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Report No.: 001 Test Time: 2019-10-14 16:13

## Luminaire Property

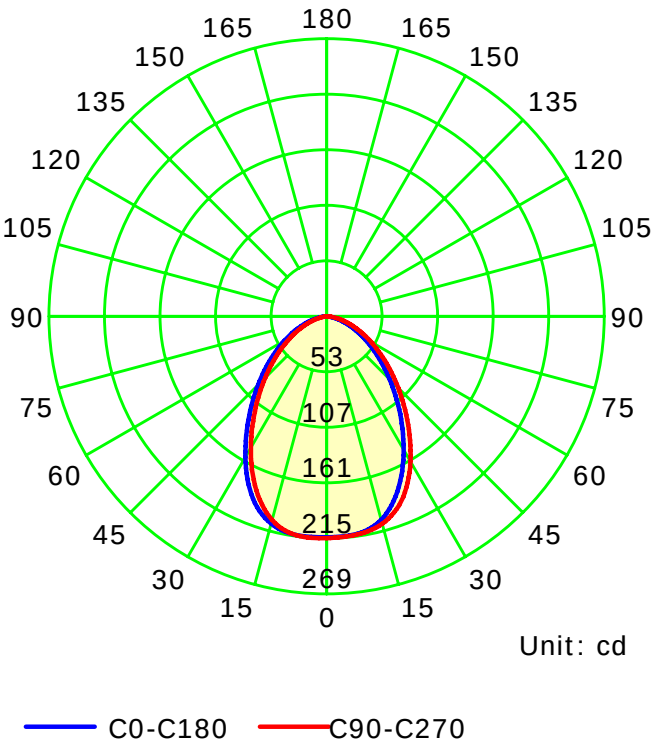
Luminaire Manufacturer:
Luminaire Category: Track Lighting
Luminaire Description: HCP-10X1000-5W-3000K
Lamp Catalog: COB
Luminous Length (mm): -38
Luminous Width (mm): -38
Luminous Height (mm): 0
Voltage: 230.6 V
Current: 0.040 A
Power: 4.74 W
Power Factor: 0.507

## Photometric Results

CIE Class: Direct
Total Rated Lamp Lumens: 413.8 lm
Measurement Flux: 413.8 lm
Efficiency: 100%
Downward Ratio: 100%
Upward Ratio: 0%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 140.9, 141.2, 141.3, 141.0
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 81.3, 81.6, 81.5, 81.5
Luminaire Efficacy Rating (LER): 87.35
Central Intensity: 214.11 cd
Max. Intensity: 215.23 cd
Pos of Max. Intensity: H315 V3
S/MH(C0/C180): 1.10
S/MH(C90/C270): 1.10

