

IES Indoor Report

Photometric Filename:PHDL10WCCT-3K-2019-08-31.IES

Indoor Luminaire Photometric Data

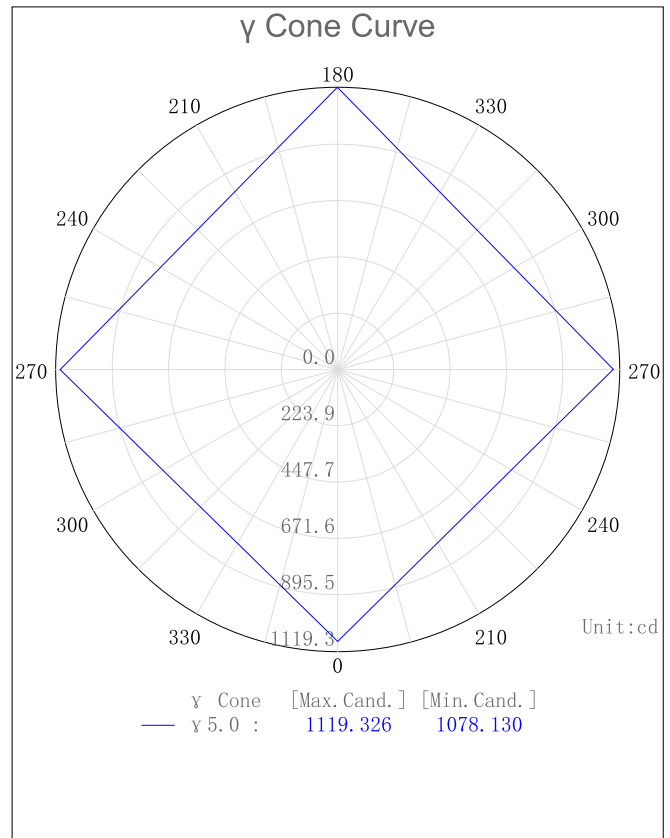
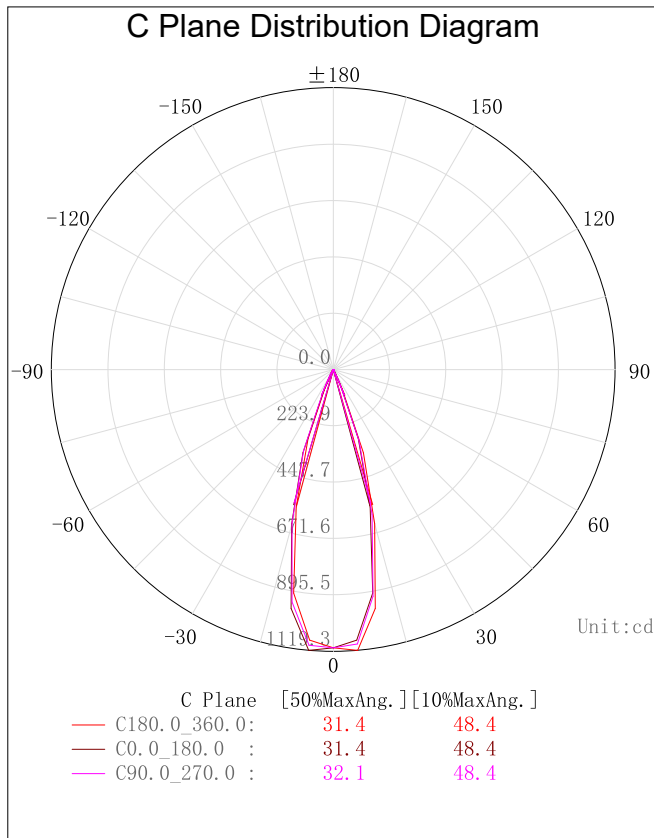
Description Information

| | | |
|--|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Date: 2019/08/31 |
| Manufacture: | ShldAngle(°): | Test Machine:GON-2000 |
| Test Lab: | Frequency(Hz): | Lamp CCT(K): Ra: |
| Lum. Size (W*L*H):0.085m*0.085m*0.092m | Lum. Area(m2):0.015 | Lum. W(kg): 2.000 |
| Test System: C, γ | Test Step: C=90.0 γ=5.0 | Temp.(°C): 25 |
| | | Humidity(%): |

Character Parameter

| Lamp Speciality Parameter | | Luminaire Speciality Parameter | |
|--|----------------------------------|--|--|
| Rated Flux(lm): 324.410 | Luminaire Flux: 324.415lm | Field Angle(10%Imax): 48.4 | |
| Rated Power(W): | Luminaire Efficiency: 100.00% | Down Lumens&Percent: 324.415lm 100.00% | |
| Rated Voltage(V): | Luminaire EER(lm/W): 35.811 | Up Lumens&Percent: 0.000lm 0.00% | |
| Tested Power(W): 9.059 | Max. Cand. (cd): 1119.326 | S/MH: CO_a180=0.531 C90_270=0.537 | |
| Lamps' Inside: 1 | Max Cand@Ang. (°): C=180.0 γ=5.0 | CIE Type: Semi-Direct | |
| Tested Electric:U=240.0V, I=0.039A, PF=0.000 | Beam Angle(50%Imax): 31.4 | ErP Φ use(90°): 324.134lm | |
| Lamp Size(W*L*H):0.085m*0.085m*0.092m | Left=-15.1 Right=16.3 | IRF: 732.515% | |

