3.57	3.53	3.48	3.58	3.56	3.50
75	TC	79.0	71.5	64.7	83.6	75.5	68.7	86.4	78.5	71.8
	SHC	32.9	43.2	51.9	39.5	50.6	61.7	43.7	57.3	70.1
	kW	3.94	3.94	3.90	4.03	3.97	3.91	4.08	3.97	3.95
70	TC	73.5	67.1	60.7	70.2	71.2	64.6	81.3	73.7	67.1
	SHC	26.6	39.3	48.2	31.5	46.7	57.9	39.5	53.3	65.6
	kW	4.39	4.44	4.40	4.54	4.48	4.43	4.56	4.50	4.44
60	TC	68.6	62.6	56.5	73.3	66.3	60.1	75.7	68.4	62.6
	SHC	25.5	35.3	44.4	30.5	42.3	53.8	34.6	48.6	61.5
	kW	5.05	5.02	4.98	5.10	5.05	5.00	5.12	5.06	5.02
50	TC	64.2	57.8	52.0	67.8	61.2	55.3	69.9	63.2	57.6
	SHC	21.7	31.1	40.5	25.8	37.8	49.5	29.5	44.0	57.6
	kW	5.72	5.68	5.64	5.74	5.70	5.66	5.76	5.72	5.67
40	TC	58.8	52.8	47.4	62.1	55.8	50.3	63.6	57.6	52.4
	SHC	17.1	26.7	36.3	20.8	33.0	45.0	24.1	39.1	52.4
	kW	6.46	6.43	6.41	6.48	6.44	6.41	6.48	6.45	6.42

50HC*E07 — 6 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	27.93	28.67	29.02	28.32	29.87	30.25	29.63	30.24	31.31
	SHC	6.95	10.60	14.71	2.87	6.41	9.76	0.19	2.12	5.43
	kW	3.80	3.79	3.78	3.79	3.78	3.78	3.79	3.78	3.77
75	TC	28.78	30.12	30.68	29.82	30.63	31.42	30.45	31.77	32.14
	SHC	7.76	12.01	16.31	4.30	7.17	10.89	1.00	3.59	6.24
	kW	3.80	3.79	3.78	3.79	3.78	3.78	3.79	3.78	3.77
70	TC	29.64	30.80	31.85	30.48	31.97	32.67	31.55	32.79	33.12
	SHC	8.60	12.69	17.46	4.95	8.46	12.12	2.06	4.59	7.21
	kW	3.80	3.79	3.78	3.79	3.78	3.78	3.79	3.78	3.77
60	TC	31.14	32.55	33.57	32.03	33.49	34.38	32.98	34.50	35.39
	SHC	10.05	14.38	19.13	6.45	9.96	13.79	3.45	6.26	9.41
	kW	3.80	3.79	3.78	3.79	3.78	3.78	3.79	3.78	3.77
50	TC	32.23	33.83	34.70	33.47	34.97	35.86	34.42	35.95	36.90
	SHC	11.11	15.63	20.24	7.83	11.39	15.24	4.84	7.67	10.88
	kW	3.80	3.79	3.78	3.79	3.78	3.78	3.79	3.78	3.77
40	TC	33.41	35.02	35.91	34.52	36.20	37.25	35.66	37.22	38.32
	SHC	12.24	16.78	21.43	8.85	12.58	16.58	6.03	8.90	12.27
	kW	3.80	3.79	3.78	3.79	3.78	3.78	3.79	3.78	3.77

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. For more information, see General Fan Performance Notes.
2. The following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*D08 — 7.5 TON — 2-STAGE COOLING CAPACITIES

50HC*D08				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
1800 Cfm	EAT (wb)	58	TC	81.0	81.0	91.8	77.9	77.9	88.4	74.7	74.7	84.6	71.1	71.1	80.6	67.3	67.3	76.3
			SHC	70.2	81.0	91.8	67.5	77.9	88.4	64.7	74.7	84.6	61.6	71.1	80.6	58.3	67.3	76.3
		62	TC	85.1	85.1	87.2	81.1	81.1	85.3	76.9	76.9	83.2	72.5	72.5	81.0	67.8	67.8	78.5
			SHC	63.3	75.3	87.2	61.4	73.4	85.3	59.5	71.3	83.2	57.3	69.2	81.0	55.0	66.7	78.5
		67	TC	93.3	93.3	93.3	89.0	89.0	89.0	84.3	84.3	84.3	79.4	79.4	79.4	74.1	74.1	74.1
			SHC	52.3	64.2	76.2	50.4	62.4	74.4	48.4	60.4	72.4	46.4	58.3	70.3	44.2	56.2	68.1
		72	TC	102.3	102.3	102.3	97.5	97.5	97.5	92.5	92.5	92.5	87.1	87.1	87.1	81.3	81.3	81.3
			SHC	40.9	53.0	65.0	39.0	51.1	63.1	37.1	49.2	61.2	35.1	47.1	59.1	32.9	44.9	57.0
		76	TC		110.0	110.0		104.8	104.8		99.4	99.4		93.5	93.5		87.3	87.3
			SHC		43.7	56.1		41.9	54.2		39.9	52.2		37.9	50.2		35.8	48.0
2100 Cfm	EAT (wb)	58	TC	85.4	85.4	96.9	82.1	82.1	93.1	78.6	78.6	89.1	74.7	74.7	84.7	70.5	70.5	80.0
			SHC	74.0	85.4	96.9	71.2	82.1	93.1	68.1	78.6	89.1	64.7	74.7	84.7	61.1	70.5	80.0
		62	TC	87.8	87.8	95.7	83.7	83.7	93.6	79.3	79.3	91.3	75.0	75.0	87.8	70.6	70.6	83.2
			SHC	68.2	82.0	95.7	66.2	79.9	93.6	64.1	77.7	91.3	61.3	74.6	87.8	58.0	70.6	83.2
		67	TC	96.0	96.0	96.0	91.4	91.4	91.4	86.5	86.5	86.5	81.3	81.3	81.3	75.8	75.8	75.8
			SHC	55.4	69.3	83.2	53.5	67.4	81.2	51.5	65.4	79.2	49.4	63.2	77.1	47.2	61.0	74.8
		72	TC	105.2	105.2	105.2	100.1	100.1	100.1	94.8	94.8	94.8	89.1	89.1	89.1	83.0	83.0	83.0
			SHC	42.3	56.2	70.2	40.4	54.3	68.2	38.4	52.3	66.2	36.3	50.2	64.1	34.1	48.0	61.9
		76	TC		112.9	112.9		107.5	107.5		101.7	101.7		95.6	95.6		89.1	89.1
			SHC		45.5	59.8		43.6	57.8		41.7	55.8		39.6	53.7		37.4	51.5
2400 Cfm	EAT (wb)	58	TC	89.2	89.2	101.1	85.6	85.6	97.1	81.8	81.8	92.8	77.7	77.7	88.1	73.2	73.2	83.0
			SHC	77.3	89.2	101.1	74.2	85.6	97.1	70.9	81.8	92.8	67.3	77.7	88.1	63.5	73.2	83.0
		62	TC	90.1	90.1	103.5	86.1	86.1	100.3	81.9	81.9	96.5	77.8	77.8	91.6	73.3	73.3	86.4
			SHC	72.7	88.1	103.5	70.1	85.2	100.3	67.3	81.9	96.5	63.9	77.8	91.6	60.2	73.3	86.4
		67	TC	98.1	98.1	98.1	93.3	93.3	93.3	88.2	88.2	88.2	82.8	82.8	83.6	77.0	77.0	81.3
			SHC	58.4	74.1	89.9	56.5	72.2	87.9	54.4	70.1	85.8	52.3	67.9	83.6	50.0	65.6	81.3
		72	TC	107.3	107.3	107.3	102.1	102.1	102.1	96.5	96.5	96.5	90.6	90.6	90.6	84.3	84.3	84.3
			SHC	43.5	59.3	75.1	41.6	57.3	73.1	39.5	55.3	71.1	37.4	53.2	69.0	35.2	50.9	66.7
		76	TC		115.2	115.2		109.5	109.5		103.5	103.5		97.2	97.2		90.4	90.4
			SHC		47.2	63.2		45.3	61.3		43.3	59.3		41.2	57.1		38.9	54.8
2700 Cfm	EAT (wb)	58	TC	92.4	92.4	104.7	88.6	88.6	100.4	84.6	84.6	95.9	80.2	80.2	90.9	75.5	75.5	85.6
			SHC	80.0	92.4	104.7	76.8	88.6	100.4	73.3	84.6	95.9	69.5	80.2	90.9	65.4	75.5	85.6
		62	TC	92.5	92.5	109.0	88.7	88.7	104.5	84.6	84.6	99.7	80.3	80.3	94.6	75.6	75.6	89.0
			SHC	76.0	92.5	109.0	72.9	88.7	104.5	69.6	84.6	99.7	66.0	80.3	94.6	62.1	75.6	89.0
		67	TC	99.7	99.7	99.7	94.8	94.8	94.8	89.5	89.5	92.2	84.0	84.0	89.9	78.0	78.0	87.4
			SHC	61.3	78.8	96.4	59.3	76.8	94.3	57.2	74.7	92.2	55.0	72.4	89.9	52.6	70.0	87.4
		72	TC	109.0	109.0	109.0	103.6	103.6	103.6	97.8	97.8	97.8	91.8	91.8	91.8	85.3	85.3	85.3
			SHC	44.6	62.2	79.9	42.7	60.3	77.9	40.6	58.2	75.8	38.5	56.1	73.6	36.2	53.8	71.3
		78	TC		116.9	116.9		111.1	111.1		104.9	104.9		98.4	98.4		91.5	91.5
			SHC		48.8	66.6		46.8	64.6		44.8	62.6		42.7	60.4		40.4	58.1
3000 Cfm	EAT (wb)	58	TC	95.1	95.1	107.8	91.2	91.2	103.3	86.9	86.9	98.5	82.3	82.3	93.3	77.4	77.4	87.8
			SHC	82.4	95.1	107.8	79.0	91.2	103.3	75.3	86.9	98.5	71.3	82.3	93.3	67.1	77.4	87.8
		62	TC	95.2	95.2	112.2	91.2	91.2	107.5	87.0	87.0	102.5	82.4	82.4	97.1	77.5	77.5	91.3
			SHC	78.2	95.2	112.2	75.0	91.2	107.5	71.5	87.0	102.5	67.7	82.4	97.1	63.7	77.5	91.3
		67	TC	101.1	101.1	102.6	96.0	96.0	100.5	90.6	90.6	98.3	84.9	84.9	95.9	78.9	78.9	93.2
			SHC	64.0	83.3	102.6	62.0	81.2	100.5	59.8	79.1	98.3	57.6	76.7	95.9	55.1	74.2	93.2
		72	TC	110.4	110.4	110.4	104.8	104.8	104.8	98.9	98.9	98.9	92.7	92.7	92.7	86.1	86.1	86.1
			SHC	45.7	65.1	84.5	43.7	63.1	82.5	41.7	61.0	80.4	39.5	58.8	78.2	37.2	56.5	75.9
		76	TC		118.3	118.3		112.4	112.4		106.0	106.0		99.4	99.4		92.3	92.3
			SHC		50.3	69.9		48.3	67.9		46.2	65.8		44.1	63.6		41.8	61.3

LEGEND

Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

Performance data (cont)

50HC*E08 — 7.5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	101.90	92.90	84.00	109.60	96.30	89.90	113.60	103.00	94.50
	SHC	43.90	54.60	66.70	50.20	62.70	80.90	56.80	75.80	93.00
	kW	4.60	4.54	4.48	4.65	4.50	4.52	4.68	4.60	4.55
75	TC	96.60	87.30	78.90	102.80	92.90	84.50	106.50	96.70	88.70
	SHC	36.80	49.30	61.90	43.80	59.70	75.90	50.20	69.80	87.40
	kW	5.15	5.09	5.04	5.20	5.13	5.08	5.22	5.16	5.11
70	TC	90.20	81.40	73.50	95.70	86.80	78.80	99.40	90.10	82.70
	SHC	30.80	43.90	56.90	37.20	54.10	70.50	43.60	63.80	81.60
	kW	5.78	5.72	5.67	5.82	5.760	5.71	5.85	5.79	5.74
60	TC	83.50	75.20	67.80	88.80	80.20	72.70	92.00	83.20	76.40
	SHC	24.60	38.20	51.70	30.80	48.00	64.90	36.70	57.40	75.50
	kW	6.50	6.45	6.40	6.54	6.48	6.43	6.57	6.50	6.46
50	TC	76.30	68.70	61.80	81.10	73.20	66.30	84.10	76.00	69.70
	SHC	17.90	32.10	46.20	23.70	41.50	59.00	29.40	50.70	69.00
	kW	7.32	7.28	7.24	7.35	7.31	7.27	7.38	7.32	7.29
40	TC	68.60	61.60	55.40	73.00	65.70	59.30	75.80	68.20	62.60
	SHC	10.90	25.60	40.30	16.20	34.70	52.60	21.70	43.60	62.10
	kW	8.24	8.22	8.20	8.27	8.23	8.21	8.29	8.25	8.22

50HC*E08 — 7.5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	24.06	26.14	27.48	25.50	27.56	28.78	26.59	28.71	29.96
	SHC	–5.55	1.16	8.38	–10.20	–4.69	1.40	–14.39	–9.85	–4.68
	kW	4.43	4.42	4.41	4.40	4.41	4.42	4.42	4.43	4.44
75	TC	24.87	27.26	28.47	26.06	28.53	30.02	27.67	29.77	31.02
	SHC	–4.77	2.23	9.32	–9.65	–3.76	2.59	–13.35	–8.83	–3.66
	kW	4.42	4.36	4.38	4.45	4.38	4.36	4.36	4.39	4.40
70	TC	25.16	27.88	28.56	26.72	29.10	30.26	28.17	30.20	31.83
	SHC	–4.48	2.84	9.45	–9.02	–3.19	2.85	–12.88	–8.40	–2.87
	kW	4.49	4.38	4.48	4.44	4.41	4.44	4.40	4.44	4.40
60	TC	26.43	28.14	29.14	27.49	29.24	30.27	28.50	30.24	32.33
	SHC	–3.25	3.14	10.05	–8.26	–2.99	2.94	–12.54	–8.29	–2.32
	kW	4.48	4.55	4.59	4.53	4.60	4.65	4.58	4.65	4.54
50	TC	27.19	29.55	31.26	28.94	30.59	32.36	30.54	31.54	32.52
	SHC	–2.50	4.50	12.05	–6.87	–1.69	4.92	–10.60	–7.02	–2.07
	kW	4.53	4.51	4.46	4.48	4.57	4.52	4.43	4.63	4.70
40	TC	27.92	31.58	32.82	28.81	32.60	33.54	31.82	33.50	34.44
	SHC	–1.79	6.42	10.84	–6.94	0.23	6.05	–9.36	–5.15	–0.25
	kW	4.57	4.37	4.46	4.65	4.45	4.51	4.40	4.51	4.58

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*D09 — 8.5 TON — 2-STAGE COOLING CAPACITIES

50HC*D09				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
2550 Cfm	EAT (wb)	58	TC	90.5	90.5	102.4	87.0	87.0	98.5	83.2	83.2	94.2	79.1	79.1	89.6	74.7	74.7	84.6	
			SHC	78.6	90.5	102.4	75.5	87.0	98.5	72.2	83.2	94.2	68.7	79.1	89.6	64.8	74.7	84.6	
		62	TC	94.8	94.8	98.1	90.2	90.2	95.8	85.4	85.4	93.4	80.3	80.3	90.8	74.9	74.9	87.8	
			SHC	71.2	84.6	98.1	69.1	82.4	95.8	66.8	80.1	93.4	64.3	77.5	90.8	61.6	74.7	87.8	
		67	TC	104.0	104.0	104.0	99.0	99.0	99.0	93.7	93.7	93.7	88.0	88.0	88.0	81.9	81.9	81.9	
			SHC	58.7	72.2	85.7	56.6	70.0	83.5	54.3	67.8	81.3	52.0	65.4	78.9	49.5	62.9	76.4	
		72	TC	114.0	114.0	114.0	108.5	108.5	108.5	102.7	102.7	102.7	96.5	96.5	96.5	89.8	89.8	89.8	
			SHC	45.8	59.3	72.9	43.7	57.2	70.8	41.4	55.0	68.5	39.1	52.7	66.2	36.7	50.2	63.7	
		76	TC		122.4	122.4		116.5	116.5		110.3	110.3		103.7	103.7		96.5	96.5	
			SHC		48.8	62.8		46.7	60.6		44.5	58.4		42.2	56.0		39.8	53.5	
2975 Cfm	EAT (wb)	58	TC	95.4	95.4	108.0	91.6	91.6	103.7	87.5	87.5	99.0	83.1	83.1	94.0	78.3	78.3	88.6	
			SHC	82.8	95.4	108.0	79.5	91.6	103.7	75.9	87.5	99.0	72.1	83.1	94.0	68.0	78.3	88.6	
		62	TC	97.7	97.7	107.4	93.0	93.0	104.9	88.1	88.1	102.1	83.2	83.2	97.9	78.4	78.4	92.2	
			SHC	76.7	92.0	107.4	74.3	89.6	104.9	71.8	86.9	102.1	68.6	83.2	97.9	64.6	78.4	92.2	
		67	TC	106.9	106.9	106.9	101.6	101.6	101.6	96.0	96.0	96.0	90.1	90.1	90.1	83.7	83.7	83.9	
			SHC	62.3	77.8	93.4	60.1	75.6	91.2	57.8	73.3	88.9	55.4	70.9	86.5	52.8	68.3	83.9	
		72	TC	117.0	117.0	117.0	111.2	111.2	111.2	105.1	105.1	105.1	98.6	98.6	98.6	91.7	91.7	91.7	
			SHC	47.3	62.9	78.6	45.1	60.8	76.4	42.9	58.5	74.1	40.5	56.1	71.7	38.0	53.6	69.2	
		76	TC		125.6	125.6		119.4	119.4		112.8	112.8		105.9	105.9		98.4	98.4	
			SHC		50.8	66.8		48.7	64.6		46.4	62.3		44.1	59.9		41.6	57.4	
3400 Cfm	EAT (wb)	58	TC	99.5	99.5	112.7	95.4	95.4	108.0	91.0	91.0	103.0	86.3	86.3	97.7	81.2	81.2	91.9	
			SHC	86.4	99.5	112.7	82.8	95.4	108.0	79.0	91.0	103.0	74.9	86.3	97.7	70.5	81.2	91.9	
		62	TC	100.3	100.3	115.8	95.6	95.6	112.4	91.2	91.2	107.2	86.4	86.4	101.6	81.3	81.3	95.6	
			SHC	81.5	98.6	115.8	78.7	95.6	112.4	75.1	91.2	107.2	71.2	86.4	101.6	67.0	81.3	95.6	
		67	TC	109.1	109.1	109.1	103.6	103.6	103.6	97.8	97.8	97.8	91.6	91.6	93.7	85.0	85.0	90.9	
			SHC	65.6	83.2	100.8	63.4	81.0	98.6	61.0	78.6	96.2	58.6	76.1	93.7	55.9	73.4	90.9	
		72	TC	119.3	119.3	119.3	113.3	113.3	113.3	107.0	107.0	107.0	100.3	100.3	100.3	93.0	93.0	93.0	
			SHC	48.7	66.4	84.1	46.5	64.2	81.8	44.2	61.8	79.5	41.8	59.4	77.1	39.2	56.9	74.5	
		76	TC		128.0	128.0		121.5	121.5		114.7	114.7		107.5	107.5		99.8	99.8	
			SHC		52.6	70.6		50.5	68.4		48.2	66.1		45.8	63.6		43.3	61.1	
3825 Cfm	EAT (wb)	58	TC	103.0	103.0	116.6	98.7	98.7	111.7	94.0	94.0	106.4	89.0	89.0	100.8	83.6	83.6	94.7	
			SHC	89.4	103.0	116.6	85.6	98.7	111.7	81.6	94.0	106.4	77.3	89.0	100.8	72.6	83.6	94.7	
		62	TC	103.1	103.1	121.3	98.8	98.8	116.1	94.1	94.1	110.7	89.1	89.1	104.8	83.7	83.7	98.4	
			SHC	85.0	103.1	121.3	81.4	98.8	116.1	77.5	94.1	110.7	73.4	89.1	104.8	69.0	83.7	98.4	
		67	TC	110.9	110.9	110.9	105.2	105.2	105.7	99.2	99.2	103.2	92.9	92.9	100.5	86.1	86.1	97.6	
			SHC	68.8	88.4	108.0	66.5	86.1	105.7	64.1	83.7	103.2	61.6	81.1	100.5	58.9	78.3	97.6	
		72	TC	121.2	121.2	121.2	114.9	114.9	114.9	108.4	108.4	108.4	101.5	101.5	101.5	94.1	94.1	94.1	
			SHC	50.0	69.7	89.4	47.7	67.4	87.1	45.4	65.1	84.7	43.0	62.6	82.3	40.4	60.0	79.6	
		78	TC		129.8	129.8		123.2	123.2		116.2	116.2		108.8	108.8		100.9	100.9	
			SHC		54.4	74.3		52.2	72.1		49.9	69.7		47.5	67.3		44.9	64.7	
4250 Cfm	EAT (wb)	58	TC	106.0	106.0	119.9	101.4	101.4	114.8	96.6	96.6	109.3	91.3	91.3	103.4	85.7	85.7	97.0	
			SHC	92.0	106.0	119.9	88.0	101.4	114.8	83.8	96.6	109.3	79.3	91.3	103.4	74.4	85.7	97.0	
		62	TC	106.1	106.1	124.7	101.5	101.5	119.4	96.6	96.6	113.6	91.4	91.4	107.5	85.7	85.7	100.8	
			SHC	87.4	106.1	124.7	83.6	101.5	119.4	79.6	96.6	113.6	75.3	91.4	107.5	70.6	85.7	100.8	
		67	TC	112.3	112.3	114.9	106.5	106.5	112.5	100.4	100.4	109.9	93.9	93.9	107.0	87.1	87.1	103.8	
			SHC	71.8	93.4	114.9	69.5	91.0	112.5	67.0	88.5	109.9	64.4	85.7	107.0	61.6	82.7	103.8	
		72	TC	122.6	122.6	122.6	116.2	116.2	116.2	109.5	109.5	109.5	102.5	102.5	102.5	94.9	94.9	94.9	
			SHC	51.2	72.8	94.5	48.9	70.5	92.2	46.6	68.2	89.8	44.1	65.7	87.3	41.5	63.1	84.6	
		76	TC		131.3	131.3		124.5	124.5		117.4	117.4		109.8	109.8		101.8	101.8	
			SHC		56.0	77.9		53.8	75.6		51.5	73.3		49.1	70.8		46.5	68.1	

LEGEND

Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

— Points are outside SST and SDT operating range

Performance data (cont)

50HC*E09 — 8.5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	114.70	103.90	93.90	104.30	110.60	100.50	122.90	114.60	105.50
	SHC	48.70	62.20	75.70	84.70	74.20	91.40	60.60	85.10	103.90
	kW	5.17	5.09	5.01	5.10	5.140	5.07	5.20	5.18	5.11
75	TC	107.80	97.40	88.00	114.20	102.90	94.20	116.20	107.60	98.70
	SHC	42.30	56.30	70.30	49.70	67.00	85.60	61.10	78.70	97.30
	kW	5.79	5.71	5.63	5.85	5.75	5.69	5.88	5.80	5.72
70	TC	100.50	90.80	82.00	106.60	96.20	87.70	110.20	100.10	92.20
	SHC	35.60	50.20	64.80	42.80	61.00	79.60	49.20	71.90	91.00
	kW	6.50	6.42	6.34	6.56	6.46	6.40	6.59	6.50	6.44
60	TC	92.70	83.80	75.70	98.50	89.00	80.90	102.10	92.40	85.10
	SHC	28.50	43.90	59.10	35.40	54.60	73.40	41.90	64.90	84.20
	kW	7.30	7.23	7.16	7.36	7.28	7.21	7.40	7.31	7.25
50	TC	85.00	76.50	69.00	90.00	81.30	73.80	93.30	84.04	77.70
	SHC	21.50	37.40	53.10	27.70	47.60	66.90	34.00	57.70	77.00
	kW	8.23	8.16	8.10	8.27	8.20	8.14	8.31	8.23	8.18
40	TC	76.50	68.80	61.80	81.10	72.90	66.20	84.10	75.80	69.80
	SHC	13.80	30.40	46.70	19.70	40.00	60.10	25.60	50.00	69.80
	kW	9.25	9.20	9.16	9.28	9.22	9.19	9.31	9.25	9.21

50HC*E09 — 8.5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	27.53	29.56	30.72	28.95	31.03	32.22	30.26	32.33	33.58
	SHC	–3.84	3.82	11.92	–9.25	–2.92	4.09	–13.93	–8.77	–2.82
	kW	5.09	5.11	5.13	5.11	5.14	5.15	5.14	5.15	5.17
75	TC	29.09	31.60	32.81	30.77	33.10	34.33	32.30	34.45	35.73
	SHC	–2.34	5.72	13.84	–7.51	–0.98	6.04	–11.95	–6.78	–0.82
	kW	4.97	4.91	4.93	4.95	4.94	4.95	4.94	4.96	4.97
70	TC	29.58	32.45	33.63	31.48	34.12	35.55	33.12	35.65	37.38
	SHC	–1.88	6.54	14.63	–6.83	0.00	7.20	–11.16	–5.63	0.75
	kW	4.99	4.90	4.92	4.96	4.90	4.89	4.93	4.90	4.86
60	TC	30.71	33.44	34.52	32.90	34.79	35.86	34.07	36.02	37.09
	SHC	–0.78	7.52	15.54	–5.47	0.68	7.57	–10.28	–5.24	0.55
	kW	5.03	4.95	5.00	4.94	5.01	5.05	4.99	5.06	5.09
50	TC	32.63	34.31	35.26	33.81	35.53	36.51	34.90	36.66	37.65
	SHC	1.05	8.38	16.29	–4.60	1.42	8.24	–9.49	–4.59	1.14
	kW	4.92	5.01	5.06	4.99	5.07	5.13	5.05	5.14	5.19
40	TC	31.94	33.26	35.77	32.96	35.70	37.86	35.17	38.01	38.92
	SHC	0.45	7.47	13.75	–5.35	1.63	9.52	–9.20	–3.29	2.36
	kW	5.16	5.27	5.20	5.25	5.19	5.10	5.16	5.11	5.17

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb})

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*D11 — 10 TON — 2-STAGE COOLING CAPACITIES

50HC*D11				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
3000 Cfm	EAT (wb)	58	TC	105.6	105.6	118.0	101.7	101.7	114.1	97.5	97.5	109.9	92.9	92.9	105.2	87.8	87.8	100.2	
			SHC	93.3	105.6	118.0	89.4	101.7	114.1	85.1	97.5	109.9	80.5	92.9	105.2	75.4	87.8	100.2	
		62	TC	110.6	110.6	110.6	105.5	105.5	108.0	100.1	100.1	105.5	94.4	94.4	102.7	88.5	88.5	98.5	
			SHC	85.6	98.0	110.3	83.3	95.7	108.0	80.7	93.1	105.5	77.9	90.3	102.7	73.8	86.1	98.5	
		67	TC	120.5	120.5	120.5	115.0	115.0	115.0	109.0	109.0	109.0	102.7	102.7	102.7	95.7	95.7	95.7	
			SHC	70.0	82.3	94.7	67.7	80.1	92.5	65.4	77.8	90.1	63.1	75.5	87.9	60.0	72.4	84.8	
		72	TC	131.4	131.4	131.4	125.4	125.4	125.4	118.8	118.8	118.8	111.7	111.7	111.7	104.2	104.2	104.2	
			SHC	53.9	66.3	78.7	51.8	64.2	76.6	49.5	61.9	74.3	47.0	59.4	71.7	44.3	56.7	69.1	
		76	TC	—	140.8	140.8	—	134.2	134.2	—	127.0	127.0	—	119.4	119.4	—	111.5	111.5	
			SHC	—	52.5	64.9	—	50.8	63.2	—	48.7	61.1	—	46.4	58.7	—	44.0	56.4	
3500 Cfm	EAT (wb)	58	TC	110.9	110.9	125.3	106.7	106.7	121.1	102.1	102.1	116.5	97.0	97.0	111.5	91.6	91.6	106.0	
			SHC	96.4	110.9	125.3	92.2	106.7	121.1	87.6	102.1	116.5	82.6	97.0	111.5	77.1	91.6	106.0	
		62	TC	113.6	113.6	120.7	108.4	108.4	118.1	103.1	103.1	114.5	97.9	97.9	109.5	92.0	92.0	105.3	
			SHC	91.9	106.3	120.7	89.3	103.7	118.1	85.7	100.1	114.5	80.6	95.0	109.5	76.4	90.8	105.3	
		67	TC	123.5	123.5	123.5	117.8	117.8	117.8	111.5	111.5	111.5	104.7	104.7	104.7	97.6	97.6	97.6	
			SHC	74.2	88.6	103.1	72.2	86.6	101.0	69.8	84.3	98.7	67.0	81.4	95.9	64.3	78.8	93.2	
		72	TC	134.6	134.6	134.6	128.2	128.2	128.2	121.3	121.3	121.3	113.9	113.9	113.9	106.1	106.1	106.1	
			SHC	55.9	70.3	84.8	53.7	68.1	82.6	51.4	65.8	80.2	48.8	63.2	77.7	46.1	60.6	75.0	
		76	TC	—	144.0	144.0	—	137.1	137.1	—	129.7	129.7	—	121.8	121.8	—	113.5	113.5	
			SHC	—	55.3	69.7	—	53.1	67.6	—	50.9	65.4	—	48.6	63.0	—	46.0	60.5	
4000 Cfm	EAT (wb)	58	TC	115.3	115.3	131.8	110.7	110.7	127.2	105.8	105.8	122.3	100.4	100.4	116.9	94.6	94.6	111.1	
			SHC	98.8	115.3	131.8	94.2	110.7	127.2	89.3	105.8	122.3	83.9	100.4	116.9	78.1	94.6	111.1	
		62	TC	116.5	116.5	129.1	112.0	112.0	124.0	106.5	106.5	120.9	100.9	100.9	116.1	94.7	94.7	111.2	
			SHC	96.1	112.6	129.1	91.0	107.5	124.0	87.9	104.4	120.9	83.1	99.6	116.1	78.2	94.7	111.2	
		67	TC	125.9	125.9	125.9	119.8	119.8	119.8	113.3	113.3	113.3	106.4	106.4	106.4	99.1	99.1	101.1	
			SHC	78.2	94.7	111.2	76.0	92.5	109.0	73.5	90.0	106.5	70.9	87.4	103.9	68.1	84.6	101.1	
		72	TC	137.0	137.0	137.0	130.3	130.3	130.3	123.2	123.2	123.2	115.6	115.6	115.6	107.5	107.5	107.5	
			SHC	57.7	74.2	90.7	55.4	71.9	88.4	53.0	69.5	86.0	50.6	67.1	83.6	47.7	64.2	80.7	
		76	TC	—	146.5	146.5	—	139.3	139.3	—	131.6	131.6	—	123.5	123.5	—	115.0	115.0	
			SHC	—	57.4	73.9	—	55.3	71.8	—	53.0	69.5	—	50.6	67.1	—	48.0	64.5	
4500 Cfm	EAT (wb)	58	TC	118.9	118.9	137.5	114.1	114.1	132.7	108.9	108.9	127.5	103.3	103.3	121.8	97.2	97.2	115.8	
			SHC	100.3	118.9	137.5	95.5	114.1	132.7	90.3	108.9	127.5	84.7	103.3	121.8	78.6	97.2	115.8	
		62	TC	119.9	119.9	135.3	115.0	115.0	130.8	109.2	109.2	126.7	103.3	103.3	121.9	97.2	97.2	115.8	
			SHC	98.2	116.8	135.3	93.7	112.3	130.8	89.6	108.2	126.7	84.8	103.3	121.9	78.7	97.2	115.8	
		67	TC	127.7	127.7	127.7	121.4	121.4	121.4	114.8	114.8	114.8	107.7	107.7	111.5	100.1	100.1	108.5	
			SHC	82.1	100.7	119.3	79.8	98.3	116.9	77.2	95.8	114.4	74.4	92.9	111.5	71.4	89.9	108.5	
		72	TC	138.9	138.9	138.9	132.1	132.1	132.1	124.7	124.7	124.7	116.9	116.9	116.9	108.6	108.6	108.6	
			SHC	59.3	77.9	96.5	57.2	75.7	94.3	54.8	73.3	91.9	52.1	70.6	89.2	49.3	67.9	86.5	
		78	TC	—	148.4	148.4	—	141.1	141.1	—	133.2	133.2	—	124.9	124.9	—	116.1	116.1	
			SHC	—	59.4	78.0	—	57.2	75.8	—	54.9	73.5	—	52.5	71.0	—	49.9	68.4	
5000 Cfm	EAT (wb)	58	TC	122.0	122.0	142.6	117.0	117.0	137.6	111.6	111.6	132.2	105.7	105.7	126.3	99.3	99.3	119.9	
			SHC	101.4	122.0	142.6	96.4	117.0	137.6	90.9	111.6	132.2	85.0	105.7	126.3	78.7	99.3	119.9	
		62	TC	122.7	122.7	141.4	117.1	117.1	137.7	111.6	111.6	132.2	105.7	105.7	126.3	99.4	99.4	120.0	
			SHC	100.2	120.8	141.4	96.4	117.1	137.7	91.0	111.6	132.2	85.1	105.7	126.3	78.8	99.4	120.0	
		67	TC	129.2	129.2	129.2	122.8	122.8	124.6	115.9	115.9	121.9	108.7	108.7	119.0	101.1	101.1	115.7	
			SHC	85.7	106.4	127.0	83.3	104.0	124.6	80.7	101.3	121.9	77.8	98.4	119.0	74.4	95.1	115.7	
		72	TC	140.5	140.5	140.5	133.4	133.4	133.4	125.9	125.9	125.9	118.0	118.0	118.0	109.6	109.6	109.6	
			SHC	61.0	81.6	102.3	58.7	79.3	99.9	56.3	76.9	97.5	53.7	74.3	94.9	50.9	71.5	92.1	
		76	TC	—	150.1	150.1	—	142.6	142.6	—	134.5	134.5	—	126.0	126.0	—	117.1	117.1	
			SHC	—	61.4	82.0	—	59.2	79.8	—	56.8	77.4	—	54.3	74.9	—	51.7	72.3	

LEGEND

— — DB/WB combo not possible
Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

Performance data (cont)

50HC*E11 — 10 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	121.34	110.46	99.60	139.20	125.18	111.17	157.20	140.10	110.50
	SHC	58.86	72.03	85.20	67.31	80.25	93.18	74.00	86.80	72.00
	kW	6.61	6.54	6.45	6.65	6.58	6.50	6.67	6.62	6.53
75	TC	115.30	105.01	94.73	128.03	114.90	101.77	140.90	124.90	105.00
	SHC	45.81	62.19	78.57	55.02	71.16	87.29	62.30	78.30	62.20
	kW	6.76	6.88	6.78	6.80	6.73	6.83	6.82	6.77	6.87
70	TC	109.26	99.57	89.89	116.87	104.62	92.38	124.60	109.70	99.60
	SHC	32.76	52.35	71.93	42.70	62.07	81.40	50.60	69.80	52.30
	kW	7.55	7.49	7.39	7.58	7.51	7.45	7.60	7.56	7.49
60	TC	103.21	94.13	85.04	105.71	94.34	82.98	108.20	94.60	94.10
	SHC	19.71	42.51	65.30	30.45	52.98	75.51	39.00	61.30	42.50
	kW	8.47	8.42	8.32	8.51	8.44	8.37	8.53	8.49	8.41
50	TC	97.17	88.68	80.20	94.54	84.06	73.58	91.90	79.40	88.70
	SHC	6.67	32.66	58.66	18.16	43.89	69.62	27.30	52.80	32.60
	kW	9.42	9.37	9.27	9.46	9.39	9.32	9.48	9.44	9.36
40	TC	91.12	83.24	75.36	83.38	73.78	64.19	75.60	64.20	83.20
	SHC	-6.40	22.82	52.03	5.87	34.80	63.73	15.60	44.30	22.80
	kW	10.35	10.30	10.20	10.39	10.32	10.25	10.41	10.37	10.29

50HC*E11 — 10 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	49.20	54.60	57.40	51.90	56.50	59.40	54.70	59.00	62.10
	SHC	12.50	20.00	28.80	7.90	13.30	20.30	4.20	8.50	13.70
	kW	5.87	5.88	5.90	5.88	5.90	5.92	5.91	5.93	5.94
75	TC	53.60	57.10	60.10	56.40	60.60	63.80	59.00	63.50	66.40
	SHC	17.30	25.10	33.60	12.70	18.20	25.20	8.80	13.60	18.70
	kW	5.56	5.57	5.58	5.57	5.58	5.60	5.60	5.62	5.63
70	TC	57.70	61.50	64.30	60.70	64.90	67.90	63.30	67.60	70.50
	SHC	22.10	29.80	38.30	17.50	23.00	30.20	13.90	18.70	23.80
	kW	5.28	5.29	5.30	5.29	5.30	5.32	5.32	5.34	5.35
60	TC	54.50	57.20	62.10	57.10	61.80	64.90	57.60	61.50	66.70
	SHC	15.40	23.40	32.90	9.40	15.70	22.50	2.10	10.20	16.60
	kW	6.26	6.35	6.39	6.33	6.46	6.47	6.40	6.50	6.51
50	TC	62.80	65.90	70.60	65.20	69.00	73.10	66.20	70.00	75.10
	SHC	23.30	31.00	40.40	15.00	23.60	30.30	7.80	16.70	24.60
	kW	5.68	5.76	5.80	5.74	5.84	5.85	5.80	5.92	5.94
40	TC	70.00	72.80	77.50	73.10	76.00	79.40	73.20	77.10	82.00
	SHC	31.40	38.70	48.20	23.00	31.70	38.30	15.50	23.00	32.60
	kW	5.10	5.18	5.22	5.13	5.27	5.28	5.23	5.32	5.34

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*D12 — 10 TON — 2-STAGE COOLING CAPACITIES