Picture Of Luminaire

Luminous Intensity Distribution Curve

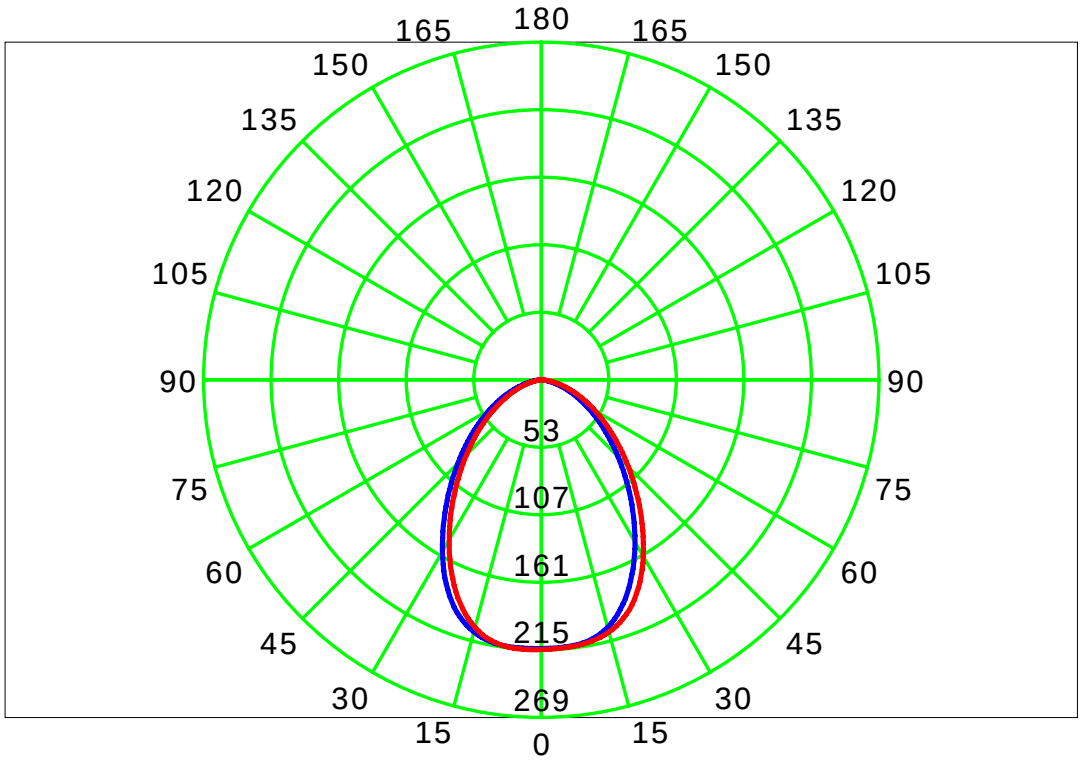


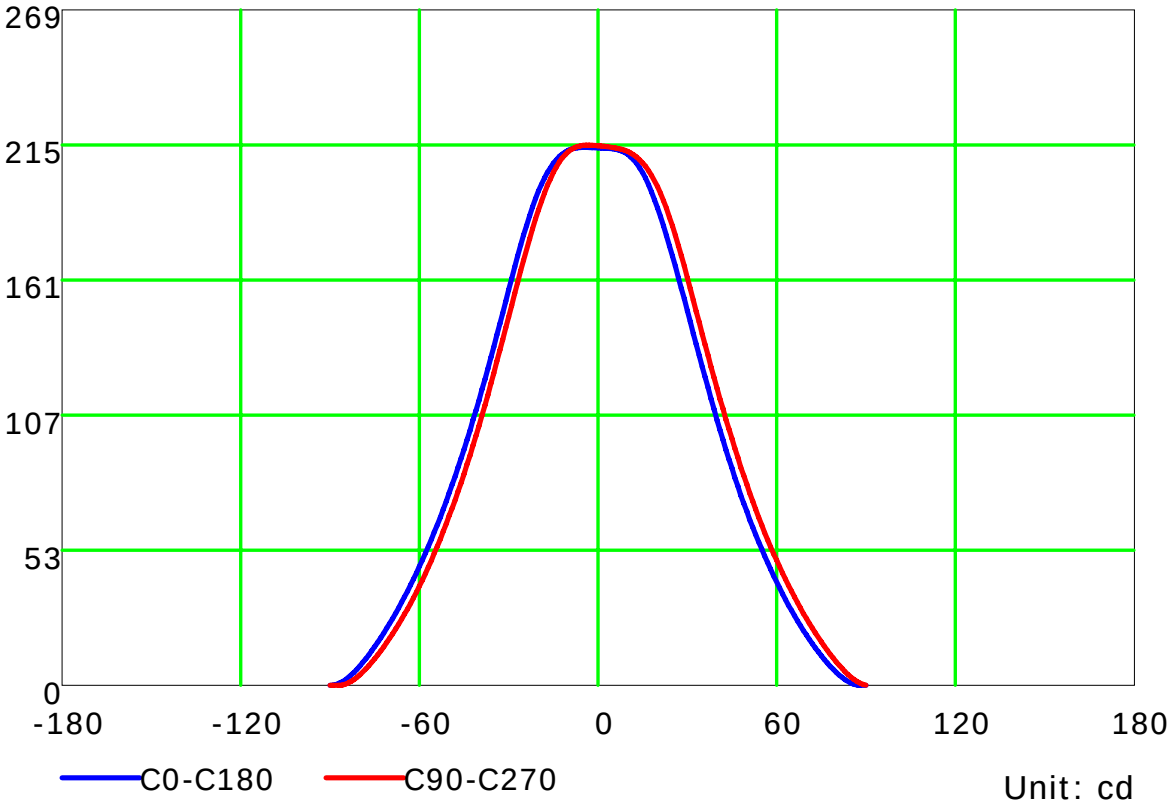

Unit: cd

C Plane (°):0.0-360.0: 45.0
Gamma Plane (°):0.0-90.0:1.0
Test Lab: Havit Commercial
Test Device: GPM-1600L
Test Type: TYPE C
Distance: 6.583 m
Temperature: 25°C
Humidity:
Operator: DING LI
Inspector:

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# Luminous Intensity Distribution Curve



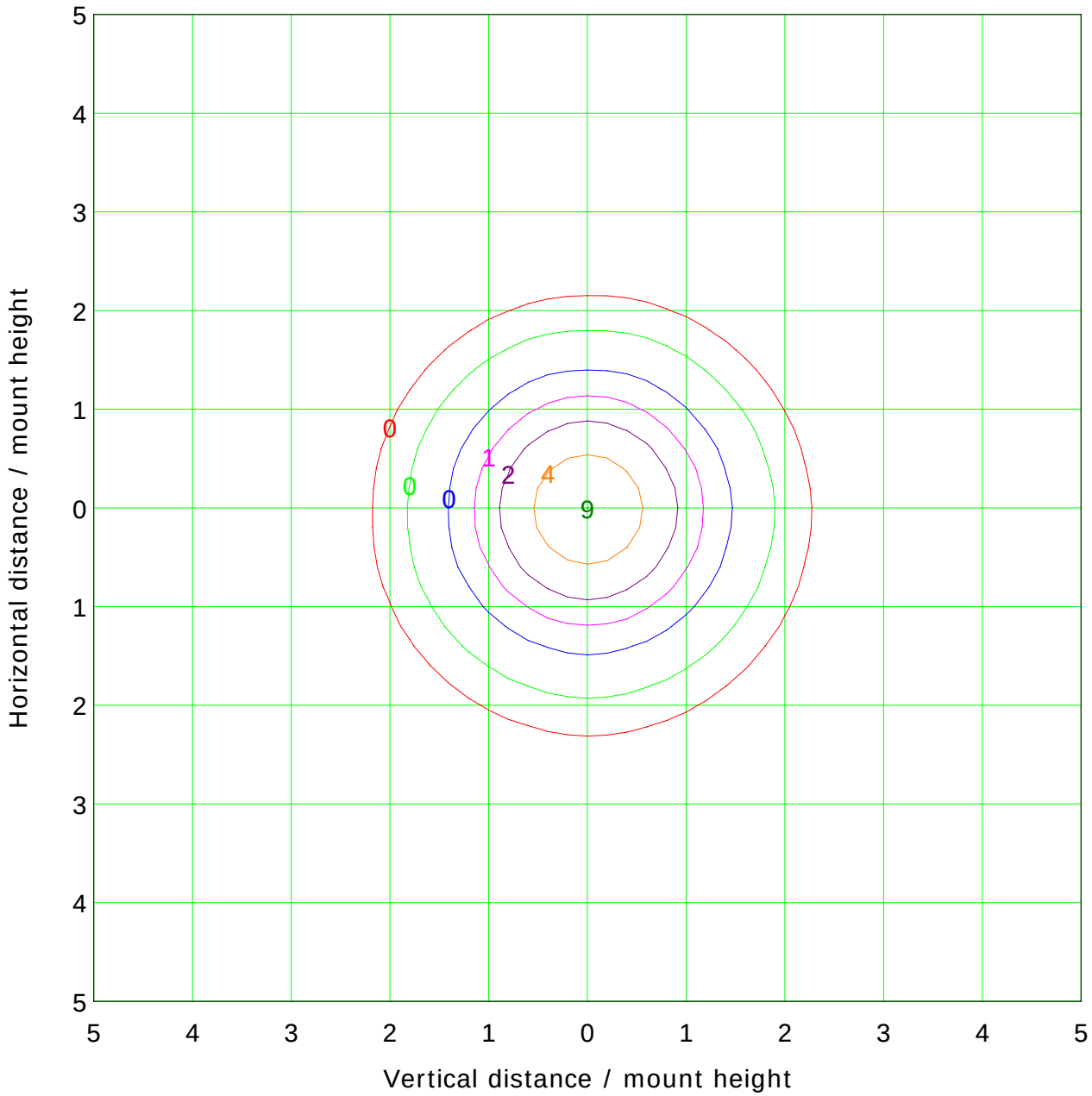

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

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# IsoLux Plot




Mounting Height: 5.0m  Max Lux(100%): 8.6 lx

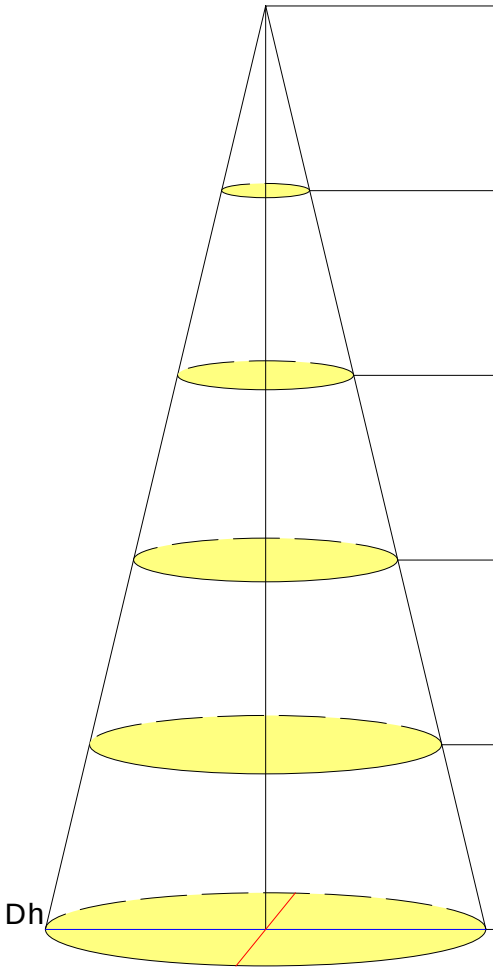
| | |
|---|---|
| ( 1%): 0.1 lx | ( 2%): 0.2 lx |
| ( 5%): 0.4 lx | ( 10%): 0.9 lx |
| ( 20%): 1.7 lx | ( 50%): 4.3 lx |
| (100%): 8.6 lx | |

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

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# Illuminance at a Distance




| Dist(m) | Enadir(lx) | Dh/Dv_B(m) | S_B(sq.m) | Eav_B(lx) |
|---|---|---|---|---|
| 1.0 | 214.11 | 1.72/1.73 | 2.3 | 60.36 |
| 2.0 | 53.53 | 3.43/3.45 | 9.4 | 15.09 |
| 3.0 | 23.79 | 5.15/5.18 | 21.1 | 6.71 |
| 4.0 | 13.38 | 6.87/6.90 | 37.4 | 3.77 |
| 5.0 | 8.56 | 8.58/8.63 | 58.5 | 2.41 |