Lighting Distribution Diagram



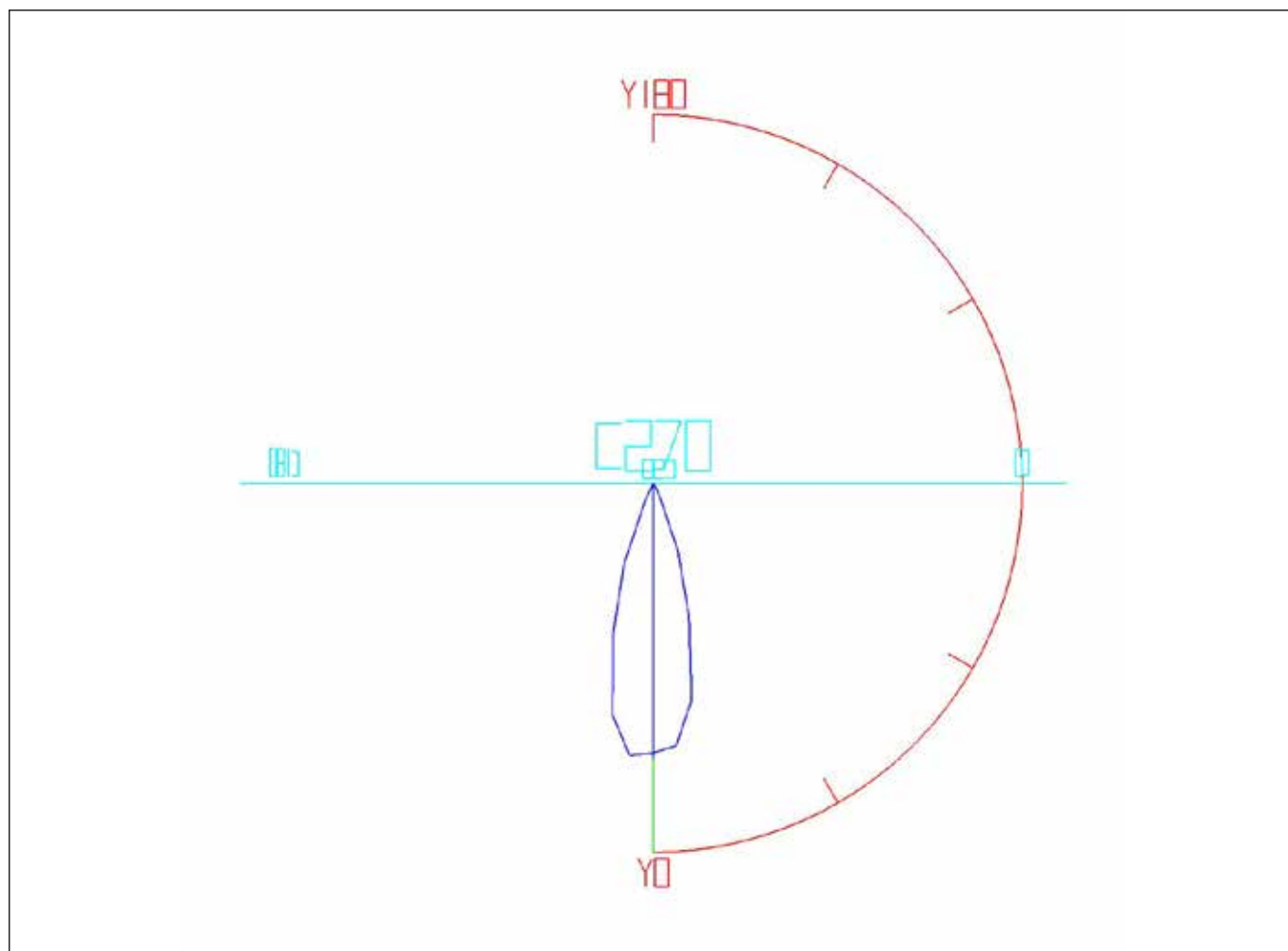
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3D Light Intensity Distribution Modal

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |

3D Light Intensity Distribution Modal



Curves: 3D Model — Fixture — Vert. HUD — Hori. HUD —
View Angles: Orient:0 Tilt:0 Roll:0 Spin:0

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Zonal Flux Tabulation

| Zone (y) | Zone Flux (lm) | Sums Flux (lm) | Zone%Lamp | Sums%Lamp |
|-------------|----------------|----------------|-----------|-----------|
| 0.0-5.0 | 26.33 | 26.33 | 8.12 | 8.12 |
| 5.0-10.0 | 72.50 | 98.83 | 22.35 | 30.46 |
| 10.0-15.0 | 91.07 | 189.90 | 28.07 | 58.54 |
| 15.0-20.0 | 76.48 | 266.38 | 23.57 | 82.11 |
| 20.0-25.0 | 41.38 | 307.76 | 12.75 | 94.87 |
| 25.0-30.0 | 11.12 | 318.88 | 3.43 | 98.29 |
| 30.0-35.0 | 3.12 | 321.99 | 0.96 | 99.25 |
| 35.0-40.0 | 1.37 | 323.36 | 0.42 | 99.68 |
| 40.0-45.0 | 0.48 | 323.84 | 0.15 | 99.83 |
| 45.0-50.0 | 0.08 | 323.92 | 0.02 | 99.85 |
| 50.0-55.0 | 0.01 | 323.93 | 0.00 | 99.85 |
| 55.0-60.0 | 0.00 | 323.93 | 0.00 | 99.85 |
| 60.0-65.0 | 0.02 | 323.95 | 0.01 | 99.86 |
| 65.0-70.0 | 0.08 | 324.03 | 0.02 | 99.88 |
| 70.0-75.0 | 0.17 | 324.20 | 0.05 | 99.94 |
| 75.0-80.0 | 0.17 | 324.37 | 0.05 | 99.99 |
| 80.0-85.0 | 0.05 | 324.41 | 0.01 | 100.00 |
| 85.0-90.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 90.0-95.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 95.0-100.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 100.0-105.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 105.0-110.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 110.0-115.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 115.0-120.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 120.0-125.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 125.0-130.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 130.0-135.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 135.0-140.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 140.0-145.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 145.0-150.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 150.0-155.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 155.0-160.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 160.0-165.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 165.0-170.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 170.0-175.0 | 0.00 | 324.41 | 0.00 | 100.00 |
| 175.0-180.0 | 0.00 | 324.41 | 0.00 | 100.00 |