50HC*D12				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
3000 Cfm	EAT (wb)	58	TC	104.3	104.3	118.5	99.5	99.5	113.0	93.4	93.4	106.1	86.7	86.7	98.6	79.7	79.7	90.6	
			SHC	90.2	104.3	118.5	86.0	99.5	113.0	80.6	93.4	106.1	74.9	86.7	98.6	68.8	79.7	90.6	
		62	TC	109.7	109.7	112.4	103.6	103.6	109.5	95.9	95.9	105.9	87.6	87.6	101.2	79.8	79.8	94.4	
			SHC	80.8	96.6	112.4	78.0	93.8	109.5	74.5	90.2	105.9	70.3	85.7	101.2	65.2	79.8	94.4	
		67	TC	121.5	121.5	121.5	115.4	115.4	115.4	107.8	107.8	107.8	98.7	98.7	98.7	89.1	89.1	89.1	
			SHC	65.2	81.0	96.9	62.7	78.6	94.5	59.7	75.6	91.5	56.2	72.0	87.9	52.5	68.3	84.2	
		72	TC	133.0	133.0	133.0	127.1	127.1	127.1	120.5	120.5	120.5	112.0	112.0	112.0	102.1	102.1	102.1	
			SHC	48.7	64.5	80.4	46.5	62.4	78.3	44.1	60.0	75.9	41.2	57.1	73.0	37.8	53.7	69.6	
		76	TC	—	140.9	140.9	—	135.1	135.1	—	128.4	128.4	—	121.3	121.3	—	112.5	112.5	
			SHC	—	50.6	67.1	—	48.7	65.2	—	46.6	63.1	—	44.3	60.7	—	41.4	57.7	
3500 Cfm	EAT (wb)	58	TC	109.9	109.9	124.9	104.9	104.9	119.3	98.7	98.7	112.2	91.6	91.6	104.2	84.2	84.2	95.8	
			SHC	94.9	109.9	124.9	90.6	104.9	119.3	85.2	98.7	112.2	79.0	91.6	104.2	72.6	84.2	95.8	
		62	TC	112.8	112.8	123.1	106.7	106.7	120.0	99.5	99.5	115.3	91.7	91.7	108.5	84.3	84.3	99.8	
			SHC	86.8	104.9	123.1	83.9	102.0	120.0	80.0	97.6	115.3	74.9	91.7	108.5	68.8	84.3	99.8	
		67	TC	124.2	124.2	124.2	118.0	118.0	118.0	110.3	110.3	110.3	101.0	101.0	101.0	91.0	91.0	92.5	
			SHC	68.4	86.7	104.9	66.1	84.3	102.6	63.2	81.5	99.8	59.6	78.0	96.3	55.9	74.2	92.5	
		72	TC	135.2	135.2	135.2	129.1	129.1	129.1	122.4	122.4	122.4	114.2	114.2	114.2	104.2	104.2	104.2	
			SHC	49.2	67.3	85.4	47.1	65.3	83.4	44.8	63.0	81.2	42.0	60.4	78.7	38.7	57.1	75.5	
		76	TC	—	142.4	142.4	—	136.5	136.5	—	129.6	129.6	—	122.4	122.4	—	114.0	114.0	
			SHC	—	51.7	70.9	—	49.7	68.7	—	47.5	66.3	—	45.2	63.8	—	42.6	61.2	
4000 Cfm	EAT (wb)	58	TC	114.3	114.3	130.0	109.2	109.2	124.2	102.9	102.9	117.0	95.4	95.4	108.7	87.7	87.7	99.9	
			SHC	98.6	114.3	130.0	94.2	109.2	124.2	88.7	102.9	117.0	82.2	95.4	108.7	75.5	87.7	99.9	
		62	TC	115.3	115.3	132.4	109.6	109.6	128.3	102.9	102.9	121.9	95.5	95.5	113.2	87.8	87.8	104.1	
			SHC	91.9	112.2	132.4	88.7	108.5	128.3	84.0	102.9	121.9	77.9	95.5	113.2	71.5	87.8	104.1	
		67	TC	125.8	125.8	125.8	119.5	119.5	119.5	111.9	111.9	111.9	102.4	102.4	104.2	92.2	92.2	100.4	
			SHC	71.3	91.8	112.3	69.0	89.6	110.2	66.2	86.9	107.6	62.8	83.5	104.2	59.1	79.7	100.4	
		72	TC	136.3	136.3	136.3	130.2	130.2	130.2	123.4	123.4	123.4	115.4	115.4	115.4	105.3	105.3	105.3	
			SHC	49.5	69.7	89.8	47.4	67.7	87.9	45.1	65.5	85.9	42.5	63.1	83.7	39.3	60.1	80.9	
		76	TC	—	143.1	143.1	—	137.1	137.1	—	130.1	130.1	—	122.6	122.6	—	114.5	114.5	
			SHC	—	52.2	73.2	—	50.2	71.1	—	48.0	68.7	—	45.7	66.4	—	43.3	64.1	
4500 Cfm	EAT (wb)	58	TC	117.5	117.5	133.8	112.4	112.4	127.9	106.0	106.0	120.7	98.4	98.4	112.1	90.3	90.3	103.0	
			SHC	101.3	117.5	133.8	96.8	112.4	127.9	91.2	106.0	120.7	84.6	98.4	112.1	77.7	90.3	103.0	
		62	TC	117.6	117.6	139.4	112.5	112.5	133.3	106.1	106.1	125.8	98.5	98.5	116.8	90.4	90.4	107.4	
			SHC	95.9	117.6	139.4	91.6	112.5	133.3	86.4	106.1	125.8	80.1	98.5	116.8	73.5	90.4	107.4	
		67	TC	126.6	126.6	126.6	120.2	120.2	120.2	112.8	112.8	114.8	103.2	103.2	111.6	93.0	93.0	107.6	
			SHC	73.7	96.4	119.2	71.5	94.3	117.2	68.9	91.8	114.8	65.6	88.6	111.6	61.8	84.7	107.6	
		72	TC	136.7	136.7	136.7	130.5	130.5	130.5	123.6	123.6	123.6	115.7	115.7	115.7	105.7	105.7	105.7	
			SHC	49.4	71.6	93.7	47.4	69.7	91.9	45.1	67.5	89.9	42.7	65.4	88.2	39.5	62.6	85.8	
		78	TC	—	143.1	143.1	—	137.0	137.0	—	129.9	129.9	—	122.4	122.4	—	114.3	114.3	
			SHC	—	52.4	75.1	—	50.5	73.1	—	48.2	70.8	—	46.0	68.5	—	43.7	66.5	
5000 Cfm	EAT (wb)	58	TC	119.9	119.9	136.7	114.7	114.7	130.7	108.4	108.4	123.6	100.6	100.6	114.8	92.3	92.3	105.4	
			SHC	103.2	119.9	136.7	98.6	114.7	130.7	93.2	108.4	123.6	86.4	100.6	114.8	79.2	92.3	105.4	
		62	TC	120.0	120.0	142.4	114.7	114.7	136.2	108.5	108.5	128.8	100.7	100.7	119.7	92.4	92.4	109.9	
			SHC	97.6	120.0	142.4	93.3	114.7	136.2	88.1	108.5	128.8	81.7	100.7	119.7	74.9	92.4	109.9	
		67	TC	126.8	126.8	126.8	120.4	120.4	123.6	113.2	113.2	121.3	103.8	103.8	118.4	93.6	93.6	114.0	
			SHC	75.7	100.6	125.4	73.6	98.6	123.6	71.2	96.2	121.3	68.0	93.2	118.4	64.2	89.1	114.0	
		72	TC	136.5	136.5	136.5	130.2	130.2	130.2	123.2	123.2	123.2	115.5	115.5	115.5	105.6	105.6	105.6	
			SHC	49.1	73.1	97.0	47.1	71.3	95.4	44.9	69.2	93.5	42.5	67.3	92.0	39.5	64.9	90.2	
		76	TC	—	142.7	142.7	—	136.5	136.5	—	129.4	129.4	—	121.6	121.6	—	113.6	113.6	
			SHC	—	52.2	76.7	—	50.4	74.7	—	48.2	72.4	—	45.9	70.1	—	43.7	68.3	

LEGEND

— — DB/WB combo not possible
Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

Performance data (cont)

50HC*E12 — 10 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	135.80	123.10	111.60	144.00	130.90	119.20	148.70	135.70	122.90
	SHC	56.70	72.80	88.90	66.10	86.90	107.40	74.40	100.10	121.00
	kW	6.42	6.26	6.13	6.54	6.37	6.22	6.61	6.43	6.26
75	TC	127.30	115.40	104.50	134.90	120.10	111.70	139.30	126.90	116.80
	SHC	48.60	65.40	82.10	57.50	76.60	100.20	65.40	91.80	115.00
	kW	7.20	7.04	6.90	7.31	7.11	7.00	7.38	7.21	7.07
70	TC	118.10	106.50	96.90	125.20	113.60	103.60	129.50	117.80	108.40
	SHC	39.90	57.00	74.90	48.30	70.50	92.40	56.20	83.10	106.80
	kW	8.06	7.89	7.76	8.17	8.00	7.86	8.24	8.07	7.93
60	TC	107.30	97.80	87.80	114.50	103.80	94.50	117.60	107.30	99.00
	SHC	29.60	48.70	66.20	38.10	61.30	83.80	44.90	73.10	97.50
	kW	8.99	8.85	8.72	9.11	8.95	8.82	9.16	9.01	8.88
50	TC	95.70	86.30	78.20	102.10	91.30	83.40	105.70	95.80	88.20
	SHC	18.60	37.80	57.10	26.40	49.40	73.20	33.60	62.30	87.00
	kW	10.03	9.89	9.79	10.14	9.97	9.86	10.20	10.05	9.94
40	TC	83.70	75.20	67.70	87.50	80.10	72.50	92.10	83.10	75.20
	SHC	7.30	27.40	47.20	12.50	38.80	62.90	20.60	50.30	74.20
	kW	11.17	11.06	10.98	11.23	11.13	11.03	11.30	11.17	11.07

50HC*E12 — 10 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	45.83	49.08	50.90	47.62	50.84	52.72	49.16	52.45	54.33
	SHC	4.82	14.45	24.36	–1.60	6.39	14.99	–7.27	–0.59	6.73
	kW	7.33	7.46	7.55	7.40	7.53	7.62	7.46	7.60	7.68
75	TC	48.52	51.89	53.81	50.31	53.74	55.73	51.92	55.47	57.43
	SHC	7.37	17.08	27.08	0.95	9.11	17.81	–4.65	2.25	9.63
	kW	6.93	7.07	7.15	7.00	7.14	7.23	7.06	7.21	7.29
70	TC	51.15	54.66	56.69	52.96	56.60	58.66	54.65	58.34	60.43
	SHC	9.87	19.70	29.80	3.47	11.82	20.57	–2.05	4.98	12.45
	kW	6.56	6.69	6.78	6.62	6.76	6.85	6.68	6.83	6.91
60	TC	52.89	56.41	59.04	55.63	59.10	62.68	58.00	62.31	64.50
	SHC	11.58	21.44	32.07	6.06	14.26	24.41	1.21	8.78	16.36
	kW	6.60	6.80	6.72	6.53	6.71	6.51	6.46	6.48	6.58
50	TC	55.13	59.53	62.75	58.04	62.61	64.69	59.64	64.34	66.41
	SHC	13.77	24.43	35.63	8.41	17.62	26.38	2.80	10.77	18.23
	kW	6.57	6.53	6.44	6.43	6.41	6.54	6.52	6.50	6.64
40	TC	57.08	60.11	64.35	58.75	63.63	65.58	60.16	65.23	69.04
	SHC	15.67	25.05	33.55	9.13	18.64	27.28	3.34	11.67	20.76
	kW	6.51	6.77	6.62	6.64	6.54	6.70	6.75	6.65	6.50

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil.

50HC*D14 —12.5 TONS — 2-STAGE COOLING CAPACITIES

50HC*D14				AMBIENT TEMPERATURE (F)															
				85			95			105			115			125			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85	
3750 Cfm	EAT (wb)	58	TC	131.9	131.9	149.8	127.0	127.0	144.1	121.5	121.5	137.9	115.4	115.4	131.0	108.7	108.7	123.4	
			SHC	114.1	131.9	149.8	109.8	127.0	144.1	105.0	121.5	137.9	99.8	115.4	131.0	94.0	108.7	123.4	
		62	TC	138.0	138.0	143.4	131.7	131.7	140.4	124.7	124.7	136.9	117.1	117.1	133.1	109.4	109.4	127.4	
			SHC	103.4	123.4	143.4	100.4	120.4	140.4	97.1	117.0	136.9	93.4	113.2	133.1	88.8	108.1	127.4	
		67	TC	151.5	151.5	151.5	144.5	144.5	144.5	136.9	136.9	136.9	128.5	128.5	128.5	119.4	119.4	119.4	
			SHC	85.1	105.2	125.3	82.1	102.2	122.3	78.9	99.0	119.0	75.4	95.5	115.5	71.7	91.8	111.8	
		72	TC	166.1	166.1	166.1	158.5	158.5	158.5	150.2	150.2	150.2	141.1	141.1	141.1	131.3	131.3	131.3	
			SHC	66.2	86.5	106.7	63.3	83.6	103.8	60.2	80.4	100.6	56.8	76.9	97.1	53.1	73.3	93.4	
		76	TC	—	178.6	178.6	—	170.5	170.5	—	161.6	161.6	—	151.8	151.8	—	141.3	141.3	
			SHC	—	71.1	91.8	—	68.3	88.9	—	65.2	85.8	—	61.8	82.5	—	58.2	78.7	
4375 Cfm	EAT (wb)	58	TC	139.2	139.2	158.0	133.8	133.8	151.9	127.9	127.9	145.2	121.3	121.3	137.7	114.1	114.1	129.5	
			SHC	120.4	139.2	158.0	115.7	133.8	151.9	110.6	127.9	145.2	104.9	121.3	137.7	98.7	114.1	129.5	
		62	TC	142.4	142.4	157.6	135.8	135.8	154.1	128.9	128.9	149.2	121.7	121.7	142.9	114.2	114.2	134.8	
			SHC	111.5	134.5	157.6	108.2	131.2	154.1	104.2	126.7	149.2	99.4	121.1	142.9	93.6	114.2	134.8	
		67	TC	155.8	155.8	155.8	148.5	148.5	148.5	140.4	140.4	140.4	131.6	131.6	131.6	122.1	122.1	123.0	
			SHC	90.3	113.6	136.8	87.3	110.5	133.8	84.0	107.2	130.5	80.4	103.6	126.8	76.6	99.8	123.0	
		72	TC	170.6	170.6	170.6	162.7	162.7	162.7	154.0	154.0	154.0	144.4	144.4	144.4	134.1	134.1	134.1	
			SHC	68.5	91.9	115.3	65.5	88.9	112.3	62.3	85.6	109.0	58.8	82.1	105.4	55.1	78.4	101.7	
		76	TC	—	183.3	183.3	—	174.8	174.8	—	165.4	165.4	—	155.2	155.2	—	144.3	144.3	
			SHC	—	74.3	98.3	—	71.3	95.2	—	68.0	91.9	—	64.6	88.3	—	60.9	84.5	
5000 Cfm	EAT (wb)	58	TC	145.3	145.3	164.9	139.5	139.5	158.4	133.2	133.2	151.2	126.2	126.2	143.2	118.5	118.5	134.5	
			SHC	125.6	145.3	164.9	120.7	139.5	158.4	115.2	133.2	151.2	109.1	126.2	143.2	102.5	118.5	134.5	
		62	TC	146.5	146.5	169.3	140.2	140.2	163.9	133.3	133.3	157.4	126.3	126.3	149.1	118.6	118.6	140.0	
			SHC	118.3	143.8	169.3	114.1	139.0	163.9	109.3	133.3	157.4	103.5	126.3	149.1	97.2	118.6	140.0	
		67	TC	159.1	159.1	159.1	151.5	151.5	151.5	143.1	143.1	143.1	134.0	134.0	137.7	124.2	124.2	133.7	
			SHC	95.2	121.6	148.0	92.2	118.5	144.9	88.8	115.1	141.5	85.1	111.4	137.7	81.3	107.5	133.7	
		72	TC	174.1	174.1	174.1	165.9	165.9	165.9	156.8	156.8	156.8	146.9	146.9	146.9	136.2	136.2	136.2	
			SHC	70.5	97.0	123.5	67.5	94.0	120.5	64.2	90.7	117.1	60.6	87.1	113.5	56.9	83.3	109.6	
		76	TC	—	187.0	187.0	—	178.1	178.1	—	168.3	168.3	—	157.7	157.7	—	146.4	146.4	
			SHC	—	77.0	104.0	—	74.0	100.9	—	70.7	97.5	—	67.2	93.9	—	63.4	90.0	
5625 Cfm	EAT (wb)	58	TC	150.4	150.4	170.8	144.4	144.4	163.9	137.7	137.7	156.3	130.3	130.3	147.9	122.2	122.2	138.7	
			SHC	130.1	150.4	170.8	124.9	144.4	163.9	119.0	137.7	156.3	112.7	130.3	147.9	105.7	122.2	138.7	
		62	TC	150.7	150.7	177.9	144.5	144.5	170.6	137.8	137.8	162.7	130.4	130.4	153.9	122.3	122.3	144.4	
			SHC	123.5	150.7	177.9	118.4	144.5	170.6	112.9	137.8	162.7	106.8	130.4	153.9	100.2	122.3	144.4	
		67	TC	161.7	161.7	161.7	153.9	153.9	155.6	145.3	145.3	152.1	135.9	135.9	148.2	125.9	125.9	143.9	
			SHC	100.0	129.4	158.8	96.8	126.2	155.6	93.4	122.7	152.1	89.7	118.9	148.2	85.6	114.8	143.9	
		72	TC	176.9	176.9	176.9	168.3	168.3	168.3	159.0	159.0	159.0	148.8	148.8	148.8	137.9	137.9	137.9	
			SHC	72.3	101.9	131.5	69.3	98.8	128.4	66.0	95.5	125.0	62.4	91.8	121.3	58.6	88.0	117.4	
		78	TC	—	189.8	189.8	—	180.6	180.6	—	170.6	170.6	—	159.7	159.7	—	148.1	148.1	
			SHC	—	79.6	109.7	—	76.5	106.5	—	73.2	103.0	—	69.6	99.2	—	65.7	95.1	
6250 Cfm	EAT (wb)	58	TC	154.8	154.8	175.8	148.5	148.5	168.6	141.5	141.5	160.6	133.7	133.7	151.8	125.3	125.3	142.3	
			SHC	133.9	154.8	175.8	128.4	148.5	168.6	122.3	141.5	160.6	115.6	133.7	151.8	108.4	125.3	142.3	
		62	TC	155.0	155.0	183.0	148.6	148.6	175.5	141.6	141.6	167.2	133.9	133.9	158.0	125.4	125.4	148.1	
			SHC	127.0	155.0	183.0	121.8	148.6	175.5	116.0	141.6	167.2	109.7	133.9	158.0	102.8	125.4	148.1	
		67	TC	163.8	163.8	169.3	155.8	155.8	166.0	147.0	147.0	162.3	137.5	137.5	158.1	127.4	127.4	153.3	
			SHC	104.5	136.9	169.3	101.3	133.6	166.0	97.8	130.0	162.3	93.9	126.0	158.1	89.7	121.5	153.3	
		72	TC	179.1	179.1	179.1	170.3	170.3	170.3	160.8	160.8	160.8	150.3	150.3	150.3	139.2	139.2	139.2	
			SHC	74.1	106.7	139.3	71.0	103.6	136.1	67.7	100.2	132.7	64.1	96.5	128.9	60.2	92.6	124.9	
		76	TC	—	192.1	192.1	—	182.7	182.7	—	172.3	172.3	—	161.2	161.2	—	149.4	149.4	
			SHC	—	82.1	115.1	—	79.0	111.8	—	75.6	108.2	—	71.9	104.3	—	67.9	100.0	

LEGEND

— — DB/WB combo not possible
Cfm — Cubic feet per minute (supply air)
EAT (db) — Entering air temperature (dry bulb)
EAT (wb) — Entering air temperature (wet bulb)
SHC — Sensible heat capacity (1000 Btuh) gross
TC — Total capacity (1000 btuh) gross

NOTE: For more information, see General Fan Performance Notes.

Performance data (cont)

50HC*E14 — 12.5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN SUBCOOLING MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	162.0	147.4	132.8	185.6	167.2	148.8	209.5	187.2	164.9
	SHC	85.0	101.4	117.4	96.9	113.0	129.0	106.5	122.4	138.4
	kW	7.7	7.6	7.3	7.9	7.7	7.4	8.1	7.8	7.5
75	TC	154.8	140.9	127.0	171.7	154.4	137.1	188.8	168.0	147.2
	SHC	70.2	90.4	110.6	83.1	103.2	123.2	93.4	113.4	133.3
	kW	8.8	8.7	8.3	8.9	8.7	8.4	9.1	8.8	8.5
70	TC	147.5	134.4	121.2	157.8	141.6	125.4	168.1	148.8	129.6
	SHC	55.5	79.7	103.9	69.3	93.4	117.5	80.4	104.3	128.3
	kW	9.8	9.7	9.3	9.9	9.7	9.5	10.1	9.8	9.6
60	TC	140.3	127.8	115.4	143.8	128.7	113.7	147.4	129.7	111.9
	SHC	40.9	69.0	97.2	55.5	83.6	111.7	67.3	95.3	111.9
	kW	10.8	10.7	10.3	10.9	10.7	10.5	11.1	10.8	10.6
50	TC	133.0	121.3	109.5	129.9	115.9	101.9	126.7	110.5	94.2
	SHC	26.2	58.3	90.4	41.8	73.8	101.9	54.2	86.2	94.2
	kW	11.8	11.7	11.4	11.9	11.7	11.6	12.1	11.8	11.7
40	TC	125.8	114.7	103.7	115.9	103.1	90.2	106.0	91.3	76.6
	SHC	11.5	47.6	83.7	28.0	64.0	90.2	41.2	77.2	76.6
	kW	12.8	12.7	12.4	12.9	12.7	12.6	13.1	12.8	12.7

50HC*E14 — 12.5 TON — UNIT WITH HUMIDI-MIZER SYSTEM IN HOT GAS REHEAT MODE - COOLING CAPACITIES

TEMP (F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative Humidity)			75 Dry Bulb 64 Wet Bulb (56% Relative Humidity)			75 Dry Bulb 65.3 Wet Bulb (60% Relative Humidity)		
		Air Entering Evaporator - Ewb (cfm)								
		900	1200	1500	900	1200	1500	900	1200	1500
80	TC	57.70	60.00	66.40	60.20	66.80	69.50	64.30	69.10	72.30
	SHC	21.30	27.00	44.00	12.80	22.40	32.50	8.60	16.20	25.50
	kW	8.08	8.15	8.23	8.28	8.34	8.37	8.36	8.43	8.52
75	TC	59.00	61.20	67.90	61.40	68.10	71.00	65.80	70.70	73.70
	SHC	22.40	28.10	44.80	13.50	23.50	33.70	9.30	17.10	26.30
	kW	8.06	8.13	8.21	8.25	8.31	8.34	8.33	8.40	8.49
70	TC	60.40	62.90	69.20	63.10	69.40	72.50	67.00	72.00	75.00
	SHC	23.20	28.90	46.00	14.50	24.30	34.40	10.30	17.90	27.40
	kW	8.04	8.11	8.18	8.23	8.29	8.32	8.31	8.38	8.47
60	TC	63.40	65.70	72.00	65.90	72.30	75.20	70.00	74.80	77.80
	SHC	24.80	30.50	47.80	16.10	25.90	36.00	11.90	19.60	29.00
	kW	8.00	8.07	8.15	8.20	8.25	8.29	8.28	8.35	8.44
50	TC	66.20	68.60	74.30	68.80	74.60	78.20	72.80	77.80	80.70
	SHC	26.60	32.30	49.40	17.70	27.70	37.80	13.50	21.20	30.60
	kW	7.94	8.01	8.08	8.13	8.20	8.23	8.22	8.29	8.38
40	TC	69.10	71.60	77.80	71.80	78.00	81.00	75.70	80.60	83.70
	SHC	28.20	33.90	50.10	19.40	29.30	39.80	15.20	22.90	32.20
	kW	7.90	7.97	8.04	8.09	8.15	8.17	8.16	8.23	8.32

LEGEND

Edb — Entering Wet-Bulb
Ewb — Entering Wet-Bulb
kW — Compressor Motor Power Input
ldb — Leaving Dry-Bulb
lwb — Leaving Wet-Bulb
SHC — Sensible Heat Capacity (100 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross)

NOTES:
1. Direct interpolation is permissible. Do not extrapolate.
2. The Following formulas may be used

$$t_{ldb} = t^{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

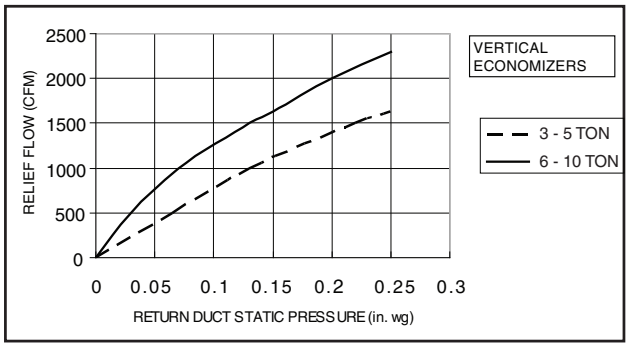
t_{lwb} = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h_{lwb}).

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

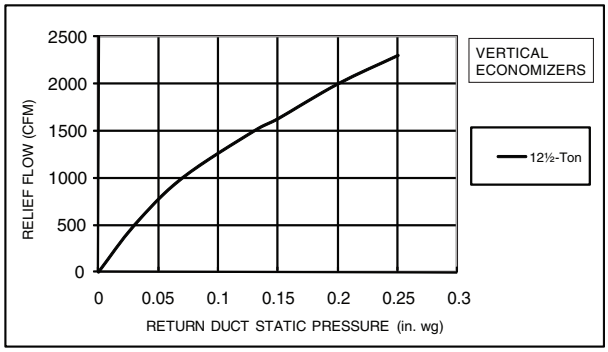
Where: h_{ewb} = Enthalpy of air entering evaporator coil.

ECONOMIZER, BAROMETRIC RELIEF AND POWER EXHAUST PERFORMANCE — VERTICAL APPLICATIONS

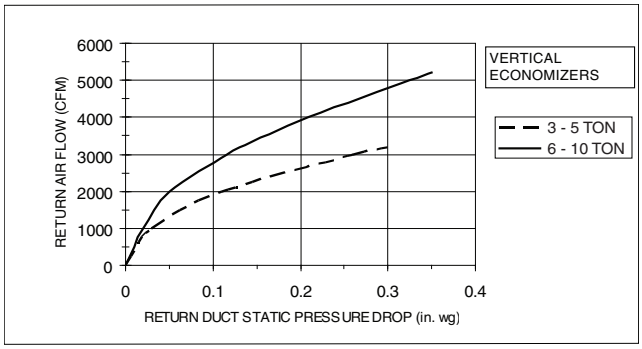
BAROMETRIC RELIEF FLOW - VERTICAL 3-10 TON



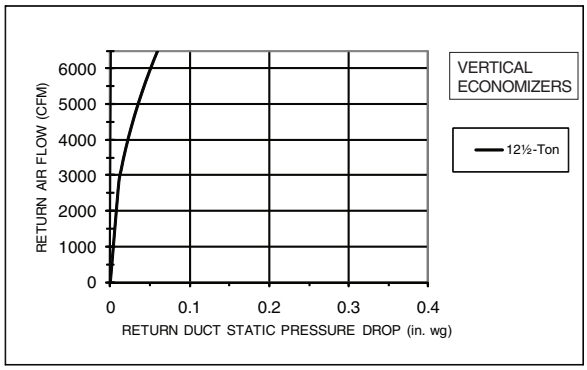
BAROMETRIC RELIEF FLOW - VERTICAL 12.5 TON



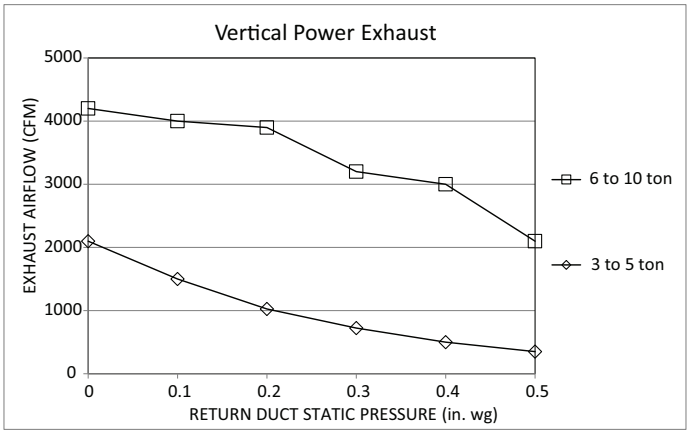
RETURN AIR PRESSURE DROP - VERTICAL 3-10 TON



RETURN AIR PRESSURE DROP - VERTICAL 12.5 TON



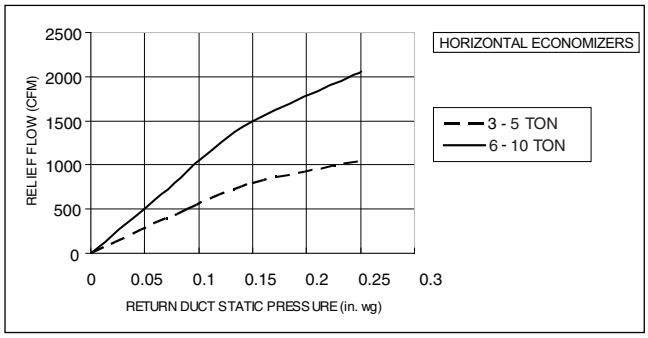
VERTICAL POWER EXHAUST PERFORMANCE



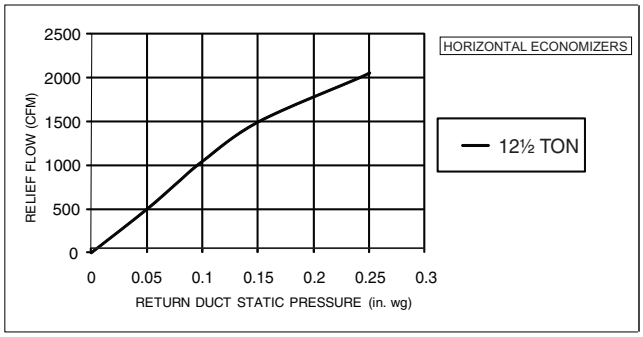
Performance data (cont)

ECONOMIZER, BAROMETRIC RELIEF AND POWER EXHAUST PERFORMANCE — HORIZONTAL APPLICATIONS

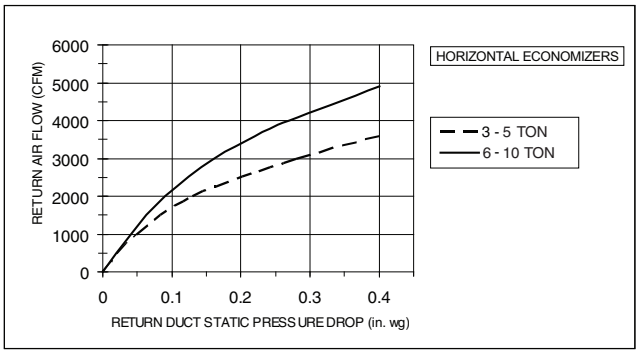
BAROMETRIC RELIEF FLOW - HORIZONTAL 3-10 TON



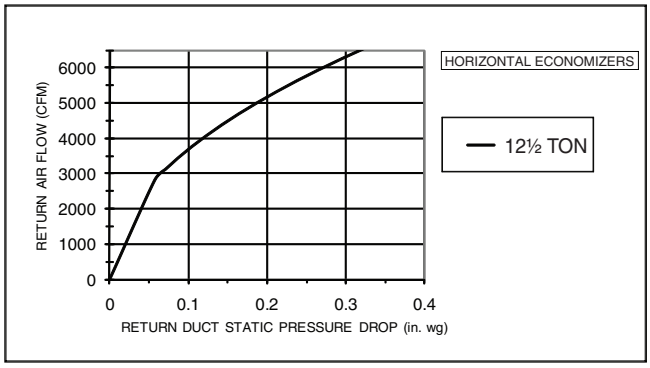
BAROMETRIC RELIEF FLOW - HORIZONTAL 12.5 TON



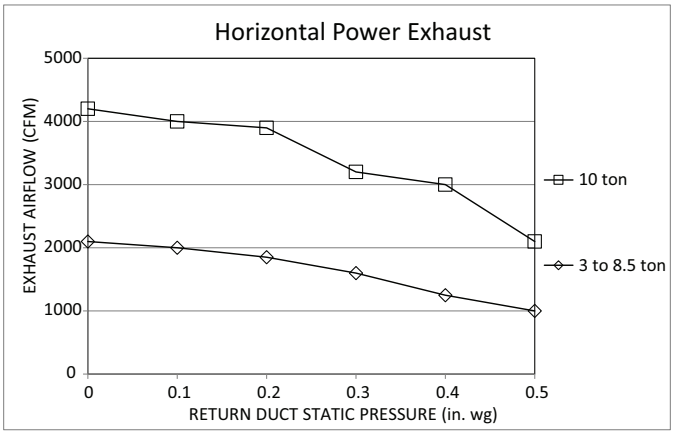
RETURN AIR PRESSURE DROP - HORIZONTAL 3-10 TON



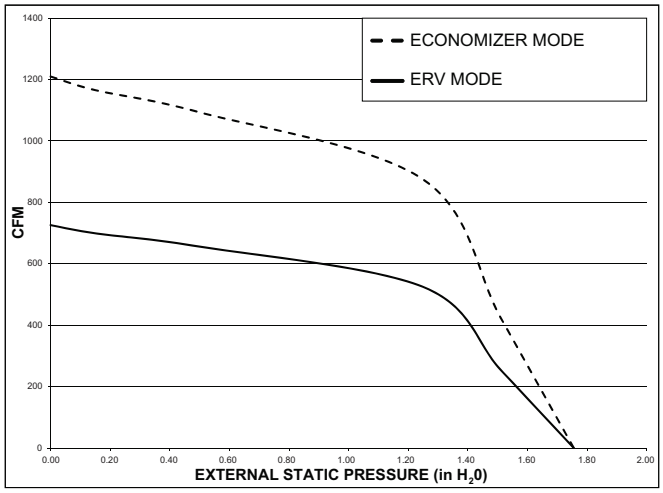
RETURN AIR PRESSURE DROP - HORIZONTAL 12.5 TON



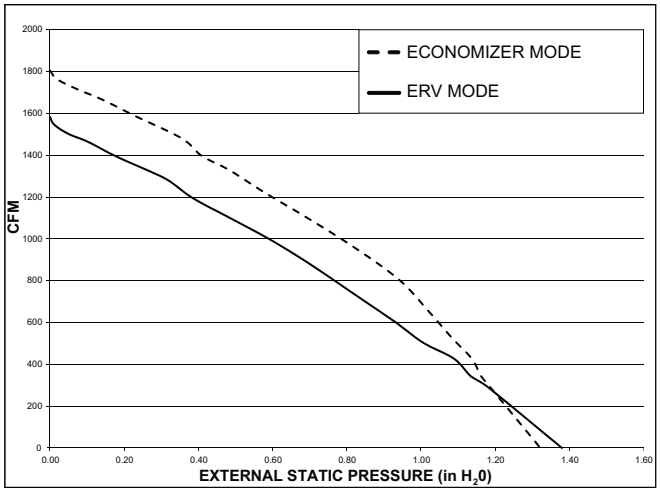
HORIZONTAL POWER EXHAUST PERFORMANCE



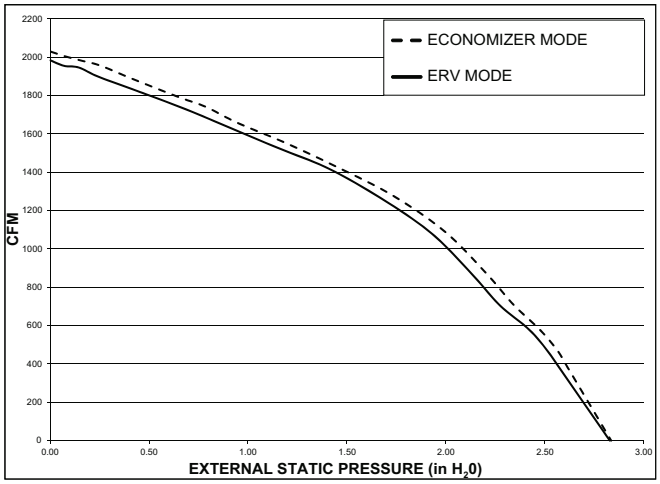
50HC UNITS WITH EnergyX® — POWER EXHAUST PERFORMANCE



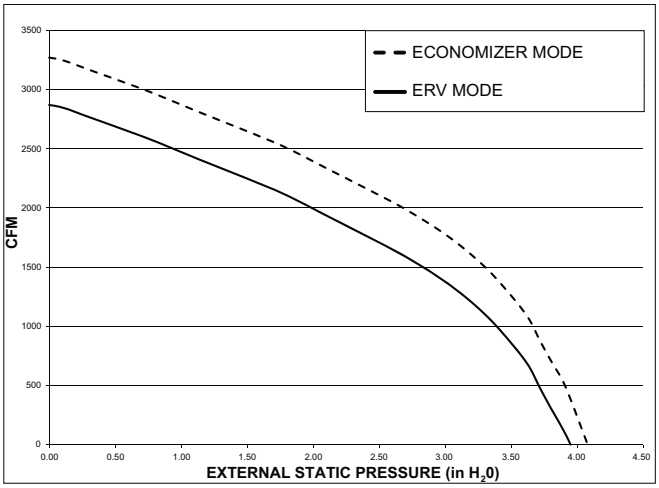
50HC04**



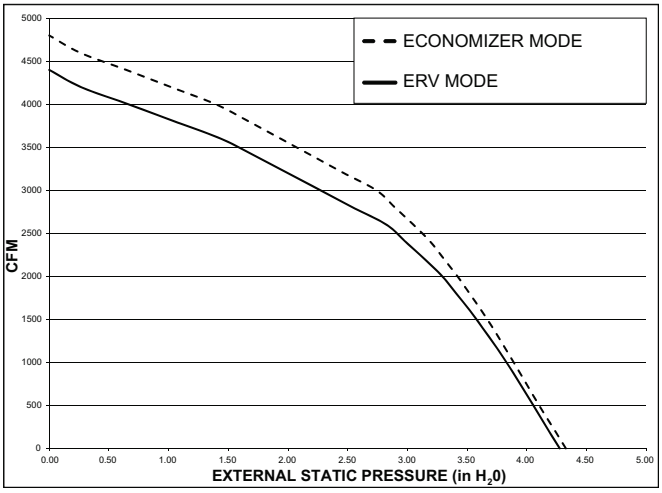
50HC05-06**



50HC07**



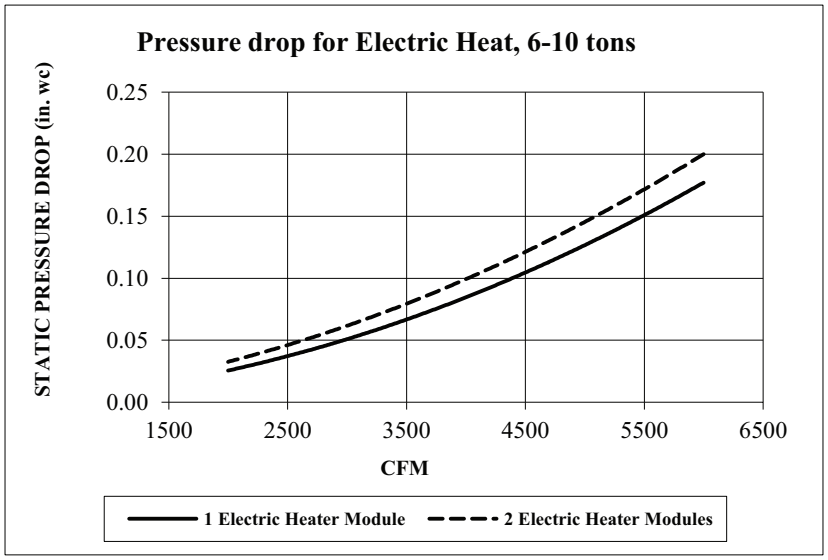
50HC08-12**



50HC14**

50HC UNITS — ACCESSORY PRESSURE DROP (cont)

ELECTRIC HEATER PRESSURE DROP



ELECTRIC HEATER STATIC PRESSURE ADDERS

3-5 TONS										
CFM	**600**	**900**	**1200**	**1400**	**1600**	**1800**	**2000**	**2200**	**2400**	**2600**
1 Electric Heater Module	0.03	0.05	0.07	0.09	0.09	0.10	0.11	0.11	0.12	0.13
2 Electric Heater Module	0.13	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18

6-10 TONS								
CFM	**2250**	**2500**	**2750**	**3000**	**3250**	**3500**	**3750**	**4000**
1 Electric Heater Module	0.031	0.037	0.044	0.051	0.059	0.067	0.076	0.085
2 Electric Heater Module	0.110	0.122	0.133	0.146	0.158	0.172	0.185	0.200

6-10 TONS								
CFM	**4250**	**4500**	**4750**	**5000**	**5250**	**5500**	**5750**	**6000**
1 Electric Heater Module	0.095	0.105	0.116	0.127	0.139	0.151	0.164	0.177
2 Electric Heater Module	0.110	0.122	0.133	0.146	0.158	0.172	0.185	0.200

6-10 TONS									
CFM	**3750**	**4063**	**4375**	**4688**	**5000**	**5313**	**5625**	**5938**	**6000**
Vertical - 1 Electric Heater Module	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04
Vertical - 2 Electric Heater Module	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08
Horizontal - 1 Electric Heater Module	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09
Horizontal - 2 Electric Heater Module	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08

HUMIDI-MIZER® SYSTEM

3-6 TONS									
CFM (in. wg)	**1000**	**1250**	**1500**	**1750**	**2000**	**2250**	**2500**	**2750**	**3000**
3 Tons	0.04	0.052	0.070	—	—	—	—	—	—
4 Tons	—	0.106	0.138	0.172	0.210	—	—	—	—
5 Tons	—	—	0.138	0.172	0.210	0.252	0.30	—	—
6 Tons	—	—	—	0.112	0.125	0.161	0.19	0.22	0.25

7.5-12.5 TONS										
CFM (in. wg)	**4000**	**4250**	**4500**	**4750**	**5000**	**5250**	**5500**	**5750**	**6000**	**6250**
7.5 Tons	—	—	—	—	—	—	—	—	—	—
8.5 Tons	0.20	0.22	—	—	—	—	—	—	—	—
10 Tons	0.20	0.22	0.24	0.26	0.28	—	—	—	—	—
12.5 Tons	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.10	0.11	0.12

GENERAL FAN PERFORMANCE NOTES

1. Interpolation is permissible. Do not extrapolate.
2. External static pressure is the static pressure difference between the return duct and the supply duct plus the static pressure caused by any FIOPs or accessories.
3. Tabular data accounts for pressure loss due to clean filters, unit casing, and wet coils. Factory options and accessories may add static pressure losses. Selection software is available, through your salesperson, to help you select the best motor/drive combination for your application.
4. The fan performance tables offer motor/drive recommendations. In cases when two motor/drive combinations would work, Carrier recommends the lower horsepower option.
5. For information on the electrical properties of Carrier motors, please see the electrical information section of this book.
6. For more information on the performance limits of Carrier motors, see the application data section of this book.
7. The EPACT (Energy Policy Act of 1992) regulates energy requirements for specific types of indoor fan motors. Motors regulated by EPACT include any general purpose, T-frame (three-digit, 143 and larger), single-speed, foot mounted, polyphase, squirrel cage induction motors of NEMA (National Electrical Manufacturers Association) design A and B, manufactured for use in the United States. Ranging from 1 to 200 Hp, these continuous-duty motors operate on 230 and 460 volt, 60 Hz power. If a motor does not fit into these specifications, the motor does not have to be replaced by an EPACT compliant energy-efficient motor. Variable-speed motors are exempt from EPACT compliance requirements.