Beam Angle(B): H81.3 V81.6 Field Angle(F): H140.9 V141.2

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

# UGR Table

| Reflectance: | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ceiling (cavity) | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H Y=2H | 27.3 | 28.5 | 27.6 | 28.7 | 29.0 | 27.6 | 28.8 | 27.8 | 29.0 | 29.2 |
| 3H | 28.1 | 29.2 | 28.4 | 29.5 | 29.7 | 28.5 | 29.6 | 28.8 | 29.9 | 30.1 |
| 4H | 28.4 | 29.4 | 28.7 | 29.7 | 30.0 | 28.8 | 29.8 | 29.1 | 30.1 | 30.4 |
| 6H | 28.5 | 29.4 | 28.8 | 29.7 | 30.0 | 29.0 | 29.9 | 29.3 | 30.2 | 30.6 |
| 8H | 28.5 | 29.4 | 28.8 | 29.7 | 30.0 | 29.0 | 29.9 | 29.4 | 30.3 | 30.6 |
| 12H | 28.4 | 29.3 | 28.8 | 29.6 | 30.0 | 29.0 | 29.9 | 29.4 | 30.2 | 30.6 |
| X=4H Y=2H | 27.7 | 28.8 | 28.1 | 29.0 | 29.3 | 28.0 | 29.0 | 28.3 | 29.3 | 29.6 |
| 3H | 28.7 | 29.6 | 29.1 | 29.9 | 30.3 | 29.1 | 30.0 | 29.4 | 30.3 | 30.6 |
| 4H | 29.1 | 29.9 | 29.5 | 30.2 | 30.6 | 29.5 | 30.3 | 29.9 | 30.6 | 31.0 |
| 6H | 29.2 | 29.9 | 29.7 | 30.3 | 30.7 | 29.7 | 30.4 | 30.1 | 30.8 | 31.2 |
| 8H | 29.3 | 29.9 | 29.7 | 30.3 | 30.7 | 29.8 | 30.4 | 30.2 | 30.8 | 31.2 |
| 12H | 29.2 | 29.8 | 29.7 | 30.2 | 30.7 | 29.8 | 30.4 | 30.3 | 30.8 | 31.2 |
| X=8H Y=4H | 29.2 | 29.9 | 29.6 | 30.3 | 30.7 | 29.6 | 30.2 | 30.0 | 30.6 | 31.0 |
| 6H | 29.5 | 30.0 | 29.9 | 30.4 | 30.9 | 29.9 | 30.4 | 30.4 | 30.9 | 31.3 |
| 8H | 29.5 | 29.9 | 30.0 | 30.4 | 30.9 | 30.0 | 30.5 | 30.5 | 30.9 | 31.4 |
| 12H | 29.5 | 29.9 | 30.0 | 30.4 | 30.9 | 30.1 | 30.4 | 30.5 | 30.9 | 31.4 |
| X=12H Y=4H | 29.2 | 29.8 | 29.7 | 30.2 | 30.6 | 29.6 | 30.2 | 30.0 | 30.6 | 31.0 |
| 6H | 29.5 | 29.9 | 29.9 | 30.4 | 30.8 | 29.9 | 30.4 | 30.4 | 30.8 | 31.3 |
| 8H | 29.5 | 29.9 | 30.0 | 30.4 | 30.9 | 30.0 | 30.4 | 30.5 | 30.9 | 31.4 |
| Variations with the observer position at spacings: | | | | | | | | | | |
| S=1.0H | +0.3/-0.4 | | | | | +0.3/-0.5 | | | | |
| S=1.5H | +0.5/-1.0 | | | | | +0.5/-1.1 | | | | |
| S=2.0H | +1.0/-1.8 | | | | | +0.9/-1.9 | | | | |

Calculate in accordance with CIE Pub.117. The table is revised with 414lm (8log(F/F0) = -3.1).