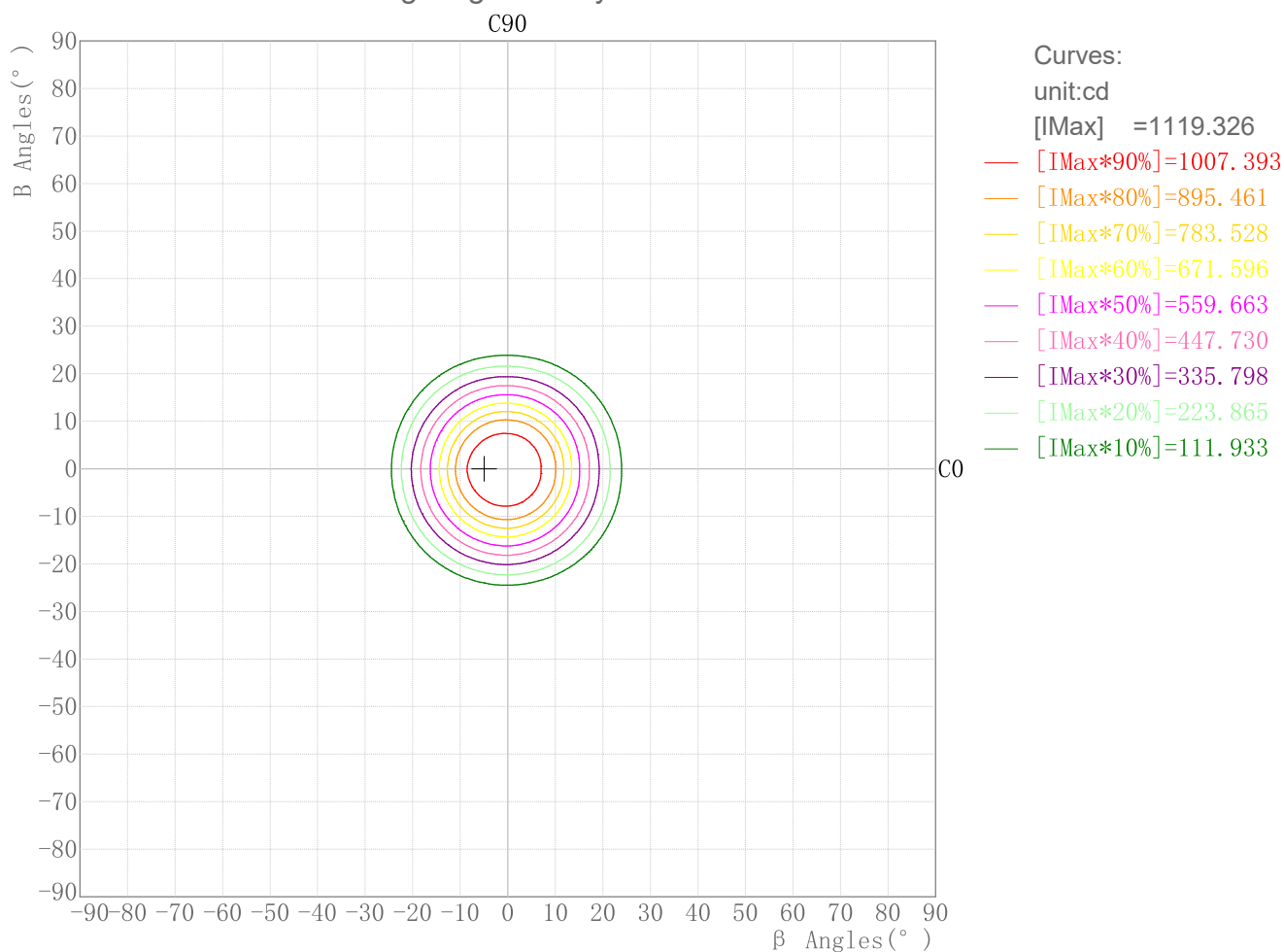
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Rectangle ISO Lighting Intensity Diagram

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |

ISO Lighting Intensity Curve



Maximum Light Intensity(cd): 1119.33

Maximum Cand.@Angle: H=-5.0°,V=0.0°

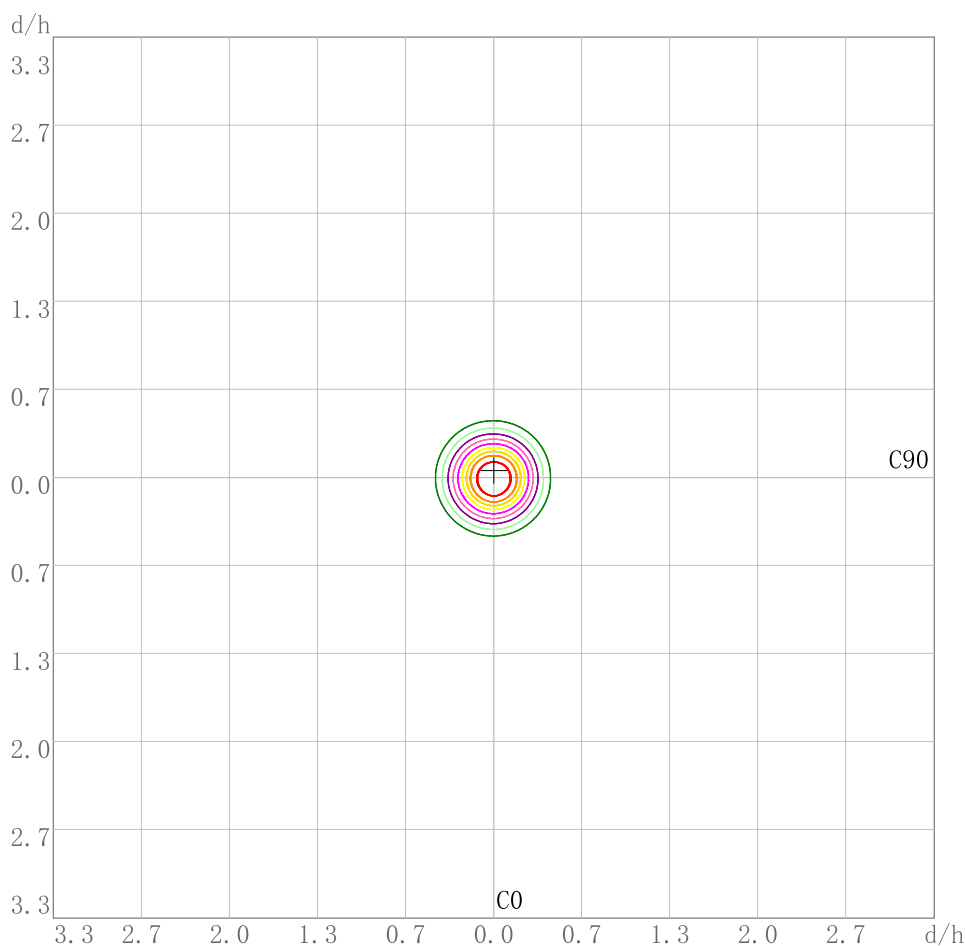
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Plane ISO-Illuminance Diagram