50HC*A04 VERTICAL UNIT - DIRECT DRIVE FAN PERFORMANCE

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	900	0.36	0.16
	975	0.27	0.16
	1050	0.18	0.15
	1125	0.10	0.15
	1200	0.04	0.16
	1275	—	—
	1350	—	—
	1425	—	—
	1500	—	—
2	900	0.51	0.21
	975	0.40	0.20
	1050	0.30	0.19
	1125	0.21	0.18
	1200	0.11	0.17
	1275	0.02	0.16
	1350	—	—
	1425	—	—
	1500	—	—
3	900	0.84	0.33
	975	0.72	0.32
	1050	0.60	0.31
	1125	0.49	0.29
	1200	0.38	0.28
	1275	0.28	0.26
	1350	0.17	0.25
	1425	0.07	0.24
	1500	—	—
4	900	1.06	0.41
	975	0.96	0.41
	1050	0.86	0.41
	1125	0.74	0.40
	1200	0.63	0.38
	1275	0.50	0.37
	1350	0.38	0.35
	1425	0.26	0.34
	1500	0.15	0.32
5	900	1.24	0.51
	975	1.19	0.52
	1050	1.14	0.54
	1125	1.08	0.57
	1200	1.03	0.59
	1275	0.98	0.61
	1350	0.93	0.64
	1425	0.88	0.67
	1500	0.82	0.69

LEGEND

BHP — Brake Horsepower
CFM — Cubic Feet Per Minute
ESP — External Static Pressure

50HC*A04 HORIZONTAL UNIT - DIRECT DRIVE FAN PERFORMANCE

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	900	0.47	0.21
	975	0.38	0.20
	1050	0.29	0.19
	1125	0.21	0.18
	1200	0.13	0.18
	1275	0.06	0.20
	1350	—	—
	1425	—	—
	1500	—	—
2	900	0.65	0.27
	975	0.54	0.26
	1050	0.44	0.25
	1125	0.33	0.24
	1200	0.23	0.23
	1275	0.13	0.21
	1350	0.02	0.20
	1425	—	—
	1500	—	—
3	900	0.96	0.38
	975	0.84	0.37
	1050	0.73	0.36
	1125	0.61	0.34
	1200	0.50	0.33
	1275	0.38	0.31
	1350	0.26	0.30
	1425	0.15	0.28
	1500	0.04	0.26
4	900	1.17	0.46
	975	1.08	0.46
	1050	0.98	0.46
	1125	0.87	0.45
	1200	0.75	0.44
	1275	0.63	0.42
	1350	0.51	0.40
	1425	0.39	0.39
	1500	0.27	0.37
5	900	1.35	0.52
	975	1.30	0.54
	1050	1.26	0.57
	1125	1.21	0.59
	1200	1.16	0.62
	1275	1.12	0.64
	1350	1.07	0.67
	1425	1.02	0.70
	1500	0.97	0.73

LEGEND

BHP — Brake Horsepower
CFM — Cubic Feet Per Minute
ESP — External Static Pressure

Fan data (cont)

50HC*A05 VERTICAL UNIT - DIRECT DRIVE FAN PERFORMANCE

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1200	0.57	0.31
	1300	0.44	0.29
	1400	0.30	0.27
	1500	0.16	0.25
	1600	0.03	0.25
	1700	—	—
	1800	—	—
	1900	—	—
	2000	—	—
2	1200	0.68	0.35
	1300	0.54	0.33
	1400	0.40	0.31
	1500	0.24	0.28
	1600	0.10	0.26
	1700	—	—
	1800	—	—
	1900	—	—
	2000	—	—
3	1200	—	—
	1300	1.09	0.54
	1400	1.02	0.55
	1500	0.93	0.58
	1600	0.82	0.57
	1700	0.69	0.55
	1800	0.54	0.52
	1900	0.38	0.50
	2000	0.21	0.47
4	1200	1.16	0.56
	1300	1.12	0.59
	1400	1.07	0.61
	1500	1.00	0.65
	1600	0.92	0.65
	1700	0.80	0.66
	1800	0.67	0.65
	1900	0.51	0.62
	2000	0.34	0.59
5	1200	1.16	0.59
	1300	1.11	0.63
	1400	1.00	0.67
	1500	0.88	0.67
	1600	0.96	0.75
	1700	0.91	0.75
	1800	0.86	0.83
	1900	0.80	0.87
	2000	0.74	0.91

LEGEND

BHP — Brake Horsepower
CFM — Cubic Feet Per Minute
ESP — External Static Pressure

50HC*A05 HORIZONTAL UNIT - DIRECT DRIVE FAN PERFORMANCE

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1200	0.62	0.34
	1300	0.48	0.32
	1400	0.35	0.30
	1500	0.23	0.28
	1600	0.12	0.28
	1700	0.02	0.27
	1800	—	—
	1900	—	—
	2000	—	—
2	1200	0.74	0.39
	1300	0.60	0.37
	1400	0.46	0.35
	1500	0.32	0.32
	1600	0.19	0.30
	1700	0.07	0.27
	1800	—	—
	1900	—	—
	2000	—	—
3	1200	1.20	0.59
	1300	1.12	0.60
	1400	1.01	0.61
	1500	0.89	0.62
	1600	0.76	0.59
	1700	0.61	0.56
	1800	0.47	0.53
	1900	0.32	0.50
	2000	0.18	0.47
4	1200	1.24	0.60
	1300	1.18	0.63
	1400	1.11	0.65
	1500	1.03	0.69
	1600	0.93	0.69
	1700	0.82	0.69
	1800	0.70	0.69
	1900	0.56	0.66
	2000	0.41	0.63
5	1200	1.25	0.61
	1300	1.20	0.65
	1400	1.11	0.68
	1500	1.03	0.68
	1600	1.05	0.76
	1700	1.01	0.76
	1800	0.96	0.84
	1900	0.91	0.89
	2000	0.87	0.93

LEGEND

BHP — Brake Horsepower
CFM — Cubic Feet Per Minute
ESP — External Static Pressure

50HC*A06 VERTICAL UNIT - DIRECT DRIVE FAN PERFORMANCE

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1500	0.50	0.44
	1625	0.32	0.42
	1750	0.14	0.39
	1875	—	—
	2000	—	—
	2125	—	—
	2250	—	—
	2375	—	—
	2500	—	—
2	1500	0.72	0.56
	1625	0.53	0.53
	1750	0.34	0.50
	1875	0.18	0.48
	2000	—	—
	2125	—	—
	2250	—	—
	2375	—	—
	2500	—	—
3	1500	1.20	0.84
	1625	1.02	0.82
	1750	0.82	0.82
	1875	0.61	0.79
	2000	0.40	0.75
	2125	0.20	0.71
	2250	0.04	0.67
	2375	—	—
	2500	—	—
4	1500	1.31	0.92
	1625	1.17	0.92
	1750	0.99	0.95
	1875	0.80	0.94
	2000	0.59	0.90
	2125	0.37	0.86
	2250	0.17	0.83
	2375	0.00	0.79
	2500	—	—
5	1500	1.36	0.94
	1625	1.24	0.99
	1750	0.99	1.02
	1875	0.80	1.05
	2000	0.74	1.03
	2125	0.53	0.99
	2250	0.31	0.94
	2375	0.08	0.90
	2500	—	0.86

LEGEND

BHP — Brake Horsepower
CFM — Cubic Feet Per Minute
ESP — External Static Pressure

50HC*A06 HORIZONTAL UNIT - DIRECT DRIVE FAN PERFORMANCE

SPEED (TORQUE) TAP	CFM	ESP	BHP
1	1500	0.63	0.49
	1625	0.45	0.46
	1750	0.27	0.43
	1875	0.10	0.39
	2000	—	—
	2125	—	—
	2250	—	—
	2375	—	—
	2500	—	—
2	1500	0.88	0.61
	1625	0.69	0.58
	1750	0.49	0.55
	1875	0.30	0.51
	2000	0.12	0.48
	2125	—	—
	2250	—	—
	2375	—	—
	2500	—	—
3	1500	1.37	0.89
	1625	1.20	0.87
	1750	1.02	0.86
	1875	0.81	0.83
	2000	0.60	0.79
	2125	0.39	0.75
	2250	0.21	0.71
	2375	0.07	0.67
	2500	—	—
4	1500	1.48	0.95
	1625	1.35	0.95
	1750	1.20	0.99
	1875	1.03	0.99
	2000	0.83	0.96
	2125	0.63	0.93
	2250	0.42	0.89
	2375	0.22	0.84
	2500	0.05	0.78
5	1500	1.52	0.97
	1625	1.42	1.01
	1750	1.20	1.05
	1875	1.03	1.09
	2000	1.00	1.09
	2125	0.82	1.06
	2250	0.62	1.02
	2375	0.40	0.98
	2500	0.16	0.93

LEGEND

BHP — Brake Horsepower
CFM — Cubic Feet Per Minute
ESP — External Static Pressure

Fan data (cont)

50HC**04, 3 PHASE WITHOUT HUMIDI-MIZER®, 3 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	**574**	**0.13**	**707**	**0.23**	817	0.34	913	0.47	999	0.61
975	**597**	**0.15**	**727**	**0.25**	835	0.37	929	0.50	1015	0.64
1050	**621**	**0.18**	**747**	**0.28**	853	0.40	946	0.53	1030	0.68
1125	**646**	**0.20**	**768**	**0.31**	872	0.43	964	0.57	1047	0.72
1200	**671**	**0.23**	790	0.34	892	0.47	982	0.61	1064	0.76
1275	**696**	**0.26**	812	0.38	912	0.51	1001	0.65	1082	0.81
1350	**723**	**0.30**	835	0.42	933	0.55	1020	0.70	1100	0.86
1425	**749**	**0.34**	859	0.46	955	0.60	1040	0.75	1119	0.91
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1078	0.77	1151	0.93	1220	1.11	1284	1.30	1346	1.49
975	1093	0.80	1165	0.97	1233	1.15	1297	1.33	1358	1.53
1050	1108	0.84	1180	1.01	1247	1.19	1311	1.38	1371	1.58
1125	1123	0.88	1195	1.05	1261	1.23	1325	1.42	1385	1.62
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1275	1157	0.97	1226	1.15	1292	1.33	1354	1.53	1414	1.73
1350	1174	1.02	1243	1.20	1308	1.39	1370	1.59	1429	1.80
1425	1192	1.08	1260	1.26	1325	1.45	1386	1.65	1444	1.86
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93

50HC**04, 3 PHASE WITHOUT HUMIDI-MIZER, 3 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	**594**	**0.15**	**740**	**0.25**	867	0.37	981	0.52	1084	0.68
975	**618**	**0.17**	**758**	**0.28**	881	0.40	991	0.55	1092	0.71
1050	**642**	**0.19**	777	0.30	896	0.43	1003	0.58	1102	0.75
1125	**668**	**0.22**	797	0.34	912	0.47	1017	0.62	1113	0.79
1200	**695**	**0.25**	818	0.37	930	0.51	1032	0.66	1126	0.83
1275	**722**	**0.29**	841	0.41	949	0.55	1048	0.71	1140	0.88
1350	**750**	**0.33**	864	0.46	968	0.60	1065	0.76	1155	0.93
1425	778	0.37	888	0.50	989	0.65	1083	0.81	1171	0.99
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1180	0.86	1269	1.05	1354	1.25	1434	1.47	**1511**	**1.70**
975	1186	0.89	1275	1.08	1358	1.29	1437	1.51	**1513**	**1.74**
1050	1194	0.92	1281	1.12	1363	1.32	1441	1.54	**1516**	**1.78**
1125	1204	0.97	1289	1.16	1370	1.37	1447	1.59	**1520**	**1.82**
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	**1526**	**1.87**
1275	1227	1.06	1309	1.26	1387	1.47	1462	1.69	**1533**	**1.92**
1350	1240	1.12	1321	1.32	1397	1.53	**1471**	**1.75**	**1541**	**1.99**
1425	1254	1.18	1333	1.38	1409	1.59	**1481**	**1.82**	—	—
1500	1270	1.24	1347	1.45	1421	1.66	**1492**	**1.89**	—	—

Boldface indicates field-supplied drive is required.

Medium static 770-1175 RPM, 1.7 BHP, max

High static 1035-1466 RPM, 2.4 BHP max

50HC**04, 3 PHASE WITH HUMIDI-MIZER®, 3 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	574	0.13	707	0.23	817	0.34	913	0.47	999	0.61
975	597	0.15	727	0.25	835	0.37	929	0.50	1015	0.64
1050	621	0.18	747	0.28	853	0.40	946	0.53	1030	0.68
1125	646	0.20	768	0.31	872	0.43	964	0.57	1047	0.72
1200	671	0.23	790	0.34	892	0.47	982	0.61	1064	0.76
1275	696	0.26	812	0.38	912	0.51	1001	0.65	1082	0.81
1350	723	0.30	835	0.42	933	0.55	1020	0.70	1100	0.86
1425	749	0.34	859	0.46	955	0.60	1040	0.75	1119	0.91
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1078	0.77	1151	0.93	1220	1.11	1284	1.30	1346	1.49
975	1093	0.80	1165	0.97	1233	1.15	1297	1.33	1358	1.53
1050	1108	0.84	1180	1.01	1247	1.19	1311	1.38	1371	1.58
1125	1123	0.88	1195	1.05	1261	1.23	1325	1.42	1385	1.62
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1275	1157	0.97	1226	1.15	1292	1.33	1354	1.53	1414	1.73
1350	1174	1.02	1243	1.20	1308	1.39	1370	1.59	1429	1.80
1425	1192	1.08	1260	1.26	1325	1.45	1386	1.65	1444	1.86
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93

50HC**04, 3 PHASE WITH HUMIDI-MIZER, 3 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	594	0.15	740	0.25	867	0.37	981	0.52	1084	0.68
975	618	0.17	758	0.28	881	0.40	991	0.55	1092	0.71
1050	642	0.19	777	0.30	896	0.43	1003	0.58	1102	0.75
1125	668	0.22	797	0.34	912	0.47	1017	0.62	1113	0.79
1200	695	0.25	818	0.37	930	0.51	1032	0.66	1126	0.83
1275	722	0.29	841	0.41	949	0.55	1048	0.71	1140	0.88
1350	750	0.33	864	0.46	968	0.60	1065	0.76	1155	0.93
1425	778	0.37	888	0.50	989	0.65	1083	0.81	1171	0.99
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1180	0.86	1269	1.05	1354	1.25	1434	1.47	**1511**	**1.70**
975	1186	0.89	1275	1.08	1358	1.29	1437	1.51	**1513**	**1.74**
1050	1194	0.92	1281	1.12	1363	1.32	1441	1.54	**1516**	**1.78**
1125	1204	0.97	1289	1.16	1370	1.37	1447	1.59	**1520**	**1.82**
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	**1526**	**1.87**
1275	1227	1.06	1309	1.26	1387	1.47	1462	1.69	**1533**	**1.92**
1350	1240	1.12	1321	1.32	1397	1.53	**1471**	**1.75**	**1541**	**1.99**
1425	1254	1.18	1333	1.38	1409	1.59	**1481**	**1.82**	—	—
1500	1270	1.24	1347	1.45	1421	1.66	**1492**	**1.89**	—	—

Boldface indicates field-supplied drive is required.

Standard static 560 — 854 RPM, 1.7 BHP max

Medium static 770 —1175 RPM, 1.7 BHP, max

High static 1035 — 1466 RPM, 2.4 BHP max

Fan data (cont)

50HC**05, 3 PHASE WITHOUT HUMIDI-MIZER®, 4 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	**671**	**0.23**	**790**	**0.34**	**892**	**0.47**	982	0.61	1064	0.76
1300	**705**	**0.28**	**820**	**0.39**	**919**	**0.52**	1007	0.67	1088	0.82
1400	**740**	**0.33**	**851**	**0.45**	947	0.58	1034	0.73	1113	0.89
1500	**776**	**0.38**	**883**	**0.51**	977	0.65	1061	0.80	1138	0.97
1600	**813**	**0.45**	**916**	**0.58**	1007	0.73	1089	0.89	1165	1.05
1700	**851**	**0.52**	949	0.66	1038	0.81	1118	0.97	1192	1.15
1800	**888**	**0.60**	984	0.75	1069	0.90	1148	1.07	1221	1.25
1900	927	0.69	1019	0.84	1102	1.00	1179	1.18	1250	1.36
2000	965	0.78	1054	0.94	1135	1.11	1210	1.29	1280	1.48

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1300	1162	0.99	1232	1.16	1297	1.35	1360	1.55	1419	1.75
1400	1186	1.06	1254	1.24	1319	1.43	1381	1.63	1439	1.84
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93
1600	1236	1.23	1302	1.42	1365	1.62	1425	1.82	1483	2.04
1700	1262	1.33	1328	1.52	1390	1.72	1449	1.93	1505	2.15
1800	1289	1.44	1354	1.63	1415	1.84	1473	2.05	1529	2.27
1900	1317	1.55	1380	1.75	1441	1.96	1498	2.18	—	—
2000	1345	1.68	1408	1.88	1467	2.10	1524	2.32	—	—

Boldface indicates field-supplied drive is required.

Medium static 920-1303 RPM, 1.7 BHP, max

High static 1208-1550 RPM, 2.9 BHP max

50HC**05, 3 PHASE WITHOUT HUMI-DIMIZER, 4 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	**695**	**0.25**	**818**	**0.37**	930	0.51	1032	0.66	1126	0.83
1300	**731**	**0.30**	**849**	**0.43**	955	0.57	1053	0.72	1145	0.89
1400	**769**	**0.36**	**880**	**0.49**	982	0.63	1077	0.79	1166	0.97
1500	**807**	**0.42**	**913**	**0.56**	1011	0.71	1103	0.87	1188	1.05
1600	**847**	**0.49**	948	0.63	1042	0.79	1130	0.96	1213	1.14
1700	**887**	**0.57**	983	0.72	1073	0.88	1158	1.06	1239	1.24
1800	928	0.66	1020	0.82	1106	0.98	1188	1.16	1266	1.35
1900	969	0.76	1057	0.92	1140	1.09	1219	1.28	1295	1.48
2000	1010	0.87	1095	1.04	1175	1.21	1251	1.41	1325	1.61

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	1526	1.87
1300	1231	1.08	1313	1.28	1390	1.49	1465	1.71	1536	1.94
1400	1249	1.16	1329	1.36	1405	1.57	1478	1.79	1547	2.03
1500	1270	1.24	1347	1.45	1421	1.66	1492	1.89	—	—
1600	1292	1.34	1367	1.54	1440	1.76	1509	1.99	—	—
1700	1315	1.44	1389	1.65	1459	1.88	1527	2.11	—	—
1800	1341	1.56	1412	1.77	1481	2.00	1547	2.23	—	—
1900	1367	1.68	1437	1.90	1504	2.13	—	—	—	—
2000	1395	1.82	1463	2.04	1528	2.28	—	—	—	—

Boldface indicates field-supplied drive is required.

Medium static 920-1303 RPM, 1.7 BHP, max

High static 1208-1639 RPM, 2.9 BHP max

50HC**05, 3 PHASE WITH HUMIDI-MIZER®, 4 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	671	0.23	790	0.34	892	0.47	982	0.61	1064	0.76
1300	705	0.28	820	0.39	919	0.52	1007	0.67	1088	0.82
1400	740	0.33	851	0.45	947	0.58	1034	0.73	1113	0.89
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97
1600	813	0.45	916	0.58	1007	0.73	1089	0.89	1165	1.05
1700	851	0.52	949	0.66	1038	0.81	1118	0.97	1192	1.15
1800	888	0.60	984	0.75	1069	0.90	1148	1.07	1221	1.25
1900	927	0.69	1019	0.84	1102	1.00	1179	1.18	1250	1.36
2000	965	0.78	1054	0.94	1135	1.11	1210	1.29	1280	1.48

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1300	1162	0.99	1232	1.16	1297	1.35	1360	1.55	1419	1.75
1400	1186	1.06	1254	1.24	1319	1.43	1381	1.63	1439	1.84
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93
1600	1236	1.23	1302	1.42	1365	1.62	1425	1.82	1483	2.04
1700	1262	1.33	1328	1.52	1390	1.72	1449	1.93	1505	2.15
1800	1289	1.44	1354	1.63	1415	1.84	1473	2.05	1529	2.27
1900	1317	1.55	1380	1.75	1441	1.96	1498	2.18	—	—
2000	1345	1.68	1408	1.88	1467	2.10	1524	2.32	—	—

50HC**05, 3 PHASE WITH HUMIDI-MIZER, 4 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	695	0.25	818	0.37	930	0.51	1032	0.66	1126	0.83
1300	731	0.30	849	0.43	955	0.57	1053	0.72	1145	0.89
1400	769	0.36	880	0.49	982	0.63	1077	0.79	1166	0.97
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05
1600	847	0.49	948	0.63	1042	0.79	1130	0.96	1213	1.14
1700	887	0.57	983	0.72	1073	0.88	1158	1.06	1239	1.24
1800	928	0.66	1020	0.82	1106	0.98	1188	1.16	1266	1.35
1900	969	0.76	1057	0.92	1140	1.09	1219	1.28	1295	1.48
2000	1010	0.87	1095	1.04	1175	1.21	1251	1.41	1325	1.61

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	1526	1.87
1300	1231	1.08	1313	1.28	1390	1.49	1465	1.71	1536	1.94
1400	1249	1.16	1329	1.36	1405	1.57	1478	1.79	1547	2.03
1500	1270	1.24	1347	1.45	1421	1.66	1492	1.89	—	—
1600	1292	1.34	1367	1.54	1440	1.76	1509	1.99	—	—
1700	1315	1.44	1389	1.65	1459	1.88	1527	2.11	—	—
1800	1341	1.56	1412	1.77	1481	2.00	1547	2.23	—	—
1900	1367	1.68	1437	1.90	1504	2.13	—	—	—	—
2000	1395	1.82	1463	2.04	1528	2.28	—	—	—	—

Standard static 560-854 RPM, 1.7 BHP max

Medium static 770-1175 RPM, 1.7 BHP, max

High static 1035-1466 RPM, 2.9 BHP max

Fan data (cont)

50HC**06, 3 PHASE WITHOUT HUMIDI-MIZER®, 5 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	**725**	**0.33**	**840**	**0.46**	937	0.60	1023	0.75	1101	0.90
1625	**765**	**0.40**	**876**	**0.54**	970	0.68	1054	0.84	1131	1.00
1750	**806**	**0.48**	**912**	**0.63**	1004	0.78	1087	0.94	1162	1.11
1875	**847**	**0.57**	**950**	**0.72**	1039	0.88	1120	1.05	1194	1.23
2000	**889**	**0.66**	**988**	**0.83**	1075	1.00	1154	1.18	1226	1.36
2125	**931**	**0.78**	**1027**	**0.95**	1112	1.13	1189	1.31	1260	1.50
2250	**974**	**0.90**	1067	1.08	1149	1.27	1224	1.46	1294	1.66
2375	**1018**	**1.03**	1107	1.23	1187	1.43	1261	1.63	1329	1.84
2500	1061	1.19	1148	1.39	1226	1.59	1297	1.81	1364	2.02

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1172	1.06	1239	1.23	1302	1.40	1361	1.58	1418	1.77
1625	1201	1.16	1267	1.34	1329	1.52	1388	1.71	1444	1.90
1750	1231	1.28	1296	1.46	1358	1.65	1416	1.84	1472	2.04
1875	1262	1.41	1326	1.60	1387	1.79	1445	1.99	1499	2.20
2000	1294	1.55	1357	1.74	1417	1.95	1474	2.15	1528	2.36
2125	1326	1.70	1388	1.90	1447	2.11	1504	2.33	—	—
2250	1359	1.87	1420	2.08	1479	2.29	1534	2.51	—	—
2375	1393	2.05	1453	2.27	1511	2.49	—	—	—	—
2500	1427	2.24	1487	2.47	1543	2.70	—	—	—	—

50HC**06, 3 PHASE WITHOUT HUMIDI-MIZER, 5 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	**794**	**0.41**	**902**	**0.55**	**993**	**0.69**	1074	0.85	1147	1.00
1625	**840**	**0.49**	**945**	**0.64**	**1034**	**0.80**	1113	0.96	1185	1.13
1750	**888**	**0.59**	**988**	**0.75**	1075	0.92	1153	1.09	1223	1.26
1875	**936**	**0.70**	**1033**	**0.87**	1117	1.05	1193	1.23	1263	1.41
2000	**984**	**0.82**	1078	1.00	1160	1.19	1235	1.39	1303	1.58
2125	**1033**	**0.96**	1124	1.15	1204	1.35	1277	1.56	1343	1.76
2250	1083	1.11	1170	1.32	1248	1.53	1319	1.74	1385	1.96
2375	1133	1.28	1217	1.50	1293	1.72	1363	1.95	1427	2.17
2500	1183	1.47	1265	1.70	1339	1.93	1406	2.17	1470	2.41

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1214	1.16	1277	1.33	1336	1.50	1392	1.67	1445	1.85
1625	1251	1.30	1313	1.47	1371	1.65	1427	1.83	1479	2.02
1750	1289	1.44	1350	1.63	1407	1.81	1462	2.01	1514	2.20
1875	1327	1.60	1387	1.80	1444	1.99	1498	2.19	1550	2.40
2000	1366	1.78	1426	1.98	1482	2.19	1535	2.40	—	—
2125	1406	1.97	1464	2.18	1520	2.40	—	—	—	—
2250	1446	2.18	1504	2.40	—	—	—	—	—	—
2375	1487	2.40	1544	2.63	—	—	—	—	—	—
2500	1529	2.64	—	—	—	—	—	—	—	—

Boldface indicates field-supplied drive is required.

Medium static 1035-1466 RPM, 2.4 BHP, max

High static 1303-1550 RPM, 2.9 BHP max

50HC**06, 3 PHASE WITH HUMIDI-MIZER®, 5 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	**725**	**0.33**	**840**	**0.46**	937	0.60	1023	0.75	1101	0.90
1625	**765**	**0.40**	**876**	**0.54**	970	0.68	1054	0.84	1131	1.00
1750	**806**	**0.48**	**912**	**0.63**	1004	0.78	1087	0.94	1162	1.11
1875	**847**	**0.57**	**950**	**0.72**	1039	0.88	1120	1.05	1194	1.23
2000	**889**	**0.66**	**988**	**0.83**	1075	1.00	1154	1.18	1226	1.36
2125	**931**	**0.78**	**1027**	**0.95**	1112	1.13	1189	1.31	1260	1.50
2250	**974**	**0.90**	1067	1.08	1149	1.27	1224	1.46	1294	1.66
2375	**1018**	**1.03**	1107	1.23	1187	1.43	1261	1.63	1329	1.84
2500	1061	1.19	1148	1.39	1226	1.59	1297	1.81	1364	2.02

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1172	1.06	1239	1.23	1302	1.40	1361	1.58	1418	1.77
1625	1201	1.16	1267	1.34	1329	1.52	1388	1.71	1444	1.90
1750	1231	1.28	1296	1.46	1358	1.65	1416	1.84	1472	2.04
1875	1262	1.41	1326	1.60	1387	1.79	1445	1.99	1499	2.20
2000	1294	1.55	1357	1.74	1417	1.95	1474	2.15	1528	2.36
2125	1326	1.70	1388	1.90	1447	2.11	1504	2.33	—	—
2250	1359	1.87	1420	2.08	1479	2.29	1534	2.51	—	—
2375	1393	2.05	1453	2.27	1511	2.49	—	—	—	—
2500	1427	2.24	1487	2.47	1543	2.70	—	—	—	—

50HC**06, 3 PHASE WITH HUMIDI-MIZER, 5 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	**794**	**0.41**	**902**	**0.55**	**993**	**0.69**	1074	0.85	1147	1.00
1625	**840**	**0.49**	**945**	**0.64**	**1034**	**0.80**	1113	0.96	1185	1.13
1750	**888**	**0.59**	**988**	**0.75**	1075	0.92	1153	1.09	1223	1.26
1875	**936**	**0.70**	**1033**	**0.87**	1117	1.05	1193	1.23	1263	1.41
2000	**984**	**0.82**	1078	1.00	1160	1.19	1235	1.39	1303	1.58
2125	**1033**	**0.96**	1124	1.15	1204	1.35	1277	1.56	1343	1.76
2250	1083	1.11	1170	1.32	1248	1.53	1319	1.74	1385	1.96
2375	1133	1.28	1217	1.50	1293	1.72	1363	1.95	1427	2.17
2500	1183	1.47	1265	1.70	1339	1.93	1406	2.17	1470	2.41

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1214	1.16	1277	1.33	1336	1.50	1392	1.67	1445	1.85
1625	1251	1.30	1313	1.47	1371	1.65	1427	1.83	1479	2.02
1750	1289	1.44	1350	1.63	1407	1.81	1462	2.01	1514	2.20
1875	1327	1.60	1387	1.80	1444	1.99	1498	2.19	1550	2.40
2000	1366	1.78	1426	1.98	1482	2.19	1535	2.40	—	—
2125	1406	1.97	1464	2.18	1520	2.40	—	—	—	—
2250	1446	2.18	1504	2.40	—	—	—	—	—	—
2375	1487	2.40	1544	2.63	—	—	—	—	—	—
2500	1529	2.64	—	—	—	—	—	—	—	—

NOTES:
1. For more information, see fan performance notes on page 72.
2. **Boldface** indicates field-supplied drive is required.

Medium static 1035-1466 RPM, 2.4 BHP, max

High static 1303-1550 RPM, 2.9 BHP max

Fan data (cont)

50HC**07, 3 PHASE WITHOUT HUMIDI-MIZER®, 6 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	415	0.28	510	0.46	588	0.65	655	0.85	715	1.08
1950	431	0.32	525	0.51	601	0.71	668	0.93	727	1.16
2100	448	0.38	540	0.57	615	0.78	681	1.01	740	1.25
2250	465	0.43	555	0.64	629	0.86	694	1.10	753	1.34
2400	483	0.49	571	0.71	644	0.94	708	1.19	766	1.45
2550	501	0.56	587	0.79	659	1.04	722	1.29	779	1.56
2700	519	0.64	603	0.88	674	1.14	737	1.40	793	1.68
2850	538	0.72	620	0.98	689	1.24	751	1.52	807	1.80
3000	557	0.82	637	1.08	705	1.36	766	1.64	822	1.94

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	770	1.31	821	1.56	868	1.82	913	2.09	955	2.36
1950	782	1.40	832	1.66	879	1.92	924	2.20	966	2.49
2100	794	1.50	844	1.76	891	2.03	935	2.32	977	2.61
2250	806	1.60	856	1.87	903	2.15	947	2.45	988	2.75
2400	819	1.71	868	1.99	915	2.28	958	2.58	1000	2.89
2550	832	1.83	881	2.12	927	2.42	971	2.73	1012	3.05
2700	845	1.96	894	2.26	940	2.57	983	2.88	1024	3.21
2850	859	2.10	907	2.41	953	2.72	995	3.05	1036	3.38
3000	873	2.24	921	2.56	966	2.89	1008	3.22	1049	3.56

50HC**07, 3 PHASE WITHOUT HUMIDI-MIZER®, 6 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	446	0.33	534	0.50	609	0.70	676	0.91	736	1.14
1950	467	0.39	552	0.57	625	0.77	690	0.99	750	1.23
2100	489	0.45	571	0.64	642	0.86	706	1.08	764	1.33
2250	511	0.53	591	0.73	660	0.95	722	1.19	779	1.44
2400	534	0.61	611	0.82	678	1.05	739	1.30	795	1.56
2550	558	0.71	631	0.93	697	1.17	756	1.42	811	1.69
2700	581	0.81	652	1.04	716	1.29	774	1.55	828	1.83
2850	605	0.93	674	1.17	736	1.43	792	1.70	845	1.98
3000	630	1.06	696	1.31	756	1.58	811	1.86	863	2.15

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	791	1.39	843	1.65	892	1.93	938	2.22	981	2.53
1950	804	1.49	855	1.76	903	2.04	949	2.34	992	2.65
2100	818	1.59	868	1.87	915	2.16	961	2.46	1003	2.78
2250	832	1.71	882	1.99	928	2.29	973	2.59	1015	2.92
2400	847	1.83	896	2.12	942	2.43	986	2.74	1028	3.07
2550	862	1.97	910	2.27	956	2.58	999	2.90	1041	3.23
2700	878	2.12	926	2.42	971	2.74	1013	3.07	1055	3.41
2850	895	2.28	941	2.59	986	2.92	1028	3.25	1069	3.60
3000	912	2.46	958	2.78	1001	3.11	1043	3.45	1083	3.80

Standard static 489-747 RPM, 1.7 BHP max

Medium static 733-949 RPM, 2.9 BHP, max

High static 909-1102 RPM, 4.7 BHP max

50HC**08, 3 PHASE WITHOUT HUMIDI-MIZER®, 7.5 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	433	0.29	518	0.41	596	0.54	667	0.67	733	0.81
2438	454	0.35	535	0.48	609	0.61	677	0.75	741	0.90
2625	477	0.42	553	0.55	624	0.69	689	0.84	751	1.00
2813	500	0.49	572	0.64	640	0.78	703	0.94	763	1.10
3000	523	0.58	592	0.73	657	0.88	718	1.05	775	1.22
3188	547	0.68	613	0.83	675	1.00	733	1.17	789	1.34
3375	571	0.78	634	0.95	694	1.12	750	1.30	804	1.48
3563	596	0.90	656	1.07	713	1.25	768	1.44	820	1.63
3750	621	1.03	679	1.21	734	1.40	786	1.59	837	1.79

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	795	0.96	854	1.11	910	1.27	963	1.43	1014	1.60
2438	802	1.05	859	1.21	913	1.38	966	1.55	1016	1.72
2625	810	1.16	865	1.32	919	1.49	970	1.67	1019	1.85
2813	819	1.27	874	1.44	925	1.62	975	1.80	1023	1.99
3000	830	1.39	883	1.57	934	1.76	982	1.95	1029	2.14
3188	843	1.53	894	1.71	943	1.90	990	2.10	1036	2.30
3375	856	1.67	905	1.86	953	2.06	1000	2.27	1045	2.48
3563	870	1.83	918	2.03	965	2.23	1010	2.44	1054	2.66
3750	885	1.99	932	2.20	978	2.42	1022	2.64	1065	2.86

50HC**08, 3 PHASE WITHOUT HUMIDI-MIZER, 7.5 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	482	0.36	577	0.51	659	0.66	732	0.82	799	0.98
2438	505	0.43	597	0.59	676	0.75	748	0.92	813	1.09
2625	529	0.51	617	0.68	694	0.85	764	1.03	827	1.22
2813	554	0.60	638	0.78	713	0.97	781	1.16	843	1.35
3000	579	0.70	660	0.89	732	1.09	799	1.29	860	1.50
3188	604	0.81	683	1.02	753	1.23	817	1.44	877	1.65
3375	630	0.94	706	1.15	774	1.37	836	1.60	895	1.82
3563	657	1.08	729	1.31	795	1.54	856	1.77	913	2.01
3750	683	1.23	753	1.47	817	1.71	877	1.96	933	2.21

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2250	860	1.14	917	1.31	971	1.48	1022	1.66	1071	1.84
2438	873	1.27	929	1.45	983	1.63	1033	1.81	1081	2.00
2625	887	1.40	942	1.59	995	1.78	1045	1.98	**1092**	**2.18**
2813	901	1.55	956	1.75	1008	1.95	1057	2.15	**1104**	**2.36**
3000	917	1.70	970	1.91	1021	2.13	1070	2.34	**1117**	**2.56**
3188	933	1.87	986	2.09	1036	2.32	1084	2.54	**1130**	**2.77**
3375	950	2.05	1002	2.29	1051	2.52	**1098**	**2.76**	**1144**	**3.00**
3563	967	2.25	1018	2.49	1067	2.74	**1113**	**2.99**	**1158**	**3.24**
3750	985	2.46	1035	2.71	1083	2.97	**1129**	**3.23**	**1173**	**3.49**

Boldface indicates field-supplied drive is required.

Standard static 518-733 RPM, 1.7 BHP max

Medium static 690-936 RPM, 2.4 BHP, max

High static 838-1084 RPM, 3.7 BHP max

Fan data (cont)

50HC**09, 3 PHASE WITHOUT HUMIDI-MIZER®, 8.5 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	468	0.39	546	0.52	618	0.66	684	0.80	747	0.96
2750	492	0.47	566	0.61	634	0.75	698	0.91	759	1.07
3000	523	0.58	592	0.73	657	0.88	718	1.05	775	1.22
3200	549	0.68	614	0.84	676	1.00	735	1.17	790	1.35
3400	575	0.80	637	0.96	696	1.14	752	1.31	806	1.50
3600	601	0.93	661	1.10	717	1.28	771	1.47	823	1.66
3850	635	1.11	691	1.29	745	1.48	796	1.68	846	1.88
4050	662	1.27	716	1.46	767	1.66	817	1.87	865	2.08
4250	689	1.45	741	1.65	790	1.86	838	2.07	885	2.29

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	806	1.11	863	1.28	916	1.45	968	1.62	1018	1.80
2750	816	1.23	871	1.40	923	1.58	973	1.76	1022	1.94
3000	830	1.39	883	1.57	934	1.76	982	1.95	1029	2.14
3200	843	1.53	894	1.72	944	1.91	991	2.11	1037	2.31
3400	858	1.69	907	1.88	955	2.09	1001	2.29	1046	2.50
3600	873	1.86	921	2.06	967	2.27	1012	2.48	1056	2.70
3850	894	2.09	940	2.30	985	2.52	1028	2.74	1071	2.97
4050	911	2.29	956	2.51	1000	2.74	1042	2.97	1083	3.20
4250	930	2.51	973	2.74	1015	2.97	1057	3.21	**1097**	**3.45**

50HC**09, 3 PHASE WITHOUT HUMIDI-MIZER, 8.5 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	495	0.43	570	0.56	634	0.70	693	0.83	746	0.96
2750	522	0.52	593	0.66	656	0.80	712	0.94	764	1.09
3000	556	0.65	623	0.80	684	0.95	738	1.11	789	1.26
3200	583	0.76	648	0.93	707	1.09	760	1.26	809	1.42
3400	611	0.89	674	1.07	730	1.24	782	1.42	831	1.59
3600	639	1.04	700	1.22	754	1.41	805	1.59	852	1.78
3850	675	1.24	733	1.44	785	1.64	834	1.83	880	2.03
4050	704	1.42	760	1.63	811	1.84	858	2.05	903	2.25
4250	733	1.62	787	1.84	836	2.06	883	2.28	926	2.49

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2550	795	1.09	841	1.23	885	1.36	926	1.50	965	1.64
2750	813	1.23	858	1.37	901	1.52	942	1.66	981	1.81
3000	836	1.42	881	1.57	923	1.73	963	1.89	1001	2.05
3200	856	1.58	899	1.75	941	1.92	980	2.08	1018	2.25
3400	876	1.76	919	1.94	960	2.12	998	2.29	1036	2.47
3600	897	1.96	939	2.14	979	2.33	1017	2.52	1054	2.70
3850	923	2.23	964	2.42	1004	2.62	1041	2.82	1077	3.02
4050	945	2.46	986	2.67	1024	2.88	1061	3.08	**1097**	**3.29**
4250	968	2.71	1007	2.93	1045	3.15	1081	3.36	**1117**	**3.58**

Boldface indicates field-supplied drive is required.

Standard static 518-733 RPM, 1.7 BHP max

Medium static 690-936 RPM, 2.4 BHP, max

High static 838-1084 RPM, 3.7 BHP max

50HC**11, 3 PHASE WITHOUT HUMIDI-MIZER®, 10 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCEE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	523	0.58	592	0.73	657	0.88	718	1.05	775	1.22
3250	555	0.71	620	0.87	681	1.04	739	1.21	794	1.39
3500	588	0.86	649	1.03	707	1.21	762	1.39	815	1.58
3750	621	1.03	679	1.21	734	1.40	786	1.59	837	1.79
4000	655	1.23	709	1.42	761	1.61	812	1.82	860	2.03
4250	689	1.45	741	1.65	790	1.86	838	2.07	885	2.29
4500	723	1.69	773	1.90	820	2.12	866	2.35	910	2.57
4750	758	1.96	805	2.19	850	2.42	894	2.65	937	2.89
5000	793	2.26	838	2.50	881	2.74	923	2.98	965	3.23

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	830	1.39	883	1.57	934	1.76	982	1.95	1029	2.14
3250	847	1.57	897	1.76	946	1.96	993	2.16	1039	2.36
3500	865	1.77	914	1.97	961	2.18	1007	2.38	1051	2.60
3750	885	1.99	932	2.20	978	2.42	1022	2.64	1065	2.86
4000	907	2.24	952	2.46	996	2.68	1038	2.91	1080	3.14
4250	930	2.51	973	2.74	1015	2.97	1057	3.21	1097	3.45
4500	954	2.81	996	3.05	1037	3.29	1076	3.54	1115	3.79
4750	979	3.13	1019	3.38	1059	3.63	1097	3.89	1135	4.15
5000	1005	3.49	1044	3.74	1082	4.01	1119	4.27	1156	4.55

50HC**11, 3 PHASE WITHOUT HUMIDI-MIZER, 10 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	556	0.65	623	0.80	684	0.95	738	1.11	789	1.26
3250	590	0.79	655	0.96	713	1.13	766	1.29	815	1.46
3500	625	0.96	687	1.14	742	1.32	794	1.50	841	1.68
3750	661	1.16	719	1.35	773	1.54	822	1.73	869	1.93
4000	697	1.37	753	1.58	804	1.79	852	1.99	897	2.20
4250	733	1.62	787	1.84	836	2.06	883	2.28	926	2.49
4500	770	1.89	821	2.13	869	2.36	914	2.59	956	2.82
4750	807	2.20	856	2.45	902	2.69	945	2.94	986	3.18
5000	844	2.54	891	2.80	936	3.06	978	3.31	1018	3.57

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	836	1.42	881	1.57	923	1.73	963	1.89	1001	2.05
3250	861	1.63	904	1.79	945	1.96	985	2.13	1023	2.30
3500	886	1.86	929	2.04	969	2.22	1008	2.40	1045	2.58
3750	912	2.12	954	2.31	994	2.50	1031	2.70	1068	2.89
4000	940	2.40	980	2.61	1019	2.81	1056	3.02	1092	3.22
4250	968	2.71	1007	2.93	1045	3.15	1081	3.36	1117	3.58
4500	996	3.05	1035	3.28	1072	3.51	1108	3.74	1142	3.97
4750	1026	3.42	1063	3.66	1100	3.91	1135	4.15	1168	4.39
5000	1056	3.82	1093	4.08	1128	4.34	1162	4.59	—	—

Boldface indicates field-supplied drive is required.

Standard static 591-838 RPM, 2.4 BHP max

Medium static 838-1084 RPM, 3.7 BHP, max

High static 1022-1240 RPM, 4.9 BHP max

Fan data (cont)

50HC**12, 3 PHASE WITHOUT HUMIDI-MIZER®, 10 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	523	0.58	592	0.73	657	0.88	718	1.05	775	1.22
3250	555	0.71	620	0.87	681	1.04	739	1.21	794	1.39
3500	588	0.86	649	1.03	707	1.21	762	1.39	815	1.58
3750	621	1.03	679	1.21	734	1.40	786	1.59	837	1.79
4000	655	1.23	709	1.42	761	1.61	812	1.82	860	2.03
4250	689	1.45	741	1.65	790	1.86	838	2.07	885	2.29
4500	723	1.69	773	1.90	820	2.12	866	2.35	910	2.57
4750	758	1.96	805	2.19	850	2.42	894	2.65	937	2.89
5000	793	2.26	838	2.50	881	2.74	923	2.98	965	3.23

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	830	1.39	883	1.57	934	1.76	982	1.95	1029	2.14
3250	847	1.57	897	1.76	946	1.96	993	2.16	1039	2.36
3500	865	1.77	914	1.97	961	2.18	1007	2.38	1051	2.60
3750	885	1.99	932	2.20	978	2.42	1022	2.64	1065	2.86
4000	907	2.24	952	2.46	996	2.68	1038	2.91	1080	3.14
4250	930	2.51	973	2.74	1015	2.97	1057	3.21	1097	3.45
4500	954	2.81	996	3.05	1037	3.29	1076	3.54	1115	3.79
4750	979	3.13	1019	3.38	1059	3.63	1097	3.89	1135	4.15
5000	1005	3.49	1044	3.74	1082	4.01	1119	4.27	1156	4.55

50HC**12, 3 PHASE WITHOUT HUMIDI-MIZER, 10 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	556	0.65	623	0.80	684	0.95	738	1.11	789	1.26
3250	590	0.79	655	0.96	713	1.13	766	1.29	815	1.46
3500	625	0.96	687	1.14	742	1.32	794	1.50	841	1.68
3750	661	1.16	719	1.35	773	1.54	822	1.73	869	1.93
4000	697	1.37	753	1.58	804	1.79	852	1.99	897	2.20
4250	733	1.62	787	1.84	836	2.06	883	2.28	926	2.49
4500	770	1.89	821	2.13	869	2.36	914	2.59	956	2.82
4750	807	2.20	856	2.45	902	2.69	945	2.94	986	3.18
5000	844	2.54	891	2.80	936	3.06	978	3.31	1018	3.57

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	836	1.42	881	1.57	923	1.73	963	1.89	1001	2.05
3250	861	1.63	904	1.79	945	1.96	985	2.13	1023	2.30
3500	886	1.86	929	2.04	969	2.22	1008	2.40	1045	2.58
3750	912	2.12	954	2.31	994	2.50	1031	2.70	1068	2.89
4000	940	2.40	980	2.61	1019	2.81	1056	3.02	1092	3.22
4250	968	2.71	1007	2.93	1045	3.15	1081	3.36	1117	3.58
4500	996	3.05	1035	3.28	1072	3.51	1108	3.74	1142	3.97
4750	1026	3.42	1063	3.66	1100	3.91	1135	4.15	1168	4.39
5000	1056	3.82	1093	4.08	1128	4.34	1162	4.59	—	—

Standard static 591-838 RPM, 2.4 BHP max

Medium static 838-1084 RPM, 3.7 BHP, max

High static 1022-1240 RPM, 4.9 BHP max

50HC**14, 3 PHASE WITHOUT HUMIDI-MIZER®, 12.5 TON, HORIZONTAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3438	379	0.48	455	0.69	526	0.94	593	1.23	655	1.54
3750	399	0.59	469	0.80	536	1.06	600	1.35	660	1.67
4063	420	0.71	486	0.93	549	1.19	609	1.49	667	1.81
4375	442	0.84	503	1.08	562	1.35	620	1.65	675	1.97
4688	464	1.00	522	1.25	578	1.52	632	1.83	685	2.16
5000	486	1.17	541	1.44	594	1.72	646	2.03	696	2.37
5313	509	1.37	561	1.64	612	1.94	661	2.26	708	2.60
5625	532	1.58	582	1.87	630	2.18	677	2.51	722	2.86
5938	555	1.82	603	2.13	649	2.45	694	2.78	737	3.14
6250	578	2.09	625	2.41	669	2.74	711	3.09	753	3.45

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3438	713	1.89	766	2.25	816	2.64	863	3.04	907	3.46
3750	717	2.02	770	2.39	820	2.79	867	3.20	911	3.63
4063	722	2.17	774	2.55	824	2.95	870	3.37	914	3.81
4375	728	2.33	779	2.72	828	3.13	874	3.56	918	4.00
4688	736	2.52	785	2.91	832	3.32	878	3.76	922	4.21
5000	745	2.73	792	3.12	838	3.54	883	3.98	926	4.44
5313	755	2.97	801	3.36	846	3.78	889	4.23	931	4.69
5625	767	3.23	811	3.63	854	4.05	896	4.50	937	4.97
5938	780	3.52	822	3.92	864	4.35	904	4.80	944	5.27
6250	794	3.84	835	4.25	875	4.68	914	5.13	952	5.61

50HC**14, 3 PHASE WITHOUT HUMIDI-MIZER, 12.5 TON, VERTICAL SUPPLY — BELT DRIVE FAN PERFORMANCE

CFM	Available External Static Pressure (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3438	383	0.46	458	0.66	530	0.91	601	1.20	668	1.53
3750	402	0.56	474	0.77	540	1.01	605	1.30	670	1.64
4063	422	0.67	491	0.90	552	1.14	613	1.43	674	1.76
4375	443	0.79	508	1.04	567	1.29	623	1.58	680	1.90
4688	464	0.93	527	1.19	583	1.46	636	1.75	689	2.07
5000	486	1.10	546	1.37	600	1.65	651	1.95	700	2.27
5313	509	1.28	565	1.56	618	1.86	666	2.17	713	2.49
5625	533	1.48	585	1.77	636	2.09	683	2.41	728	2.74
5938	557	1.71	605	2.01	655	2.34	701	2.67	744	3.02
6250	581	1.97	626	2.26	673	2.61	718	2.96	760	3.32

CFM	Available External Static Pressure (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3438	729	1.88	783	2.25	833	2.62	879	2.99	921	3.37
3750	731	2.00	787	2.39	838	2.78	885	3.18	929	3.59
4063	733	2.13	789	2.52	841	2.94	890	3.36	935	3.79
4375	736	2.27	791	2.67	843	3.10	892	3.54	938	3.99
4688	741	2.43	794	2.83	845	3.26	894	3.72	941	4.19
5000	749	2.63	799	3.02	848	3.45	896	3.90	942	4.39
5313	760	2.85	806	3.23	853	3.66	899	4.11	944	4.60
5625	772	3.10	816	3.48	860	3.90	904	4.35	947	4.83
5938	786	3.38	827	3.76	869	4.18	911	4.62	952	5.09
6250	801	3.69	841	4.07	880	4.49	920	4.93	**959**	**5.40**

Boldface indicates field-supplied drive is required.

Standard static 440-609 RPM, 2.9 BHP max

Medium static 609-778 RPM, 3.7 BHP, max

High static 776-955 RPM, 6.1 BHP max

50HC*A04-14 COOLING ELECTRICAL DATA — WITHOUT EnergyX SYSTEM

50HC UNIT*	V-Ph-Hz	UNIT VOLTAGE RANGE		COMP 1		OFM (EA)		IFM			CMBST. FAN MOTOR	POWER EXHAUST	
		MIN	MAX	RLA	LRA	WATTS	FLA	TYPE	EFFCY AT FULL LOAD	FLA	FLA	KIT QTY	FLA (EA KIT)
04	208/230-1-60	187	253	16.6	79	190	1.0	DD-STD	78%	7.4	0.48	1	1.9
								STD	67%	4.9			
								MED	67%	4.9			
	208-3-60	187	253	10.4	73	190	1.0	DD-STD	78%	7.4	0.48	1	1.9
								STD	67%	4.9			
								MED	67%	4.9			
								HIGH	78%	7.4			
	230-3-60	187	253	10.4	73	190	1.0	DD-STD	75%	5.2	0.48	1	1.9
								STD	87%	5.2			
								MED	89%	8.4			
								HIGH	78%	7.4			
	460-3-60	414	506	5.8	38	190	0.5	DD-STD	75%	5.2	0.25	1	1.0
								STD	87%	4.9			
								MED	89%	8.3			
								HIGH	78%	4.0			
	575-3-60	518	633	3.8	37	190	0.5	DD-STD	75%	2.6	0.24	1	1.9
								STD	87%	2.5			
								MED	89%	4.2			
								HIGH	78%	4.0			
05	208/230-1-60	187	253	21.8	117	325	1.4	DD-STD	73%	1.2	0.48	1	1.9
								STD	73%	1.2			
								MED	78%	2.0			
	208-3-60	187	253	13.7	83	325	1.4	DD-STD	78%	7.4	0.48	1	1.9
								STD	67%	4.9			
								MED	67%	4.9			
								HIGH	78%	7.4			
	230-3-60	187	253	13.7	83	325	1.4	DD-STD	67%	4.9	0.48	1	1.9
								STD	67%	4.9			
								MED	78%	7.4			
								HIGH	75%	5.2			
	460-3-60	414	506	6.2	41	325	0.9	DD-STD	87%	5.2	0.25	1	1.0
								STD	89%	8.4			
								MED	78%	7.4			
								HIGH	75%	5.2			
	575-3-60	518	633	4.8	33	325	0.9	DD-STD	87%	4.9	0.24	1	1.9
								STD	89%	8.3			
								MED	78%	4.0			
								HIGH	75%	2.6			

See legend on page 90.

50HC*A04-14 COOLING ELECTRICAL DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	V-Ph-Hz	UNIT VOLTAGE RANGE		COMP 1		COMP 2		OFM (EA)		IFM			CMBST. FAN MOTOR	POWER EXHAUST	
		MIN	MAX	RLA	LRA	WATTS	FLA	WATTS	FLA	TYPE	EFFCY AT FULL LOAD	FLA	FLA	KIT QTY	FLA (EA KIT)
06	208/230-1-60	187	253	25.0	134	—	—	325	1.4	DD-STD STD MED	87% 89% 78%	2.5 4.2 4.0	0.48	1	1.9
	208-3-60	187	253	15.9	110	—	—	325	1.4	DD-STD STD MED HIGH	73% 72% 77% 78%	1.2 1.6 2.8 7.4	0.48	1	1.9
	230-3-60	187	253	15.9	110	—	—	325	1.4	DD-STD STD MED HIGH	67% 76% 78% 67%	4.9 7.0 7.4 4.9	0.48	1	1.9
	460-3-60	414	506	7.0	52	—	—	325	0.9	DD-STD STD MED HIGH	76% 78% 75% 89%	7.0 7.4 5.2 8.4	0.25	1	1.0
	575-3-60	518	633	5.1	40	—	—	325	0.9	DD-STD STD MED HIGH	89% 78% 75% 89%	8.4 7.4 5.2 8.3	0.24	1	1.9
A07	208-3-60	187	253	19.6	136	—	—	325	1.5	STD MED HIGH	75% 89% 83%	5.2 8.4 13.6	0.48	1	3.8
	230-3-60	187	253	19.6	136	—	—	325	1.5	STD MED HIGH	75% 89% 83%	5.2 8.3 12.7	0.48	1	3.8
	460-3-60	414	506	8.2	66	—	—	325	0.8	STD MED HIGH	75% 89% 83%	2.6 4.2 6.4	0.25	1	1.8
	575-3-60	518	633	6.6	55	—	—	325	0.6	STD MED HIGH	72% 77% 81%	1.6 2.8 5.6	0.24	1	3.8
D07	208-3-60	187	253	17.5	136	—	—	325	1.5	STD MED HIGH	75% 89% 83%	5.2 8.4 13.6	0.48	1	3.8
	230-3-60	187	253	17.5	136	—	—	325	1.5	STD MED HIGH	75% 89% 83%	5.2 8.3 12.7	0.48	1	3.8
	460-3-60	414	506	8.4	66	—	—	325	0.8	STD MED HIGH	75% 89% 83%	2.6 4.2 6.4	0.25	1	1.8
	575-3-60	518	633	6.3	55	—	—	325	0.6	STD MED HIGH	72% 77% 81%	1.6 2.8 5.6	0.24	1	3.8
08	208-3-60	187	253	13.6	83	13.6	83	325	1.5	STD MED HIGH	75% 87% 87%	5.2 6.9 10.6	0.48	1	3.8
	230-3-60	187	253	13.6	83	13.6	83	325	1.5	STD MED HIGH	75% 87% 87%	5.2 6.7 10.6	0.48	1	3.8
	460-3-60	414	506	6.1	41	6.1	41	325	0.8	STD MED HIGH	75% 87% 87%	2.6 3.4 5.3	0.25	1	1.8
	575-3-60	518	633	4.2	33	4.2	33	325	0.6	STD MED HIGH	72% 78% 77%	1.6 2.0 2.8	0.24	1	3.8

See legend on page 90.

Electrical data (cont)

50HC*A04-14 COOLING ELECTRICAL DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT SIZE*	V-Ph-Hz	UNIT VOLTAGE RANGE		COMP 1		COMP 2		OFM (EA)		IFM			CMBST FAN MOTOR	POWER EXHAUST	
		MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFFCY AT FULL LOAD	FLA	FLA	KIT QTY	FLA (EA KIT)
09	208-3-60	187	253	13.7	83	13.7	83	325	1.5	STD	75%	5.2	0.48	1	3.8
										MED	87%	6.9			
										HIGH	87%	10.6			
	230-3-60	187	253	13.7	83	13.7	83	325	1.5	STD	75%	5.2	0.48	1	3.8
										MED	87%	6.7			
										HIGH	87%	10.6			
	460-3-60	414	506	6.2	41	6.2	41	325	0.8	STD	75%	2.6	0.25	1	1.8
										MED	87%	3.4			
										HIGH	87%	5.3			
	575-3-60	518	633	4.8	33	4.8	33	325	0.6	STD	72%	1.6	0.24	1	3.8
										MED	78%	2.0			
										HIGH	77%	2.8			
11	208-3-60	187	253	15.9	110	15.9	110	610	7.4	STD	69%	5.2	0.48	1	3.8
										MED	87%	10.6			
										HIGH	83%	13.6			
	230-3-60	187	253	15.9	110	15.9	110	610	7.4	STD	69%	5.2	0.48	1	3.8
										MED	87%	10.6			
										HIGH	83%	12.7			
	460-3-60	414	506	7.0	52	7.0	52	610	3.6	STD	69%	2.6	0.25	1	1.8
										MED	87%	5.3			
										HIGH	83%	6.4			
	575-3-60	518	633	5.1	40	5.1	40	610	3.6	STD	78%	2.0	0.24	1	3.8
										MED	77%	2.8			
										HIGH	81%	5.6			
12	208-3-60	187	253	15.9	110	15.9	110	1070	6.2	STD	69%	5.2	0.48	1	3.8
										MED	87%	10.6			
										HIGH	83%	13.6			
	230-3-60	187	253	15.9	110	15.9	110	1070	6.2	STD	69%	5.2	0.48	1	3.8
										MED	87%	10.6			
										HIGH	83%	12.7			
	460-3-60	414	506	7.7	52	7.7	52	1070	3.1	STD	69%	2.6	0.25	1	1.8
										MED	87%	5.3			
										HIGH	83%	6.4			
	575-3-60	518	633	5.7	39	5.7	39	1070	2.5	STD	78%	2.0	0.24	1	3.8
										MED	77%	2.8			
										HIGH	81%	5.6			
14	208-3-60	187	253	19.6	136	19.6	136	280	1.5	STD	79%	7.5	0.48	1	3.8
										MED	87%	10.6			
										HIGH	87%	17.0			
										HIGH-HE	90%	20.4			
	230-3-60	187	253	19.6	136	19.6	136	280	1.5	STD	79%	7.5	0.48	1	3.8
										MED	87%	10.6			
										HIGH	87%	15.0			
										HIGH-HE	90%	20.4			
	460-3-60	414	506	8.2	66	8.2	66	280	0.8	STD	79%	3.4	0.25	1	1.8
										MED	87%	5.3			
										HIGH	87%	7.6			
										HIGH-HE	90%	10.2			
	575-3-60	518	633	6.6	55	6.6	55	280	0.7	STD	77%	2.8	0.24	1	3.8
										MED	77%	2.8			
										HIGH	90%	6.1			
										HIGH-HE	94%	9.0			

LEGEND

FLA — Full Load Amps
IFM — Indoor (Evaporator) Fan Motor
LRA — Locked Rotor Amps
RLA — Rated Load Amps

* 50HC*A04-50HC*A07 — One-Stage Cooling
50HC*D07-50HC*D14 — Two-Stage Cooling

NOTE: Refer to Packaged Rooftop Builder (Selection Software) for additional electrical data with EnergyX system.

50HC**07-14 TWO-SPEED BLOWER COOLING ELECTRICAL DATA — WITHOUT EnergyX SYSTEM

50HC UNIT	V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (EA)		IFM			CMBST FAN MOTOR	PWR EXH	
		MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at FULL LOAD	FLA	FLA	QTY	FLA
D07	208-3-60	187	253	17.5	136	—	—	325	1.5	STD	84%	5.8	0.48	1	3.8
										MED	85%	8.6			
										HIGH	84%	13.6			
	230-3-60	187	253	17.5	136	—	—	325	1.5	STD	84%	5.6	0.48	1	3.8
										MED	85%	7.8			
										HIGH	84%	12.7			
	460-3-60	414	506	8.4	66	—	—	325	0.8	STD	79%	2.9	0.25	1	1.8
										MED	85%	3.8			
										HIGH	84%	6.4			
	575-3-60	518	633	6.3	55	—	—	325	0.6	STD	81%	2.8	0.24	1	3.8
										MED	84%	4.5			
										HIGH	83%	6.2			
08	208-3-60	187	253	13.6	83	13.6	83	325	1.5	STD	84%	5.8	0.48	1	3.8
										MED	77%	7.1			
										HIGH	82%	10.8			
	230-3-60	187	253	13.6	83	13.6	83	325	1.5	STD	84%	5.6	0.48	1	3.8
										MED	77%	6.8			
										HIGH	82%	9.8			
	460-3-60	414	506	6.1	41	6.1	41	325	0.8	STD	79%	2.9	0.25	1	1.8
										MED	77%	3.4			
										HIGH	82%	4.9			
	575-3-60	518	633	4.2	33	4.2	33	325	0.6	STD	81%	2.8	0.24	1	3.8
										MED	80%	3.5			
										HIGH	84%	4.5			
09	208-3-60	187	253	13.7	83	13.7	83	325	1.5	STD	84%	5.8	0.48	1	3.8
										MED	77%	7.1			
										HIGH	82%	10.8			
	230-3-60	187	253	13.7	83	13.7	83	325	1.5	STD	84%	5.6	0.48	1	3.8
										MED	77%	6.8			
										HIGH	82%	9.8			
	460-3-60	414	506	6.2	41	6.2	41	325	0.8	STD	79%	2.9	0.25	1	1.8
										MED	77%	3.4			
										HIGH	82%	4.9			
	575-3-60	518	633	4.8	33	4.8	33	325	0.6	STD	81%	2.8	0.24	1	3.8
										MED	80%	3.5			
										HIGH	84%	4.5			
11	208-3-60	187	253	15.9	110	15.9	110	610	7.4	STD	77%	7.1	0.48	1	3.8
										MED	82%	10.8			
										HIGH	84%	13.6			
	230-3-60	187	253	15.9	110	15.9	110	610	7.4	STD	77%	6.8	0.48	1	3.8
										MED	82%	9.8			
										HIGH	84%	12.7			
	460-3-60	414	506	7.0	52	7.0	52	610	3.6	STD	77%	3.4	0.25	1	1.8
										MED	82%	4.9			
										HIGH	84%	6.4			
	575-3-60	518	633	5.1	40	5.1	40	610	3.6	STD	80%	3.5	0.24	1	3.8
										MED	84%	4.5			
										HIGH	83%	6.2			
12	208-3-60	187	253	15.9	110	15.9	110	1070	6.2	STD	77%	7.1	0.48	1	3.8
										MED	82%	10.8			
										HIGH	84%	13.6			
	230-3-60	187	253	15.9	110	15.9	110	1070	6.2	STD	77%	6.8	0.48	1	3.8
										MED	82%	9.8			
										HIGH	84%	12.7			
	460-3-60	414	506	7.7	52	7.7	52	1070	3.1	STD	77%	3.4	0.25	1	1.8
										MED	82%	4.9			
										HIGH	84%	6.4			
	575-3-60	518	633	5.7	39	5.7	39	1070	2.5	STD	80%	3.5	0.24	1	3.8
										MED	84%	4.5			
										HIGH	83%	6.2			

See legend on page 92.

Electrical data (cont)

50HC**07-14 TWO-SPEED BLOWER COOLING ELECTRICAL DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT	V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (EA)		IFM			CMBST FAN MOTOR	PWR EXH	
		MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFF at FULL LOAD	FLA	FLA	QTY	FLA
14	208-3-60	187	253	19.6	136	19.6	136	280	1.5	STD	85%	8.6	0.48	1	3.8
										MED	82%	10.8			
										HIGH	90%	20.4			
	230-3-60	187	253	19.6	136	19.6	136	280	1.5	STD	85%	7.8	0.48	1	3.8
										MED	82%	9.8			
										HIGH	90%	20.4			
	460-3-60	414	506	8.2	66	8.2	66	280	0.8	STD	85%	3.8	0.25	1	1.8
										MED	82%	4.9			
										HIGH	90%	10.2			
	575-3-60	518	633	6.6	55	6.6	55	280	0.7	STD	84%	4.5	0.24	1	3.8
										MED	84%	4.5			
										HIGH	94%	9.0			

LEGEND

FLA — Full Load Amps
IFM — Indoor (Evaporator) Fan Motor
LRA — Locked Rotor Amps
RLA — Rated Load Amps

NOTE: Refer to Packaged Rooftop Builder (Selection Software) for additional electrical data with EnergyX system.

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX® SYSTEM

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
A04	208/230-1-60	DD-STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	037
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	040	040
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	040	040	040	040
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
		STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	040	040	040	040
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
		MED	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	040	040	040	040
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
	208/230-3-60	DD-STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		MED	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		HIGH	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	037
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8				
			CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	575-3-60†	DD-STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
		STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
		MED	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
		HIGH	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—

See legend on page 102.

Electrical data (cont)

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
A05	208/230-1-60	DD-STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	040	040
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
			CRHEATER103B00,103B00	17.4	13.1/16.0	44.6/54.5	040	040	040	040
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	040	040	040	040
		STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
			CRHEATER103B00,103B00	17.4	13.1/16.0	44.6/54.5	040	040	040	040
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	040	040	040	040
		MED	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
			CRHEATER103B00,103B00	17.4	13.1/16.0	44.6/54.5	040	040	040	040
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	040	040	040	040
	208/230-3-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		HIGH	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	038	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
		STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
		MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
		HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
	575-3-60†	DD-STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
		STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
		MED	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
		HIGH	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
			CRHEATER298A00	15.0	13.8	47.0	—	—	—	—

See legend on page 102.

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
A06	208/230-1-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	037
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	040	040
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
			CRHEATER103B00,103B00	17.4	13.1/16.0	44.6/54.5	040	040	040	040
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	040	040	040	040
		STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
			CRHEATER103B00,103B00	17.4	13.1/16.0	44.6/54.5	040	040	040	040
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	040	040	040	040
		MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	037
			CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	040	040
			CRHEATER102A00,102A00	13.0	9.8/11.9	33.3/40.7	040	040	040	040
			CRHEATER103B00,103B00	17.4	13.1/16.0	44.6/54.5	040	040	040	040
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	040	040	040	040
	208/230-3-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
			CRHEATER104B00,105A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
		STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
			CRHEATER104B00,105A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
		MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	037
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	038	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
			CRHEATER104B00,105A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
		HIGH	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
			CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	037
			CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	038	038	038
			CRHEATER104B00,104B00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
			CRHEATER104B00,105A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
			CRHEATER108A00,109A00	25.5	23.4	79.9	037	037	037	037
		STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
			CRHEATER108A00,109A00				037	037	037	037
		MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
			CRHEATER108A00,109A00	25.5	23.4	79.9	037	037	037	037
		HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
			CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
			CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
			CRHEATER108A00,108A00	23.0	21.1	72.1	037	037	037	037
			CRHEATER108A00,109A00	25.5	23.4	79.9	037	037	037	037
	575-3-60†	DD-STD	CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
			CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
		STD	CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
			CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
		MED	CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
			CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
		HIGH	CRHEATER298A00	15.0	13.8	47.0	—	—	—	—
			CRHEATER301A00	25.0	23.0	78.3	037	037	037	037

See legend on page 102.

Electrical data (cont)

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
A07	208/230-3-60	STD	CRHEATER264A00	6.5	4.9/6.0	16.7/20.4	042	042	042	042
			CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	042	042	042	042
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	042	042	043	043
			CRHEATER117A00,117A00	21.0	15.8/19.3	53.8/65.8	043	043	043	043
			CRHEATER110A00,117A00	26.5	19.9/24.3	67.9/83.0	043	043	043	043
		MED	CRHEATER264A00	6.5	4.9/6.0	16.7/20.4	042	042	042	042
			CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	042	042	042	042
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	042	043	043	043
			CRHEATER117A00,117A00	21.0	15.8/19.3	53.8/65.8	043	043	043	043
			CRHEATER110A00,117A00	26.5	19.9/24.3	67.9/83.0	043	043	043	043
		HIGH	CRHEATER264A00	6.5	4.9/6.0	16.7/20.4	042	042	042	042
			CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	042	042	042	042
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	043	043	043	043
			CRHEATER117A00,117A00	21.0	15.8/19.3	53.8/65.8	043	043	043	043
			CRHEATER110A00,117A00	26.5	19.9/24.3	67.9/83.0	043	043	043	043
	460-3-60	STD	CRHEATER265A00	6.0	5.5	18.8	042	042	042	042
			CRHEATER266A00	11.5	10.6	36.0	042	042	042	042
			CRHEATER267A00	14.0	12.9	43.9	042	042	042	042
			CRHEATER268A00	23.0	21.1	72.1	042	042	042	042
			CRHEATER269A00	25.5	23.4	79.9	042	042	042	042
		MED	CRHEATER265A00	6.0	5.5	18.8	042	042	042	042
			CRHEATER266A00	11.5	10.6	36.0	042	042	042	042
			CRHEATER267A00	14.0	12.9	43.9	042	042	042	042
			CRHEATER268A00	23.0	21.1	72.1	042	042	042	042
			CRHEATER269A00	25.5	23.4	79.9	042	042	042	042
		HIGH	CRHEATER265A00	6.0	5.5	18.8	042	042	042	042
			CRHEATER266A00	11.5	10.6	36.0	042	042	042	042
			CRHEATER267A00	14.0	12.9	43.9	042	042	042	042
			CRHEATER268A00	23.0	21.1	72.1	042	042	042	042
			CRHEATER269A00	25.5	23.4	79.9	042	042	042	042
	575-3-60†	STD	CRHEATER118A00	18.0	16.5	56.4	042	042	042	042
			CRHEATER299A00	28.0	25.7	87.7	042	042	042	042
		MED	CRHEATER118A00	18.0	16.5	56.4	042	042	042	042
			CRHEATER299A00	28.0	25.7	87.7	042	042	042	042
		HIGH	CRHEATER118A00	18.0	16.5	56.4	042	042	042	042
			CRHEATER299A00	28.0	25.7	87.7	042	042	042	042

See legend on page 102.

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
D07	208/230-3-60	STD	CRHEATER264A00	6.5	4.9/6.0	16.7/20.4	042	042	042	042
			CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	042	042	042	042
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	042	042	043	043
			CRHEATER117A00,117A00	21.0	15.8/19.3	53.8/65.8	043	043	043	043
			CRHEATER110A00,117A00	26.5	19.9/24.3	67.9/83.0	043	043	043	043
		MED	CRHEATER264A00	6.5	4.9/6.0	16.7/20.4	042	042	042	042
			CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	042	042	042	042
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	042	043	043	043
			CRHEATER117A00,117A00	21.0	15.8/19.3	53.8/65.8	043	043	043	043
			CRHEATER110A00,117A00	26.5	19.9/24.3	67.9/83.0	043	043	043	043
		HIGH	CRHEATER264A00	6.5	4.9/6.0	16.7/20.4	042	042	042	042
			CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	042	042	043	042
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	043	043	043	043
			CRHEATER117A00,117A00	21.0	15.8/19.3	53.8/65.8	043	043	043	043
			CRHEATER110A00,117A00	26.5	19.9/24.3	67.9/83.0	043	043	043	043
	460-3-60	STD	CRHEATER265A00	6.0	5.5	18.8	042	042	042	042
			CRHEATER266A00	11.5	10.6	36.0	042	042	042	042
			CRHEATER267A00	14.0	12.9	43.9	042	042	042	042
			CRHEATER268A00	23.0	21.1	72.1	042	042	042	042
			CRHEATER269A00	25.5	23.4	79.9	042	042	042	042
		MED	CRHEATER265A00	6.0	5.5	18.8	042	042	042	042
			CRHEATER266A00	11.5	10.6	36.0	042	042	042	042
			CRHEATER267A00	14.0	12.9	43.9	042	042	042	042
			CRHEATER268A00	23.0	21.1	72.1	042	042	042	042
			CRHEATER269A00	25.5	23.4	79.9	042	042	042	042
		HIGH	CRHEATER265A00	6.0	5.5	18.8	042	042	042	042
			CRHEATER266A00	11.5	10.6	36.0	042	042	042	042
			CRHEATER267A00	14.0	12.9	43.9	042	042	042	042
			CRHEATER268A00	23.0	21.1	72.1	042	042	042	042
			CRHEATER269A00	25.5	23.4	79.9	042	042	042	042
	575-3-60†	STD	CRHEATER118A00	18.0	16.5	56.4	042	042	042	042
			CRHEATER299A00	28.0	25.7	87.7	042	042	042	042
		MED	CRHEATER118A00	18.0	16.5	56.4	042	042	042	042
			CRHEATER299A00	28.0	25.7	87.7	042	042	042	042
		HIGH	CRHEATER118A00	18.0	16.5	56.4	042	042	042	042
			CRHEATER299A00	28.0	25.7	87.7	042	042	042	042

See legend on page 102.

Electrical data (cont)

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
D08	208/230-3-60	STD	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	047
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	047	047	049	049
			CRHEATER111A00	24.8	18.6/22.8	63.5/77.7	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
		MED	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	051
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	047	049	049	049
			CRHEATER111A00	24.8	18.6/22.8	63.5/77.7	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
		HIGH	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	047
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	049	049	049	049
			CRHEATER111A00	24.8	18.6/22.8	63.5/77.7	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
	460-3-60	STD	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER114B00	27.8	25.5	87.1	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	047
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
		MED	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER114B00	27.8	25.5	87.1	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	047
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
		HIGH	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER114B00	27.8	25.5	87.1	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	050
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
	575-3-60†	STD	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
		MED	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
		HIGH	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047

See legend on page 102.

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
D09	208/230-3-60	STD	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	047
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	047	047	049	049
			CRHEATER111A00	24.8	18.6/22.8	63.5/77.7	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
		MED	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	047
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	047	049	049	049
			CRHEATER111A00	24.8	18.6/22.8	63.5/77.7	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
		HIGH	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	047
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	049	049	049	049
			CRHEATER111A00	24.8	18.6/22.8	63.5/77.7	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
	460-3-60	STD	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER114B00	27.8	25.5	87.1	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	047
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
		MED	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER114B00	27.8	25.5	87.1	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	047
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
		HIGH	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER114B00	27.8	25.5	87.1	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	050
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
	575-3-60†	STD	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
		MED	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
		HIGH	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047

See legend on page 102.

Electrical data (cont)

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
D11	208/230-3-60	STD	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	049
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	047	047	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
			CRHEATER112A00,110A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		MED	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	049	049	049
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
			CRHEATER112A00,110A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		HIGH	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	049	049	049	049
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
			CRHEATER112A00,110A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
	460-3-60	STD	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	047
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
			CRHEATER129B00	50.0	45.9	156.7	050	050	050	050
		MED	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	050
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
			CRHEATER129B00	50.0	45.9	156.7	050	050	050	050
		HIGH	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	050	050
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
			CRHEATER129B00	50.0	45.9	156.7	050	050	050	050
	575-3-60†	STD	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
			CRHEATER118A00,119A00	54.0	49.6	169.2	047	047	047	050
		MED	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
			CRHEATER118A00,119A00	54.0	49.6	169.2	047	050	047	050
		HIGH	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
			CRHEATER118A00,119A00	54.0	49.6	169.2	050	050	050	050

See legend on page 102.

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
D12	208/230-3-60	STD	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	047	047	047
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	047	047	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
			CRHEATER112A00,110A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		MED	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	049	049	049
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
			CRHEATER112A00,110A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		HIGH	CRHEATER117A00	10.4	7.8/9.6	26.6/32.6	047	049	049	049
			CRHEATER110A00	16.0	12.0/14.7	41.0/50.1	049	049	049	049
			CRHEATER112A00	32.0	24.0/29.4	82.0/100.3	049	049	049	049
			CRHEATER112A00,117A00	42.4	31.8/38.9	108.6/132.9	051	051	051	051
			CRHEATER112A00,110A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
	460-3-60	STD	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	047
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
			CRHEATER129B00	50.0	45.9	156.7	050	050	050	050
		MED	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	047	050
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
			CRHEATER129B00	50.0	45.9	156.7	050	050	050	050
		HIGH	CRHEATER116B00	13.9	12.8	43.6	047	047	047	047
			CRHEATER113B00	16.5	15.2	51.7	047	047	047	047
			CRHEATER115B00	33.0	30.3	103.4	047	047	050	050
			CRHEATER128B00	41.7	38.3	130.7	050	050	050	050
			CRHEATER129B00	50.0	45.9	156.7	050	050	050	050
	575-3-60†	STD	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
			CRHEATER118A00,119A00	54.0	49.6	169.2	047	047	047	050
		MED	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
			CRHEATER118A00,119A00	54.0	49.6	169.2	047	050	047	050
		HIGH	CRHEATER118A00	18.0	16.5	56.4	047	047	047	047
			CRHEATER119A00	36.0	33.1	112.8	047	047	047	047
			CRHEATER118A00,119A00	54.0	49.6	169.2	050	050	050	050

See legend on page 102.