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

# Candlepower Table

Unit: cd

| G\C | C0.0 | C45.0 | C90.0 | C135.0 | C180.0 | C225.0 | C270.0 | C315.0 | C360.0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| G0.0 | 214.1 | 214.5 | 215.0 | 215.2 | 214.1 | 214.5 | 215.0 | 215.2 | 214.1 | |
| G1.0 | 214.1 | 214.4 | 214.9 | 215.1 | 214.1 | 214.6 | 215.1 | 215.2 | 214.1 | |
| G2.0 | 214.0 | 214.3 | 214.7 | 215.1 | 214.2 | 214.7 | 215.1 | 215.2 | 214.0 | |
| G3.0 | 213.9 | 214.1 | 214.6 | 215.1 | 214.3 | 214.8 | 215.2 | 215.2 | 213.9 | |
| G4.0 | 213.9 | 214.0 | 214.4 | 215.0 | 214.3 | 214.9 | 215.2 | 215.2 | 213.9 | |
| G5.0 | 213.7 | 213.8 | 214.3 | 214.9 | 214.3 | 214.8 | 215.1 | 215.1 | 213.7 | |
| G6.0 | 213.5 | 213.6 | 214.1 | 214.8 | 214.3 | 214.7 | 214.9 | 214.9 | 213.5 | |
| G7.0 | 213.2 | 213.4 | 213.8 | 214.6 | 214.1 | 214.6 | 214.6 | 214.7 | 213.2 | |
| G8.0 | 212.9 | 213.0 | 213.5 | 214.3 | 213.9 | 214.2 | 214.1 | 214.3 | 212.9 | |
| G9.0 | 212.3 | 212.6 | 213.1 | 214.0 | 213.6 | 213.8 | 213.5 | 213.7 | 212.3 | |
| G10.0 | 211.6 | 212.1 | 212.7 | 213.6 | 213.1 | 213.1 | 212.6 | 212.9 | 211.6 | |
| G11.0 | 210.5 | 211.3 | 212.1 | 212.9 | 212.4 | 212.1 | 211.4 | 211.9 | 210.5 | |
| G12.0 | 209.4 | 210.4 | 211.3 | 212.2 | 211.6 | 211.1 | 210.1 | 210.6 | 209.4 | |
| G13.0 | 208.0 | 209.4 | 210.5 | 211.4 | 210.7 | 209.8 | 208.6 | 209.2 | 208.0 | |
| G14.0 | 206.2 | 208.0 | 209.4 | 210.3 | 209.4 | 208.2 | 206.5 | 207.2 | 206.2 | |
| G15.0 | 204.2 | 206.5 | 208.1 | 209.0 | 208.0 | 206.4 | 204.3 | 205.2 | 204.2 | |
| G16.0 | 202.1 | 204.7 | 206.8 | 207.5 | 206.2 | 204.3 | 201.7 | 202.9 | 202.1 | |
| G17.0 | 199.4 | 202.8 | 205.0 | 205.8 | 204.3 | 201.8 | 199.2 | 200.1 | 199.4 | |
| G18.0 | 196.6 | 200.6 | 203.1 | 203.9 | 202.1 | 199.3 | 196.2 | 197.3 | 196.6 | |
| G19.0 | 193.4 | 198.0 | 200.9 | 201.5 | 199.6 | 196.2 | 192.8 | 193.9 | 193.4 | |
| G20.0 | 190.1 | 195.2 | 198.7 | 199.2 | 197.0 | 193.2 | 189.4 | 190.7 | 190.1 | |
| G21.0 | 186.8 | 192.1 | 196.1 | 196.3 | 194.0 | 189.8 | 185.9 | 187.4 | 186.8 | |
| G22.0 | 183.1 | 189.0 | 193.1 | 193.5 | 190.6 | 186.0 | 181.9 | 183.4 | 183.1 | |
| G23.0 | 179.3 | 185.5 | 190.1 | 190.2 | 187.1 | 182.2 | 177.9 | 179.5 | 179.3 | |
| G24.0 | 175.1 | 181.7 | 186.5 | 186.6 | 183.2 | 178.4 | 173.6 | 175.7 | 175.1 | |
| G25.0 | 171.0 | 177.9 | 183.0 | 182.9 | 179.4 | 174.1 | 169.4 | 171.4 | 171.0 | |
| G26.0 | 167.0 | 174.1 | 179.3 | 179.1 | 175.4 | 169.8 | 165.3 | 167.2 | 167.0 | |
| G27.0 | 162.4 | 169.8 | 175.2 | 174.8 | 171.1 | 165.2 | 160.5 | 162.6 | 162.4 | |
| G28.0 | 158.2 | 165.6 | 171.3 | 170.6 | 166.7 | 160.8 | 156.3 | 158.2 | 158.2 | |
| G29.0 | 154.1 | 161.1 | 167.1 | 166.0 | 162.1 | 156.5 | 151.4 | 153.8 | 154.1 | |
| G30.0 | 149.3 | 156.9 | 162.4 | 161.5 | 157.6 | 151.5 | 146.8 | 149.1 | 149.3 | |
| G31.0 | 145.0 | 152.5 | 158.2 | 157.2 | 153.1 | 147.0 | 142.5 | 144.6 | 145.0 | |
| G32.0 | 140.2 | 147.8 | 153.5 | 152.2 | 148.3 | 142.3 | 137.8 | 139.9 | 140.2 | |
| G33.0 | 135.9 | 143.4 | 149.0 | 147.8 | 144.1 | 137.9 | 133.6 | 135.4 | 135.9 | |
| G34.0 | 131.5 | 139.2 | 144.8 | 143.3 | 139.6 | 133.6 | 129.1 | 131.1 | 131.5 | |
| G35.0 | 126.9 | 134.6 | 139.9 | 138.5 | 134.8 | 129.1 | 124.3 | 126.4 | 126.9 | |
| G36.0 | 122.8 | 130.3 | 135.7 | 134.2 | 130.7 | 124.7 | 120.3 | 122.1 | 122.8 | |

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

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# Candlepower Table (Continue 1)