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |

Plane ISO-Illuminance Curve



Working Plane Luminaire Mounting Height(m): 3.00
 Working Plane Maximum Illuminance(lx): 123.20
 Working Plane Maximum Illuminance Position(d/h): H0.0 V-0.1

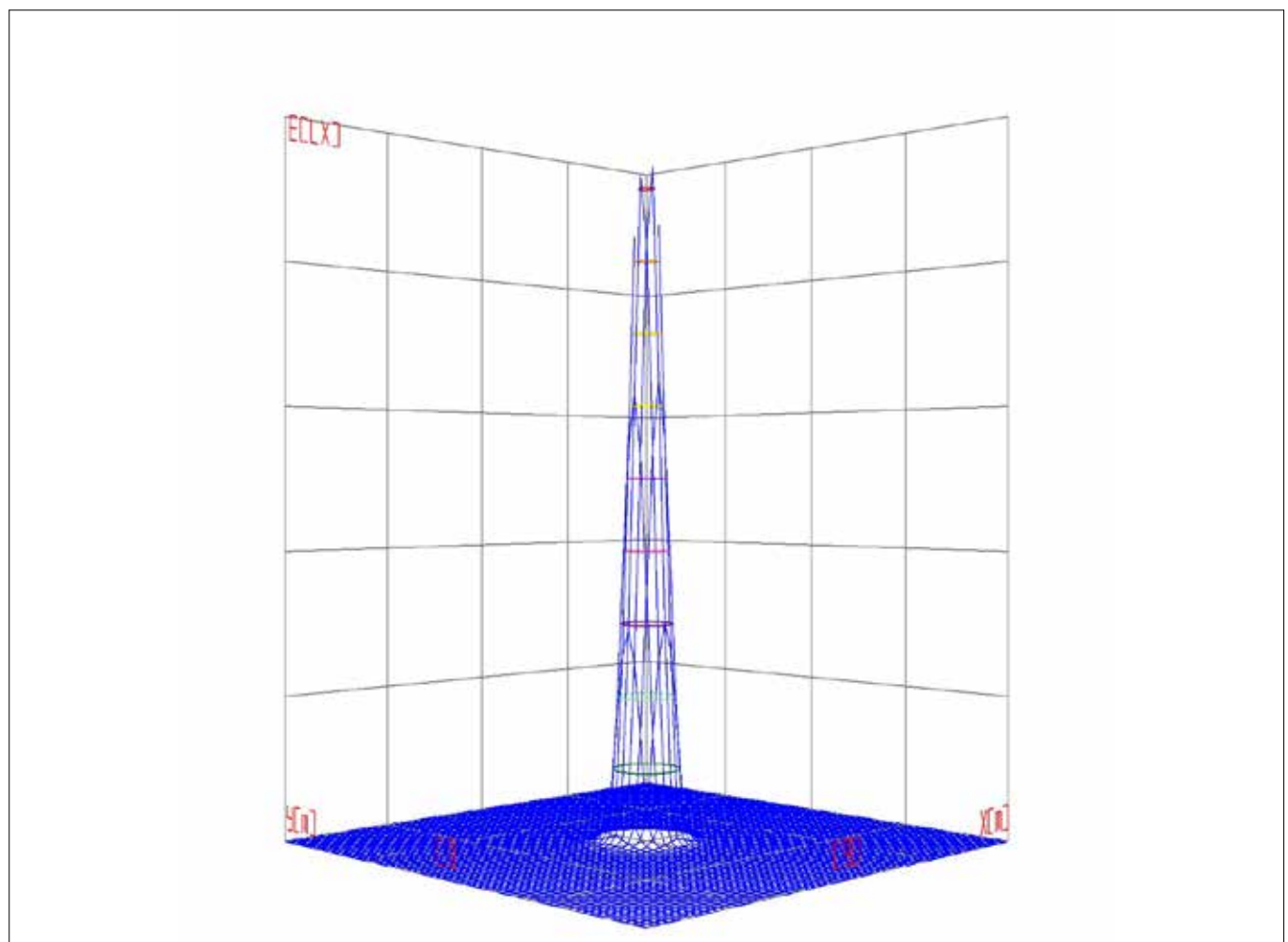
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3D Plane ISO Illuminance Diagram

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |

3D Plane Illuminance Modal



Curves: 3D Model — 90% — 80% — 70% — 60% — 50% — 40% — 30% — 20% — 10% —
View Angles(deg): 0 Height(m): 3.0 Distance(m): 10.0