Electrical data (cont)

50HC04-14 ELECTRIC HEAT DATA — WITHOUT EnergyX SYSTEM (cont)

50HC UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER (CRSINGLEXXXA00)			
							NO C.O. OR UNPOWERED C.O.		W/PWRD C.O.	
							NO P.E.	WITH P.E. (pwrd fr/unit)	NO P.E.	WITH P.E. (pwrd fr/unit)
D14	208/230-3-60	STD	CRHEATER291A00	16.5	12.4/15.2	42.3/51.7	049	049	049	049
			CRHEATER288A00,291A00	26.5	19.9/24.3	67.9/83.0	049	049	049	049
			CRHEATER294A00	33.5	25.2/30.8	85.9/105.0	049	049	049	049
			CRHEATER288A00,294A00	43.5	32.7/40.0	111.5/136.3	051	051	051	051
			CRHEATER291A00,294A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		MED	CRHEATER291A00	16.5	12.4/15.2	42.3/51.7	049	049	049	049
			CRHEATER288A00,291A00	26.5	19.9/24.3	67.9/83.0	049	049	049	049
			CRHEATER294A00	33.5	25.2/30.8	85.9/105.0	049	049	049	049
			CRHEATER288A00,294A00	43.5	32.7/40.0	111.5/136.3	051	051	051	051
			CRHEATER291A00,294A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		HIGH	CRHEATER291A00	16.5	12.4/15.2	42.3/51.7	049	049	049	049
			CRHEATER288A00,291A00	26.5	19.9/24.3	67.9/83.0	049	049	049	049
			CRHEATER294A00	33.5	25.2/30.8	85.9/105.0	049	049	049	049
			CRHEATER288A00,294A00	43.5	32.7/40.0	111.5/136.3	051	051	051	051
			CRHEATER291A00,294A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
		HIGH-HE	CRHEATER291A00	16.5	12.4/15.2	42.3/51.7	049	049	049	049
			CRHEATER288A00,291A00	26.5	19.9/24.3	67.9/83.0	049	049	049	049
			CRHEATER294A00	33.5	25.2/30.8	85.9/105.0	049	049	049	049
			CRHEATER288A00,294A00	43.5	32.7/40.0	111.5/136.3	051	051	051	051
			CRHEATER291A00,294A00	50.0	37.6/45.9	128.1/156.7	051	051	051	051
	460-3-60	STD	CRHEATER292A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER289A00,292A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER295A00	33.5	30.8	105.0	047	047	047	047
			CRHEATER289A00,295A00	43.5	40.0	136.3	050	050	050	050
			CRHEATER292A00,295A00	50.0	45.9	156.7	050	050	050	050
		MED	CRHEATER292A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER289A00,292A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER295A00	33.5	30.8	105.0	047	047	047	050
			CRHEATER289A00,295A00	43.5	40.0	136.3	050	050	050	050
			CRHEATER292A00,295A00	50.0	45.9	156.7	050	050	050	050
		HIGH	CRHEATER292A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER289A00,292A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER295A00	33.5	30.8	105.0	047	050	050	050
			CRHEATER289A00,295A00	43.5	40.0	136.3	050	050	050	050
			CRHEATER292A00,295A00	50.0	45.9	156.7	050	050	050	050
		HIGH-HE	CRHEATER292A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER289A00,292A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER295A00	33.5	30.8	105.0	050	050	050	050
			CRHEATER289A00,295A00	43.5	40.0	136.3	050	050	050	050
			CRHEATER292A00,295A00	50.0	45.9	156.7	050	050	050	050
	575-3-60†	STD	CRHEATER293A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER290A00,293A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER296A00	33.5	30.8	105.0	047	047	047	047
			CRHEATER290A00,296A00	43.5	40.0	136.3	047	050	047	050
			CRHEATER293A00,296A00	50.0	45.9	156.7	047	047	047	047
		MED	CRHEATER293A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER290A00,293A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER296A00	33.5	30.8	105.0	047	047	047	047
			CRHEATER290A00,296A00	43.5	40.0	136.3	047	050	047	050
			CRHEATER293A00,296A00	50.0	45.9	156.7	047	047	047	047
		HIGH	CRHEATER293A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER290A00,293A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER296A00	33.5	30.8	105.0	047	047	047	047
			CRHEATER290A00,296A00	43.5	40.0	136.3	047	050	050	050
			CRHEATER293A00,296A00	50.0	45.9	156.7	047	050	047	050
		HIGH-HE	CRHEATER293A00	16.5	15.2	51.7	—	—	—	—
			CRHEATER290A00,293A00	26.5	24.3	83.0	047	047	047	047
			CRHEATER296A00	33.5	30.8	105.0	047	047	047	047
			CRHEATER290A00,296A00	43.5	40.0	136.3	050	050	050	050
			CRHEATER293A00,296A00	50.0	45.9	156.7	050	050	050	050

LEGEND

HIGH-HE — High-High Efficiency
IFM — Indoor (Evaporator) Fan Motor
P.E. — Power Exhaust

* 50HC*__A__04-50HC*__A__07 — Single-Stage Cooling
50HC*__D__07-50HC*__D__14 — Two-Stage Cooling
† On 575v units, the ERV motors are 230v or 460v.

NOTES:
1. "STD" and "MED" IFM type are belt drive for single phase HC units with Humidi-MiZer® system. Single phase HC units without Humidi-MiZer must use "DD-STD" IFM type only.
2. Refer to Packaged Rooftop Builder (Selection Software) for electric heat data on units equipped with EnergyX system.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50HC-A04	208/230-1-60	DD-STD	NONE	—	—	30	45	29	88	32	45	31	90	34	50	34	93	36	50	36	95
			101A	3.3/4.4	15.9/18.3	30/33	45/45	29/30	88/88	32/35	45/45	31/32	90/90	36/39	50/50	34/35	93/93	38/41	50/50	36/37	95/95
			102A	4.9/6.5	23.5/27.1	39/44	45/45	36/40	88/88	41/46	45/50	38/42	90/90	45/50	50/50	41/45	93/93	47/52	50/60	43/47	95/95
			103B	6.5/8.7	31.4/36.3	49/55	50/60	45/50	88/88	51/57	60/60	47/52	90/90	55/61	60/70	50/56	93/93	57/63	60/70	52/58	95/95
			104B	7.9/10.5	37.9/43.8	57/64	60/70	52/59	88/88	59/67	60/70	54/61	90/90	63/70	70/80	58/64	93/93	65/73	70/80	60/67	95/95
			102A+102A	9.8/13.0	46.9/54.2	68/77	70/80	62/71	88/88	71/80	80/80	65/73	90/90	74/83	80/90	68/76	93/93	77/86	80/90	70/79	95/95
		STD	NONE	—	—	27	40	26	93	29	45	28	95	32	45	31	98	34	45	34	100
			101A	3.3/4.4	15.9/18.3	27/29	40/40	26/27	93/93	29/32	45/45	28/29	95/95	32/35	45/45	31/32	98/98	35/38	45/45	34/34	100/100
			102A	4.9/6.5	23.5/27.1	36/40	40/45	33/37	93/93	38/43	45/45	35/39	95/95	42/46	45/50	38/42	98/98	44/49	45/50	40/45	100/100
			103B	6.5/8.7	31.4/36.3	46/52	50/60	42/47	93/93	48/54	50/60	44/50	95/95	52/58	60/60	47/53	98/98	54/60	60/60	49/55	100/100
			104B	7.9/10.5	37.9/43.8	54/61	60/70	49/56	93/93	56/64	60/70	51/58	95/95	60/67	60/70	55/62	98/98	62/70	70/70	57/64	100/100
			102A+102A	9.8/13.0	46.9/54.2	65/74	70/80	60/68	93/93	68/77	70/80	62/70	95/95	71/80	80/80	65/73	98/98	74/83	80/90	67/76	100/100
		MED	NONE	—	—	27	40	26	93	29	45	28	95	32	45	31	98	34	45	34	100
			101A	3.3/4.4	15.9/18.3	27/29	40/40	26/27	93/93	29/32	45/45	28/29	95/95	32/35	45/45	31/32	98/98	35/38	45/45	34/34	100/100
			102A	4.9/6.5	23.5/27.1	36/40	40/45	33/37	93/93	38/43	45/45	35/39	95/95	42/46	45/50	38/42	98/98	44/49	45/50	40/45	100/100
			103B	6.5/8.7	31.4/36.3	46/52	50/60	42/47	93/93	48/54	50/60	44/50	95/95	52/58	60/60	47/53	98/98	54/60	60/60	49/55	100/100
			104B	7.9/10.5	37.9/43.8	54/61	60/70	49/56	93/93	56/64	60/70	51/58	95/95	60/67	60/70	55/62	98/98	62/70	70/70	57/64	100/100
			102A+102A	9.8/13.0	46.9/54.2	65/74	70/80	60/68	93/93	68/77	70/80	62/70	95/95	71/80	80/80	65/73	98/98	74/83	80/90	67/76	100/100

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
								DISC. SIZE				DISC. SIZE				DISC. SIZE			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	FLA	LRA	MCA	FUSE or HACR BRKR	FLA	LRA	MCA	FUSE or HACR BRKR	FLA	LRA	MCA	FUSE or HACR BRKR	FLA	LRA
50HC-A04	208/230-3-60	DD-STD	NONE	—	—	22	30	22	82	24	30	24	84	27	30	27	87	29	35	29	89
			101A	3.3/4.4	9.2/10.6	22/23	30/30	22/22	82/82	24/25	30/30	24/24	84/84	27/29	30/30	27/27	87/87	30/31	35/35	29/29	89/89
			102A	4.9/6.5	13.6/15.6	27/29	30/30	24/26	82/82	29/32	30/35	26/29	84/84	33/35	35/35	30/32	87/87	35/38	35/40	32/34	89/89
			103B	6.5/8.7	18.1/20.9	32/36	35/40	29/33	82/82	35/38	35/40	32/35	84/84	38/42	40/45	35/38	87/87	41/44	45/45	37/40	89/89
			104B	7.9/10.5	21.9/25.3	37/41	40/45	34/38	82/82	39/44	40/45	36/40	84/84	43/47	45/50	39/43	87/87	45/50	50/50	41/45	89/89
			105A	12.0/16.0	33.4/38.5	51/58	60/60	47/53	82/82	54/60	60/60	49/55	84/84	57/64	60/70	52/58	87/87	60/66	60/70	55/60	89/89
		STD	NONE	—	—	20	25	19	94	22	30	21	96	24	30	25	99	26	30	27	101
			101A	3.3/4.4	9.2/10.6	20/20	25/25	19/19	94/94	22/23	30/30	21/21	96/96	24/26	30/30	25/25	99/99	27/29	30/30	27/27	101/101
			102A	4.9/6.5	13.6/15.6	24/26	25/30	22/24	94/94	26/29	30/30	24/26	96/96	30/32	30/35	27/29	99/99	32/35	35/35	29/32	101/101
			103B	6.5/8.7	18.1/20.9	30/33	30/35	27/30	94/94	32/35	35/40	29/32	96/96	36/39	40/40	32/36	99/99	38/41	40/45	35/38	101/101
			104B	7.9/10.5	21.9/25.3	34/39	35/40	31/35	94/94	37/41	40/45	33/37	96/96	40/45	40/45	37/41	99/99	43/47	45/50	39/43	101/101
			105A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	94/94	51/57	60/60	47/52	96/96	55/61	60/70	50/56	99/99	57/63	60/70	52/58	101/101
		MED	NONE	—	—	20/19	25/25	19/19	111	22/21	30/30	21/21	113	24/24	30/30	25/24	116	26/26	30/30	27/26	118
			101A	3.3/4.4	9.2/10.6	20/20	25/25	19/19	111/111	22/22	30/30	21/21	113/113	24/26	30/30	25/24	116/116	27/28	30/30	27/26	118/118
			102A	4.9/6.5	13.6/15.6	24/26	25/30	22/24	111/111	26/28	30/30	24/26	113/113	30/32	30/35	27/29	116/116	32/34	35/35	29/31	118/118
			103B	6.5/8.7	18.1/20.9	30/33	30/35	27/30	111/111	32/35	35/35	29/32	113/113	36/39	40/40	32/35	116/116	38/41	40/45	35/37	118/118
			104B	7.9/10.5	21.9/25.3	34/38	35/40	31/35	111/111	37/41	40/45	33/37	113/113	40/44	40/45	37/40	116/116	43/47	45/50	39/42	118/118
			105A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	111/111	51/57	60/60	47/52	113/113	55/61	60/70	50/55	116/116	57/63	60/70	52/58	118/118
		HIGH	NONE	—	—	23/23	30/30	23/23	147	25/25	30/30	25/25	149	28/28	30/30	28/28	152	30/29	35/35	30/30	154
			101A	3.3/4.4	9.2/10.6	23/24	30/30	23/23	147/147	25/26	30/30	25/25	149/149	28/30	30/30	28/28	152/152	31/32	35/35	30/30	154/154
			102A	4.9/6.5	13.6/15.6	28/30	30/30	25/27	147/147	30/33	30/35	27/30	149/149	34/36	35/40	31/33	152/152	36/39	40/40	33/35	154/154
			103B	6.5/8.7	18.1/20.9	34/37	35/40	30/34	147/147	36/39	40/40	33/36	149/149	40/43	40/45	36/39	152/152	42/45	45/45	38/41	154/154
			104B	7.9/10.5	21.9/25.3	38/42	40/45	35/39	147/147	41/45	45/45	37/41	149/149	44/48	45/50	40/44	152/152	47/51	50/60	43/46	154/154
			105A	12.0/16.0	33.4/38.5	53/59	60/60	48/54	147/147	55/61	60/70	50/56	149/149	59/65	60/70	54/59	152/152	61/67	70/70	56/62	154/154

See legend on page 117.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC-A04	460-3-60	DD-STD	NONE	—	—	12	15	12	43	13	15	13	44	14	20	14	45	15	20	16	46
			106A	6.0	7.2	14	15	13	43	16	20	14	44	17	20	15	45	18	20	17	46
			107A	8.8	10.6	19	20	17	43	20	20	18	44	21	25	19	45	23	25	20	46
			108A	11.5	13.8	23	25	20	43	24	25	22	44	25	25	23	45	27	30	24	46
			109A	14.0	16.8	26	30	24	43	28	30	25	44	29	30	26	45	30	30	28	46
		STD	NONE	—	—	11	15	10	48	12	15	11	49	13	15	13	50	14	20	14	51
			106A	6.0	7.2	13	15	11	48	14	15	12	49	15	15	14	50	17	20	15	51
			107A	8.8	10.6	17	20	15	48	18	20	16	49	20	20	18	50	21	25	19	51
			108A	11.5	13.8	21	25	19	48	22	25	20	49	24	25	21	50	25	25	23	51
			109A	14.0	16.8	25	25	22	48	26	30	23	49	27	30	25	50	29	30	26	51
		MED	NONE	—	—	11	15	10	57	12	15	11	58	13	15	13	59	14	15	14	60
			106A	6.0	7.2	13	15	11	57	14	15	12	58	15	15	14	59	17	20	15	60
			107A	8.8	10.6	17	20	15	57	18	20	16	58	20	20	18	59	21	25	19	60
			108A	11.5	13.8	21	25	19	57	22	25	20	58	24	25	21	59	25	25	22	60
			109A	14.0	16.8	25	25	22	57	26	30	23	58	27	30	25	59	29	30	26	60
		HIGH	NONE	—	—	12	15	12	75	13	15	13	76	15	20	15	77	16	20	16	78
			106A	6.0	7.2	15	15	13	75	16	20	14	76	17	20	16	77	19	20	17	78
			107A	8.8	10.6	19	20	17	75	20	20	18	76	22	25	20	77	23	25	21	78
			108A	11.5	13.8	23	25	21	75	24	25	22	76	26	30	23	77	27	30	24	78
			109A	14.0	16.8	27	30	24	75	28	30	25	76	29	30	27	77	31	35	28	78
	575-3-60	DD-STD	NONE	—	—	10	15	10	42	12	15	12	44	11	15	12	44	13	15	14	46
			297A	10.0	9.6	17	20	16	42	20	20	18	44	20	20	18	44	22	25	20	46
			298A	15.0	14.4	23	25	21	42	26	30	23	44	26	30	23	44	28	30	25	46
		STD	NONE	—	—	7	15	6	45	9	15	9	47	9	15	8	47	11	15	10	49
			297A	10.0	9.6	14	15	12	45	16	20	15	47	16	20	14	47	18	20	17	49
			298A	15.0	14.4	20	20	18	45	22	25	20	47	22	25	20	47	24	25	22	49
		MED	NONE	—	—	7	15	6	45	9	15	9	47	9	15	8	47	11	15	10	49
			297A	10.0	9.6	14	15	12	45	16	20	15	47	16	20	14	47	18	20	17	49
			298A	15.0	14.4	20	20	18	45	22	25	20	47	22	25	20	47	24	25	22	49
		HIGH	NONE	—	—	8	15	7	49	10	15	9	51	9	15	9	51	11	15	11	53
			297A	10.0	9.6	15	15	13	49	17	20	16	51	17	20	15	51	19	20	17	53
			298A	15.0	14.4	21	25	19	49	23	25	21	51	23	25	21	51	25	30	23	53
50HC-A05	208/230-1-60	DD-STD	NONE	—	—	37	50	35	127	38	50	37	129	41	60	41	132	43	60	43	134
			101A	3.3/4.4	15.9/18.3	37/37	50/50	35/35	127/127	38/38	50/50	37/37	129/129	41/41	60/60	41/41	132/132	43/43	60/60	43/43	134/134
			103B	6.5/8.7	31.4/36.3	49/55	50/60	45/50	127/127	51/57	60/60	47/52	129/129	55/61	60/70	50/56	132/132	57/63	60/70	52/58	134/134
			102A+102A	9.8/13.0	46.9/54.2	68/77	70/80	62/71	127/127	71/80	80/80	65/73	129/129	74/83	80/90	68/76	132/132	77/86	80/90	70/79	134/134
			103B+103B	13.1/17.4	62.8/72.5	88/100	90/100	81/92	127/127	91/103	100/110	83/94	129/129	94/106	100/110	86/97	132/132	97/109	100/110	88/100	134/134
			104B+104B	15.8/21.0	75.8/87.5	104/119	110/125	96/109	127/127	107/121	110/125	98/111	129/129	110/125	125/125	101/115	132/132	113/127	125/150	103/117	134/134
		STD	NONE	—	—	34	50	32	132	36	50	35	134	39	60	38	137	41	60	40	139
			101A	3.3/4.4	15.9/18.3	34/34	50/50	32/32	132/132	36/36	50/50	35/35	134/134	39/39	60/60	38/38	137/137	41/41	60/60	40/40	139/139
			103B	6.5/8.7	31.4/36.3	46/52	50/60	42/47	132/132	48/54	50/60	44/50	134/134	52/58	60/60	47/53	137/137	54/60	60/60	49/55	139/139
			102A+102A	9.8/13.0	46.9/54.2	65/74	70/80	60/68	132/132	68/77	70/80	62/70	134/134	71/80	80/80	65/73	137/137	74/83	80/90	67/76	139/139
			103B+103B	13.1/17.4	62.8/72.5	85/97	90/100	78/89	132/132	87/100	90/100	80/91	134/134	91/103	100/110	83/95	137/137	93/106	100/110	86/97	139/139
			104B+104B	15.8/21.0	75.8/87.5	101/116	110/125	93/106	132/132	104/118	110/125	95/108	134/134	107/122	110/125	98/112	137/137	110/124	110/125	101/114	139/139
		MED	NONE	—	—	34	50	32	132	36	50	35	134	39	60	38	137	41	60	40	139
			101A	3.3/4.4	15.9/18.3	34/34	50/50	32/32	132/132	36/36	50/50	35/35	134/134	39/39	60/60	38/38	137/137	41/41	60/60	40/40	139/139
			103B	6.5/8.7	31.4/36.3	46/52	50/60	42/47	132/132	48/54	50/60	44/50	134/134	52/58	60/60	47/53	137/137	54/60	60/60	49/55	139/139
			102A+102A	9.8/13.0	46.9/54.2	65/74	70/80	60/68	132/132	68/77	70/80	62/70	134/134	71/80	80/80	65/73	137/137	74/83	80/90	67/76	139/139
			103B+103B	13.1/17.4	62.8/72.5	85/97	90/100	78/89	132/132	87/100	90/100	80/91	134/134	91/103	100/110	83/95	137/137	93/106	100/110	86/97	139/139
			104B+104B	15.8/21.0	75.8/87.5	101/116	110/125	93/106	132/132	104/118	110/125	95/108	134/134	107/122	110/125	98/112	137/137	110/124	110/125	101/114	139/139

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC-A05	208/230-3-60	DD-STD	NONE	—	—	26	30	26	93	28	40	28	95	31	40	31	98	33	45	34	100
			102A	4.9/6.5	13.6/15.6	27/29	30/30	26/26	93/93	29/32	40/40	28/29	95/95	33/35	40/40	31/32	98/98	35/38	45/45	34/34	100/100
			103B	6.5/8.7	18.1/20.9	32/36	35/40	29/33	93/93	35/38	40/40	32/35	95/95	38/42	40/45	35/38	98/98	41/44	45/45	37/40	100/100
			105A	12.0/16.0	33.4/38.5	51/58	60/60	47/53	93/93	54/60	60/60	49/55	95/95	57/64	60/70	52/58	98/98	60/66	60/70	55/60	100/100
			104B+104B	15.8/21.0	43.8/50.5	64/73	70/80	59/67	93/93	67/75	70/80	61/69	95/95	70/79	80/80	64/72	98/98	73/81	80/90	67/74	100/100
		STD	NONE	—	—	24	30	23	105	26	30	26	107	29	40	29	110	31	40	31	112
			102A	4.9/6.5	13.6/15.6	24/26	30/30	23/24	105/105	26/29	30/30	26/26	107/107	30/32	40/40	29/29	110/110	32/35	40/40	31/32	112/112
			103B	6.5/8.7	18.1/20.9	30/33	30/35	27/30	105/105	32/35	35/40	29/32	107/107	36/39	40/40	32/36	110/110	38/41	40/45	35/38	112/112
			105A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	105/105	51/57	60/60	47/52	107/107	55/61	60/70	50/56	110/110	57/63	60/70	52/58	112/112
			104B+104B	15.8/21.0	43.8/50.5	62/70	70/70	56/64	105/105	64/72	70/80	59/66	107/107	68/76	70/80	62/70	110/110	70/78	70/80	64/72	112/112
		MED	NONE	—	—	24/24	30/30	23/23	122	26/26	30/30	26/25	124	29/29	40/40	29/29	127	31/31	40/40	31/31	129
			102A	4.9/6.5	13.6/15.6	24/26	30/30	23/24	122/122	26/28	30/30	26/26	124/124	30/32	40/40	29/29	127/127	32/34	40/40	31/31	129/129
			103B	6.5/8.7	18.1/20.9	30/33	30/35	27/30	122/122	32/35	35/35	29/32	124/124	36/39	40/40	32/35	127/127	38/41	40/45	35/37	129/129
			105A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	122/122	51/57	60/60	47/52	124/124	55/61	60/70	50/55	127/127	57/63	60/70	52/58	129/129
			104B+104B	15.8/21.0	43.8/50.5	62/70	70/70	56/64	122/122	64/72	70/80	59/66	124/124	68/76	70/80	62/69	127/127	70/78	70/80	64/71	129/129
		HIGH	NONE	—	—	27/27	40/40	27/27	158	29/29	40/40	29/29	160	32/32	45/45	33/32	163	34/34	45/45	35/35	165
			102A	4.9/6.5	13.6/15.6	28/30	40/40	27/27	158/158	30/33	40/40	29/30	160/160	34/36	45/45	33/33	163/163	36/39	45/45	35/35	165/165
			103B	6.5/8.7	18.1/20.9	34/37	40/40	30/34	158/158	36/39	40/40	33/36	160/160	40/43	45/45	36/39	163/163	42/45	45/45	38/41	165/165
			105A	12.0/16.0	33.4/38.5	53/59	60/60	48/54	158/158	55/61	60/70	50/56	160/160	59/65	60/70	54/59	163/163	61/67	70/70	56/62	165/165
			104B+104B	15.8/21.0	43.8/50.5	66/74	70/80	60/68	158/158	68/76	70/80	62/70	160/160	72/80	80/80	66/73	163/163	74/82	80/90	68/75	165/165
	460-3-60	DD-STD	NONE	—	—	13	15	13	47	14	20	14	48	15	20	15	49	16	20	16	50
			106A	6.0	7.2	14	15	13	47	16	20	14	48	17	20	15	49	18	20	17	50
			108A	11.5	13.8	23	25	20	47	24	25	22	48	25	25	23	49	27	30	24	50
			109A	14.0	16.8	26	30	24	47	28	30	25	48	29	30	26	49	30	30	28	50
			108A+108A	23.0	27.7	40	40	36	47	41	45	38	48	43	45	39	49	44	45	40	50
		STD	NONE	—	—	12	15	11	52	13	15	12	53	14	20	14	54	15	20	15	55
			106A	6.0	7.2	13	15	11	52	14	15	12	53	15	20	14	54	17	20	15	55
			108A	11.5	13.8	21	25	19	52	22	25	20	53	24	25	21	54	25	25	23	55
			109A	14.0	16.8	25	25	22	52	26	30	23	53	27	30	25	54	29	30	26	55
			108A+108A	23.0	27.7	38	40	35	52	40	40	36	53	41	45	37	54	42	45	39	55
		MED	NONE	—	—	12	15	11	61	13	15	12	62	14	15	14	63	15	20	15	64
			106A	6.0	7.2	13	15	11	61	14	15	12	62	15	15	14	63	17	20	15	64
			108A	11.5	13.8	21	25	19	61	22	25	20	62	24	25	21	63	25	25	22	64
			109A	14.0	16.8	25	25	22	61	26	30	23	62	27	30	25	63	29	30	26	64
			108A+108A	23.0	27.7	38	40	35	61	39	40	36	62	41	45	37	63	42	45	38	64
		HIGH	NONE	—	—	13	15	13	79	14	20	14	80	16	20	16	81	17	20	17	82
			106A	6.0	7.2	15	15	13	79	16	20	14	80	17	20	16	81	19	20	17	82
			108A	11.5	13.8	23	25	21	79	24	25	22	80	26	30	23	81	27	30	24	82
			109A	14.0	16.8	27	30	24	79	28	30	25	80	29	30	27	81	31	35	28	82
			108A+108A	23.0	27.7	40	40	37	79	42	45	38	80	43	45	39	81	44	45	40	82
	575-3-60	DD-STD	NONE	—	—	11	15	11	39	13	15	13	41	13	15	13	41	15	20	15	43
			297A	10.0	9.6	17	20	16	39	20	20	18	41	20	20	18	41	22	25	20	43
			298A	15.0	14.4	23	25	21	39	26	30	23	41	26	30	23	41	28	30	25	43
		STD	NONE	—	—	9	15	8	42	10	15	10	44	10	15	10	44	12	15	12	46
			297A	10.0	9.6	14	15	12	42	16	20	15	44	16	20	14	44	18	20	17	46
			298A	15.0	14.4	20	20	18	42	22	25	20	44	22	25	20	44	24	25	22	46
		MED	NONE	—	—	9	15	8	42	11	15	11	44	11	15	10	44	13	15	13	46
			297A	10.0	9.6	14	15	13	42	17	20	15	44	17	20	15	44	19	20	17	46
			298A	15.0	14.4	20	25	18	42	23	25	21	44	23	25	20	44	25	25	23	46
		HIGH	NONE	—	—	10	15	10	57	12	15	12	59	12	15	12	59	14	15	14	61
			297A	10.0	9.6	16	20	14	57	18	20	16	59	18	20	16	59	20	25	18	61
			298A	15.0	14.4	22	25	20	57	24	25	22	59	24	25	22	59	26	30	24	61

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC-A06	208/230-1-60	DD-STD	NONE	—	—	41	60	39	144	42	60	41	146	45	60	44	149	47	60	47	151
			102A	4.9/6.5	23.5/27.1	41/44	60/60	39/40	144/144	42/46	60/60	41/42	146/146	45/50	60/60	44/45	149/149	47/52	60/60	47/47	151/151
			103B	6.5/8.7	31.4/36.3	49/55	60/60	45/50	144/144	51/57	60/60	47/52	146/146	55/61	60/70	50/56	149/149	57/63	60/70	52/58	151/151
			102A+102A	9.8/13.0	46.9/54.2	68/77	70/80	62/71	144/144	71/80	80/80	65/73	146/146	74/83	80/90	68/76	149/149	77/86	80/90	70/79	151/151
			103B+103B	13.1/17.4	62.8/72.5	88/100	90/100	81/92	144/144	91/103	100/110	83/94	146/146	94/106	100/110	86/97	149/149	97/109	100/110	88/100	151/151
			104B+104B	15.8/21.0	75.8/87.5	104/119	110/125	96/109	144/144	107/121	110/125	98/111	146/146	110/125	125/125	101/115	149/149	113/127	125/150	103/117	151/151
		STD	NONE	—	—	38	60	36	149	40	60	38	151	43	60	42	154	45	60	44	156
			102A	4.9/6.5	23.5/27.1	38/40	60/60	36/37	149/149	40/43	60/60	38/39	151/151	43/46	60/60	42/42	154/154	45/49	60/60	44/45	156/156
			103B	6.5/8.7	31.4/36.3	46/52	60/60	42/47	149/149	48/54	60/60	44/50	151/151	52/58	60/60	47/53	154/154	54/60	60/60	49/55	156/156
			102A+102A	9.8/13.0	46.9/54.2	65/74	70/80	60/68	149/149	68/77	70/80	62/70	151/151	71/80	80/80	65/73	154/154	74/83	80/90	67/76	156/156
			103B+103B	13.1/17.4	62.8/72.5	85/97	90/100	78/89	149/149	87/100	90/100	80/91	151/151	91/103	100/110	83/95	154/154	93/106	100/110	86/97	156/156
			104B+104B	15.8/21.0	75.8/87.5	101/116	110/125	93/106	149/149	104/118	110/125	95/108	151/151	107/122	110/125	98/112	154/154	110/124	110/125	101/114	156/156
		MED	NONE	—	—	40	60	38	174	42	60	41	176	45	60	44	179	47	60	46	181
			102A	4.9/6.5	23.5/27.1	40/43	60/60	38/39	174/174	42/45	60/60	41/41	176/176	45/49	60/60	44/45	179/179	47/51	60/60	46/47	181/181
			103B	6.5/8.7	31.4/36.3	48/55	60/60	44/50	174/174	51/57	60/60	46/52	176/176	54/61	60/70	50/55	179/179	57/63	60/70	52/58	181/181
			102A+102A	9.8/13.0	46.9/54.2	68/77	70/80	62/70	174/174	70/79	70/80	64/73	176/176	74/83	80/90	68/76	179/179	76/85	80/90	70/78	181/181
			103B+103B	13.1/17.4	62.8/72.5	88/100	90/100	80/91	174/174	90/102	90/110	82/94	176/176	94/106	100/110	86/97	179/179	96/108	100/110	88/99	181/181
			104B+104B	15.8/21.0	75.8/87.5	104/119	110/125	95/109	174/174	106/121	110/125	97/111	176/176	110/125	110/125	101/114	179/179	112/127	125/150	103/116	181/181

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC-A06	208/230-3-60	DD-STD	NONE	—	—	29	40	28	120	31	45	31	122	34	45	34	125	36	50	36	127
			102A	4.9/6.5	13.6/15.6	29/29	40/40	28/28	120/120	31/32	45/45	31/31	122/122	34/35	45/45	34/34	125/125	36/38	50/50	36/36	127/127
			104B	7.9/10.5	21.9/25.3	37/41	40/45	34/38	120/120	39/44	45/45	36/40	122/122	43/47	45/50	39/43	125/125	45/50	50/50	41/45	127/127
			105A	12.0/16.0	33.4/38.5	51/58	60/60	47/53	120/120	54/60	60/60	49/55	122/122	57/64	60/70	52/58	125/125	60/66	60/70	55/60	127/127
			104B+104B	15.8/21.0	43.8/50.5	64/73	70/80	59/67	120/120	67/75	70/80	61/69	122/122	70/79	80/80	64/72	125/125	73/81	80/90	67/74	127/127
			104B+105A	19.9/26.5	55.2/63.8	79/89	80/90	72/82	120/120	81/92	90/100	74/84	122/122	85/95	90/100	78/87	125/125	87/98	90/100	80/90	127/127
		STD	NONE	—	—	27	40	26	132	29	40	28	134	32	45	31	137	34	45	34	139
			102A	4.9/6.5	13.6/15.6	27/27	40/40	26/26	132/132	29/29	40/40	28/28	134/134	32/32	45/45	31/31	137/137	34/35	45/45	34/34	139/139
			104B	7.9/10.5	21.9/25.3	34/39	40/40	31/35	132/132	37/41	40/45	33/37	134/134	40/45	45/45	37/41	137/137	43/47	45/50	39/43	139/139
			105A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	132/132	51/57	60/60	47/52	134/134	55/61	60/70	50/56	137/137	57/63	60/70	52/58	139/139
			104B+104B	15.8/21.0	43.8/50.5	62/70	70/70	56/64	132/132	64/72	70/80	59/66	134/134	68/76	70/80	62/70	137/137	70/78	70/80	64/72	139/139
			104B+105A	19.9/26.5	55.2/63.8	76/87	80/90	69/79	132/132	78/89	80/90	72/82	134/134	82/93	90/100	75/85	137/137	84/95	90/100	77/87	139/139
		MED	NONE	—	—	30/30	45/45	30/29	185	32/32	45/45	32/32	187	35/35	50/50	35/35	190	37/37	50/50	37/37	192
			102A	4.9/6.5	13.6/15.6	30/30	45/45	30/29	185/185	32/33	45/45	32/32	187/187	35/36	50/50	35/35	190/190	37/39	50/50	37/37	192/192
			104B	7.9/10.5	21.9/25.3	38/42	45/45	35/39	185/185	41/45	45/45	37/41	187/187	44/48	50/50	40/44	190/190	47/51	50/60	43/46	192/192
			105A	12.0/16.0	33.4/38.5	53/59	60/60	48/54	185/185	55/61	60/70	50/56	187/187	59/65	60/70	54/59	190/190	61/67	70/70	56/62	192/192
			104B+104B	15.8/21.0	43.8/50.5	66/74	70/80	60/68	185/185	68/76	70/80	62/70	187/187	72/80	80/80	66/73	190/190	74/82	80/90	68/75	192/192
			104B+105A	19.9/26.5	55.2/63.8	80/91	80/100	73/83	185/185	82/93	90/100	75/85	187/187	86/97	90/100	79/88	190/190	88/99	90/100	81/91	192/192
		HIGH	NONE	—	—	30/30	45/45	30/29	185	32/32	45/45	32/32	187	35/35	50/50	35/35	190	37/37	50/50	37/37	192
			102A	4.9/6.5	13.6/15.6	30/30	45/45	30/29	185/185	32/33	45/45	32/32	187/187	35/36	50/50	35/35	190/190	37/39	50/50	37/37	192/192
			104B	7.9/10.5	21.9/25.3	38/42	45/45	35/39	185/185	41/45	45/45	37/41	187/187	44/48	50/50	40/44	190/190	47/51	50/60	43/46	192/192
			105A	12.0/16.0	33.4/38.5	53/59	60/60	48/54	185/185	55/61	60/70	50/56	187/187	59/65	60/70	54/59	190/190	61/67	70/70	56/62	192/192
			104B+104B	15.8/21.0	43.8/50.5	66/74	70/80	60/68	185/185	68/76	70/80	62/70	187/187	72/80	80/80	66/73	190/190	74/82	80/90	68/75	192/192
			104B+105A	19.9/26.5	55.2/63.8	80/91	80/100	73/83	185/185	82/93	90/100	75/85	187/187	86/97	90/100	79/88	190/190	88/99	90/100	81/91	192/192

See legend on page 117.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*A06	460-3-60	DD-STD	NONE	—	—	14	20	14	58	15	20	15	59	16	20	16	60	17	20	17	61
			106A	6.0	7.2	14	20	14	58	16	20	15	59	17	20	16	60	18	20	17	61
			108A	11.5	13.8	23	25	20	58	24	25	22	59	25	25	23	60	27	30	24	61
			109A	14.0	16.8	26	30	24	58	28	30	25	59	29	30	26	60	30	30	28	61
			108A+108A	23.0	27.7	40	40	36	58	41	45	38	59	43	45	39	60	44	45	40	61
			108A+109A	25.5	30.7	44	45	40	58	45	45	41	59	47	50	42	60	48	50	44	61
		STD	NONE	—	—	13	15	12	63	14	20	13	64	15	20	15	65	16	20	16	66
			106A	6.0	7.2	13	15	12	63	14	20	13	64	15	20	15	65	17	20	16	66
			108A	11.5	13.8	21	25	19	63	22	25	20	64	24	25	21	65	25	25	23	66
			109A	14.0	16.8	25	25	22	63	26	30	23	64	27	30	25	65	29	30	26	66
			108A+108A	23.0	27.7	38	40	35	63	40	40	36	64	41	45	37	65	42	45	39	66
			108A+109A	25.5	30.7	42	45	38	63	43	45	39	64	45	45	41	65	46	50	42	66
		MED	NONE	—	—	14	20	14	90	15	20	15	91	17	20	16	92	18	20	18	93
			106A	6.0	7.2	15	20	14	90	16	20	15	91	17	20	16	92	19	20	18	93
			108A	11.5	13.8	23	25	21	90	24	25	22	91	26	30	23	92	27	30	24	93
			109A	14.0	16.8	27	30	24	90	28	30	25	91	29	30	27	92	31	35	28	93
			108A+108A	23.0	27.7	40	40	37	90	42	45	38	91	43	45	39	92	44	45	40	93
			108A+109A	25.5	30.7	44	45	40	90	45	45	41	91	47	50	43	92	48	50	44	93
		HIGH	NONE	—	—	14	20	14	90	15	20	15	91	17	20	16	92	18	20	18	93
			106A	6.0	7.2	15	20	14	90	16	20	15	91	17	20	16	92	19	20	18	93
			108A	11.5	13.8	23	25	21	90	24	25	22	91	26	30	23	92	27	30	24	93
			109A	14.0	16.8	27	30	24	90	28	30	25	91	29	30	27	92	31	35	28	93
			108A+108A	23.0	27.7	40	40	37	90	42	45	38	91	43	45	39	92	44	45	40	93
			108A+109A	25.5	30.7	44	45	40	90	45	45	41	91	47	50	43	92	48	50	44	93
	575-3-60	DD-STD	NONE	—	—	12	15	12	46	14	15	14	48	13	15	13	48	15	20	16	50
			298A	—	—	23	25	21	46	26	30	23	48	26	30	23	48	28	30	25	50
			301A	25.0	24.1	36	40	32	46	38	40	35	48	38	40	34	48	40	40	36	50
		STD	NONE	—	—	9	15	8	49	11	15	10	51	11	15	10	51	13	15	12	53
			298A	15.0	14.4	20	20	18	49	22	25	20	51	22	25	20	51	24	25	22	53
			301A	25.0	24.1	32	35	29	49	34	35	31	51	34	35	31	51	37	40	33	53
		MED	NONE	—	—	10	15	9	53	12	15	11	55	11	15	11	55	13	15	13	57
			298A	15.0	14.4	21	25	19	53	23	25	21	55	23	25	21	55	25	30	23	57
			301A	25.0	24.1	33	35	30	53	35	40	32	55	35	35	32	55	38	40	34	57
		HIGH	NONE	—	—	11	15	10	64	12	15	12	66	12	15	12	66	14	15	14	68
			298A	15.0	14.4	22	25	20	64	24	25	22	66	24	25	22	66	26	30	24	68
			301A	25.0	24.1	34	35	31	64	36	40	33	66	36	40	33	66	39	40	35	68

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*A07	208/230-3-60	STD	NONE	—	—	33	50	32	161	37	50	36	165	38	50	37	166	42	60	42	170
			264A	4.9/ 6.5	13.6/ 15.6	33/33	50/50	32/32	161/ 161	37/37	50/50	36/36	165/ 165	38/38	50/50	37/37	166/ 166	42/42	60/60	42/42	170/ 170
			117A	7.8/ 10.4	21.7/ 25.0	34/38	50/50	32/35	161/ 161	39/43	50/50	36/39	165/ 165	40/44	50/50	37/40	166/ 166	45/49	60/60	42/45	170/ 170
			110A	12.0/ 16.0	33.4/ 38.5	49/55	50/60	44/50	161/ 161	53/60	60/60	49/55	165/ 165	55/61	60/70	50/56	166/ 166	59/66	60/70	54/60	170/ 170
			117A+117A	15.8/ 21.0	43.8/ 50.5	62/70	70/70	56/64	161/ 161	66/75	70/80	61/68	165/ 165	68/76	70/80	62/70	166/ 166	72/81	80/90	66/74	170/ 170
			110A+117A	19.9/ 26.5	55.2/ 63.8	76/87	80/90	69/79	161/ 161	81/91	90/100	74/84	165/ 165	82/93	90/100	75/85	166/ 166	87/97	90/100	79/89	170/ 170
		MED	NONE	—	—	36/36	50/50	36/36	214	40/40	50/50	40/40	218	41/41	60/60	41/41	219	45/45	60/60	46/45	223
			264A	4.9/ 6.5	13.6/ 15.6	36/36	50/50	36/36	214/ 214	40/40	50/50	40/40	218/ 218	41/41	60/60	41/41	219/ 219	45/45	60/60	46/45	223/ 223
			117A	7.8/ 10.4	21.7/ 25.0	38/42	50/50	36/38	214/ 214	43/47	50/50	40/43	218/ 218	44/48	60/60	41/44	219/ 219	49/53	60/60	46/48	223/ 223
			110A	12.0/ 16.0	33.4/ 38.5	53/59	60/60	48/54	214/ 214	57/64	60/70	52/58	218/ 218	59/65	60/70	54/59	219/ 219	63/70	70/70	58/64	223/ 223
			117A+117A	15.8/ 21.0	43.8/ 50.5	66/74	70/80	60/68	214/ 214	70/79	80/80	64/72	218/ 218	72/80	80/80	66/73	219/ 219	76/85	80/90	70/78	223/ 223
			110A+117A	19.9/ 26.5	55.2/ 63.8	80/91	80/100	73/83	214/ 214	85/95	90/100	78/87	218/ 218	86/97	90/100	79/88	219/ 219	91/ 101	100/ 110	83/93	223/ 223
		HIGH	NONE	—	—	42/41	60/50	42/41	230	45/44	60/60	46/45	234	46/45	60/60	47/46	235	50/49	60/60	52/50	239
			264A	4.9/ 6.5	13.6/ 15.6	42/41	60/50	42/41	230/ 230	45/44	60/60	46/45	234/ 234	46/45	60/60	47/46	235/ 235	50/49	60/60	52/50	239/ 239
			117A	7.8/ 10.4	21.7/ 25.0	45/48	60/50	42/43	230/ 230	49/52	60/60	46/48	234/ 234	51/54	60/60	47/49	235/ 235	55/58	60/60	52/53	239/ 239
			110A	12.0/ 16.0	33.4/ 38.5	59/64	60/70	54/59	230/ 230	64/69	70/70	58/63	234/ 234	65/70	70/70	60/64	235/ 235	70/75	70/80	64/69	239/ 239
			117A+117A	15.8/ 21.0	43.8/ 50.5	72/79	80/80	66/73	230/ 230	77/84	80/90	70/77	234/ 234	78/85	80/90	72/78	235/ 235	83/90	90/90	76/83	239/ 239
			110A+117A	19.9/ 26.5	55.2/ 63.8	86/96	90/100	79/88	230/ 230	91/ 101	100/ 110	83/92	234/ 234	92/ 102	100/ 110	85/93	235/ 235	97/ 107	100/ 110	89/98	239/ 239
	460-3-60	STD	NONE	—	—	15	20	14	79	17	20	16	81	17	20	17	81	19	25	19	83
			265A	6.0	7.2	15	20	14	79	17	20	16	81	17	20	17	81	19	25	19	83
			266A	11.5	13.8	21	25	19	79	23	25	21	81	24	25	21	81	26	30	23	83
			267A	14.0	16.8	25	25	22	79	27	30	24	81	27	30	25	81	30	30	27	83
			268A	23.0	27.7	38	40	35	79	41	45	37	81	41	45	37	81	43	45	39	83
			269A	25.5	30.7	42	45	38	79	44	45	40	81	45	45	41	81	47	50	43	83
		MED	NONE	—	—	17	20	16	106	18	25	18	108	19	25	19	108	21	25	21	110
			265A	6.0	7.2	17	20	16	106	18	25	18	108	19	25	19	108	21	25	21	110
			266A	11.5	13.8	23	25	21	106	25	25	23	108	26	30	23	108	28	30	25	110
			267A	14.0	16.8	27	30	24	106	29	30	26	108	29	30	27	108	32	35	29	110
			268A	23.0	27.7	40	40	37	106	43	45	39	108	43	45	39	108	45	45	41	110
			269A	25.5	30.7	44	45	40	106	46	50	42	108	47	50	43	108	49	50	45	110
		HIGH	NONE	—	—	19	25	19	114	21	25	21	116	21	25	21	116	23	30	23	118
			265A	6.0	7.2	19	25	19	114	21	25	21	116	21	25	21	116	23	30	23	118
			266A	11.5	13.8	26	30	23	114	28	30	25	116	28	30	26	116	31	35	28	118
			267A	14.0	16.8	29	30	27	114	32	35	29	116	32	35	29	116	34	35	31	118
			268A	23.0	27.7	43	45	39	114	45	45	41	116	46	50	42	116	48	50	44	118
			269A	25.5	30.7	47	50	43	114	49	50	45	116	50	50	45	116	52	60	47	118
	575-3-60	STD	NONE	—	—	12	15	11	66	15	20	15	70	13	15	13	68	17	20	17	72
			118A	18.0	17.3	24	25	22	66	29	30	26	70	26	30	24	68	31	35	28	72
			299A	28.0	26.9	36	40	33	66	41	45	37	70	38	40	35	68	43	45	39	72
		MED	NONE	—	—	13	15	12	81	17	20	17	85	14	20	14	83	18	20	19	87
			118A	18.0	17.3	26	30	23	81	30	30	27	85	28	30	25	83	32	35	29	87
			299A	28.0	26.9	38	40	34	81	42	45	39	85	40	40	36	83	44	45	40	87
		HIGH	NONE	—	—	16	20	15	95	19	25	20	99	17	20	17	97	21	25	22	101
			118A	18.0	17.3	29	30	26	95	34	35	31	99	31	35	28	97	36	40	33	101
			299A	28.0	26.9	41	45	37	95	46	50	42	99	43	45	39	97	48	50	44	101

See legend on page117.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*D07	208/230-3-60	STD	NONE	—	—	31	45	30	161	34	50	34	165	35	50	35	166	39	50	39	170
			264A	4.9/6.5	13.6/15.6	31/31	45/45	30/30	161/161	34/34	50/50	34/34	165/165	35/35	50/50	35/35	166/166	39/39	50/50	39/39	170/170
			117A	7.8/10.4	21.7/25.0	34/38	45/45	31/35	161/161	39/43	50/50	35/39	165/165	40/44	50/50	36/40	166/166	45/49	50/50	41/45	170/170
			110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	161/161	53/60	60/60	49/55	165/165	55/61	60/70	50/56	166/166	59/66	60/70	54/60	170/170
			117A+117A	15.8/21.0	43.8/50.5	62/70	70/70	56/64	161/161	66/75	70/80	61/68	165/165	68/76	70/80	62/70	166/166	72/81	80/90	66/74	170/170
			110A+117A	19.9/26.5	55.2/63.8	76/87	80/90	69/79	161/161	81/91	90/100	74/84	165/165	82/93	90/100	75/85	166/166	87/97	90/100	79/89	170/170
		MED	NONE	—	—	34/34	50/50	33/33	214	38/37	50/50	38/37	218	39/38	50/50	39/39	219	42/42	50/50	43/43	223
			264A	4.9/6.5	13.6/15.6	34/34	50/50	33/33	214/214	38/37	50/50	38/37	218/218	39/38	50/50	39/39	219/219	42/42	50/50	43/43	223/223
			117A	7.8/10.4	21.7/25.0	38/42	50/50	35/38	214/214	43/47	50/50	39/43	218/218	44/48	50/50	40/44	219/219	49/53	50/60	45/48	223/223
			110A	12.0/16.0	33.4/38.5	53/59	60/60	48/54	214/214	57/64	60/70	52/58	218/218	59/65	60/70	54/59	219/219	63/70	70/70	58/64	223/223
			117A+117A	15.8/21.0	43.8/50.5	66/74	70/80	60/68	214/214	70/79	80/80	64/72	218/218	72/80	80/80	66/73	219/219	76/85	80/90	70/78	223/223
			110A+117A	19.9/26.5	55.2/63.8	80/91	80/100	73/83	214/214	85/95	90/100	78/87	218/218	86/97	90/100	79/88	219/219	91/101	100/110	83/93	223/223
		HIGH	NONE	—	—	39/38	50/50	39/38	230	43/42	50/50	44/43	234	44/43	60/50	45/44	235	48/47	60/60	49/48	239
			264A	4.9/6.5	13.6/15.6	39/38	50/50	39/38	230/230	43/42	50/50	44/43	234/234	44/43	60/50	45/44	235/235	48/47	60/60	49/48	239/239
			117A	7.8/10.4	21.7/25.0	45/48	50/50	41/43	230/230	49/52	50/60	45/48	234/234	51/54	60/60	46/49	235/235	55/58	60/60	50/53	239/239
			110A	12.0/16.0	33.4/38.5	59/64	60/70	54/59	230/230	64/69	70/70	58/63	234/234	65/70	70/70	60/64	235/235	70/75	70/80	64/69	239/239
			117A+117A	15.8/21.0	43.8/50.5	72/79	80/80	66/73	230/230	77/84	80/90	70/77	234/234	78/85	80/90	72/78	235/235	83/90	90/90	76/83	239/239
			110A+117A	19.9/26.5	55.2/63.8	86/96	90/100	79/88	230/230	91/101	100/110	83/92	234/234	92/102	100/110	85/93	235/235	97/107	100/110	89/98	239/239
	460-3-60	STD	NONE	—	—	15	20	14	79	17	20	17	81	17	25	17	81	19	25	19	83
			265A	6.0	7.2	15	20	14	79	17	20	17	81	17	25	17	81	19	25	19	83
			266A	11.5	13.8	21	25	19	79	23	25	21	81	24	25	21	81	26	30	23	83
			267A	14.0	16.8	25	25	22	79	27	30	24	81	27	30	25	81	30	30	27	83
			268A	23.0	27.7	38	40	35	79	41	45	37	81	41	45	37	81	43	45	39	83
			269A	25.5	30.7	42	45	38	79	44	45	40	81	45	45	41	81	47	50	43	83
		MED	NONE	—	—	17	20	16	106	19	25	18	108	19	25	19	108	21	25	21	110
			265A	6.0	7.2	17	20	16	106	19	25	18	108	19	25	19	108	21	25	21	110
			266A	11.5	13.8	23	25	21	106	25	25	23	108	26	30	23	108	28	30	25	110
			267A	14.0	16.8	27	30	24	106	29	30	26	108	29	30	27	108	32	35	29	110
			268A	23.0	27.7	40	40	37	106	43	45	39	108	43	45	39	108	45	45	41	110
			269A	25.5	30.7	44	45	40	106	46	50	42	108	47	50	43	108	49	50	45	110
		HIGH	NONE	—	—	19	25	19	114	21	25	21	116	21	25	21	116	23	30	23	118
			265A	6.0	7.2	19	25	19	114	21	25	21	116	21	25	21	116	23	30	23	118
			266A	11.5	13.8	26	30	23	114	28	30	25	116	28	30	26	116	31	35	28	118
			267A	14.0	16.8	29	30	27	114	32	35	29	116	32	35	29	116	34	35	31	118
			268A	23.0	27.7	43	45	39	114	45	45	41	116	46	50	42	116	48	50	44	118
			269A	25.5	30.7	47	50	43	114	49	50	45	116	50	50	45	116	52	60	47	118
	575-3-60	STD	NONE	—	—	11	15	10	66	15	20	15	70	13	15	12	68	17	20	17	72
			118A	18.0	17.3	24	25	22	66	29	30	26	70	26	30	24	68	31	35	28	72
			299A	28.0	26.9	36	40	33	66	41	45	37	70	38	40	35	68	43	45	39	72
		MED	NONE	—	—	12	15	12	81	16	20	16	85	14	20	14	83	18	20	18	87
			118A	18.0	17.3	26	30	23	81	30	30	27	85	28	30	25	83	32	35	29	87
			299A	28.0	26.9	38	40	34	81	42	45	39	85	40	40	36	83	44	45	40	87
		HIGH	NONE	—	—	15	20	15	95	19	25	19	99	17	20	17	97	21	25	21	101
			118A	18.0	17.3	29	30	26	95	34	35	31	99	31	35	28	97	36	40	33	101
			299A	28.0	26.9	41	45	37	95	46	50	42	99	43	45	39	97	48	50	44	101

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*D08	208/230-3-60	STD	NONE	—	—	39	50	41	191	43	50	45	195	44	50	46	196	48	60	51	200
			117A	7.8/ 10.4	21.7/ 25.0	39/39	50/50	41/41	191/ 191	43/43	50/50	45/45	195/ 195	44/44	50/50	46/46	196/ 196	48/49	60/60	51/51	200/ 200
			110A	12.0/ 16.0	33.4/ 38.5	49/55	50/60	44/50	191/ 191	53/60	60/60	49/55	195/ 195	55/61	60/70	50/56	196/ 196	59/66	60/70	54/60	200/ 200
			111A	18.6/ 24.8	51.7/ 59.7	72/82	80/90	65/75	191/ 191	76/86	80/90	70/79	195/ 195	78/88	80/90	71/80	196/ 196	82/92	90/100	75/85	200/ 200
			112A	24.0/ 32.0	66.7/ 77.0	90/ 103	90/110	83/95	191/ 191	95/ 108	100/ 110	87/99	195/ 195	96/ 109	100/ 110	88/ 100	196/ 196	101/ 114	110/ 125	93/ 104	200/ 200
			112A+117A	31.8/ 42.4	88.4/ 102.0	117/ 134	125/ 150	108/ 123	191/ 191	122/ 139	125/ 150	112/ 128	195/ 195	123/ 140	125/ 150	113/ 129	196/ 196	128/ 145	150/ 150	118/ 133	200/ 200
		MED	NONE	—	—	41/41	50/50	43/42	229	45/45	50/50	47/47	233	46/46	50/50	48/48	234	50/49	60/60	53/52	238
			117A	7.8/ 10.4	21.7/ 25.0	41/41	50/50	43/42	229/ 229	45/45	50/50	47/47	233/ 233	46/46	50/50	48/48	234/ 234	50/51	60/60	53/52	238/ 238
			110A	12.0/ 16.0	33.4/ 38.5	51/57	60/60	46/52	229/ 229	56/62	60/70	51/56	233/ 233	57/63	60/70	52/58	234/ 234	62/68	70/70	56/62	238/ 238
			111A	18.6/ 24.8	51.7/ 59.7	74/83	80/90	67/76	229/ 229	78/88	80/90	72/81	233/ 233	80/89	80/90	73/82	234/ 234	84/94	90/100	77/86	238/ 238
			112A	24.0/ 32.0	66.7/ 77.0	92/ 105	100/ 110	85/96	229/ 229	97/ 110	100/ 110	89/ 101	233/ 233	98/ 111	100/ 125	90/ 102	234/ 234	103/ 116	110/ 125	95/ 106	238/ 238
			112A+117A	31.8/ 42.4	88.4/ 102.0	120/ 136	125/ 150	110/ 125	229/ 229	124/ 141	125/ 150	114/ 129	233/ 233	126/ 142	150/ 150	115/ 131	234/ 234	130/ 147	150/ 150	119/ 135	238/ 238
		HIGH	NONE	—	—	45	50	47	258	48	60	51	262	49	60	52	263	53	60	57	267
			117A	7.8/ 10.4	21.7/ 25.0	45/45	50/50	47/47	258/ 258	48/50	60/60	51/51	262/ 262	49/51	60/60	52/52	263/ 263	53/56	60/60	57/57	267/ 267
			110A	12.0/ 16.0	33.4/ 38.5	55/62	60/70	51/56	258/ 258	60/67	60/70	55/61	262/ 262	61/68	70/70	56/62	263/ 263	66/73	70/80	60/66	267/ 267
			111A	18.6/ 24.8	51.7/ 59.7	78/88	80/90	72/81	258/ 258	83/93	90/100	76/85	262/ 262	84/94	90/100	77/86	263/ 263	89/99	90/100	82/91	267/ 267
			112A	24.0/ 32.0	66.7/ 77.0	97/ 110	100/ 110	89/ 101	258/ 258	102/ 115	110/ 125	93/ 105	262/ 262	103/ 116	110/ 125	94/ 106	263/ 263	108/ 121	110/ 125	99/ 111	267/ 267
			112A+117A	31.8/ 42.4	88.4/ 102.0	124/ 141	125/ 150	114/ 129	258/ 258	129/ 146	150/ 150	118/ 134	262/ 262	130/ 147	150/ 150	119/ 135	263/ 263	135/ 152	150/ 175	124/ 139	267/ 267
	460-3-60	STD	NONE	—	—	18	20	19	95	20	25	21	97	21	25	21	97	22	25	23	99
			116B	13.9	16.7	25	25	22	95	27	30	24	97	27	30	25	97	30	30	27	99
			113B	16.5	19.8	28	30	26	95	31	35	28	97	31	35	28	97	33	35	30	99
			114B	27.8	33.4	45	50	41	95	48	50	43	97	48	50	44	97	50	60	46	99
			115B	33.0	39.7	53	60	49	95	56	60	51	97	56	60	51	97	58	60	53	99
			128B	41.7	50.2	66	70	61	95	69	70	63	97	69	70	63	97	71	80	65	99
		MED	NONE	—	—	19	25	20	114	21	25	22	116	21	25	22	116	23	25	24	118
			116B	13.9	16.7	26	30	23	114	28	30	25	116	28	30	26	116	31	35	28	118
			113B	16.5	19.8	29	30	27	114	32	35	29	116	32	35	29	116	34	35	31	118
			114B	27.8	33.4	46	50	42	114	49	50	44	116	49	50	45	116	51	60	47	118
			115B	33.0	39.7	54	60	50	114	57	60	52	116	57	60	52	116	59	60	54	118
			128B	41.7	50.2	67	70	62	114	70	70	64	116	70	70	64	116	72	80	66	118
		HIGH	NONE	—	—	21	25	22	129	23	25	24	131	23	25	24	131	25	30	27	133
			116B	13.9	16.7	28	30	25	129	30	30	27	131	31	35	28	131	33	35	30	133
			113B	16.5	19.8	32	35	29	129	34	35	31	131	35	35	31	131	37	40	33	133
			114B	27.8	33.4	49	50	45	129	51	60	47	131	52	60	47	131	54	60	49	133
			115B	33.0	39.7	57	60	52	129	59	60	54	131	59	60	54	131	62	70	56	133
			128B	41.7	50.2	70	70	64	129	72	80	66	131	73	80	66	131	75	80	68	133
	575-3-60	STD	NONE	—	—	13	15	13	77	17	20	17	81	14	15	15	79	18	20	19	83
			118A	18.0	17.3	24	25	22	77	29	30	26	81	26	30	24	79	31	35	28	83
			119A	36.0	34.6	46	50	42	77	50	60	46	81	48	50	44	79	53	60	48	83
		MED	NONE	—	—	13	15	13	81	17	20	18	85	15	20	15	83	19	20	20	87
			118A	18.0	17.3	25	25	22	81	29	30	27	85	27	30	24	83	31	35	29	87
			119A	36.0	34.6	46	50	42	81	51	60	46	85	48	50	44	83	53	60	48	87
		HIGH	NONE	—	—	14	15	14	92	18	20	19	96	16	20	16	94	19	25	21	98
			118A	18.0	17.3	26	30	23	92	30	30	27	96	28	30	25	94	32	35	29	98
			119A	36.0	34.6	47	50	43	92	52	60	47	96	49	50	45	94	54	60	49	98

See legend on page 117.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*D09	208/230-3-60	STD	NONE	—	—	39	50	41	191	43	50	45	195	44	50	46	196	48	60	51	200
			117A	7.8/10.4	21.7/25.0	39/39	50/50	41/41	191/191	43/43	50/50	45/45	195/195	44/44	50/50	46/46	196/196	48/49	60/60	51/51	200/200
			110A	12.0/16.0	33.4/38.5	49/55	50/60	44/50	191/191	53/60	60/60	49/55	195/195	55/61	60/70	50/56	196/196	59/66	60/70	54/60	200/200
			111A	18.6/24.8	51.7/59.7	72/82	80/90	65/75	191/191	76/86	80/90	70/79	195/195	78/88	80/90	71/80	196/196	82/92	90/100	75/85	200/200
			112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	191/191	95/108	100/110	87/99	195/195	96/109	100/110	88/100	196/196	101/114	110/125	93/104	200/200
			112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	191/191	122/139	125/150	112/128	195/195	123/140	125/150	113/129	196/196	128/145	150/150	118/133	200/200
		MED	NONE	—	—	41/41	50/50	43/43	229	45/45	50/50	47/47	233	46/46	50/50	48/48	234	50/50	60/60	53/53	238
			117A	7.8/10.4	21.7/25.0	41/41	50/50	43/43	229/229	45/45	50/50	47/47	233/233	46/46	50/50	48/48	234/234	50/51	60/60	53/53	238/238
			110A	12.0/16.0	33.4/38.5	51/57	60/60	46/52	229/229	56/62	60/70	51/56	233/233	57/63	60/70	52/58	234/234	62/68	70/70	56/62	238/238
			111A	18.6/24.8	51.7/59.7	74/83	80/90	67/76	229/229	78/88	80/90	72/81	233/233	80/89	80/90	73/82	234/234	84/94	90/100	77/86	238/238
			112A	24.0/32.0	66.7/77.0	92/105	100/110	85/96	229/229	97/110	100/110	89/101	233/233	98/111	100/125	90/102	234/234	103/116	110/125	95/106	238/238
			112A+117A	31.8/42.4	88.4/102.0	120/136	125/150	110/125	229/229	124/141	125/150	114/129	233/233	126/142	150/150	115/131	234/234	130/147	150/150	119/135	238/238
		HIGH	NONE	—	—	45	50	47	258	49	60	52	262	50	60	53	263	53	60	57	267
			117A	7.8/10.4	21.7/25.0	45/45	50/50	47/47	258/258	49/50	60/60	52/52	262/262	50/51	60/60	53/53	263/263	53/56	60/60	57/57	267/267
			110A	12.0/16.0	33.4/38.5	55/62	60/70	51/56	258/258	60/67	60/70	55/61	262/262	61/68	70/70	56/62	263/263	66/73	70/80	60/66	267/267
			111A	18.6/24.8	51.7/59.7	78/88	80/90	72/81	258/258	83/93	90/100	76/85	262/262	84/94	90/100	77/86	263/263	89/99	90/100	82/91	267/267
			112A	24.0/32.0	66.7/77.0	97/110	100/110	89/101	258/258	102/115	110/125	93/105	262/262	103/116	110/125	94/106	263/263	108/121	110/125	99/111	267/267
			112A+117A	31.8/42.4	88.4/102.0	124/141	125/150	114/129	258/258	129/146	150/150	118/134	262/262	130/147	150/150	119/135	263/263	135/152	150/175	124/139	267/267
	460-3-60	STD	NONE	—	—	19	20	19	95	20	25	21	97	21	25	22	97	23	25	24	99
			116B	13.9	16.7	25	25	22	95	27	30	24	97	27	30	25	97	30	30	27	99
			113B	16.5	19.8	28	30	26	95	31	35	28	97	31	35	28	97	33	35	30	99
			114B	27.8	33.4	45	50	41	95	48	50	43	97	48	50	44	97	50	60	46	99
			115B	33.0	39.7	53	60	49	95	56	60	51	97	56	60	51	97	58	60	53	99
			128B	41.7	50.2	66	70	61	95	69	70	63	97	69	70	63	97	71	80	65	99
		MED	NONE	—	—	19	25	20	114	21	25	22	116	22	25	23	116	23	25	25	118
			116B	13.9	16.7	26	30	23	114	28	30	25	116	28	30	26	116	31	35	28	118
			113B	16.5	19.8	29	30	27	114	32	35	29	116	32	35	29	116	34	35	31	118
			114B	27.8	33.4	46	50	42	114	49	50	44	116	49	50	45	116	51	60	47	118
			115B	33.0	39.7	54	60	50	114	57	60	52	116	57	60	52	116	59	60	54	118
			128B	41.7	50.2	67	70	62	114	70	70	64	116	70	70	64	116	72	80	66	118
		HIGH	NONE	—	—	21	25	22	129	23	25	24	131	24	25	25	131	25	30	27	133
			116B	13.9	16.7	28	30	25	129	30	30	27	131	31	35	28	131	33	35	30	133
			113B	16.5	19.8	32	35	29	129	34	35	31	131	35	35	31	131	37	40	33	133
			114B	27.8	33.4	49	50	45	129	51	60	47	131	52	60	47	131	54	60	49	133
			115B	33.0	39.7	57	60	52	129	59	60	54	131	59	60	54	131	62	70	56	133
			128B	41.7	50.2	70	70	64	129	72	80	66	131	73	80	66	131	75	80	68	133
	575-3-60	STD	NONE	—	—	14	15	14	77	18	20	19	81	16	20	16	79	20	25	21	83
			118A	18.0	17.3	24	25	22	77	29	30	26	81	26	30	24	79	31	35	28	83
			119A	36.0	34.6	46	50	42	77	50	60	46	81	48	50	44	79	53	60	48	83
		MED	NONE	—	—	14	20	15	81	18	20	19	85	16	20	17	83	20	25	21	87
			118A	18.0	17.3	25	25	22	81	29	30	27	85	27	30	24	83	31	35	29	87
			119A	36.0	34.6	46	50	42	81	51	60	46	85	48	50	44	83	53	60	48	87
		HIGH	NONE	—	—	15	20	16	92	19	20	20	96	17	20	18	94	21	25	22	98
			118A	18.0	17.3	26	30	23	92	30	30	27	96	28	30	25	94	32	35	29	98
			119A	36.0	34.6	47	50	43	92	52	60	47	96	49	50	45	94	54	60	49	98

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*D11	208/230-3-60	STD	NONE	—	—	49	60	51	257	53	60	55	261	54	60	57	262	57	70	61	266
			117A	7.8/10.4	21.7/25.0	49/49	60/60	51/51	257/257	53/53	60/60	55/55	261/261	54/54	60/60	57/57	262/262	57/57	70/70	61/61	266/266
			110A	12.0/16.0	33.4/38.5	49/55	60/60	51/51	257/257	53/60	60/60	55/55	261/261	55/61	60/70	57/57	262/262	59/66	70/70	61/61	266/266
			112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	257/257	95/108	100/110	87/99	261/261	96/109	100/110	88/100	262/262	101/114	110/125	93/104	266/266
			112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	257/257	122/139	125/150	112/128	261/261	123/140	125/150	113/129	262/262	128/145	150/150	118/133	266/266
			112A+110A	37.6/50.0	104.2/120.3	137/127	150/150	126/144	257/257	142/132	150/150	130/149	261/261	143/133	150/150	131/150	262/262	148/138	150/150	136/154	266/266
		MED	NONE	—	—	54	60	57	313	58	70	62	317	59	70	63	318	63	70	67	322
			117A	7.8/10.4	21.7/25.0	54/54	60/60	57/57	313/313	58/58	70/70	62/62	317/317	59/59	70/70	63/63	318/318	63/63	70/70	67/67	322/322
			110A	12.0/16.0	33.4/38.5	55/62	60/70	57/57	313/313	60/67	70/70	62/62	317/317	61/68	70/70	63/63	318/318	66/73	70/80	67/67	322/322
			112A	24.0/32.0	66.7/77.0	97/110	100/110	89/101	313/313	102/115	110/125	93/105	317/317	103/116	110/125	94/106	318/318	108/121	110/125	99/111	322/322
			112A+117A	31.8/42.4	88.4/102.0	124/141	125/150	114/129	313/313	129/146	150/150	118/134	317/317	130/147	150/150	119/135	318/318	135/152	150/175	124/139	322/322
			112A+110A	37.6/50.0	104.2/120.3	144/134	150/150	132/151	313/313	149/139	150/150	136/155	317/317	150/140	150/150	138/156	318/318	155/145	175/175	142/160	322/322
		HIGH	NONE	—	—	57/56	70/60	61/60	315	61/60	70/70	65/64	319	62/61	70/70	66/65	320	66/65	80/80	71/70	324
			117A	7.8/10.4	21.7/25.0	57/56	70/60	61/60	315/315	61/60	70/70	65/64	319/319	62/61	70/70	66/65	320/320	66/65	80/80	71/70	324/324
			110A	12.0/16.0	33.4/38.5	59/64	70/70	61/60	315/315	64/69	70/70	65/64	319/319	65/70	70/70	66/65	320/320	70/75	80/80	71/70	324/324
			112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	315/315	106/117	110/125	97/108	319/319	107/119	110/125	98/109	320/320	112/123	125/125	102/113	324/324
			112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	315/315	133/149	150/150	122/136	319/319	134/150	150/150	123/137	320/320	139/155	150/175	127/142	324/324
			112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	315/315	152/141	175/175	140/157	319/319	154/143	175/175	141/158	320/320	158/147	175/175	145/163	324/324
	460-3-60	STD	NONE	—	—	22	25	23	123	24	30	25	125	25	30	26	125	26	30	28	127
			116B	13.9	16.7	25	25	23	123	27	30	25	125	27	30	26	125	30	30	28	127
			113B	16.5	19.8	28	30	26	123	31	35	28	125	31	35	28	125	33	35	30	127
			115B	33.0	39.7	53	60	49	123	56	60	51	125	56	60	51	125	58	60	53	127
			128B	41.7	50.2	66	70	61	123	69	70	63	125	69	70	63	125	71	80	65	127
			129B	50.0	60.1	64	70	72	123	66	70	74	125	67	70	75	125	69	70	77	127
		MED	NONE	—	—	25	30	26	151	27	30	28	153	27	30	29	153	29	35	31	155
			116B	13.9	16.7	28	30	26	151	30	30	28	153	31	35	29	153	33	35	31	155
			113B	16.5	19.8	32	35	29	151	34	35	31	153	35	35	31	153	37	40	33	155
			115B	33.0	39.7	57	60	52	151	59	60	54	153	59	60	54	153	62	70	56	155
			128B	41.7	50.2	70	70	64	151	72	80	66	153	73	80	66	153	75	80	68	155
			129B	50.0	60.1	67	80	75	151	69	80	77	153	70	80	78	153	72	80	80	155
		HIGH	NONE	—	—	26	30	28	152	28	30	30	154	28	30	30	154	30	35	32	156
			116B	13.9	16.7	29	30	28	152	32	35	30	154	32	35	30	154	34	35	32	156
			113B	16.5	19.8	33	35	30	152	35	35	32	154	36	40	33	154	38	40	35	156
			115B	33.0	39.7	58	60	53	152	60	60	55	154	61	70	56	154	63	70	58	156
			128B	41.7	50.2	71	80	65	152	73	80	67	154	74	80	68	154	76	80	70	156
			129B	50.0	60.1	69	80	76	152	71	80	79	154	71	80	79	154	74	80	81	156
	575-3-60	STD	NONE	—	—	18	20	18	95	21	25	23	99	19	25	20	97	23	25	24	101
			118A	18.0	17.3	25	25	22	95	29	30	27	99	27	30	24	97	31	35	29	101
			119A	36.0	34.6	46	50	42	95	51	60	46	99	48	50	44	97	53	60	48	101
			118A+119A	54.0	52.0	55	60	62	95	60	60	66	99	57	60	64	97	62	70	68	101
		MED	NONE	—	—	18	20	19	106	22	25	23	110	20	25	21	108	24	25	25	112
			118A	18.0	17.3	26	30	23	106	30	30	27	110	28	30	25	108	32	35	29	112
			119A	36.0	34.6	47	50	43	106	52	60	47	110	49	50	45	108	54	60	49	112
			118A+119A	54.0	52.0	56	60	63	106	61	70	67	110	58	60	65	108	63	70	69	112
		HIGH	NONE	—	—	21	25	22	120	25	30	27	124	23	25	24	122	27	30	29	126
			118A	18.0	17.3	29	30	26	120	34	35	31	124	31	35	28	122	36	40	33	126
			119A	36.0	34.6	51	60	46	120	55	60	51	124	53	60	48	122	58	60	53	126
			118A+119A	54.0	52.0	59	70	66	120	64	70	71	124	62	70	68	122	66	70	73	126

See legend on page 117.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*D12	208/230-3-60	STD	NONE	—	—	48	60	50	282	51	60	54	286	52	60	55	287	56	60	60	291
			117A	7.8/10.4	21.7/25.0	48/48	60/60	50/50	282/282	51/51	60/60	54/54	286/286	52/52	60/60	55/55	287/287	56/56	60/60	60/60	291/291
			110A	12.0/16.0	33.4/38.5	49/55	60/60	50/50	282/282	53/60	60/60	54/55	286/286	55/61	60/70	55/56	287/287	59/66	60/70	60/60	291/291
			112A	24.0/32.0	66.7/77.0	90/103	90/110	83/95	282/282	95/108	100/110	87/99	286/286	96/109	100/110	88/100	287/287	101/114	110/125	93/104	291/291
			112A+117A	31.8/42.4	88.4/102.0	117/134	125/150	108/123	282/282	122/139	125/150	112/128	286/286	123/140	125/150	113/129	287/287	128/145	150/150	118/133	291/291
			112A+110A	37.6/50.0	104.2/120.3	137/127	150/150	126/144	282/282	142/132	150/150	130/149	286/286	143/133	150/150	131/150	287/287	148/138	150/150	136/154	291/291
		MED	NONE	—	—	53	60	56	338	57	70	60	342	58	70	61	343	62	70	66	347
			117A	7.8/10.4	21.7/25.0	53/53	60/60	56/56	338/338	57/57	70/70	60/60	342/342	58/58	70/70	61/61	343/343	62/62	70/70	66/66	347/347
			110A	12.0/16.0	33.4/38.5	55/62	60/70	56/56	338/338	60/67	70/70	60/61	342/342	61/68	70/70	61/62	343/343	66/73	70/80	66/66	347/347
			112A	24.0/32.0	66.7/77.0	97/110	100/110	89/101	338/338	102/115	110/125	93/105	342/342	103/116	110/125	94/106	343/343	108/121	110/125	99/111	347/347
			112A+117A	31.8/42.4	88.4/102.0	124/141	125/150	114/129	338/338	129/146	150/150	118/134	342/342	130/147	150/150	119/135	343/343	135/152	150/175	124/139	347/347
			112A+110A	37.6/50.0	104.2/120.3	144/134	150/150	132/151	338/338	149/139	150/150	136/155	342/342	150/140	150/150	138/156	343/343	155/145	175/175	142/160	347/347
		HIGH	NONE	—	—	56/55	60/60	59/58	340	60/59	70/70	64/63	344	61/60	70/70	65/64	345	65/64	80/70	69/68	349
			117A	7.8/10.4	21.7/25.0	56/55	60/60	59/58	340/340	60/59	70/70	64/63	344/344	61/60	70/70	65/64	345/345	65/64	80/70	69/68	349/349
			110A	12.0/16.0	33.4/38.5	59/64	60/70	59/59	340/340	64/69	70/70	64/63	344/344	65/70	70/70	65/64	345/345	70/75	80/80	69/69	349/349
			112A	24.0/32.0	66.7/77.0	101/113	110/125	92/103	340/340	106/117	110/125	97/108	344/344	107/119	110/125	98/109	345/345	112/123	125/125	102/113	349/349
			112A+117A	31.8/42.4	88.4/102.0	128/144	150/150	117/132	340/340	133/149	150/150	122/136	344/344	134/150	150/150	123/137	345/345	139/155	150/175	127/142	349/349
			112A+110A	37.6/50.0	104.2/120.3	148/137	150/150	135/153	340/340	152/141	175/175	140/157	344/344	154/143	175/175	141/158	345/345	158/147	175/175	145/163	349/349
	460-3-60	STD	NONE	—	—	23	30	24	135	25	30	26	137	26	30	27	137	27	30	29	139
			116B	13.9	16.7	25	30	24	135	27	30	26	137	27	30	27	137	30	30	29	139
			113B	16.5	19.8	28	30	26	135	31	35	28	137	31	35	28	137	33	35	30	139
			115B	33.0	39.7	53	60	49	135	56	60	51	137	56	60	51	137	58	60	53	139
			128B	41.7	50.2	66	70	61	135	69	70	63	137	69	70	63	137	71	80	65	139
			129B	50.0	60.1	64	70	72	135	66	70	74	137	67	70	75	137	69	70	77	139
		MED	NONE	—	—	26	30	27	163	28	30	29	165	28	30	30	165	30	35	32	167
			116B	13.9	16.7	28	30	27	163	30	30	29	165	31	35	30	165	33	35	32	167
			113B	16.5	19.8	32	35	29	163	34	35	31	165	35	35	31	165	37	40	33	167
			115B	33.0	39.7	57	60	52	163	59	60	54	165	59	60	54	165	62	70	56	167
			128B	41.7	50.2	70	70	64	163	72	80	66	165	73	80	66	165	75	80	68	167
			129B	50.0	60.1	67	80	75	163	69	80	77	165	70	80	78	165	72	80	80	167
		HIGH	NONE	—	—	27	30	29	164	29	35	31	166	29	35	31	166	31	35	33	168
			116B	13.9	16.7	29	30	29	164	32	35	31	166	32	35	31	166	34	35	33	168
			113B	16.5	19.8	33	35	30	164	35	35	32	166	36	40	33	166	38	40	35	168
			115B	33.0	39.7	58	60	53	164	60	60	55	166	61	70	56	166	63	70	58	168
			128B	41.7	50.2	71	80	65	164	73	80	67	166	74	80	68	166	76	80	70	168
			129B	50.0	60.1	69	80	76	164	71	80	79	166	71	80	79	166	74	80	81	168
	575-3-60	STD	NONE	—	—	18	20	18	105	22	25	23	109	19	25	20	107	23	25	25	111
			118A	18.0	17.3	25	25	22	105	29	30	27	109	27	30	24	107	31	35	29	111
			119A	36.0	34.6	46	50	42	105	51	60	46	109	48	50	44	107	53	60	48	111
			118A+119A	54.0	52.0	55	60	62	105	60	60	66	109	57	60	64	107	62	70	68	111
		MED	NONE	—	—	19	20	19	116	22	25	24	120	20	25	21	118	24	30	26	122
			118A	18.0	17.3	26	30	23	116	30	30	27	120	28	30	25	118	32	35	29	122
			119A	36.0	34.6	47	50	43	116	52	60	47	120	49	50	45	118	54	60	49	122
			118A+119A	54.0	52.0	56	60	63	116	61	70	67	120	58	60	65	118	63	70	69	122
		HIGH	NONE	—	—	21	25	22	130	25	30	27	134	23	25	24	132	27	30	29	136
			118A	18.0	17.3	29	30	26	130	34	35	31	134	31	35	28	132	36	40	33	136
			119A	36.0	34.6	51	60	46	130	55	60	51	134	53	60	48	132	58	60	53	136
			118A+119A	54.0	52.0	59	70	66	130	64	70	71	134	62	70	68	132	66	70	73	136

See legend on page 117.

Electrical data (cont)

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA	MCA	FUSE or HACR BRKR	DISC. SIZE FLA	DISC. SIZE LRA
50HC*D14	208/230-3-60	STD	NONE	—	—	57	70	59	340	60	70	63	344	61	80	64	345	65	80	69	349
			291A	12.4/16.5	34.4/39.7	57/59	70/70	59/59	340/340	60/64	70/70	63/63	344/344	61/65	80/80	64/64	345/345	65/70	80/80	69/69	349/349
			288A+291A	19.9/26.5	55.3/63.8	79/90	80/90	72/82	340/340	84/94	90/100	77/86	344/344	85/96	90/100	78/88	345/345	90/100	90/100	82/92	349/349
			294A	25.2/33.5	69.9/80.6	97/111	100/125	89/101	340/340	102/115	110/125	93/106	344/344	103/117	110/125	95/107	345/345	108/121	110/125	99/111	349/349
			288A+294A	32.7/43.5	90.7/104.7	123/141	125/150	113/129	340/340	128/145	150/150	117/133	344/344	129/147	150/150	118/135	345/345	134/151	150/175	123/139	349/349
			291A+294A	37.6/50.0	104.3/120.3	140/130	150/150	129/147	340/340	145/135	150/150	133/151	344/344	146/136	150/150	134/152	345/345	151/141	175/150	138/157	349/349
		MED	NONE	—	—	60	70	62	370	63	80	67	374	64	80	68	375	68	80	72	379
			291A	12.4/16.5	34.4/39.7	60/63	70/70	62/62	370/370	63/68	80/80	67/67	374/374	64/69	80/80	68/68	375/375	68/74	80/80	72/72	379/379
			288A+291A	19.9/26.5	55.3/63.8	83/93	90/100	76/86	370/370	88/98	90/100	80/90	374/374	89/99	90/100	81/91	375/375	94/104	100/110	86/95	379/379
			294A	25.2/33.5	69.9/80.6	101/114	110/125	93/105	370/370	106/119	110/125	97/109	374/374	107/120	110/125	98/110	375/375	112/125	125/125	102/115	379/379
			288A+294A	32.7/43.5	90.7/104.7	127/145	150/150	116/133	370/370	132/149	150/150	121/137	374/374	133/151	150/175	122/138	375/375	138/155	150/175	126/142	379/379
			291A+294A	37.6/50.0	104.3/120.3	144/134	150/150	132/151	370/370	149/139	150/150	137/155	374/374	150/140	150/150	138/156	375/375	155/145	175/175	142/160	379/379
		HIGH	NONE	—	—	66/64	80/80	70/68	368	70/68	80/80	74/72	372	71/69	80/80	75/73	373	75/73	80/80	80/77	377
			291A	12.4/16.5	34.4/39.7	66/69	80/80	70/68	368/368	70/74	80/80	74/72	372/372	71/75	80/80	75/73	373/373	75/80	80/80	80/77	377/377
			288A+291A	19.9/26.5	55.3/63.8	91/99	100/100	83/91	368/368	96/104	100/110	88/95	372/372	97/105	100/110	89/96	373/373	102/110	110/110	93/101	377/377
			294A	25.2/33.5	69.9/80.6	109/120	110/125	100/110	368/368	114/125	125/125	104/114	372/372	115/126	125/150	105/115	373/373	120/131	125/150	110/120	377/377
			288A+294A	32.7/43.5	90.7/104.7	135/150	150/150	124/138	368/368	140/155	150/175	128/142	372/372	141/156	150/175	129/143	373/373	146/161	150/175	134/148	377/377
			291A+294A	37.6/50.0	104.3/120.3	152/140	175/175	139/156	368/368	157/144	175/175	144/160	372/372	158/146	175/175	145/161	373/373	163/150	175/175	149/165	377/377
		HIGH-HE	NONE	—	—	70	80	74	376	73	80	78	380	74	80	79	381	78	90	84	385
			291A	12.4/16.5	34.4/39.7	70/76	80/80	74/74	376/376	74/80	80/80	78/78	380/380	75/82	80/90	79/79	381/381	80/86	90/90	84/84	385/385
			288A+291A	19.9/26.5	55.3/63.8	95/106	100/110	87/97	376/376	100/110	100/125	91/101	380/380	101/112	110/125	93/102	381/381	106/116	110/125	97/107	385/385
			294A	25.2/33.5	69.9/80.6	113/127	125/150	104/116	376/376	118/131	125/150	108/121	380/380	119/133	125/150	109/122	381/381	124/137	125/150	114/126	385/385
			288A+294A	32.7/43.5	90.7/104.7	139/157	150/175	128/144	376/376	144/162	150/175	132/148	380/380	145/163	150/175	133/149	381/381	150/168	150/175	138/154	385/385
			291A+294A	37.6/50.0	104.3/120.3	156/146	175/175	143/162	376/376	161/151	175/175	148/166	380/380	162/152	175/175	149/167	381/381	167/157	175/175	153/172	385/385
	460-3-60	STD	NONE	—	—	25	30	26	166	27	30	28	168	27	30	28	168	29	35	30	170
			292A	16.5	19.9	30	30	27	166	32	35	29	168	32	35	29	168	35	35	31	170
			289A+292A	26.5	31.9	45	45	41	166	47	50	43	168	47	50	43	168	50	50	45	170
			295A	33.5	40.3	55	60	50	166	57	60	52	168	58	60	53	168	60	60	55	170
			289A+295A	43.5	52.3	70	70	64	166	72	80	66	168	73	80	67	168	75	80	69	170
			292A+295A	50.0	60.2	65	70	73	166	67	70	75	168	68	80	76	168	70	80	78	170
		MED	NONE	—	—	27	30	28	181	28	35	30	183	29	35	30	183	31	35	32	185
			292A	16.5	19.9	32	35	29	181	34	35	31	183	35	35	32	183	37	40	34	185
			289A+292A	26.5	31.9	47	50	43	181	49	50	45	183	50	50	45	183	52	60	47	185
			295A	33.5	40.3	57	60	52	181	60	60	55	183	60	60	55	183	62	70	57	185
			289A+295A	43.5	52.3	72	80	66	181	75	80	68	183	75	80	69	183	77	80	71	185
			292A+295A	50.0	60.2	67	80	75	181	70	80	77	183	70	80	78	183	72	80	80	185
		HIGH	NONE	—	—	29	35	30	180	31	35	32	182	31	35	33	182	33	40	35	184
			292A	16.5	19.9	35	35	32	180	37	40	34	182	38	40	34	182	40	40	36	184
			289A+292A	26.5	31.9	50	50	45	180	52	60	47	182	53	60	48	182	55	60	50	184
			295A	33.5	40.3	60	60	55	180	63	70	57	182	63	70	58	182	65	70	60	184
			289A+295A	43.5	52.3	75	80	69	180	78	80	71	182	78	80	71	182	80	80	73	184
			292A+295A	50.0	60.2	70	80	78	180	72	80	80	182	73	80	81	182	75	80	83	184
		HIGH-HE	NONE	—	—	32	40	33	184	34	40	35	186	34	40	36	186	36	45	38	188
			292A	16.5	19.9	38	40	35	184	40	40	37	186	41	45	37	186	43	45	39	188
			289A+292A	26.5	31.9	53	60	48	184	55	60	50	186	56	60	51	186	58	60	53	188
			295A	33.5	40.3	64	70	58	184	66	70	60	186	66	70	61	186	69	70	63	188
			289A+295A	43.5	52.3	79	80	72	184	81	90	74	186	81	90	74	186	84	90	76	188
			292A+295A	50.0	60.2	73	80	81	184	76	80	83	186	76	80	83	186	78	80	86	188

See legend on page 117.

50HC**04-14 MCA MOCP DATA — WITHOUT EnergyX SYSTEM (cont)

UNIT*	NOM. V-Ph-Hz	IFM TYPE	ELEC. HTR			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET								w/ PWRD C.O.							
						No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)				No Powered Exhaust				With Powered Exhaust (Pwrd fr/unit)			
			CRHEATER***A00	Nom (kW)	FLA	MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE		MCA	FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50HC*D14	575-3-60	STD	NONE	—	—	20	25	21	138	24	30	25	142	22	25	23	140	26	30	27	144
			293A	16.5	15.9	24	25	22	138	29	30	26	142	26	30	23	140	31	35	28	144
			290A+293A	26.5	25.5	36	40	33	138	41	45	37	142	38	40	35	140	43	45	39	144
			296A	33.5	32.2	44	45	40	138	49	50	45	142	46	50	42	140	51	60	47	144
			290A+296A	43.5	41.9	56	60	51	138	61	70	56	142	58	60	53	140	63	70	58	144
			293A+296A	50.0	48.1	52	60	59	138	57	60	63	142	54	60	60	140	59	60	65	144
		MED	NONE	—	—	20	25	21	138	24	30	25	142	22	25	23	140	26	30	27	144
			293A	16.5	15.9	24	25	22	138	29	30	26	142	26	30	23	140	31	35	28	144
			290A+293A	26.5	25.5	36	40	33	138	41	45	37	142	38	40	35	140	43	45	39	144
			296A	33.5	32.2	44	45	40	138	49	50	45	142	46	50	42	140	51	60	47	144
			290A+296A	43.5	41.9	56	60	51	138	61	70	56	142	58	60	53	140	63	70	58	144
			293A+296A	50.0	48.1	52	60	59	138	57	60	63	142	54	60	60	140	59	60	65	144
		HIGH	NONE	—	—	24	25	25	141	27	30	29	145	25	30	27	143	29	35	31	147
			293A	16.5	15.9	28	30	25	141	33	35	30	145	30	30	27	143	35	35	32	147
			290A+293A	26.5	25.5	40	40	36	141	45	45	41	145	42	45	38	143	47	50	43	147
			296A	33.5	32.2	48	50	44	141	53	60	48	145	50	60	46	143	55	60	50	147
			290A+296A	43.5	41.9	60	60	55	141	65	70	60	145	63	70	57	143	67	70	62	147
			293A+296A	50.0	48.1	56	60	62	141	61	70	67	145	58	60	64	143	63	70	69	147
		HIGH-HE	NONE	—	—	27	30	28	150	31	35	32	154	29	35	30	152	33	40	34	156
			293A	16.5	15.9	32	35	29	150	36	40	33	154	34	35	31	152	38	40	35	156
			290A+293A	26.5	25.5	44	45	40	150	48	50	44	154	46	50	42	152	50	60	46	156
			296A	33.5	32.2	52	60	47	150	57	60	52	154	54	60	49	152	59	60	54	156
			290A+296A	43.5	41.9	64	70	59	150	69	70	63	154	66	70	60	152	71	80	65	156
			293A+296A	50.0	48.1	60	70	66	150	65	70	70	154	62	70	68	152	67	70	72	156

LEGEND

FLA — Full Load Amps
IFM — Indoor (Evaporator) Fan Motor
HIGH-HE — High-High Efficiency
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
PWRD CO — Powered Convenience Outlet
PWRD FR/UNIT — Powered Front Unit

* 50HC***A**04-50HC***A**07 — One-Stage Cooling
50HC***D**07-50HC***D**14 — Two-Stage Cooling

NOTE: Refer to Packaged Rooftop Builder (Selection Software) for additional electrical data.

Sequence of operation

General

The sequence below describes the sequence of operation for an electro-mechanical unit with and without a factory-installed EconoMi$er® IV and X (called "economizer" in this sequence). For information regarding a direct digital controller, see the start-up, operations, and troubleshooting manual for the applicable controller.

Electro-Mechanical Units with No Economizer

Cooling (Single speed indoor fan motor)

When the thermostat calls for cooling, terminals G and Y1 are energized. As a result, the indoor-fan contactor (IFC) and the compressor contactor (C1) are energized, causing the indoor-fan motor (IFM), compressor #1, and outdoor fan to start. If the unit has 2 stages of cooling, the thermostat will additionally energize Y2. On two compressor units, the Y2 signal will energize compressor contactor #2 (C2), causing compressor #2 to start. On 2-Stage 07 units, the Y1 signal energizes the IFC and C1 Contactor, causing the indoor fan and outdoor fan to start and the compressor to operate at 66% capacity. The Y2 signal will energize the compressor loader plug, allowing compressor to operate at 100% capacity. Regardless of the number of stages, the outdoor-fan motor runs continuously while unit is cooling.

Cooling (2-speed indoor fan motor)

Per ASHRAE 90.1 standard, during the first stage of cooling operation, the VFD will adjust the fan motor to provide 66% of the total cfm established for the unit. When a call for the second stage of cooling is required, the VFD will allow the total cfm established for the unit (100%).

Heating

NOTE: The 50HC is sold as cooling only. If electric heaters are required, use only factory-approved electric heaters. They will operate as described below.

Units have either 1 or 2 stages of electric heat. When the thermostat calls for heating, power is applied to the W1 terminal at the unit. The unit control will energize the indoor fan contactor and the first stage of electric heat. On units with two-stage heating, when additional heating is required, the second stage of electric heat (if equipped) will be energized when power is applied at the W2 terminal on the unit.

Electro-Mechanical Units with an Economizer

Cooling

When free cooling is not available, the compressors will be controlled by the zone thermostat. When free cooling is available, the outdoor-air damper is modulated by the EconoMi$er IV and X control to provide a 50°F (10°C) to 55°F (13°C) mixed-air temperature into the zone. As the mixed air temperature fluctuates above 55°F (13°C) or below 50°F (10°C), dampers will be modulated (open or close) to bring the mixed-air temperature back within control. If mechanical cooling is utilized with free cooling, the outdoor-air damper will maintain its current position at the time the compressor is started. If the increase in cooling capacity causes the mixed-air temperature to drop below 45°F (7°C), then the outdoor-air damper position will be decreased to the minimum position. If the mixed-air temperature continues to fall, the outdoor-air damper will close. Control returns to normal once the mixed-air temperature rises above 48°F (9°C). The power exhaust fans will be energized and de-energized, if installed, as the outdoor-air damper opens and closes

If field-installed accessory CO_2 sensors are connected to the EconoMi$er IV and X control, a demand controlled ventilation strategy will begin to operate. As the CO_2 level in the zone increases above the CO_2 setpoint, the minimum position of the damper will be increased proportionally. As the CO_2 level decreases because of the increase in fresh air, the outdoor-air damper will be proportionally closed. For EconoMi$er IV and X operation, there must be a thermostat call for the fan (G). If the unit is occupied and the fan is on, the damper will operate at minimum position. Otherwise, the damper will be closed.

When the EconoMi$er IV and X control is in the occupied mode and a call for cooling exists (Y1 on the thermostat), the control will first check for indoor fan operation. If the fan is not on, then cooling will not be activated. If the fan is on, then the control will open the EconoMi$er IV and X damper to the minimum position.

On the initial power to the EconoMi$er IV and X control, it will take the damper up to $2^1/_2$ minutes before it begins to position itself. After the initial power-up, further changes in damper position can take up to 30 seconds to initiate. Damper movement from full closed to full open (or vice versa) will take between $1^1/_2$ and $2^1/_2$ minutes. If free cooling can be used as determined from the appropriate changeover command (switch, dry bulb, enthalpy curve, differential dry bulb, or differential enthalpy), then the control will modulate the dampers open to maintain the mixed-air temperature setpoint at 50°F (10°C) to 55°F (13°C). If there is a further demand for cooling (cooling second stage - Y2 is energized), then the control will bring on compressor stage 1 to maintain the mixed-air temperature setpoint. The EconoMi$er IV and X damper will be open at maximum position. EconoMi$er IV and X operation is limited to a single compressor.

2-Speed Note: When operating in ventilation mode only, the indoor fan motor will automatically adjust to 66% of the total cfm established.

Heating

The sequence of operation for the heating is the same as an electro-mechanical unit with no economizer. The only difference is how the economizer acts. The economizer will stay at the Economizer Minimum Position while the evaporator fan is operating. The outdoor-air damper is closed when the indoor fan is not operating.

Optional Humidi-MiZer® Dehumidification System

Units with the factory equipped Humidi-MiZer system option are capable of providing multiple modes of improved dehumidification as a variation of the normal cooling cycle. The Humidi-MiZer system option includes additional valves in the liquid line and discharge line of each refrigerant circuit, a small reheat condenser coil downstream of the evaporator, and Motormaster variable-speed control of some or all outdoor fans. Operation of the revised refrigerant circuit for each mode is described below.

The Humidi-MiZer system provides three sub-modes of operation: Cool, Reheat1, and Reheat2.

Cool Mode

Provides a normal ratio of Sensible and Latent Cooling effect from the evaporator coil.

Reheat1

Provides increased Latent Cooling while slightly reducing the Sensible Cooling effect.

Reheat2

Provides normal Latent Cooling but with null or minimum Sensible Cooling effect delivered to the space.

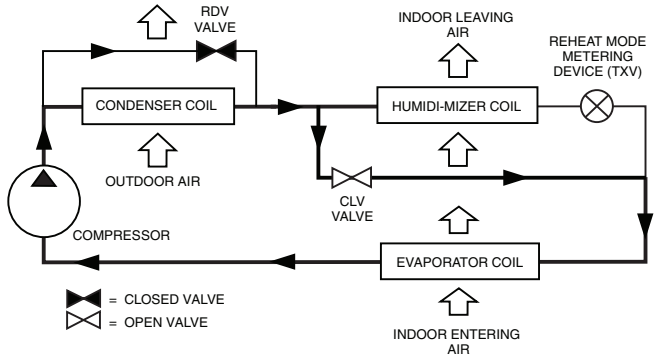
The Reheat1 and Reheat2 modes are available when the unit is not in a Heating mode and when the Low Ambient Lockout switch is closed.

See the figures on this page for diagrams depicting piping for single stage cooling units.

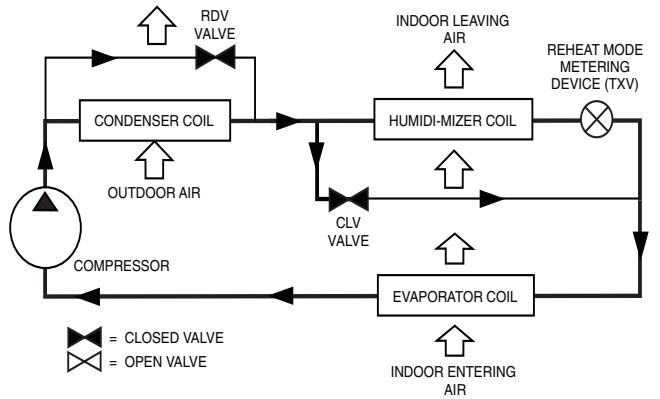
RTU Open Controller (Factory Option)

For details on operating 50HC units equipped with the factory-installed RTU Open controller option, refer to Factory Installed RTU Open Multi-Protocol Controller Controls, Start-Up, Operation and Troubleshooting manual.

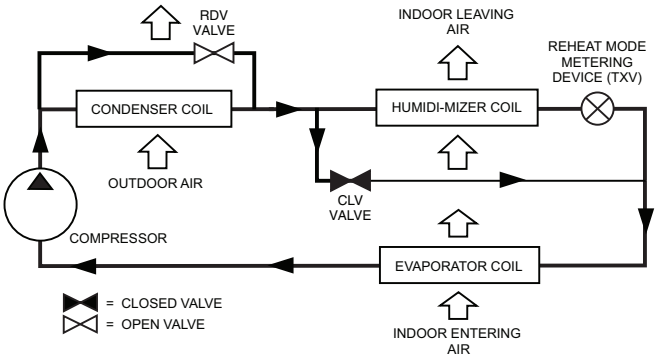
NORMAL COOLING MODE — HUMIDI-MIZER® SYSTEM WITH SINGLE STAGE COOLING



SUBCOOLING MODE (REHEAT 1) — HUMIDI-MIZER SYSTEM WITH SINGLE STAGE COOLING



HOT GAS REHEAT MODE (REHEAT2) — HUMIDI-MIZER SYSTEM WITH SINGLE STAGE COOLING



EnergyX® Energy Recovery Ventilator (ERV) Sequence of Operation

The EnergyX Energy Recovery Ventilator (ERV) module is controlled by a digital controller located inside the EnergyX chassis. It communicates with the WeatherMaster® *Comfort*Link controller via a UPC translator module which connects to the WeatherMaster rooftop unit's *Comfort*Link controller via a LEN cable. All controller settings and configuration are input via the *Comfort*Link scrolling marquee display.

All control points, including outdoor airflow, exhaust airflow and CO_2 setpoints are configured via the *Comfort*Link scrolling marquee interface.

NOTE: CO_2 sensor requires a factory-installed economizer.

The EnergyX energy recovery unit pre-conditions the outdoor air before it mixes with the return air and enters the rooftop unit evaporator coil. As a result, the EnergyX operation is mostly independent of the rooftop unit operation except to allow the space conditioning needs to be met without RTU compressor operation or RTU heat operation for a significantly wider range of ambient temperatures (than a unit without an energy recovery module). This is achieved either by the pre-conditioning of the EnergyX wheel or the economizer (if equipped). The EnergyX will pre-condition the outside air in the cooling and heating modes of operation.

General

The sequence below describes the sequence of operation for a WeatherMaster unit with *Comfort*Link controls and an EnergyX system. For more information regarding controller operation, see the EnergyX Start-Up, Operations, and Troubleshooting supplement manual.

The EnergyX system will not activate unless the RTU fan is on. The EnergyX system default condition is to remain off in the unoccupied mode, however, this can be over-ridden via the control setpoints.

Cooling Operation

When the *Comfort*Link controller recognizes that the conditioned zone requires cooling (via the space temperature sensor or space thermostat) the EnergyX module is activated. The EnergyX control module follows the sequence of operation logic as listed below.

Step 1 — Economizer Operation

First, the EnergyX module checks if the outside air is suitable for free cooling via the outside air enthalpy sensor. If the outside air is suitable for free cooling and the unit has an economizer, the EnergyX will operate in "ventilation mode" where the wheel will remain off but the ERV economizer will modulate in free-cooling. If the unit is in Unoccupied mode, then the unit will not operate in economizer mode and will proceed to Step 2.

Step 2 — Wheel Operation

If the outside air is not suitable for free cooling, then the EnergyX will operate in either cooling or heating mode as called for by the rooftop unit *Comfort*Link controller.

NOTE: If the unit is in Unoccupied mode, the default configuration is that the EnergyX module will not operate. This can be over-ridden by an adjustable setpoint in the ERV controller.

Cooling Operation

If the outside air is not suitable for free cooling, then the EnergyX wheel will activate and the supply fan will activate per the CFM setpoint.

Modulating EnergyX Units Only

If a CO_2 sensor is used (connected to the RTU *Comfort*Link controller) the supply fan will modulate between the DCV minimum and DCV maximum setpoints. The exhaust fan will modulate to follow the supply fan operation per the Exhaust CFM-offset value. If the economizer opens more than 5%, the wheel utilizes a "stop-jog" operation to periodically rotate the wheel and minimize potential dirt build-up and excess wear on one section of the wheel.

NOTE: CO_2 sensor requires a factory-installed economizer.

Heating Operation

When the *Comfort*Link controller sees that the space requires heating via the space temperature sensor or when the thermostat or calls for heating, the EnergyX module is activated. The ERV wheel will rotate and the supply fan will activate per the CFM setpoint.

Modulating EnergyX Units Only

If a CO_2 sensor is used (connected to the RTU *Comfort*Link controller) the supply fan will modulate between the DCV minimum and DCV maximum setpoints. The exhaust fan will modulate to follow the supply fan operation per the Exhaust CFM-offset value, via the Economizer Control Board (ECB).

Supply and Exhaust Air Frost Control Operation

When the factory installed frost protection option is used, the EnergyX module will sense pressure differential across the energy recovery cassette. The supply blower will be shut off if the pressure differential across the energy recovery cassette exceeds the adjustable setpoint value. The blower will remain off for 5 minutes. The exhaust blower and wheel will remain on, in order to remove any frost build-up on the wheel.

EnergyX Wheel Maintenance and Blower Indicator Operation

When the optional factory-installed wheel maintenance indicator is used, a proxy sensor monitors the EnergyX wheel and sends a corresponding alarm signal when appropriate. Pressure switches are used to detect and activate the unit alarm when blowers are not running.

EnergyX Filter Maintenance Indicator Operation

When the optional factory-installed filter maintenance indicator is used, a factory-installed differential pressure switch measures pressure drop across the outside air filter and activates a field-supplied dry contact indicator when the pressure differential exceeds the adjustable switch setpoint. EnergyX operation is not interrupted.

Application data

Min operating ambient temp (cooling)

In mechanical cooling mode, your Carrier rooftop can safely operate down to an outdoor ambient temperature of 35°F (2°C) and 25°F (–4°C), with an accessory winter start kit. It is possible to provide cooling at lower outdoor ambient temperatures by using less outside air, economizers, and/or accessory low ambient kits.

Max operating ambient temp (cooling)

The maximum operating ambient temperature for cooling mode is 125°F (52°C). While cooling operation above 125°F (52°C) may be possible, it could cause either a reduction in performance, reliability, or a protective action by the unit's internal safety devices.

Min and max airflow (cooling mode)

To maintain safe and reliable operation of your rooftop, operate within the cooling airflow limits. Operating above the max may cause blow-off, undesired airflow noise, or airflow related problems with the rooftop unit. Operating below the min may cause problems with coil freeze-up.

Airflow

All units are draw-through in cooling mode.

Outdoor air application strategies

Economizers reduce operating expenses and compressor run time by providing a free source of cooling and a means of ventilation to match application changing needs. In fact, they should be considered for most applications. Also, consider the various economizer control methods and their benefits, as well as sensors required to accomplish your application goals. Please contact your local Carrier representative for assistance.

Motor limits, break horsepower (BHP)

Due to Carrier's internal unit design, air path, and specially designed motors, the full horsepower (maximum continuous BHP) band, as listed in Physical Data tables, can be used with the utmost confidence. There is no need for extra safety factors, as Carrier's motors are designed and rigorously tested to use the entire, listed BHP range without either nuisance tripping or premature motor failure.

Sizing a rooftop

Bigger isn't necessarily better. While an air conditioner needs to have enough capacity to meet the load, it doesn't need excess capacity. In fact, having excess capacity typically results in very poor part load performance and humidity control.

Using higher design temperatures than ASHRAE recommends for your location, adding "safety factors" to the calculated load, and rounding up to the next largest unit, are all signs of oversizing air conditioners. Oversizing can cause short-cycling, and short cycling leads to poor humidity control, reduced efficiency, higher utility bills, drastic indoor temperature swings, excessive noise, and increased wear and tear on the air conditioner.

Rather than oversizing an air conditioner, wise contractors and engineers "right-size" or even slightly undersize air conditioners. Correctly sizing an air conditioner controls humidity better, promotes efficiency, reduces utility bills, extends equipment life, and maintains even, comfortable temperatures.

Low ambient applications

When equipped with a Carrier economizer, your rooftop unit can cool your space by bringing in fresh, cool outside air. In fact, when so equipped, accessory low-ambient kit may not be necessary. In low ambient conditions, unless the outdoor air is excessively humid or contaminated, economizer-based "free cooling" is the preferred less costly and energy conscious method.

In low ambient applications where outside air might not be desired (such as contaminated or excessively humid outdoor environments), your Carrier rooftop can operate to ambient temperatures down to –20°F (–29°C) using the recommended field-installed accessory Motormaster low ambient controller or 0°F (–18°C) with the factory-installed low ambient controller option.

Winter start

Carrier's winter start kit extends the low ambient limit of your rooftop to 25°F (–4°C). The kit bypasses the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Staged Air Volume (SAV™) System with VFD Controller (2-Stage Cooling Models Only)

Carrier's Staged Air Volume (SAV) system saves energy and installation time by utilizing a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed in sequence with the units cooling operation. Per ASHRAE 90.1 standard, during the first stage of cooling operation the VFD will adjust the fan motor to provide 66% of the total cfm established for the unit. When a call for the second stage of cooling is required, the VFD will allow the total cfm for the unit established (100%). During the heating mode the VFD will allow total design cfm (100%) operation and during the ventilation mode the VFD will allow operation to 66% of total cfm.

Compared to single speed indoor fan motor systems, Carrier's SAV system can save substantial energy (25%+) versus single speed indoor fan motor systems.

IMPORTANT: Data based on 0.10 ($/kWh) in an office application utilizing Carrier's HAP 4.6 simulation software program.

The VFD used in Carrier's SAV system has soft start capabilities to slowly ramp up the speeds, thus eliminating any high inrush air volume during initial start-up. It also has internal overcurrent protection for the fan motor and a field installed display kit that allows adjustment and in depth diagnostics of the VFD.

This SAV system is available on models with 2-stage cooling operation.

The SAV system is very flexible for initial fan performance set up and adjustment. The standard factory shipped VFD is pre-programmed to automatically stage the fan speed between the first and second stage of cooling. The unit fan performance static pressure and cfm can be easily adjusted using the traditional means of pulley adjustments. The other means to adjust the unit static and cfm performance is to utilize the field installed Display Kit and adjust the frequency and voltage in the VFD to required performance requirements. In either case, once set up, the VFD will automatically adjust the speed between the cooling stage operations.

50HC STAGED AIR VOLUME (SAV) — VARIABLE FREQUENCY DRIVE (VFD) HP RATING

50HC UNIT	VOLTAGE	STATIC OPTION	VFD HP RATING
07	208/230, 460, 575	STD	3.0
	208/230, 460	MED	3.0
	575	MED	5.0
	208/230, 460, 575	HIGH	7.5
08	208/230, 460, 575	STD	3.0
	208/230, 460, 575	MED	3.0
	208/230, 460, 575	HIGH	5.0
09	208/230, 460, 575	STD	3.0
	208/230, 460, 575	MED	5.0
	208/230, 460, 575	HIGH	3.0
11	208/230, 460, 575	STD	3.0
	208/230, 460, 575	MED	5.0
	208/230, 460, 575	HIGH	7.5
12	208/230, 460, 575	STD	3.0
	208/230, 460, 575	MED	5.0
	208/230, 460, 575	HIGH	7.5
14	208/230, 460	STD	3.0
	575	STD	5.0
	208/230, 460, 575	MED	5.0
	208/230, 460, 575	HIGH	7.5

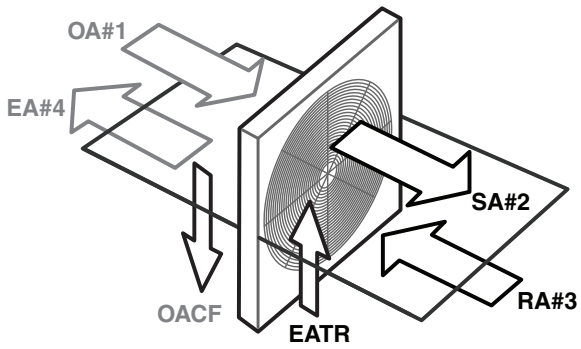
Optional EnergyX® System Application Data

Energy recovery devices such as the EnergyX typically result in substantial energy savings over other outdoor air devices. Specifically, the EnergyX system adds sensible and latent capacity as well as additional stages of cooling and heating operation to the Rooftop Unit. Due to the EnergyX system's significantly lower input watts than the corresponding RTU compressor(s), proper control strategies for this device maximize its operation to reduce the run time of the RTU compressor(s). This results in a much higher system efficiency than can typically be achieved by using a rooftop unit of the same total capacity.

The EnergyX system with its modulating airflow capability allows a designer to increase the amount of outside air significantly more than normal with the following benefits:

- Reduced rooftop unit sizing - The more air that passes through the energy recovery device reduces the load (and potential unit size) on the rooftop unit's compressors and heating system
- Higher system cooling and heating efficiencies - Since the EnergyX system uses the power of 'rotary enthalpy transfer' as opposed to mechanical compression, conditioning of the ventilation air results in a much higher operating efficiency (RER) of the energy recovery unit and system Combined Efficiency Factor (CEF). The higher the airflow through the EnergyX system, the higher the system efficiency (CEF) value. Since the EnergyX system also conditions ventilation air in the heating mode, the necessary amount and/or operation of the rooftop unit heat system is reduced.
- Better part-load conditioning – as the EnergyX system is able to modulate its airflow, the ability to match the changing zone part-load capacity (in cooling and in heating) is greatly increased.
- Higher air change rates – Larger amounts of ventilation air allows the zone air to be flushed out more often. This can contribute significantly to reduced sickness and more productive operating environments.

All ventilated spaces are good candidates for energy recovery systems. The applications that benefit most are those that require a large amount of outside air for a space that has a low internal load. This is true because most outside air loads are latent which requires a larger rooftop unit to accommodate both internal and ventilation loads. Advantages of the ERV unit include the ability to reduce the size of the rooftop unit, provide better humidity levels and provide a stable, tempered space.



EA — Exhaust Air
EATR — Exhaust Air Transfer Ratio
OA — Outdoor Air
OACF — Outdoor Air Correction Factor
RA — Return Air
SA — Supply Air

Examples of ERV applications are classrooms, churches, conference rooms, game rooms, auditoriums, movie theaters, day care centers, nursing homes, funeral homes, dormitories, and clinics. Retrofits of existing systems to handle outside air without modifying the rooftop unit are excellent applications. Other examples are bars, restaurants, casino/game rooms, barber/beauty shops, bingo halls, locker rooms, recreational facilities and health clubs. Animal shelters such as veterinary clinics and kennels have been very successful implementations. Retail spaces and manufacturing facilities are also good applications.

If the outside air requirement is greater than 10% of a rooftop unit's supply air rating, the EnergyX unit should be considered to enhance the comfort of the occupants and reduce the tonnage of the rooftop unit. Carrier's Packaged RTU Builder selection software program offers a quick, simple look at the advantages and payback of the EnergyX system.

ASHRAE 62.1 Air Classification Requirements

The EnergyX system allows for easy compliance with the current ASHRAE Standard 62.1 Air Classification Requirements. Pollutant transfer via Desiccant is a 'non issue' since by virtue of the ASHRAE "classes of air," the main determinant is EATR or cross transfer of air by leakage from exhaust to supply. Since the EATR is an AHRI Certified measurement of an AHRI certified wheel device, the user can be assured of meeting the air dilution requirements of ASHRAE 62.1 and therefore the air classification requirements.

Industrial Applications are by definition those that are Class 4 air (or worse). Most wheel manufacturers do not encourage application of wheels to these types of applica-

tions. When required, many wheel manufacturers make specialty wheels with specific mechanical purge construction for industrial applications, that can be used to field-replace the factory provided wheels. Contact the applicable wheel manufacture for specific application details.

Choosing the proper airflow is essential. Unit selection guidance for the EnergyX system is in definite contrast to typical unit sizing and selections. Typical unit sizing methods are to select the energy recovery device per the desired amount of outdoor air and then calculate the total capacity of the resulting energy recovery unit. This capacity is then subtracted from the desired total capacity for the conditioned zone. The remaining value is the necessary capacity of the rooftop unit. By conventional cooling and heating capacity guidance, the effort is to reduce the amount of outside (ventilation air) as much as possible since this additional ventilation air results in increased load on the rooftop unit compressor and heating sections.

NOTE: All units can be used in applications that require more or less airflow than the published CFM operating range as long as the airflow range is within the capabilities of the EnergyX fan system. This option can be used for high-static applications.

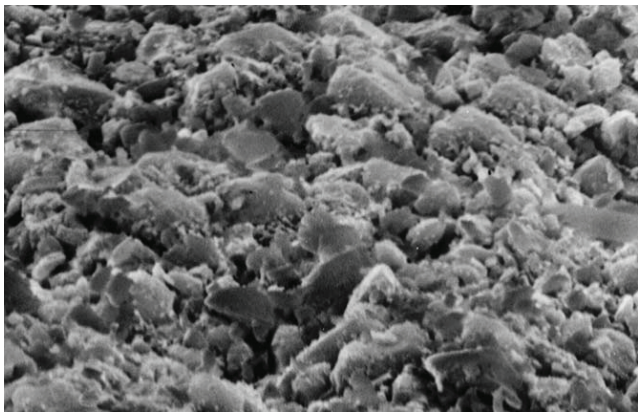
Although performance is optimized at equal exhaust and supply airflow rates, the selection program and the EnergyX unit can be used with unequal airflow amounts. The unit must be sized for the largest airflow amount. The smaller airflow used cannot be less than 50% of the larger airflow in the published range.

Energy Recovery Wheels

Carrier's EnergyX energy recovery wheels consist of a welded stainless steel hub, spoke and rim assembly, which is independent of the heat transfer matrix. The heat transfer matrix is contained in patented energy transfer segments, removable from the wheel without requiring tools. The energy wheel uses a unique parallel plate geometry and polymer film substrate to provide an optimized heat exchanger design. The polymer film construction is not subject to corrosion in coastal locations or swimming pool areas.

Silica Gel Technology

The EnergyX energy recovery wheels use the desiccant material known as silica gel, which is a highly porous solid adsorbent material that structurally resembles a rigid sponge. It has a very large internal surface composed of myriad microscopic cavities and a vast system of capillary channels that provide pathways connecting the internal microscopic cavities to the outside surface of the sponge. Silica gel enthalpy wheels transfer water by rotating between two air streams of different vapor pressures. The vapor pressure differential drives molecules into/from these cavities to transfer moisture from the more humid airstream to the drier airstream.



MICROSCOPIC IMAGE OF SILICA GEL

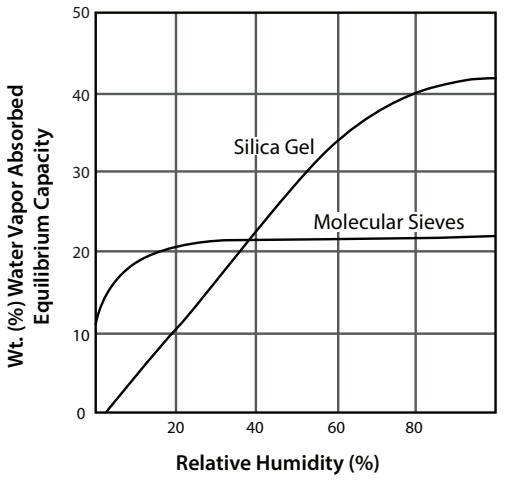
Adsorption: Silica Gel vs. Molecular Sieve

The following graph shows the effect of Relative Humidity on Desiccant Capacity characteristic curve for adsorption of water on silica gel. It shows the percent weight adsorbed versus relative humidity of the airstream in contact with the silica gel. The amount of water adsorbed rises linearly with increasing relative humidity (RH) until RH reaches near 60%. It then plateaus at above 40% adsorbed as relative humidity approaches 100%. For contrast, the curve for molecular sieves rises rapidly to plateau at about 20% absorbed at 20% RH.

The Effect of Relative Humidity on Desiccant Capacity graph explains the following application considerations:

- Molecular sieves are preferred for regenerated applications such as desiccant cooling and dehumidification systems that must reduce the processed air streams to very low relative humidities.
- Silica gel has superior characteristics for recovering space conditioning energy from exhaust air and handling high relative humidity outside conditions.

The transfer of water by adsorption/desorption is not dependent on temperature. Therefore, the silica gel enthalpy wheel works to reduce latent load at difficult part-load conditions.



EFFECT OF RELATIVE HUMIDITY ON DESICCANT CAPACITY

Fungal growth and moisture transfer

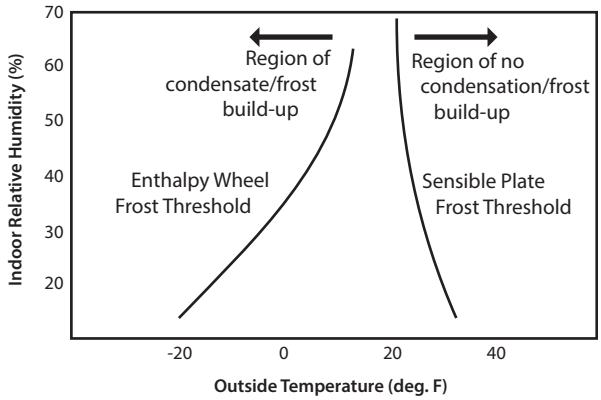
Carrier EnergyX units have silica gel-based desiccant wheels. The water molecules are individually transferred by desorption/adsorption to and from the silica gel surfaces. Water is present on the wheel in a molecular layer only, and condensation does not occur. Therefore, Carrier's energy recovery wheels experience dry moisture transfer; there is no bulk liquid water present that could support fungal growth. Water transfer to and from the wheel's desiccant surfaces occurs in the vapor phase; there are no wet surfaces and liquid water does not enter the airstream. Silica gel is also highly selective for water, based on the strong preference of the gel surface for the dipolar water molecule over other compounds.

Frost control requirements

Energy recovery systems require frost protection or a means of defrosting in climates that experience severe winter conditions. Frost formation results in a reduction and eventual blockage of airflow through the energy wheel.

Frost formation causes reduced airflow through the heat exchanger. Without frost control, energy recovery and airflow may be significantly reduced. The frost threshold temperature is the point at which frost begins to accumulate on heat exchanger surfaces. It is a function of both outside temperature and indoor relative humidity.

The Frost Threshold Comparison figure compares the frost threshold of a plate-type sensible heat exchanger with that of an enthalpy wheel. Note that frost forms at temperatures between 22°F and 30°F in a plate-type heat exchanger, frost threshold temperatures for enthalpy wheels are generally 20 to 30 degrees lower, approximately 0°F to 20°F. This is because the enthalpy wheel removes water from the exhaust air-stream, effectively lowering the exhausts dew point. The water removed is subsequently picked up through desorption by the entering outdoor air. Depending on the indoor relative humidity in areas where winter outside temperatures are between –5°F and 22°F, enthalpy wheel based recovery systems have a significant advantage over sensible plate type units because there is no additional cost for frost control. Even in cold areas, in most cases, enthalpy wheel based systems for schools and office buildings can be designed without frost control because most of the frosting hours are at night when the building is unoccupied. Consult bin data, such as that provided by ASHRAE, to qualify daytime applications in cold climates for frost-free operation.



FROST THRESHOLD COMPARISON

The Frost Thresholds Temperatures table below lists typical frost threshold temperatures for Carrier's EnergyX energy recovery wheels over a wide range of indoor-air temperatures and relative humidity. Frost control is not required until outdoor air temperatures are below the threshold.

INDOOR AIR RELATIVE	INDOOR AIR DRY BULB TEMPERATURE			
	70°F	72°F	75°F	80°F
20	–14	–13	–11	–8
30	–3	–2	–1	3
40	5	7	9	11
50	12	13	15	18
60	18	19	21	26

In regions where winter temperatures are extreme, Carrier's energy recovery wheels can be used effectively with the Frost Protection Factory Installed Option (FIOP).

NOTE: Refer to ASHRAE for bin data in cold climates where the threat of wheel frosting is frequent. Consult this information to ensure appropriate preheat techniques are used during occupied times.

Frost prevention for frost control is required in extremely cold climates to preserve performance and assure the continuous supply of outdoor air. Enthalpy wheel frost control strategies take advantage of inherently low frosting thresholds. This results in minimized energy use and maximized design load reductions. In regions that experience extreme winter conditions, the Frost Protection FIOP allows the exhaust fan to operate below the frost threshold temperature; however, a temperature sensor would disable the supply fan when the outdoor-air temperatures reach the frost control setpoint. The outdoor-air temperature sensor is located in the outdoor air intake of the ERV section. To avoid depressurization of the space, fresh air dampers may be required as part of the building's ventilation system.

Economizers

As promulgated by ASHRAE, economizers reduce operating expenses and compressor run time by providing a source of free cooling and a means of ventilation to match changing application needs. When properly designed (per ASHRAE standards), the economizer will control the amount of outdoor air allowed into the building and is inte-

grated with the operation of the compressors. Carrier economizers are properly designed and allow free cooling to occur when the outdoor air is suitable depending upon the control strategy chosen.

It has also been proven (by multiple independent sources) that using a Demand Controlled Ventilation (CO_2) strategy will result in considerable energy savings over a constant outdoor air volume strategy. This is because air to be brought in at a fixed rate has no variability as the outside air conditions change. Modulating EnergyX systems with DCV control allows the outside ventilation air to be reduced to the minimum building ventilation requirements as required by the actual occupancy load, which in term reduces the load on the unit compressors or heating system.

It is recommended that an economizer option always be used with the EnergyX system. This allows for true free cooling operation when the outside air conditions allow for it.

Wheel Cleaning

The EnergyX system includes a 5 year wheel warranty as a standard product feature. Wheels are self cleaning from dry dust and dirt due to laminar airflow through the wheel. If volatile organic compounds (VOC's) are present, wheels need to be 'deep' cleaned just like evaporator coils must be in order to maintain latent recovery performance. Since it is easier and less risky to clean a wheel outside of the HVAC unit than within, EnergyX unit construction allows for easy wheel segment removal.

It is recommended that a different wheel segment be cleaned each time the unit air filters are changed in order to ensure periodic entire wheel cleaning. Wheel cleaning can be done simply and easily by hand. Proper wheel cleaning does not remove wheel desiccant. See the EnergyX Controls and Troubleshooting Supplement Instructions for additional wheel cleaning and service information.

Exhaust Fan Performance

Many applications that utilize energy recovery incorporate ducted return/exhaust air paths. In these applications, it is important to consider the duct pressure of the return/exhaust just as a designer would consider the effects of the supply duct static pressure on the airflow of the rooftop unit itself.

EnergyX Modulating Volume 3-12.5 ton Units

The exhaust fan in the Modulating Volume EnergyX unit will assist the rooftop unit fan in pulling air through the exhaust/return duct. These exhaust fans are backwards curved impeller designs which are capable of significant more static pressure operation than typical forward curved fan designs. Exhaust fan performance curves for EnergyX units are provided on page 69 for additional guidance when considering return/exhaust duct design.

NOTE: If application designs require two separate ducts (one for exhaust air, one for return air) contact your Carrier Sales Engineer for additional guidance prior to specification or ordering.

Cooling Only/Electric Heat Packaged Rooftop

HVAC Guide Specifications

Size Range: **3 to 12.5 Tons (53 to 250 kW)**

Carrier Model Numbers: **50HC 04-14**

Part 1 — (23 06 80) Schedules for decentralized HVAC equipment

1.01 (23 06 80.13) Decentralized Unitary HVAC Equipment Schedule

A. (23 06 80.13.A.) Rooftop unit (RTU) schedule

Schedule is per the project specification requirements.

Part 2 — (23 07 16) HVAC equipment insulation

2.01 (23 07 16.13) Decentralized, Rooftop Units:

A. (23 07 16.13.A.) Evaporator fan compartment:

1. Interior cabinet surfaces shall be insulated with a minimum $^1/_2$-in. thick, minimum $1^1/_2$ lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
3. Unit internal insulation linings shall be resistant to mold growth in accordance with "mold growth and humidity" test in ASTM C1338, G21, and UL 181 or comparable test method. Air stream surfaces shall be evaluated in accordance with the "Erosion Test" in UL 181, as part of ASTM C1071.

B. (23 07 16.13.B.) Electric heat compartment:

1. Aluminum foil-faced fiberglass insulation shall be used.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

Part 3 — (23 09 13) Instrumentation and control devices for HVAC

3.01 (23 09 13.23) Sensors and Transmitters

A. (23 09 13.23.A.) Thermostats:

1. Thermostat must
   a. energize both "W" and "G" when calling for heat.
   b. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
   c. include capability for occupancy scheduling.

Part 4 — (23 09 23) Direct-digital control system for HVAC

4.01 (23 09 23.13) Decentralized, Rooftop Units:

A. (23 09 23.13.A.) PremierLink™ controller:

1. Shall be ASHRAE 62 compliant.
2. Shall accept 18-32 VAC input power.
3. Shall have an operating temperature range from –40°F (–40°C) to 158°F (70°C), 10% to 95% RH (non-condensing).
4. Shall include an integrated economizer controller to support an economizer with 4 to 20 mA actuator input and no microprocessor controller.
5. Controller shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air quality, indoor relative humidity, compressor lock-out, fire shutdown, enthalpy, fan status, remote time clock/door switch.
6. Shall accept a CO_2 sensor in the conditioned space, and be Demand Controlled Ventilation (DCV) ready.
7. Shall provide the following outputs: economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, heat stage 3/ exhaust/ reversing valve/ dehumidify/ occupied.
8. Unit shall provide surge protection for the controller through a circuit breaker.
9. Shall be Internet capable, and communicate at a Baud rate of 38.4K or faster.
10. Shall have an LED display independently showing the status of activity on the communication bus, and processor operation.
11. Shall include an EIA-485 protocol communication port, an access port for connection of either a computer or a Carrier technician tool, an EIA-485 port for network communication to intelligent space sensors and displays, and a port to connect an optional LonWorks[1] plug-in communications card.
12. Shall have built-in Carrier Comfort Network® (CCN) protocol, and be compatible with other CCN devices, including *Comfort*Link and ComfortVIEW™ controllers.
13. Shall have built-in support for Carrier technician tool.
14. Software upgrades will be accomplished by local download. Software upgrades through chip replacements are not allowed.
15. Shall be shock resistant in all planes to 5G peak, 11ms during operation, and 100G peak, 11ms during storage.
16. Shall be vibration resistant in all planes to 1.5G at 20-300 Hz.
17. Shall support a bus length of 4000 ft (1219 m) max, 60 devices per 1000 ft (305 m) section, and 1 RS-485 repeater per 1000 ft (305 m) sections.

B. (23 09 23.13.B.) *Comfort*Link Unit Controls shall contain:

1. LonWorks is a registered trademark of Echelon Corporation.

1. Four button detailed English scrolling marquee display.
2. CCN (Carrier Comfort Network) capable.
3. Unit control with standard suction pressure transducers and condensing temperature thermistors.
4. Shall provide a 5°F temperature difference between cooling and heating set points to meet ASHRAE 90.1-2016 Energy Standard.
5. Shall provide and display a current alarm list and an alarm history list.
6. Service run test capability.
7. Shall accept input from a CO_2 sensor (both indoor and outdoor).
8. Configurable alarm light shall be provided which activates when certain types of alarms occur.
9. Compressor minimum run time (3 minutes) and minimum off time (5 minutes) are provided.
10. Service diagnostic mode.
11. Economizer control (optional).
12. Control multiple capacity stages.
13. Unit shall be complete with self-contained low voltage control circuit.
14. Unit shall have 0°F low ambient cooling operation.

C. (23 09 23.13.C.) RTU Open protocol, direct digital controller:

1. Shall be ASHRAE 62 compliant.
2. Shall accept 18-30VAC, 50-60Hz, and consume 15VA or less power.
3. Shall have an operating temperature range from –40°F (–40°C) to 130°F (54°C), 10% to 90% RH (non-condensing).
4. Shall include built-in protocol for BACnet[1] (MS/TP and PTP modes), Modbus[2] (RTU and ASCII), Johnson N2 and LonWorks. LonWorks Echelon processor required for all Lon applications shall be contained in separate communication board.
5. Shall allow access of up to 62 network variables (SNVT). Shall be compatible with all open controllers.
6. Baud rate controller shall be selectable using a dip switch.
7. Shall have an LED display independently showing the status of serial communication, running, errors, power, all digital outputs, and all analog inputs.
8. Shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air quality, compressor lock-out, fire shutdown, enthalpy switch, and fan status / filter status / humidity / remote occupancy.
9. Shall provide the following outputs: economizer, variable frequency drive, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, exhaust reversing valve/high fan speed.
10. Shall have built-in surge protection circuitry through solid- state polyswitches. Polyswitches shall be used on incoming power and network connections. Polyswitches will return to normal when the “trip” condition clears.
11. Shall have a battery backup capable of a minimum of 10,000 hours of data and time clock retention during power outages.
12. Shall have built-in support for Carrier technician tool.
13. Shall include an RS-485 protocol communication port, an access port for connection of either a computer or a Carrier technician tool, an RS-485 port for network communication to intelligent space sensors and displays, and a port to connect an optional LonWorks communications card.
14. Software upgrades will be accomplished by either local or remote download. No software upgrades through chip replacements are allowed.

Part 5 — (23 09 33) Electric and electronic control system for HVAC

5.01 (23 09 33.13) Decentralized, rooftop units

A. (23 09 33.13.A) General:

1. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75VA capability.
2. Shall utilize color-coded wiring.
3. Shall include a central control terminal board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, DDC control options, loss of charge, freeze switch, high pressure switches.
4. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

B. (23 09 33.23.B) Safeties:

1. Compressor over-temperature, over-current.
2. Low-pressure switch:
   a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 loss of charge switches. They shall physically prevent the cross-wiring of the safety switches between circuits 1 and 2.
   b. Loss of charge switch shall use different color wire than the high pressure switch.

1. BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).
2. Modbus is a registered trademark of Schneider Electric.

The purpose is to assist the installer and service technician to correctly wire and/or troubleshoot the rooftop unit.

3. High-pressure switch:
   a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 high pressure switches. They shall physically prevent the cross-wiring of the safety switches between circuits 1 and 2.
   b. High-pressure switch shall use different color wire than the low-pressure switch. The purpose is to assist the installer and service technician to correctly wire and/or troubleshoot the rooftop unit.
4. Automatic reset, motor thermal overload protector.

Part 6 — (23 09 93) Sequence of operations for HVAC controls

6.01 (23 09 93.13) Decentralized, Rooftop Units:

A. (23 09 93.13.A) INSERT SEQUENCE OF OPERATION

Part 7 — (23 40 13) Panel air filters

7.01 (23 40 13 13) Decentralized rooftop units:

A. (23 40 13 13.A) Standard filter section:
   1. Shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
   2. Unit shall use only one filter size. Multiple sizes are not acceptable.
   3. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification (23 81 19.13.G).

Part 8 — (23 81 19) Self-contained air conditioners

8.01 (23 81 19.13) Small-Capacity Self-Contained Air Conditioners (50HC**04-14)

A. (23 81 19.13.A) General:
   1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing hermetic scroll compressor(s) for cooling duty and optional electric heat for heating duty.
   2. Factory assembled, single piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
   3. Unit shall use Puron® (R-410A) refrigerant.
   4. Unit shall be installed in accordance with the manufacturer's instructions.
   5. Unit must be selected and installed in compliance with local, state, and federal codes.

B. (23 81 19.13.B.) Quality Assurance:
   1. Unit meets ASHRAE 90.1-2016 and IECC-2015 minimum efficiency requirements.
   2. 3-phase units are ENERGY STAR[1] qualified.
   3. Unit shall be rated in accordance with AHRI Standards 210/240 and 340/360.
   4. Unit shall be designed to conform to ASHRAE 15.
   5. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL or ETL-listed and certified under Canadian standards as a total package for safety requirements.
   6. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
   7. Unit internal insulation linings shall be resistant to mold growth in accordance with "mold growth and humidity" test in ASTM C1338, G21, and UL 181 or comparable test method. Air stream surfaces shall be evaluated in accordance with the "Erosion Test" in UL 181, as part of ASTM C1071.
   8. Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
   9. Roof curb shall be designed to conform to NRCA Standards.
   10. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
   11. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
   12. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.
   13. High Efficiency Motors listed shall meet section 313 of the Energy Independence and Security Act of 2007 (EISA 2007).

C. (23 81 19.13.C) Delivery, storage, and handling:
   1. Unit shall be stored and handled per manufacturer's recommendations.
   2. Lifted by crane requires either shipping top panel or spreader bars.
   3. Unit shall only be stored or positioned in the upright position.

D. (23 81 19.13.D) Project conditions:
   As specified in the contract.

E. (23 81 19.13.E) Operating characteristics:
   1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 340/360 at ± 10% voltage.
   2. Compressor with standard controls shall be capable of operation from 35°F (2°C), ambient

1. Energy Star is registered trademark of the United States Department of Energy.

outdoor temperatures. Accessory kits are necessary if mechanically cooling at ambient temperatures below 35°F (2°C).

3. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
4. Unit shall be factory configured and ordered for vertical supply and return configurations.
5. Unit shall be field convertible from vertical to horizontal airflow on all models. No special kit required on 04-12 models. Supply duct kit required for size 14 models only.
6. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.

F. (23 81 19.13.F) Electrical Requirements:
1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.
2. Control Panel SCCR (short circuit current rating): 5kA RMS at Rated Symmetrical Voltage.

G. (23 81 19.13.G) Unit Cabinet:
1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
2. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum $^{1}/_{2}$-in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the heat compartment.
4. Unit internal insulation linings shall be resistant to mold growth in accordance with "mold growth and humidity" test in ASTM C1338, G21, and UL 181 or comparable test method. Air stream surfaces shall be evaluated in accordance with the "Erosion Test" in UL 181, as part of ASTM C1071.
5. Base of unit shall have a minimum of four locations for factory thru-the-base electrical connections (factory-installed or field-installed) standard. Connections shall be internal to the cabinet to protect from environmental issues.
6. Base Rail:
   a. Unit shall have base rails on a minimum of 2 sides.
   b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
   c. Holes shall be provided in the base rail for moving the rooftop by fork truck.
   d. Base rail shall be a minimum of 16 gage thickness.
7. Condensate pan and connections:
   a. Shall be a sloped condensate drain pan made of a non-corrosive material.
   b. Shall comply with ASHRAE Standard 62.
   c. Shall use a $^{3}/_{4}$-in. 14 NPT drain connection at the end of the drain pan. Connection shall be made per manufacturer's recommendations.
8. Top panel:
   a. Shall be a single piece top panel on sizes 04 through 12, two piece on size 14.
9. Electrical Connections:
   a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
   b. Thru-the-base capability:
      1.) Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
      2.) Optional, factory-approved, water-tight connection method must be used for thru-the-base electrical connections.
      3.) No basepan penetration, other than those authorized by the manufacturer, is permitted.
10. Component access panels (standard):
   a. Cabinet panels shall be easily removable for servicing.
   b. Unit shall have one factory installed, toolless, removable, filter access panel.
   c. Panels covering control box and filters shall have molded composite handles while the blower access door shall have an integrated flange for easy removal.
   d. Handles shall be UV modified, composite. permanently attached, and recessed into the panel.
   e. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
   f. Collars shall be removable and easily replaceable using manufacturer recommended parts.

H. (23 81 19.13.H.) Coils:
1. Standard Aluminum Fin/Copper Tube Coils:
   a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
   b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.

c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.

2. Optional Pre-coated aluminum-fin condenser coils (3-phase models only):
   a. Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments.
   b. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.
   c. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.
   d. Corrosion durability of fin stock shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.
   e. Corrosion durability of fin stock shall be confirmed through testing to have no visible corrosion after 48 hour immersion in a room temperature solution of 5% salt, 1% acetic acid.
   f. Fin stock coating shall pass 2000 hours of the following: one week exposure in the prohesion chamber followed by one week of accelerated ultraviolet light testing. Prohesion chamber: the solution shall contain 3.5% sodium chloride and 0.35% ammonium sulfate. The exposure cycle is one hour of salt fog application at ambient followed by one hour drying at 95°F (35°C).
3. Optional Copper-fin evaporator and condenser coils (3-phase models only):
   a. Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets.
   b. Galvanized steel tube sheets shall not be acceptable.
   c. A polymer strip shall prevent coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.
4. Optional E-coated aluminum-fin evaporator and condenser coils (3-phase models only):
   a. Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins.
   b. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.
   c. Color shall be high gloss black with gloss per ASTM D523-89.
   d. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges.
   e. Superior hardness characteristics of 2H per ASTM D3363-92A and cross-hatch adhesion of 4B-5B per ASTM D3359-93.
   f. Impact resistance shall be up to 160 in.-lb (ASTM D2794-93).
   g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D224-92 and ASTM D870-92).
   h. Corrosion durability shall be confirmed through testing to be no less than 6000 hours salt spray per ASTM B117-90.

I. (23 81 19.13.I) Refrigerant components:
   1. Refrigerant circuit shall include the following control, safety, and maintenance features:
      a. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain removable power element to allow change out of power element and bulb without removing the valve body.
      b. Refrigerant filter drier.
      c. Service gage connections on suction and discharge lines.
      d. Pressure gage access through a specially designed access port in the top panel of the unit.
   2. There shall be gage line access port in the skin of the rooftop, covered by a black, removable plug:
      a. The plug shall be easy to remove and replace.
      b. When the plug is removed, the gage access port shall enable maintenance personnel to route their pressure gage lines.
      c. This gage access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
      d. The plug shall be made of a leak proof, UV-resistant, composite material.
   3. Compressors:
      a. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
      b. Models shall be available with single compressor/single stage cooling designs on 04-07 models, single compressor/2-stage cooling on 07 size, and 2 compressor/2-stage cooling models on 08-14 sizes.
      c. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
      d. Compressors shall be internally protected from high discharge temperature conditions.
      e. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.

f. Compressor shall be factory mounted on rubber grommets.

g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.

h. Crankcase heaters shall be utilized on all models to protect compressor with specific refrigerant charge.

J. (23 81 19.13.J) Filter section:

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

K. (23 81 19.13.K) Evaporator fan and motor:

1. Evaporator fan motor:
   a. Shall have permanently lubricated bearings.
   b. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
   c. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
2. Electric Drive (Direct Drive) X13 - 5 Speed/ Torque Evaporator Fan:
   a. Multi speed motor with easy quick adjustment settings.
   b. Blower fan shall be double-inlet type with forward-curved blades.
   c. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
   d. Standard on all 04-06 models with 208/ 230/1/60 operation without Humidi-MiZer system.
   e. Standard on all 04-06 3-phase models without Humidi-MiZer system, with optional belt drive.
3. Belt-driven evaporator fan:
   a. Belt drive shall include an adjustable-pitch motor pulley and belt break protection system.
   b. Shall use rigid pillow block bearing system with lubricate fittings at are accessible or lubrication line.
   c. Blower fan shall be double-inlet type with forward-curved blades.
   d. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
   e. Standard on all 04-07 sizes and 04-06 size models with Humidi-MiZer system. Optional on all 04-06 3-phase models.

L. (23 81 19.13.L) Condenser Fans and Motors:

1. Condenser fan motors:
   a. Shall be a totally enclosed motor.
   b. Shall use permanently lubricated bearings.
   c. Shall have inherent thermal overload protection with an automatic reset feature.
   d. Shall use a shaft down design on 04 to 12 models and shaft up design on size 14 with rain shield.
2. Condenser fans:
   a. Shall be a direct driven propeller type fan.
   b. Shall have galvalum blades riveted to corrosion resistant steel spiders and shall be dynamically balanced.

M. (23 81 19.13.M) Special Features Options and Accessories:

1. EnergyX® and Economizer:
   a. System Description:
      1.) One-piece EnergyX (Energy Recovery Ventilation) unit is an electrically controlled ventilation air pre-conditioner utilizing an AHRI 1060 certified Energy Recovery Cassette to reduce the cooling and heating loads placed on the primary HVAC unit by untreated outdoor air. Building exhaust air shall be introduced to the EnergyX unit through ductwork. Unit shall be designed as a factory-installed option to be used with WeatherMaster 50HC units for use in vertical return applications only.
   b. Quality Assurance:
      1.) Unit shall be designed in accordance with UL Standard 1995.
      2.) Energy Recovery unit shall be ETL tested and certified.
      3.) Rooftop unit and Energy Recovery unit shall be ETL certified as one single system.
      4.) Roof curb or curb extension shall be designed to conform to NRCA Standards.
      5.) Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
      6.) Unit casing shall be capable of withstanding ASTM No. 141 (Method 6061) 500 hour salt spray test.
      7.) Unit shall contain ARI 1060 certified Energy Recovery Cassette.
      8.) Unit leakage rates shall be capable of meeting ASHRAE Standard 62.1 requirements for use of class-2 exhaust with class-1 ventilation air.

c. Products:
   1.) Equipment (Standard):
   General: The EnergyX unit shall be a factory assembled, single piece unit. Contained within the unit enclosure shall be all factory wiring with a single, predetermined point of power input and a single point of 24-volt control wiring.
   2.) Unit Cabinet:
      a) Unit cabinet shall be constructed of galvanized steel coated with a prepainted baked enamel finish.
      b) All models shall have hoods installed over outside air intake and exhaust openings. Outside air hood shall have aluminum water entrainment filters.
      c) All models have 1-in., 2 pound density fiberglass insulation.
      d) Hinged access doors with compression latches shall be provided on all units for access to fans and filters. Hinged doors shall be provided with at least one handle capable of being locked.
      e) Exhaust air stream shall have backdraft dampers to prevent air penetration during off cycles.
      f) Holes shall be provided in the base rails for rigging shackles to facilitate overhead rigging.
   3.) Blowers:
      a) Blowers shall be direct drive with variable speed motors.
      b) Blower wheel shall be made of steel with a corrosion resistant finish. It shall be dynamically balanced, double-inlet type with backward-curved blades.
      c) Blower shall be mounted on neoprene vibration isolation pads.
      d) Motor shall be high efficiency and have thermal overload protection.
   4.) Filter Section:
      a) Standard filter section shall accept commercially available, 2-in. pleated filter(s).
   5.) Controls and Safeties:
      a) The EnergyX unit shall operate in conjunction with rooftop unit fan.
   6.) Electrical Requirements:
      a) All unit power wiring shall enter unit cabinet at a single location.
   7.) Energy Recovery Cassette:
      a) The energy recovery media shall have a minimum of 70% effectiveness at nominal unit airflow.
      b) Energy wheel performance shall be AHRI Standard 1060 Certified and bear the AHRI Certified Product Seal.
      c) The energy recovery cassette shall be an UL Recognized component for electrical and fire safety.
      d) The wheel shall be coated with silica gel desiccant, permanently bonded without the use of binders or adhesives.
      e) Coated wheels shall be washable with detergent or alkaline coil cleaner and water.
      f) The silica gel shall not dissolve or deliquesce in the presence of water or high humidity.
      g) The substrate shall be made of a lightweight polymer and shall not degrade or require additional coatings for application in coastal environments.
      h) The wheel polymer layers shall be wound continuously with one flat and one structured layer in an ideal parallel plate geometry providing laminar flow and minimum pressure drop.
      i) The polymer layers shall be captured in a stainless steel wheel frame or aluminum and stainless steel segment frames that provide a rigid and self-supporting matrix.
      j) Energy recovery wheels greater than 19 inches in diameter shall be provided with removable wheel segments.
      k) Wheel frame shall be a welded hub, spoke and rim assembly of stainless, plated, and or coated steel and shall be self supporting without the wheel segments in place.
      l) Wheel segments shall be removable without the use of tools to facilitate maintenance and cleaning.
      m) Wheel rim shall be continuous rolled stainless steel and the wheel shall be connected to the shaft by means of taper locks.
      n) Wheel bearings shall provide an L-10 life of 400,000 hours.
      o) Drive belts of stretch urethane shall be provided for wheel rim drive without the need for external tensioners or adjustment.

d. Special Features (Options and Accessories):
   1.) Supply and exhaust air frost control option:
      a) Factory-installed frost protection module shall sense pressure differential across the energy recovery cassette.
      b) Supply blower shall be shut-off if the pressure differential across the energy recovery cassette exceeds an adjustable set point. Blower shall

remain off for an adjustable time period.
c) Exhaust blower and wheel shall remain in operation in order to remove any frost build-up on the wheel.

2.) EnergyX maintenance indicator package:
a) A factory-installed switch shall monitor EnergyX blowers and wheel motor amp draw and send a signal to field-supplied 24-v indicator upon amperage surge that maintenance required.

3.) Filter maintenance indicator:
a) A factory-installed differential pressure switch shall measure pressure drop across the outside air filter and activate a field-supplied 24-v indicator when airflow is restricted. It shall not interrupt EnergyX operation. Switch set point shall be adjustable.

4.) EnergyX free cooling with enthalpy and stop/jog control:
a) An enthalpy sensor shall prevent the wheel from rotating if the outside air conditions are acceptable for free cooling. Both exhaust and supply blowers will remain on.
b) Stop-Jog-Control shall energize the wheel periodically during the free cooling operation of the EnergyX to prevent dirt build-up on the wheel.

5.) Economizer Option:
a) The economizer shall be integrated in the energy recovery module and shall allow air to bypass the energy recovery wheel for free cooling and fail safe operation. Tilting wheel mechanisms shall not be allowed.
b) The economizer damper shall be motorized with factory installed, 24-volt Belimo actuator.
c) The EnergyX shall be capable of using the economizer in a free cooling operation.
d) The economizer shall utilize enthalpy sensor controls when in the economizer mode.

6.) CO_2 Sensor:
a) The modulating airflow energy recovery unit shall be capable of incorporating a CO_2 sensor for use with Demand Controlled Ventilation.
b) The CO_2 sensor shall connect to the base rooftop unit's digital controller.
c) The modulating airflow energy recovery unit shall use at a minimum, a high and low CFM airflow set point when a CO_2 sensor is used.

7.) Roof Curb Extension Accessory for use with EnergyX units:
a) The energy recovery module shall us the standard rooftop unit rooftop curb.
b) Rooftop extensions, support rails or other devices that come in contact with the roof surface to support the energy recovery module shall not be allowed.
c) A horizontal adapter curb shall be used to convert vertical return air applications into horizontal return air applications. The supply airflow shall be convertible via the base rooftop unit operation and restrictions.

2. Staged Air Volume System (SAV™) for 2-stage cooling models only:
a. Evaporator fan motor:
1.) Shall have permanently lubricated bearings.
2.) Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating.
3.) Shall be Variable Frequency duty and 2-speed control.
4.) Shall contain motor shaft grounding ring to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground.

3. Variable Frequency Drive (VFD). Only available on 2-speed indoor fan motor option (SAV):
a. Factory-supplied VFDs qualify, through ABB for a 12-month warranty from date of commissioning or 18 months from date of sale, whichever occurs first.
b. Shall be installed inside the unit cabinet, mounted, wired and tested.
c. Shall contain Electromagnetic Interference (EMI) frequency protection.
d. Insulated Gate Bi-Polar Transistors (IGBT) used to produce the output pulse width modulated (PWM) waveform, allowing for quiet motor operation.
e. Self diagnostics with fault and power code LED indicator. Field accessory Display Kit available for further diagnostics and special setup applications.
f. RS485 capability standard.
g. Electronic thermal overload protection.
h. 5% swinging chokes for harmonic reduction and improved power factor.
i. All printed circuit boards shall be conformal coated.

4. Integrated EconoMi$er® IV, EconoMi$er 2, and EconoMi$er X low leak rate models. (Factory-installed on 3-phase models only. Field installed on all 3 and 1-phase models):

a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory-installed option.
c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
f. Low leak rate models shall be equipped with dampers not to exceed 2% leakage at 1 in. wg pressure differential.
g. Economizer controller on EconoMi$er IV models shall be Honeywell W7212 that provides:
   1.) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.
   2.) Functions with solid state analog enthalpy or dry bulb changeover control sensing.
   3.) LED indicators for: when free cooling is available, when module is in DCV mode, when exhaust fan contact is closed.
h. Economizer controller on EconoMi$er X models shall be the Honeywell W7220 that provides:
   1.) 2-line LCD interface screen for setup, configuration and troubleshooting.
   2.) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.
   3.) Sensor failure loss of communication identification.
   4.) Automatic sensor detection.
   5.) Capabilities for use with multiple-speed indoor fan systems.
   6.) Utilize digital sensors: Dry bulb and Enthalpy.
i. Economizer controller on EconoMi$er 2 models with PremierLink™ controller shall be 4 to 20mA design and controlled by the PremierLink controller. PremierLink does not comply with California Title 24 Fault Detection and Diagnostic (FDD) requirements.
j. Economizer controller on EconoMi$er 2 models with RTU Open controller shall be a 4 to 20mA design controlled directly by the RTU Open controller. RTU Open controller meets California Title 24 Fault Detection and Diagnostic (FDD) requirements.
k. Shall be capable of introducing up to 100% outdoor air.
l. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1-2016 and IECC-2015 requirements.
m. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
n. Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory-installed only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.
o. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.
p. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy.
q. Dampers shall be completely closed when the unit is in the unoccupied mode.
r. Economizer controller shall accept a 2 to 10 Vdc CO_2 sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.
s. Compressor lockout temperature on W7220 is adjustable from –45°F to 80°F (–43°C to 27°C), set at a factory default of 32°F (0°C). Others shall open at 35°F (2°C) and close at 50°F (10°C).
t. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
u. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.

5. Integrated EconoMi$er2, and EconoMi$er X Ultra Low Leak rate models. (Factory-installed on 3 phase models only. Field-installed on all 3 and 1 phase models):
   a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
   b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory-installed option.

c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.

d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.

e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control

f. Ultra Low Leak design meets California Title 24 section 140.4 and, ASHRAE 90.1-2016 and IECC-2015 requirements for 4 cfm per sq. ft. on the outside air dampers and 10 cfm per sq. ft. on the return dampers.

g. Economizer controller on EconoMi$er X models shall be the Honeywell W7220 that provides:
   1.) 2-line LCD interface screen for setup, configuration and troubleshooting
   2.) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.
   3.) Sensor failure loss of communication identification
   4.) Automatic sensor detection
   5.) Capabilities for use with multiple-speed indoor fan systems
   6.) Utilize digital sensors: Dry bulb and Enthalpy

h. Economizer controller on EconoMi$er 2 models with RTU Open controller shall be a 4 to 20mA design controlled directly by the RTU Open controller. RTU Open controller meets California Title 24 Fault Detection and Diagnostic (FDD) requirements.

i. Shall be capable of introducing up to 100% outdoor air.

j. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1-2016 and IECC-2015 requirements.

k. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.

l. Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory-installed only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.

m. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.

n. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy.

o. Dampers shall be completely closed when the unit is in the unoccupied mode.

p. Economizer controller shall accept a 2 to 10 Vdc CO_2 sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.

q. Compressor lockout temperature on W7220 is adjustable from –45°F to 80°F, set at a factory default of 32°F (0°C). Others shall open at 35°F (2°C) and closes at 50°F (10°C).

r. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.

s. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.

6. Two-Position Damper (Factory or Field-installed on all 3 phase models):
   a. Damper shall be a two-position damper. Damper travel shall be from the full closed position to the field adjustable %-open setpoint.
   b. Damper shall include adjustable damper travel from 25% to 100% (full open).
   c. Damper shall include single or dual blade, gear driven dampers and actuator motor.
   d. Actuator shall be direct coupled to damper gear. No linkage arms or control rods shall be acceptable.
   e. Damper will admit up to 100% outdoor air for applicable rooftop units.
   f. Damper shall close upon indoor (evaporator) fan shutoff and/or loss of power.
   g. The damper actuator shall plug into the rooftop unit's wiring harness plug. No hard wiring shall be required.
   h. Outside air hood shall include aluminum water entrainment filter.

7. Manual damper:
   a. Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 25% or 50% outdoor air for year round ventilation.

8. Humidi-MiZer® Adaptive Dehumidification System (3-phase models only):
   a. The Humidi-MiZer Adaptive Dehumidification System shall be factory-installed and shall provide greater dehumidification of the occupied space by two modes of dehumidification operations in addition to its normal design cooling mode:

1.) Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil when both temperature and humidity in the space are not satisfied.
2.) Hot gas reheat mode shall mix a portion of the hot gas from the discharge of the compressor with the hot liquid refrigerant leaving the condenser coil to create a two-phase heat transfer in the system, resulting in a neutral leaving air temperature when only humidity in the space is not satisfied.
3.) Includes head pressure controller.

9. Head Pressure Control Package (Motormaster®):
   a. Controller shall control coil head pressure by condenser-fan speed modulation or condenser-fan cycling and wind baffles.
   b. Shall consist of solid-state control and condenser-coil temperature sensor to maintain condensing temperature at outdoor ambient temperatures down to –20°F (–29°C).
10. Low Ambient Controller (Factory-installed only):
   a. Controller shall control coil head pressure by condenser-fan speed modulation or condenser-fan cycling and wind baffles.
      1.) Shall consist of solid-state control and condenser-coil temperature sensor to maintain condensing temperature at outdoor ambient temperatures down to 0°F (–18°C). (Not available on 11 size models as standard unit cooling operation down to 0°F /–18°C).
11. Condenser Coil Hail Guard Assembly (Factory-installed option on 3-phase models. Field-installed on all 3 and 1 phase models):
   a. Shall protect against damage from hail.
   b. Shall be of louvered style.
12. Unit-Mounted, Non-Fused Disconnect Switch:
   a. Switch shall be factory-installed, internally mounted.
   b. National Electric Code (NEC) and UL or ETL approved non-fused switch shall provide unit power shutoff.
   c. Shall be accessible from outside the unit.
   d. Shall provide local shutdown and lockout capability.
   e. Sized only for the unit as ordered from the factory. Does not accommodate field-installed devices.
13. HACR Breaker:
   a. These manual reset devices provide overload and short circuit protection for the unit. Factory wired and mounted with the units, with access cover to help provide environmental protection. On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.
   b. Sized only for the unit as ordered from the factory. Does not accommodate field-installed devices.
   c. Convenience outlet:
      1.) Powered convenience outlet. (Not available on single phase models):
         a) Outlet shall be powered from main line power to the rooftop unit.
         b) Outlet shall be powered from line side or load side of disconnect by installing contractor, as required by code. If outlet is powered from load side of disconnect, unit electrical ratings shall be UL certified and rated for additional outlet amperage.
         c) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
         d) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
         e) Voltage required to operate convenience outlet shall be provided by a factory-installed step down transformer.
         f) Outlet shall be accessible from outside the unit.
         g) Outlet shall include a field-installed "Wet in Use" cover.
      2.) Factory-installed non-powered convenience outlet:
         a) Outlet shall be powered from a separate 115-120v power source.
         b) A transformer shall not be included.
         c) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
         d) Outlet shall include 15 amp GFI receptacles.
         e) Outlet shall be accessible from outside the unit.
         f) Outlet shall include a field-installed "Wet in Use" cover.
      3.) Field-installed non-powered convenience outlet:
         a) Outlet shall be powered from a separate 115-120v power source.
         b) A transformer shall not be included.
         c) Outlet shall be field-installed and internally mounted with easily accessible 115-v female receptacle.
         d) Outlet shall include 20 amp GFI receptacles. This kit provides a flexible installation method which allows code compliance for height requirements of the GFCI outlet from the finished roof surface as well as the

capability to relocate the outlet to a more convenient location.

e) Outlet shall be accessible from outside the unit.

f) Outlet shall include a field-installed "Wet in Use" cover.

14. Thru-the-Base Connectors:
    a. Kits shall provide connectors to permit electrical connections to be brought to the unit through the unit basepan.
    b. Minimum of four connection locations per unit.
15. Propeller Power Exhaust:
    a. Power exhaust shall be used in conjunction with an integrated economizer.
    b. Independent modules for vertical or horizontal return configurations shall be available.
    c. Horizontal power exhaust shall be mounted in return ductwork.
    d. Power exhaust shall be controlled by economizer controller operation. Exhaust fans shall be energized when dampers open past the 0 to 100% adjustable setpoint on the economizer control.
16. Roof Curbs (Vertical):
    a. Full perimeter roof curb with exhaust capability providing separate air streams for energy recovery from the exhaust air without supply air contamination.
    b. Formed galvanized steel with wood nailer strip and shall be capable of supporting entire unit weight.
        1.) Permits installation and securing of ductwork to curb prior to mounting unit on the curb.
17. High-Static Indoor Fan Motor(s) and Drive(s):
    a. High-static motor(s) and drive(s) shall be factor-installed to provide additional performance range.
18. Condenser Coil Grille:
    a. Shall protect against damage from hail.
    b. Shall be of louvered style.
19. Outdoor Air Enthalpy Sensor:
    a. The outdoor air enthalpy sensor shall be used to provide single enthalpy control. When used in conjunction with a return air enthalpy sensor, the unit will provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.
20. Return Air Enthalpy Sensor:
    a. The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.
21. Indoor Air Quality (CO_2) Sensor:
    a. Shall be able to provide demand ventilation indoor air quality (IAQ) control.
    b. The IAQ sensor shall be available in duct mount, wall mount, or wall mount with LED display. The setpoint shall have adjustment capability.
22. Smoke detectors (factory or field installed only):
    a. Shall be a four-wire controller and detector.
    b. Shall be environmental compensated with differential sensing for reliable, stable, and drift-free sensitivity.
    c. Shall use magnet-activated test/reset sensor switches.
    d. Shall have tool-less connection terminal access.
    e. Shall have a recessed momentary switch for testing and resetting the detector.
    f. Controller shall include:
        1.) One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel.
        2.) Two Form-C auxiliary alarm relays for interface with rooftop unit or other equipment.
        3.) One Form-C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station.
        4.) Capable of direct connection to two individual detector modules.
        5.) Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.
23. Horn/Strobe Annunciator:
    a. Provides an audible/visual signaling device for use with factory-installed option or field-installed accessory smoke detectors.
        1.) Requires installation of a field-supplied 24-v transformer suitable for 4.2 VA (AC) or 3.0 VA (DC) per horn/strobe accessory.
        2.) Requires field-supplied electrical box, North American 1-gang box, 2-in. (51 mm) x 4-in. (102 mm).
        3.) Shall have a clear colored lens.
24. Winter start kit:
    a. Shall contain a bypass device around the low pressure switch.
    b. Shall be required when mechanical cooling is required down to 25°F (–4°C).
    c. Shall not be required to operate on an economizer when below an outdoor ambient of 40°F (4°C).

Guide specifications (cont)

25. Time Guard:
    a. Shall prevent compressor short cycling by providing a 5 minute delay (±2 minutes) before restarting a compressor after shutdown for any reason.
    b. One device shall be required per compressor.
26. Condensate Overflow Switch:
    a. This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:
        1.) Indicator light – solid red (more than 10 seconds on water contact – compressors disabled), blinking red (sensor disconnected).
        2.) 10 second delay to break – eliminates nuisance trips from splashing or waves in pan (sensor needs 10 seconds of constant water contact before tripping).
        3.) Disables the compressor(s) operation when condensate plug is detected, but still allows fans to run for Economizer.
27. Electric Heat:
    a. Heating Section:
        1.) Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
        2.) Heater assemblies are provided with integral fusing in the single point box (if applicable) for protection of internal heater circuits not exceeding 48 amps each. Electric heaters other than CRHEATER113B00-116B00 use 24v control side break/auto-reset or line-break/auto-reset limit switches to protect the unit against over-temperature situations. CRHEATER113B00-116B00 electric heater applications use a combination of 24v control side break/auto-reset, line-break/non-resettable "one shot" limit switches to protect the unit against over-temperature situations. All heaters use magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.
28. Hinged Access Panels:
    a. Shall provide easy access through integrated quarter turn latches.
    b. Shall be on major panels of filter, control box, fan motor, and compressor
29. Display Kit for Variable Frequency Drive:
    a. Kit allows the ability to access the VFD controller programs to provide special setup capabilities and diagnostics.
    b. Kit contains display module and communication cable.
    c. Display Kit can be permanently installed in the unit or used on any SAV system VFD controller as needed.
30. Foil faced insulation:
    a. Throughout unit cabinet air stream, nonfibrous and cleanable foil faced insulation is used.
31. California OSHPD Seismic Certification Label:
    a. Units meet the seismic capacity requirements of the International Code Council Evaluation Service (ICC-ES) document AC156 (Acceptance Criteria for Seismic Qualification by Shake-Table Testing of Nonstructural Components and Systems) and per International Building Code (IBC 2009) at an SDS (g) value of 2.00 z/h=1.0, Ip=1.5 and certified by independent structural engineers.
    b. Units shall include a certification label that meets the CA OSHPD Special Seismic Certification pre-approval labeling requirements on the external chassis of the unit.
    c. OSHPD not available on units with factory-installed Humidi-MiZer®, HACR breaker, low ambient controls, hail guards, or EnergyX system.