Unit: cd

| G\C | C0.0 | C45.0 | C90.0 | C135.0 | C180.0 | C225.0 | C270.0 | C315.0 | C360.0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| G37.0 | 118.5 | 125.8 | 131.4 | 129.4 | 126.1 | 120.5 | 115.6 | 117.7 | 118.5 | |
| G38.0 | 114.1 | 121.5 | 126.8 | 125.2 | 121.9 | 116.1 | 111.6 | 113.3 | 114.1 | |
| G39.0 | 110.0 | 117.3 | 122.6 | 120.9 | 117.9 | 112.2 | 107.5 | 109.3 | 110.0 | |
| G40.0 | 105.6 | 113.0 | 118.2 | 116.5 | 113.4 | 107.8 | 103.3 | 104.8 | 105.6 | |
| G41.0 | 101.7 | 109.0 | 114.1 | 112.4 | 109.5 | 103.9 | 99.5 | 100.9 | 101.7 | |
| G42.0 | 97.8 | 105.2 | 110.2 | 108.3 | 105.8 | 100.0 | 95.6 | 96.9 | 97.8 | |
| G43.0 | 93.8 | 100.9 | 105.8 | 104.3 | 101.6 | 96.0 | 91.7 | 92.9 | 93.8 | |
| G44.0 | 90.0 | 97.3 | 102.1 | 100.4 | 97.8 | 92.5 | 88.1 | 89.3 | 90.0 | |
| G45.0 | 86.6 | 93.3 | 98.3 | 96.4 | 93.9 | 88.8 | 84.2 | 85.6 | 86.6 | |
| G46.0 | 82.7 | 89.8 | 94.4 | 92.7 | 90.5 | 85.1 | 80.7 | 81.8 | 82.7 | |
| G47.0 | 79.3 | 86.2 | 90.7 | 89.2 | 86.9 | 81.6 | 77.4 | 78.3 | 79.3 | |
| G48.0 | 75.7 | 82.4 | 86.8 | 85.3 | 83.3 | 77.9 | 73.9 | 74.8 | 75.7 | |
| G49.0 | 72.4 | 79.2 | 83.5 | 82.0 | 80.0 | 74.8 | 70.6 | 71.5 | 72.4 | |
| G50.0 | 69.3 | 75.8 | 80.1 | 78.6 | 76.7 | 71.5 | 67.6 | 68.4 | 69.3 | |
| G51.0 | 65.9 | 72.3 | 76.5 | 75.2 | 73.3 | 68.2 | 64.4 | 64.9 | 65.9 | |
| G52.0 | 63.0 | 69.3 | 73.3 | 72.0 | 70.1 | 65.3 | 61.3 | 62.1 | 63.0 | |
| G53.0 | 60.0 | 66.1 | 70.1 | 68.7 | 66.9 | 62.3 | 58.3 | 59.1 | 60.0 | |
| G54.0 | 57.1 | 63.1 | 66.8 | 65.6 | 63.9 | 59.3 | 55.4 | 56.1 | 57.1 | |
| G55.0 | 54.3 | 60.2 | 63.8 | 62.6 | 61.1 | 56.5 | 52.7 | 53.4 | 54.3 | |
| G56.0 | 51.5 | 57.1 | 60.8 | 59.6 | 58.1 | 53.6 | 49.7 | 50.4 | 51.5 | |
| G57.0 | 48.9 | 54.5 | 57.9 | 56.7 | 55.3 | 51.0 | 47.1 | 47.8 | 48.9 | |
| G58.0 | 46.3 | 52.0 | 55.2 | 54.1 | 52.7 | 48.3 | 44.5 | 45.2 | 46.3 | |
| G59.0 | 43.7 | 49.2 | 52.4 | 51.2 | 50.0 | 45.6 | 41.9 | 42.6 | 43.7 | |
| G60.0 | 41.2 | 46.8 | 49.9 | 48.7 | 47.4 | 43.0 | 39.6 | 40.2 | 41.2 | |
| G61.0 | 38.9 | 44.1 | 47.3 | 46.0 | 44.8 | 40.7 | 37.1 | 37.9 | 38.9 | |
| G62.0 | 36.4 | 41.7 | 44.7 | 43.6 | 42.3 | 38.2 | 34.8 | 35.5 | 36.4 | |
| G63.0 | 34.2 | 39.4 | 42.3 | 41.2 | 40.0 | 35.8 | 32.6 | 33.2 | 34.2 | |
| G64.0 | 31.9 | 37.0 | 39.8 | 38.8 | 37.5 | 33.5 | 30.4 | 31.0 | 31.9 | |
| G65.0 | 29.9 | 34.7 | 37.5 | 36.5 | 35.3 | 31.3 | 28.4 | 29.0 | 29.9 | |
| G66.0 | 27.8 | 32.4 | 35.3 | 34.2 | 33.1 | 29.3 | 26.4 | 27.0 | 27.8 | |
| G67.0 | 25.8 | 30.3 | 33.0 | 32.0 | 30.8 | 27.1 | 24.3 | 25.0 | 25.8 | |
| G68.0 | 23.9 | 28.2 | 30.9 | 29.9 | 28.7 | 25.1 | 22.5 | 23.1 | 23.9 | |
| G69.0 | 21.8 | 26.2 | 28.6 | 27.7 | 26.6 | 23.2 | 20.5 | 21.3 | 21.8 | |
| G70.0 | 20.1 | 24.2 | 26.7 | 25.7 | 24.6 | 21.1 | 18.8 | 19.4 | 20.1 | |
| G71.0 | 18.4 | 22.4 | 24.7 | 23.8 | 22.8 | 19.4 | 17.1 | 17.7 | 18.4 | |
| G72.0 | 16.6 | 20.5 | 22.8 | 21.8 | 20.7 | 17.5 | 15.3 | 16.0 | 16.6 | |
| G73.0 | 15.0 | 18.7 | 20.9 | 20.0 | 19.0 | 15.8 | 13.8 | 14.4 | 15.0 | |