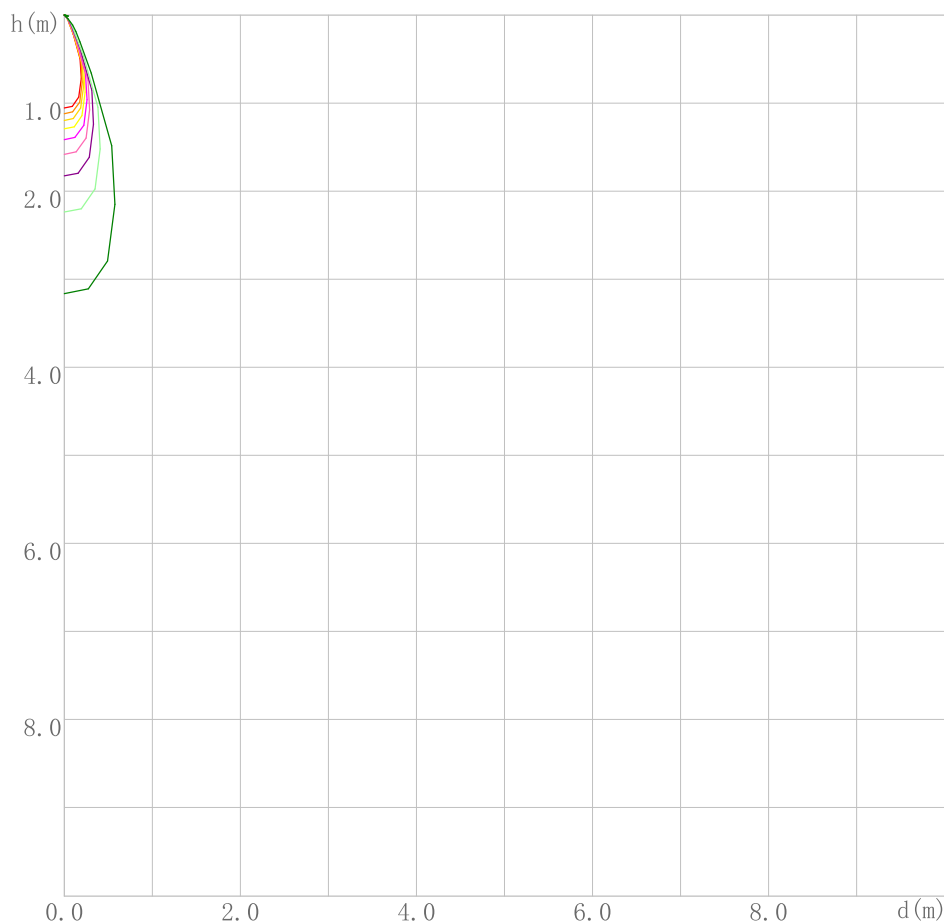
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Space ISO Illuminance Diagram

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |

Space ISO Illuminance Curve

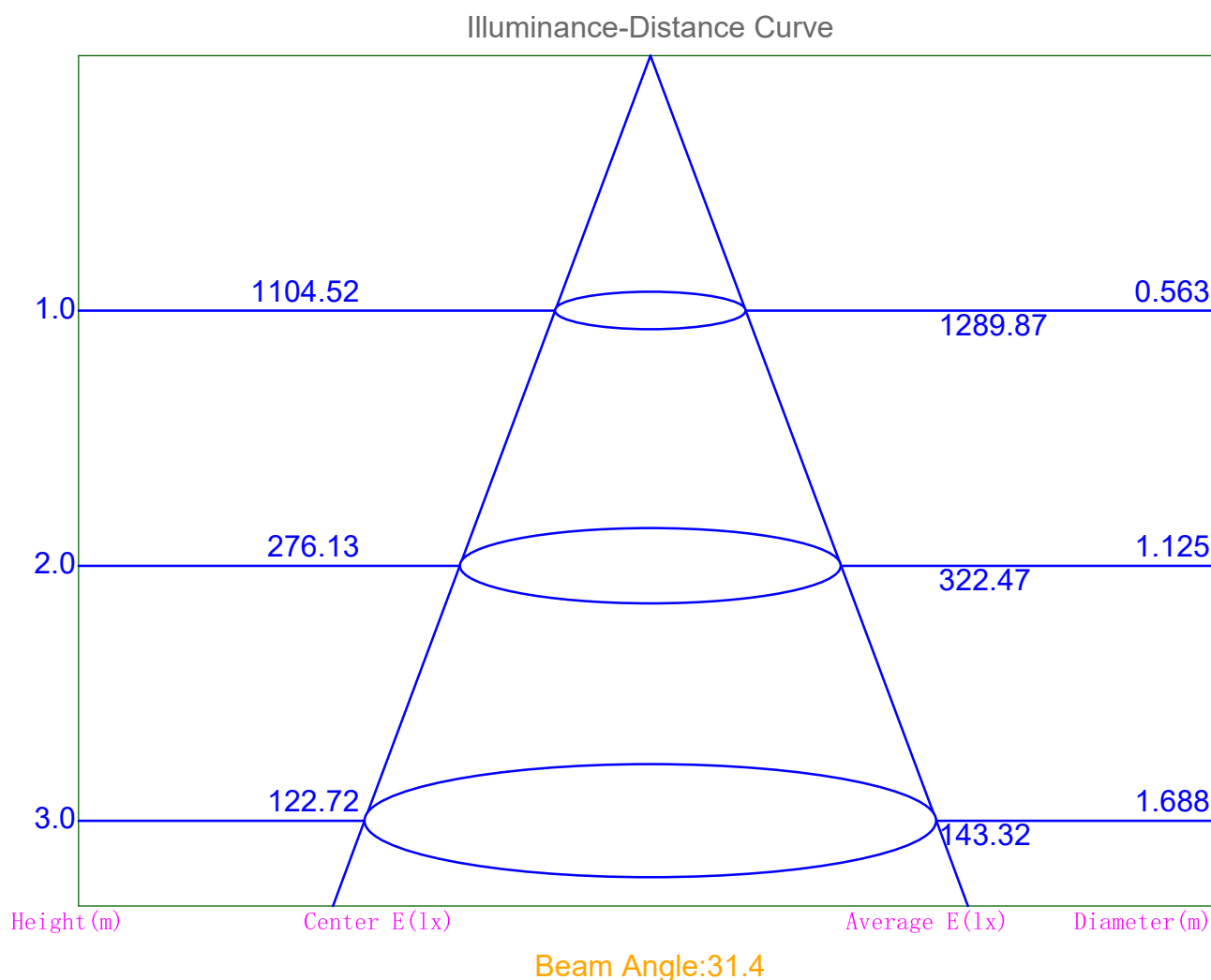


- Curves:
unit: lx
[EMax] = 1104.520
- [EMax*90%]=994.068
 - [EMax*80%]=883.616
 - [EMax*70%]=773.164
 - [EMax*60%]=662.712
 - [EMax*50%]=552.260
 - [EMax*40%]=441.808
 - [EMax*30%]=331.356
 - [EMax*20%]=220.904
 - [EMax*10%]=110.452

Space Plane Maximum Illuminance and @Angle: 1104.52, 0.0deg
Plane Maximum Lighting Intensity and @Angle: 1104.520cd, 0deg

Illuminance-Distance Diagram

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine:GON-2000 | Test Date: 2019/08/31 |



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Indoor Luminance Limiting Curves

| | | |
|--------------------------|-----------------------------|-----------------------|
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| Lamp Name: 3000K | Lamp Catalog: COB | Test Lab: |
| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |

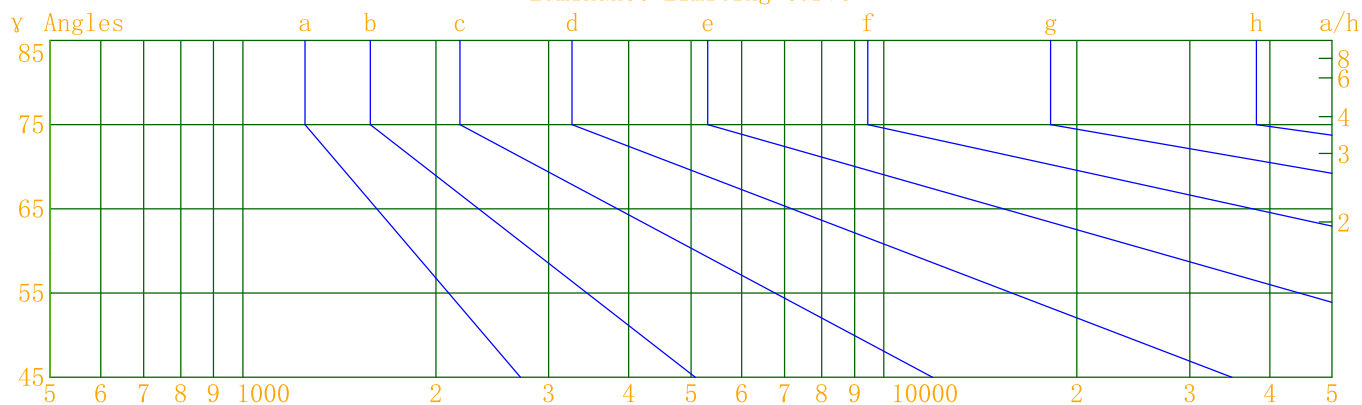
Glare Grade Table

| GI | Quality | Using Illuminance | | | | | | | |
|------|---------|-------------------|------|------|-------|-------|-------|-------|-------|
| | | a | b | c | d | e | f | g | h |
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.5 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.2 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | a | | | | 2000 | 1000 | 500 | <=300 |
| | | | b | c | d | e | f | g | h |

Luminance Table

| Gama (deg) | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
|------------|----|----|----|----|----|----|-----|-----|----|
| C0 | 44 | 0 | 0 | 1 | 35 | 82 | 247 | 257 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Luminance Limiting Curve



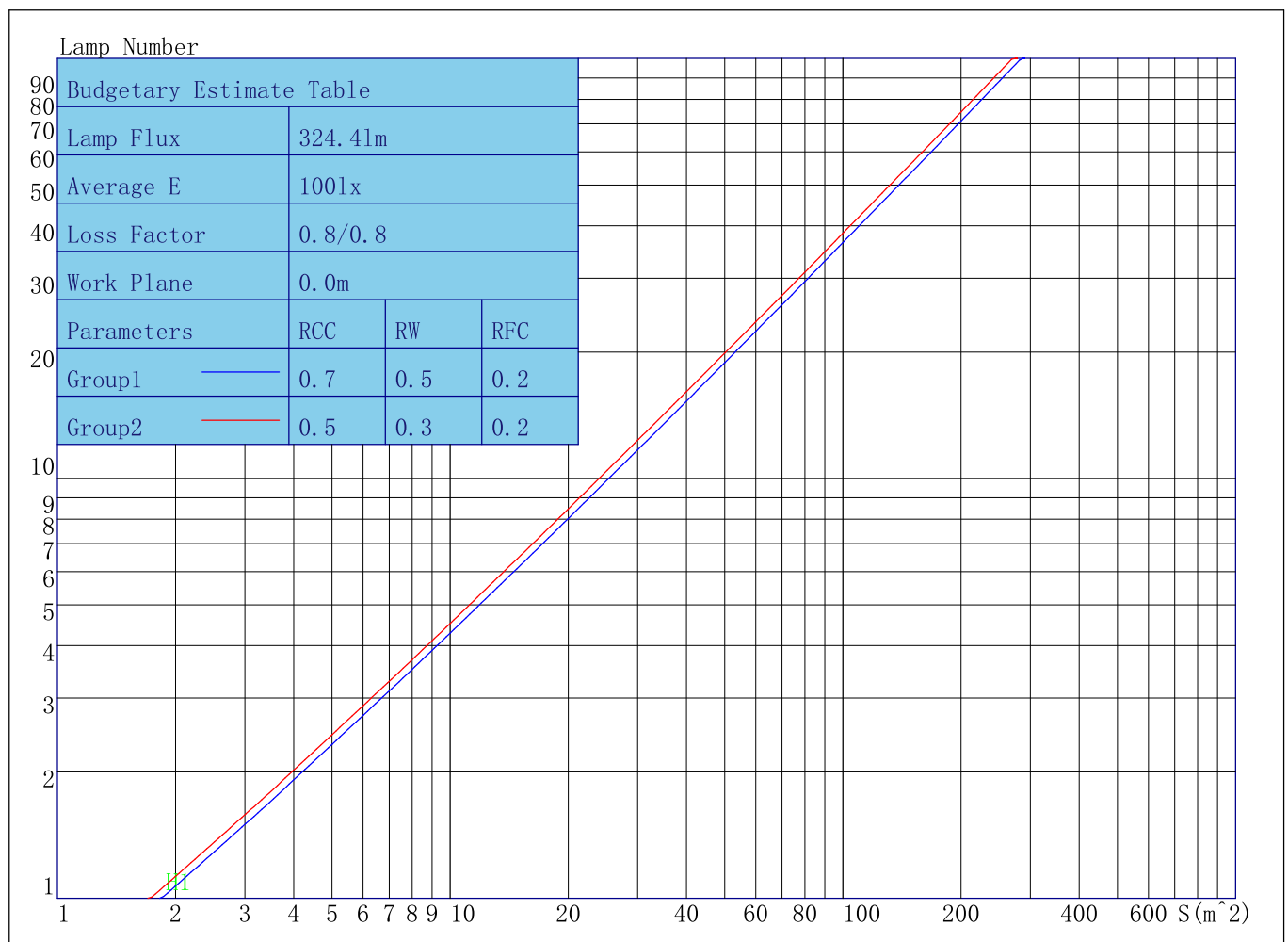
Luminous Size: Length(m)=0.085 Width(m)=0.085 Height(m)=0.092 Area(m²)=0.015045
 Luminous Type: Without Luminous Side
 Luminous Curves: C0-C180 Color: — C90-C270 Color: —

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Indoor Budgetary Estimate Table

| | | |
|--------------------------|-----------------------------|-----------------------|
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| Manufacture: | Test Machine: GON-2000 | Test Date: 2019/08/31 |



Parameters1: Rhocc = 0.7 Rhow = 0.5 Rhofc = 0.2 LLF = 0.8
 Parameters2: Rhocc = 0.5 Rhow = 0.3 Rhofc = 0.2 LLF = 0.8
 Average Illuminance(lx): 100 Cavity Height: H1(m) = 2

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Indoor Coefficient of Utilization Table

| | | |
|--------------------------|-----------------------------|-----------------------|
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| Manufacture: | Test Machine:GON-2000 | Test Date: 2019/08/31 |

| Coefficients of Utilization - Zonal Cavity Method | | | | | | | | | | | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Coef. | Effective Floor Cavity Reflectance RFC=0.20 | | | | | | | | | | | | | | | | | |
| RhoCC (%) | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
| RhoW (%) | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | Coefficient of Utilization(%) | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 115 | 113 | 111 | 109 | 113 | 111 | 109 | 108 | 107 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 |
| 2 | 111 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 103 | 101 | 99 | 100 | 98 | 97 | 97 | 96 | 95 | 93 |
| 3 | 108 | 103 | 100 | 97 | 106 | 102 | 99 | 96 | 99 | 97 | 94 | 97 | 95 | 93 | 95 | 93 | 92 | 90 |
| 4 | 104 | 99 | 95 | 92 | 103 | 98 | 94 | 92 | 96 | 93 | 91 | 94 | 92 | 90 | 93 | 90 | 89 | 87 |
| 5 | 101 | 95 | 91 | 88 | 100 | 95 | 91 | 88 | 93 | 90 | 87 | 92 | 89 | 87 | 90 | 88 | 86 | 85 |
| 6 | 98 | 92 | 88 | 85 | 97 | 91 | 88 | 85 | 90 | 87 | 84 | 89 | 86 | 84 | 88 | 85 | 83 | 82 |
| 7 | 96 | 89 | 85 | 82 | 95 | 89 | 85 | 82 | 87 | 84 | 81 | 86 | 83 | 81 | 85 | 83 | 81 | 80 |
| 8 | 93 | 86 | 82 | 79 | 92 | 86 | 82 | 79 | 85 | 81 | 79 | 84 | 81 | 79 | 83 | 80 | 78 | 77 |
| 9 | 90 | 84 | 80 | 77 | 90 | 83 | 79 | 77 | 83 | 79 | 77 | 82 | 79 | 76 | 81 | 78 | 76 | 75 |
| 10 | 88 | 81 | 77 | 75 | 87 | 81 | 77 | 75 | 80 | 77 | 74 | 80 | 76 | 74 | 79 | 76 | 74 | 73 |

Unified Glare Rating Table

| | | |
|--------------------------|-----------------------------|-----------------------|
| Lum. Name: PHDL10WCCT-3K | Lum. Catalog: LED DOWNLIGHT | Test ID: |
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| Manufacture: | Test Machine:GON-2000 | Test Date: 2019/08/31 |

Unified Glare Rating Table

| | | | | | | | | | | |
|---|-----------------|------|------|------|------|---------------|------|------|------|------|
| Ceiling RCC | 0.70 | 0.70 | 0.50 | 0.50 | 0.30 | 0.70 | 0.70 | 0.50 | 0.50 | 0.30 |
| Wall RW | 0.50 | 0.30 | 0.50 | 0.30 | 0.30 | 0.50 | 0.30 | 0.50 | 0.30 | 0.30 |
| Floor RFC | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| Room Size | Vewed crosswise | | | | | Vewed endwise | | | | |
| X=2H Y=2H | 14.6 | 16.1 | 15.3 | 16.7 | 17.3 | 14.8 | 16.3 | 15.5 | 16.9 | 17.5 |
| Y=3H | 14.3 | 15.8 | 15.0 | 16.4 | 16.9 | 14.4 | 15.9 | 15.2 | 16.5 | 17.1 |
| Y=4H | 14.2 | 15.7 | 14.9 | 16.3 | 16.9 | 14.3 | 15.8 | 15.0 | 16.4 | 16.9 |
| Y=6H | 14.3 | 15.8 | 15.0 | 16.4 | 17.0 | 14.1 | 15.6 | 14.8 | 16.2 | 16.8 |
| Y=8H | 14.3 | 15.8 | 15.1 | 16.4 | 17.0 | 14.0 | 15.5 | 14.7 | 16.1 | 16.7 |
| Y=12H | 14.3 | 15.8 | 15.0 | 16.4 | 16.9 | 13.9 | 15.4 | 14.6 | 16.0 | 16.6 |
| X=4H Y=2H | 14.1 | 15.6 | 14.8 | 16.2 | 16.7 | 14.3 | 15.8 | 15.0 | 16.4 | 16.9 |
| Y=3H | 13.7 | 15.2 | 14.4 | 15.8 | 16.4 | 13.9 | 15.4 | 14.6 | 16.0 | 16.6 |
| Y=4H | 11.5 | 12.6 | 12.5 | 13.4 | 14.2 | 11.6 | 12.6 | 12.5 | 13.5 | 14.2 |
| Y=6H | 11.7 | 12.8 | 12.7 | 13.6 | 14.4 | 11.4 | 12.5 | 12.4 | 13.3 | 14.1 |
| Y=8H | 11.8 | 12.8 | 12.7 | 13.7 | 14.4 | 11.4 | 12.4 | 12.3 | 13.2 | 14.0 |
| Y=12H | 10.8 | 11.7 | 11.9 | 12.6 | 13.5 | 10.4 | 11.2 | 11.4 | 12.2 | 13.0 |
| X=8H Y=4H | 11.3 | 12.3 | 12.2 | 13.2 | 14.0 | 11.4 | 12.4 | 12.3 | 13.2 | 14.0 |
| Y=6H | 10.6 | 11.4 | 11.7 | 12.4 | 13.3 | 10.3 | 11.2 | 11.4 | 12.1 | 13.0 |
| Y=8H | 10.2 | 10.9 | 11.3 | 11.9 | 12.8 | 9.8 | 10.5 | 10.9 | 11.5 | 12.4 |
| Y=12H | 10.1 | 10.8 | 11.2 | 11.8 | 12.8 | 9.7 | 10.4 | 10.8 | 11.4 | 12.3 |
| X=12H Y=4H | 10.3 | 11.2 | 11.4 | 12.1 | 13.0 | 10.4 | 11.2 | 11.4 | 12.2 | 13.0 |
| Y=6H | 10.1 | 10.7 | 11.2 | 11.8 | 12.7 | 9.8 | 10.5 | 10.9 | 11.5 | 12.4 |
| Y=8H | 10.1 | 10.8 | 11.2 | 11.8 | 12.7 | 9.7 | 10.4 | 10.8 | 11.4 | 12.3 |
| Variations with the objver position at spacings | | | | | | | | | | |
| S=1.0H | -17.6/-1.\$ | | | | | -31.1/-1.\$ | | | | |
| S=1.5H | -24.5/-1.\$ | | | | | -37.9/-1.\$ | | | | |
| S=2.0H | -27.0/-1.\$ | | | | | -42.5/-1.\$ | | | | |

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Candela Tabulation

| V/H | C0.0 | C90.0 | C180.0 | C270.0 |
|---------|---------|---------|---------|---------|
| Υ 0.0 | 1104.52 | 1104.52 | 1104.52 | 1104.52 |
| Υ 5.0 | 1078.13 | 1093.94 | 1119.33 | 1099.08 |
| Υ 10.0 | 901.49 | 914.18 | 963.22 | 937.79 |
| Υ 15.0 | 565.53 | 594.61 | 633.78 | 630.65 |
| Υ 20.0 | 292.42 | 299.43 | 352.55 | 342.94 |
| Υ 25.0 | 63.95 | 57.31 | 83.92 | 85.48 |
| Υ 30.0 | 16.00 | 10.39 | 13.99 | 20.38 |
| Υ 35.0 | 6.94 | 3.82 | 4.71 | 8.40 |
| Υ 40.0 | 3.15 | 0.75 | 0.98 | 4.06 |
| Υ 45.0 | 0.46 | 0.00 | 0.00 | 1.03 |
| Υ 50.0 | 0.00 | 0.00 | 0.00 | 0.10 |
| Υ 55.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 60.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 65.0 | 0.22 | 0.00 | 0.00 | 0.17 |
| Υ 70.0 | 0.42 | 0.00 | 0.00 | 0.38 |
| Υ 75.0 | 0.96 | 0.00 | 0.00 | 0.87 |
| Υ 80.0 | 0.67 | 0.00 | 0.00 | 0.00 |
| Υ 85.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 90.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 95.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 100.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 105.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 110.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 115.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 125.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 130.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 135.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 140.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 145.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 150.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 155.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 160.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 165.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 170.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 175.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| Υ 180.0 | 0.00 | 0.00 | 0.00 | 0.00 |