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector:

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# Candlepower Table (Continue 2)

Unit: cd

| G\C | C0.0 | C45.0 | C90.0 | C135.0 | C180.0 | C225.0 | C270.0 | C315.0 | C360.0 | |
|---|---|---|---|---|---|---|---|---|---|---|
| G74.0 | 13.4 | 16.9 | 19.1 | 18.1 | 17.1 | 14.2 | 12.1 | 12.9 | 13.4 | |
| G75.0 | 11.8 | 15.3 | 17.4 | 16.5 | 15.4 | 12.4 | 10.6 | 11.3 | 11.8 | |
| G76.0 | 10.4 | 13.7 | 15.7 | 14.8 | 13.9 | 11.0 | 9.3 | 9.9 | 10.4 | |
| G77.0 | 9.0 | 12.1 | 14.0 | 13.0 | 12.1 | 9.4 | 7.8 | 8.4 | 9.0 | |
| G78.0 | 7.7 | 10.6 | 12.4 | 11.6 | 10.6 | 8.1 | 6.6 | 7.2 | 7.7 | |
| G79.0 | 6.5 | 9.2 | 11.0 | 10.1 | 9.2 | 6.7 | 5.4 | 6.0 | 6.5 | |
| G80.0 | 5.2 | 7.8 | 9.4 | 8.5 | 7.7 | 5.4 | 4.2 | 4.8 | 5.2 | |
| G81.0 | 4.1 | 6.5 | 8.1 | 7.2 | 6.4 | 4.3 | 3.3 | 3.8 | 4.1 | |
| G82.0 | 3.2 | 5.2 | 6.8 | 5.9 | 5.1 | 3.3 | 2.3 | 2.9 | 3.2 | |
| G83.0 | 2.3 | 4.1 | 5.5 | 4.7 | 4.1 | 2.3 | 1.5 | 2.0 | 2.3 | |
| G84.0 | 1.5 | 3.3 | 4.3 | 3.6 | 3.1 | 1.5 | 0.9 | 1.3 | 1.5 | |
| G85.0 | 0.9 | 2.3 | 3.2 | 2.6 | 2.1 | 0.9 | 0.4 | 0.7 | 0.9 | |
| G86.0 | 0.4 | 1.5 | 2.4 | 1.8 | 1.4 | 0.4 | 0.1 | 0.3 | 0.4 | |
| G87.0 | 0.2 | 0.9 | 1.6 | 1.1 | 0.8 | 0.1 | 0.0 | 0.0 | 0.2 | |
| G88.0 | 0.0 | 0.5 | 0.9 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | |
| G89.0 | 0.0 | 0.1 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | |
| G90.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |

C Plane (°):0.0-360.0: 45.0
Test Lab: Havit Commercial
Test Type: TYPE C
Temperature: 25°C
Operator: DING LI

Gamma Plane (°):0.0-90.0:1.0
Test Device: GPM-1600L
Distance: 6.583 m
Humidity:
Inspector: