# IES Indoor Report

# Photometric Filename:HCP-1022222+HCP-1032222 3000K 36D.IES

## Indoor Luminaire Photometric Data

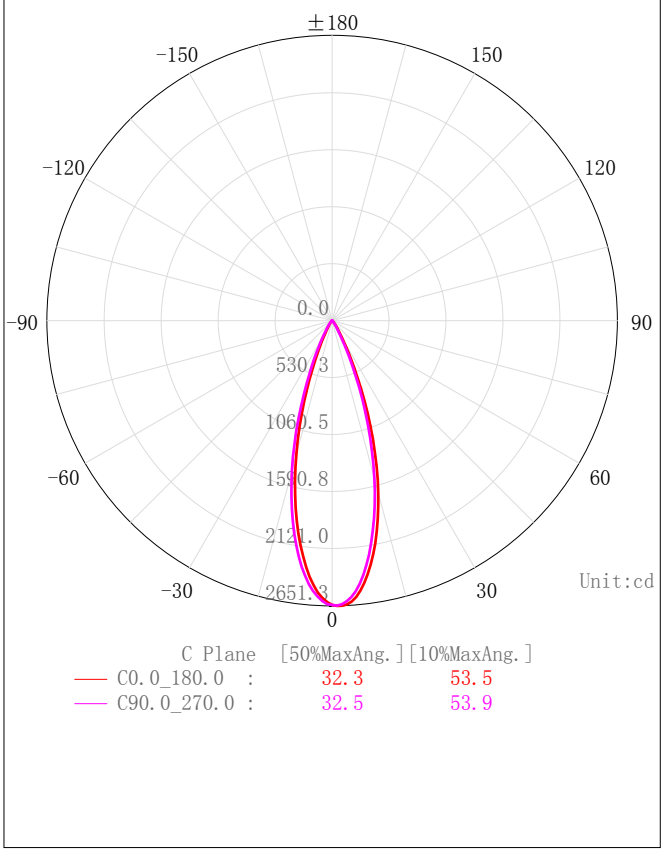
### Description Information

| | | | |
|---|---|---|---|
| Luminary Name: HCP-1022222+HCP-1032222 3000K 36D | | Lum. Catelog: | Test ID: 01 |
| Lamp Name: | | Lamp Catelog: LED | Test Date: 2020/11/25 |
| Manufacture: Havit Commercial | | Shld.Ang(° ): | Test Machine:GON-2000 |
| Test Lab: Quality Department | | Frequency(Hz): | Lamp CCT(K): Ra: |
| Lum.Size(W*L*H):0.000m*0.000m*0.000m | | Lum.Area(m2):0.000 | Lum.W(kg): 0.000 |
| Test System: C, γ | Test Step: C=90.0 γ=1.0 | Temp.(℃): 25 | Humidity(%): 50.0 |

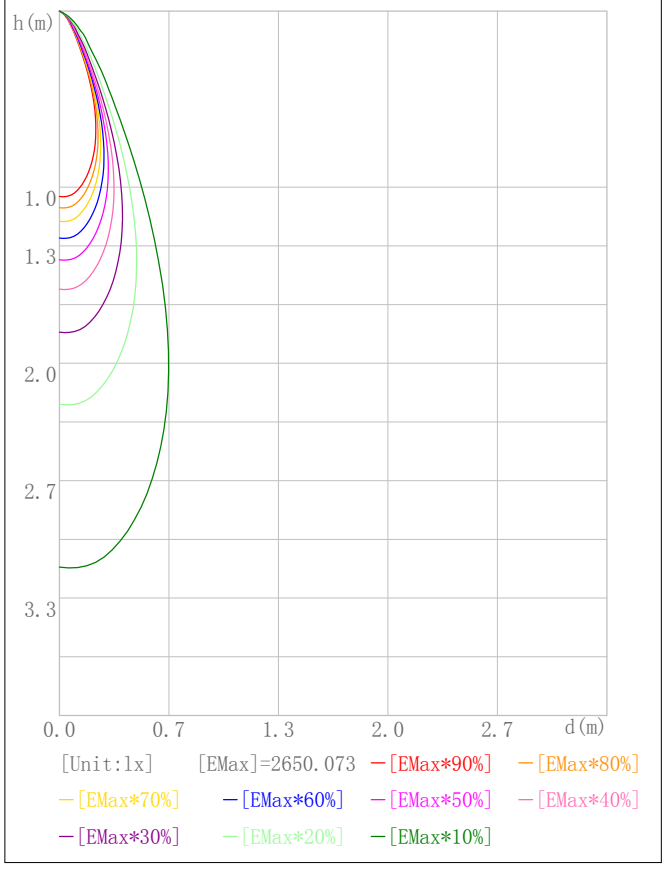
### Character Parameter

| Lamp Speciality Parameter | Luminaire Speciality Parameter | |
|---|---|---|
| Rated Flux(lm): 864.350 | Luminary Flux(lm): 864.346 | Field Angle(10%Imax): 53.5(° ) |
| Rated Power(W): | Luminary Efficiency: 100.00% | Down Lumens&Percent: 864.346lm 100.00% |
| Rated Voltage(V): | Luminary EER(lm/W): 59.775 | Up Lumens&Percent: 0.000lm 0.00% |
| Tested Power(W): 14.460 | Max.Candela(cd): 2651.311 | S/MH: C0_a180=0.537 C90_270=0.539 |
| Lamps' Inside: 1 | Max Cand@Ang.(° ): C=0.0 γ=2.0 | CIE Type: Semi-Direct |
| Tested Electrics(V,A,pf):240.2,0.062,0.965 | Beam Angle(50%Imax): 32.3(° ) | ErP Φuse(90° ): 836.107lm |
| Lamp Size(W*L*H):0.000m*0.000m*0.000m | Left=-14.6° ,Right=17.7° | IRF(%): 593.159 |

### C Plane Distribution Diagram

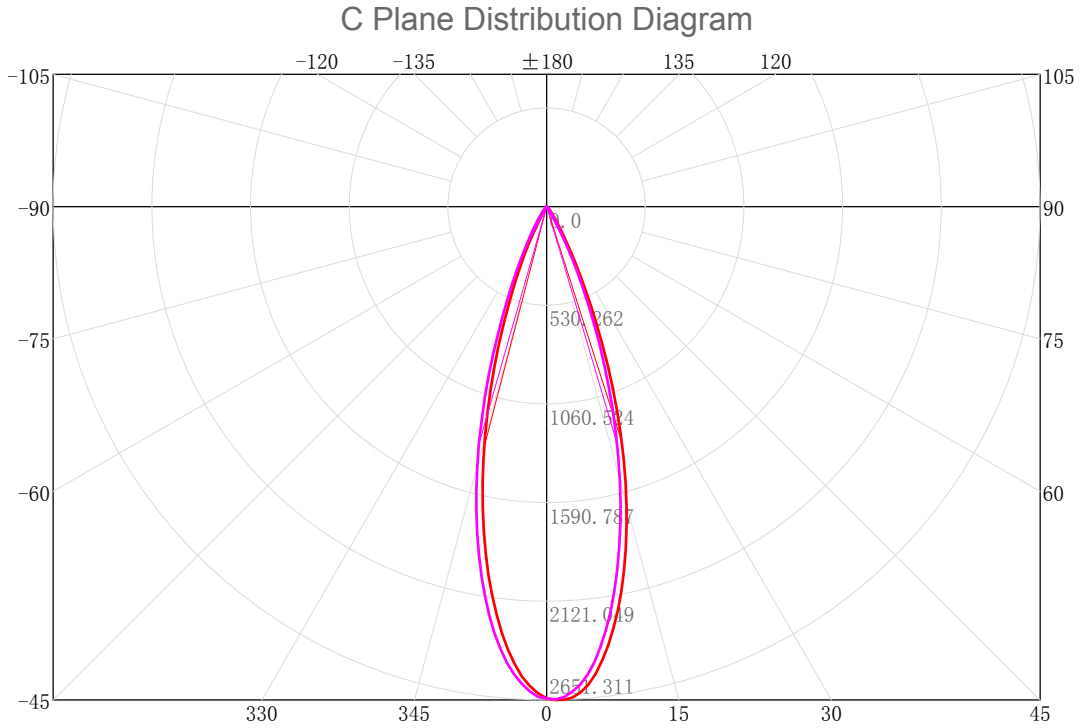


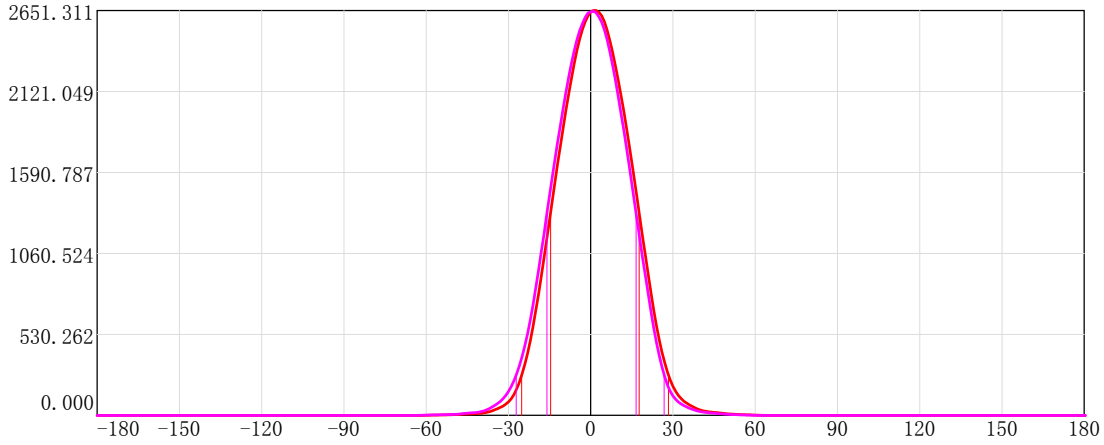

### C0 Space ISO Illuminance Curve



## 2D Plane Light Intensity Distribution Curve

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |



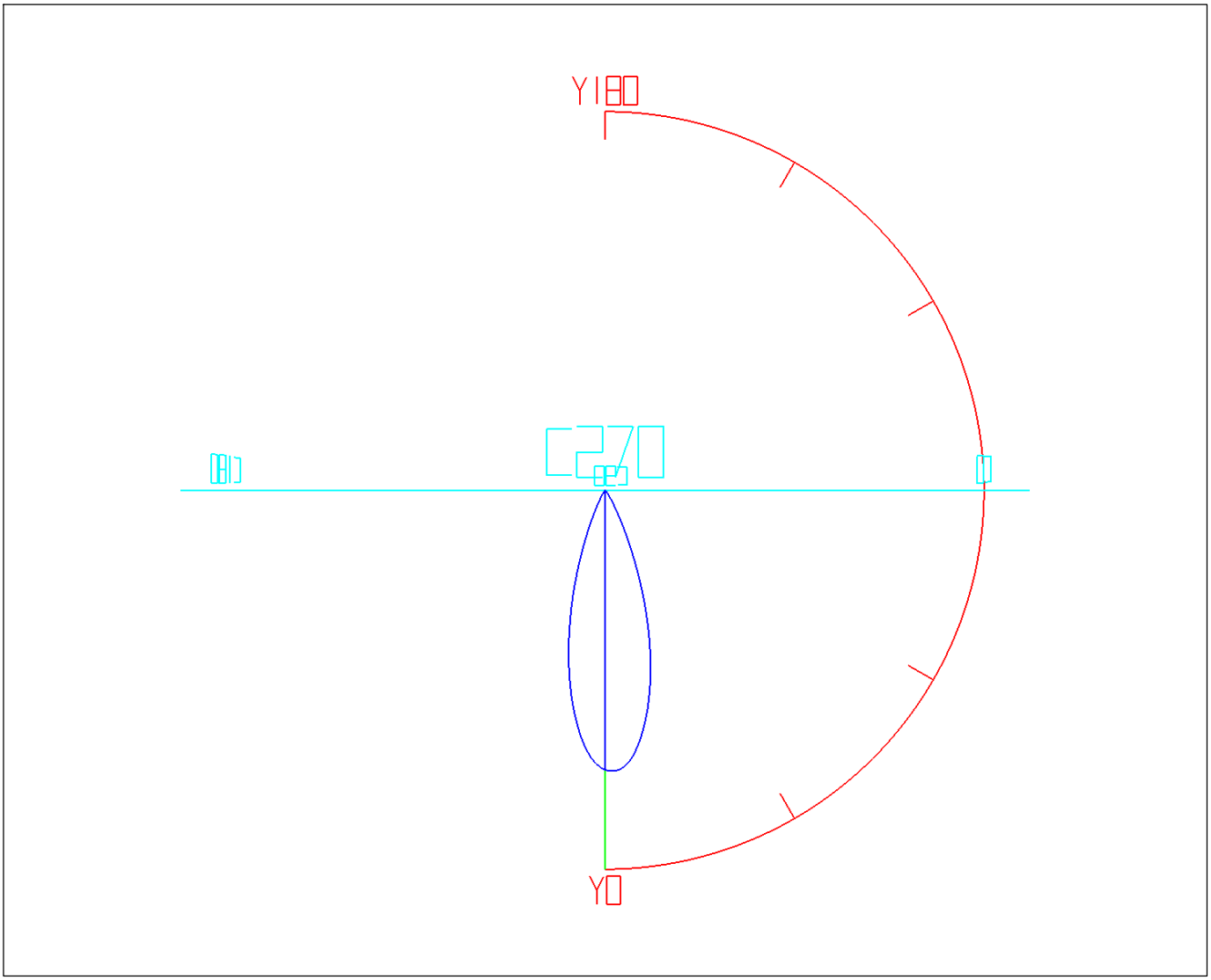




| C Plane | [50%MaxAng.] | [10%MaxAng.] | Unit:cd |
|---|---|---|---|
| C0.0_180.0 : | 32.3 | 53.5 | |
| C90.0_270.0 : | 32.5 | 53.9 | |

# 3D Light Intensity Distribution Modal

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

3D Light Intensity Distribution Modal




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

## Zonal Flux Tabulation

| Zone(γ) | Zone Flux (lm) | Sums Flux (lm) | Zone%Lamp | Sums%Lamp | Zone(γ) | Zone Flux (lm) | Sums Flux (lm) | Zone%Lamp | Sums%Lamp |
|---|---|---|---|---|---|---|---|---|---|
| 0.0-1.0 | 2.53 | 2.53 | 0.29 | 0.29 | 47.0-48.0 | 0.88 | 858.86 | 0.10 | 99.37 |
| 1.0-2.0 | 7.54 | 10.07 | 0.87 | 1.16 | 48.0-49.0 | 0.75 | 859.61 | 0.09 | 99.45 |
| 2.0-3.0 | 12.45 | 22.52 | 1.44 | 2.61 | 49.0-50.0 | 0.66 | 860.27 | 0.08 | 99.53 |
| 3.0-4.0 | 17.17 | 39.69 | 1.99 | 4.59 | 50.0-51.0 | 0.60 | 860.87 | 0.07 | 99.60 |
| 4.0-5.0 | 21.64 | 61.33 | 2.50 | 7.10 | 51.0-52.0 | 0.54 | 861.41 | 0.06 | 99.66 |
| 5.0-6.0 | 25.78 | 87.11 | 2.98 | 10.08 | 52.0-53.0 | 0.49 | 861.91 | 0.06 | 99.72 |
| 6.0-7.0 | 29.51 | 116.62 | 3.41 | 13.49 | 53.0-54.0 | 0.44 | 862.35 | 0.05 | 99.77 |
| 7.0-8.0 | 32.82 | 149.44 | 3.80 | 17.29 | 54.0-55.0 | 0.40 | 862.75 | 0.05 | 99.81 |
| 8.0-9.0 | 35.68 | 185.12 | 4.13 | 21.42 | 55.0-56.0 | 0.35 | 863.10 | 0.04 | 99.85 |
| 9.0-10.0 | 38.04 | 223.16 | 4.40 | 25.82 | 56.0-57.0 | 0.30 | 863.40 | 0.04 | 99.89 |
| 10.0-11.0 | 39.89 | 263.05 | 4.61 | 30.43 | 57.0-58.0 | 0.26 | 863.66 | 0.03 | 99.92 |
| 11.0-12.0 | 41.23 | 304.28 | 4.77 | 35.20 | 58.0-59.0 | 0.22 | 863.88 | 0.03 | 99.95 |
| 12.0-13.0 | 42.05 | 346.33 | 4.87 | 40.07 | 59.0-60.0 | 0.17 | 864.05 | 0.02 | 99.97 |
| 13.0-14.0 | 42.35 | 388.67 | 4.90 | 44.97 | 60.0-61.0 | 0.13 | 864.18 | 0.01 | 99.98 |
| 14.0-15.0 | 42.12 | 430.79 | 4.87 | 49.84 | 61.0-62.0 | 0.08 | 864.26 | 0.01 | 99.99 |
| 15.0-16.0 | 41.40 | 472.19 | 4.79 | 54.63 | 62.0-63.0 | 0.05 | 864.31 | 0.01 | 100.00 |
| 16.0-17.0 | 40.16 | 512.35 | 4.65 | 59.28 | 63.0-64.0 | 0.03 | 864.34 | 0.00 | 100.00 |
| 17.0-18.0 | 38.47 | 550.83 | 4.45 | 63.73 | 64.0-65.0 | 0.01 | 864.35 | 0.00 | 100.00 |
| 18.0-19.0 | 36.39 | 587.22 | 4.21 | 67.94 | 65.0-66.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 19.0-20.0 | 33.92 | 621.14 | 3.92 | 71.86 | 66.0-67.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 20.0-21.0 | 31.16 | 652.30 | 3.61 | 75.47 | 67.0-68.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 21.0-22.0 | 28.20 | 680.50 | 3.26 | 78.73 | 68.0-69.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 22.0-23.0 | 25.18 | 705.68 | 2.91 | 81.64 | 69.0-70.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 23.0-24.0 | 22.21 | 727.89 | 2.57 | 84.21 | 70.0-71.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 24.0-25.0 | 19.39 | 747.28 | 2.24 | 86.46 | 71.0-72.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 25.0-26.0 | 16.71 | 763.99 | 1.93 | 88.39 | 72.0-73.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 26.0-27.0 | 14.18 | 778.17 | 1.64 | 90.03 | 73.0-74.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 27.0-28.0 | 11.91 | 790.08 | 1.38 | 91.41 | 74.0-75.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 28.0-29.0 | 10.00 | 800.08 | 1.16 | 92.56 | 75.0-76.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 29.0-30.0 | 8.44 | 808.52 | 0.98 | 93.54 | 76.0-77.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 30.0-31.0 | 7.17 | 815.69 | 0.83 | 94.37 | 77.0-78.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 31.0-32.0 | 6.12 | 821.81 | 0.71 | 95.08 | 78.0-79.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 32.0-33.0 | 5.29 | 827.10 | 0.61 | 95.69 | 79.0-80.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 33.0-34.0 | 4.61 | 831.70 | 0.53 | 96.22 | 80.0-81.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 34.0-35.0 | 4.01 | 835.72 | 0.46 | 96.69 | 81.0-82.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 35.0-36.0 | 3.50 | 839.21 | 0.40 | 97.09 | 82.0-83.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 36.0-37.0 | 3.01 | 842.22 | 0.35 | 97.44 | 83.0-84.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 37.0-38.0 | 2.57 | 844.80 | 0.30 | 97.74 | 84.0-85.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 38.0-39.0 | 2.20 | 846.99 | 0.25 | 97.99 | 85.0-86.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 39.0-40.0 | 1.89 | 848.89 | 0.22 | 98.21 | 86.0-87.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 40.0-41.0 | 1.66 | 850.54 | 0.19 | 98.40 | 87.0-88.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 41.0-42.0 | 1.49 | 852.03 | 0.17 | 98.58 | 88.0-89.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 42.0-43.0 | 1.37 | 853.40 | 0.16 | 98.73 | 89.0-90.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 43.0-44.0 | 1.27 | 854.67 | 0.15 | 98.88 | 90.0-91.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 44.0-45.0 | 1.19 | 855.86 | 0.14 | 99.02 | 91.0-92.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 45.0-46.0 | 1.11 | 856.97 | 0.13 | 99.15 | 92.0-93.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 46.0-47.0 | 1.01 | 857.98 | 0.12 | 99.26 | 93.0-94.0 | 0.00 | 864.35 | 0.00 | 100.00 |

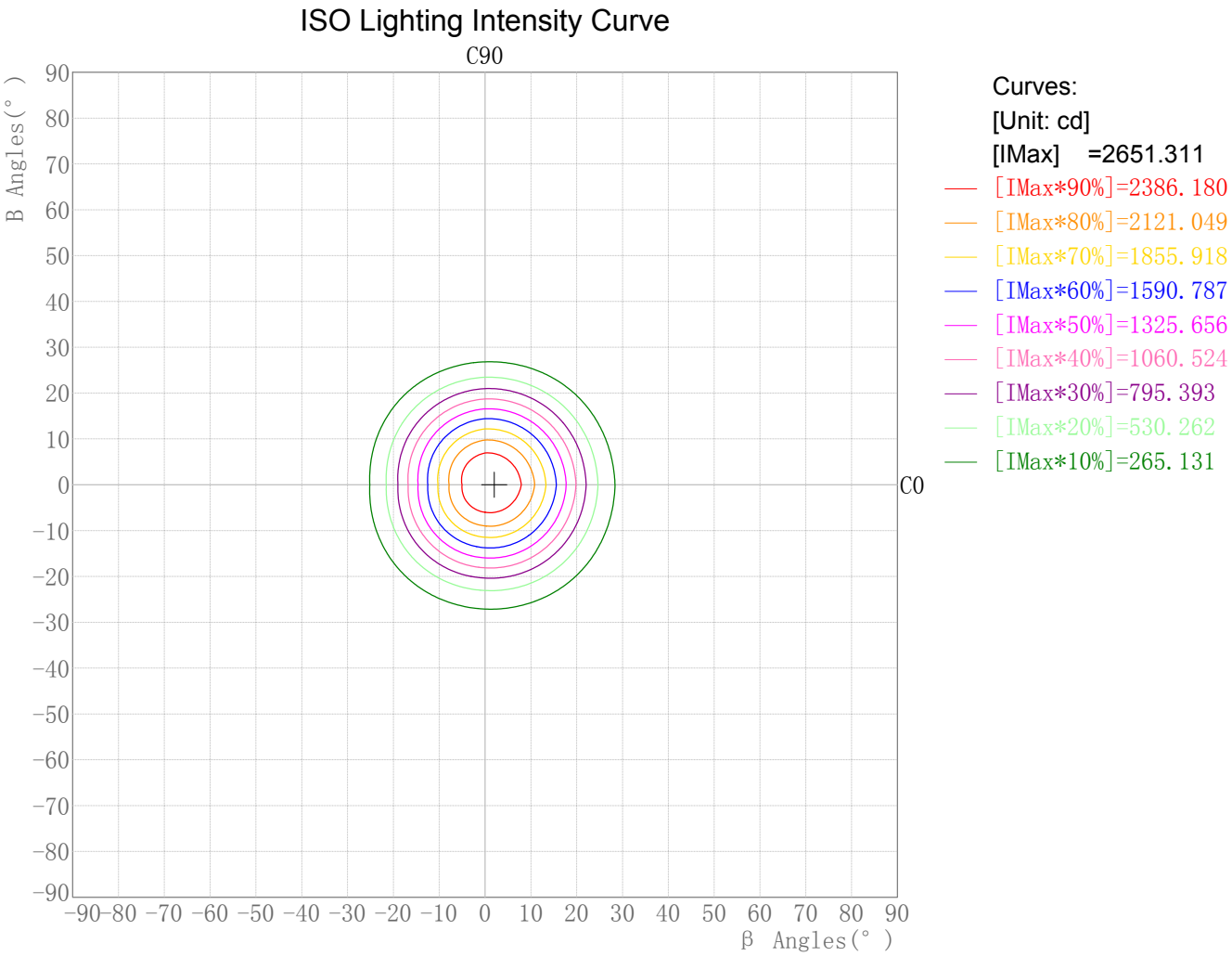
## Zonal Flux Tabulation - (Cont.)

| Zone(γ) | Zone Flux (lm) | Sums Flux (lm) | Zone%Lamp | Sums%Lamp |
|---|---|---|---|---|
| 94.0-95.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 95.0-96.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 96.0-97.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 97.0-98.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 98.0-99.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 99.0-100.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 100.0-101.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 101.0-102.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 102.0-103.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 103.0-104.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 104.0-105.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 105.0-106.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 106.0-107.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 107.0-108.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 108.0-109.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 109.0-110.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 110.0-111.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 111.0-112.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 112.0-113.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 113.0-114.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 114.0-115.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 115.0-116.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 116.0-117.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 117.0-118.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 118.0-119.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 119.0-120.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 120.0-121.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 121.0-122.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 122.0-123.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 123.0-124.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 124.0-125.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 125.0-126.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 126.0-127.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 127.0-128.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 128.0-129.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 129.0-130.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 130.0-131.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 131.0-132.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 132.0-133.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 133.0-134.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 134.0-135.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 135.0-136.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 136.0-137.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 137.0-138.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 138.0-139.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 139.0-140.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 140.0-141.0 | 0.00 | 864.35 | 0.00 | 100.00 |

| Zone(γ) | Zone Flux (lm) | Sums Flux (lm) | Zone%Lamp | Sums%Lamp |
|---|---|---|---|---|
| 141.0-142.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 142.0-143.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 143.0-144.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 144.0-145.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 145.0-146.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 146.0-147.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 147.0-148.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 148.0-149.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 149.0-150.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 150.0-151.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 151.0-152.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 152.0-153.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 153.0-154.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 154.0-155.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 155.0-156.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 156.0-157.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 157.0-158.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 158.0-159.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 159.0-160.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 160.0-161.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 161.0-162.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 162.0-163.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 163.0-164.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 164.0-165.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 165.0-166.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 166.0-167.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 167.0-168.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 168.0-169.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 169.0-170.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 170.0-171.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 171.0-172.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 172.0-173.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 173.0-174.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 174.0-175.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 175.0-176.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 176.0-177.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 177.0-178.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 178.0-179.0 | 0.00 | 864.35 | 0.00 | 100.00 |
| 179.0-180.0 | 0.00 | 864.35 | 0.00 | 100.00 |

# Rectangle ISO Lighting Intensity Diagram

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

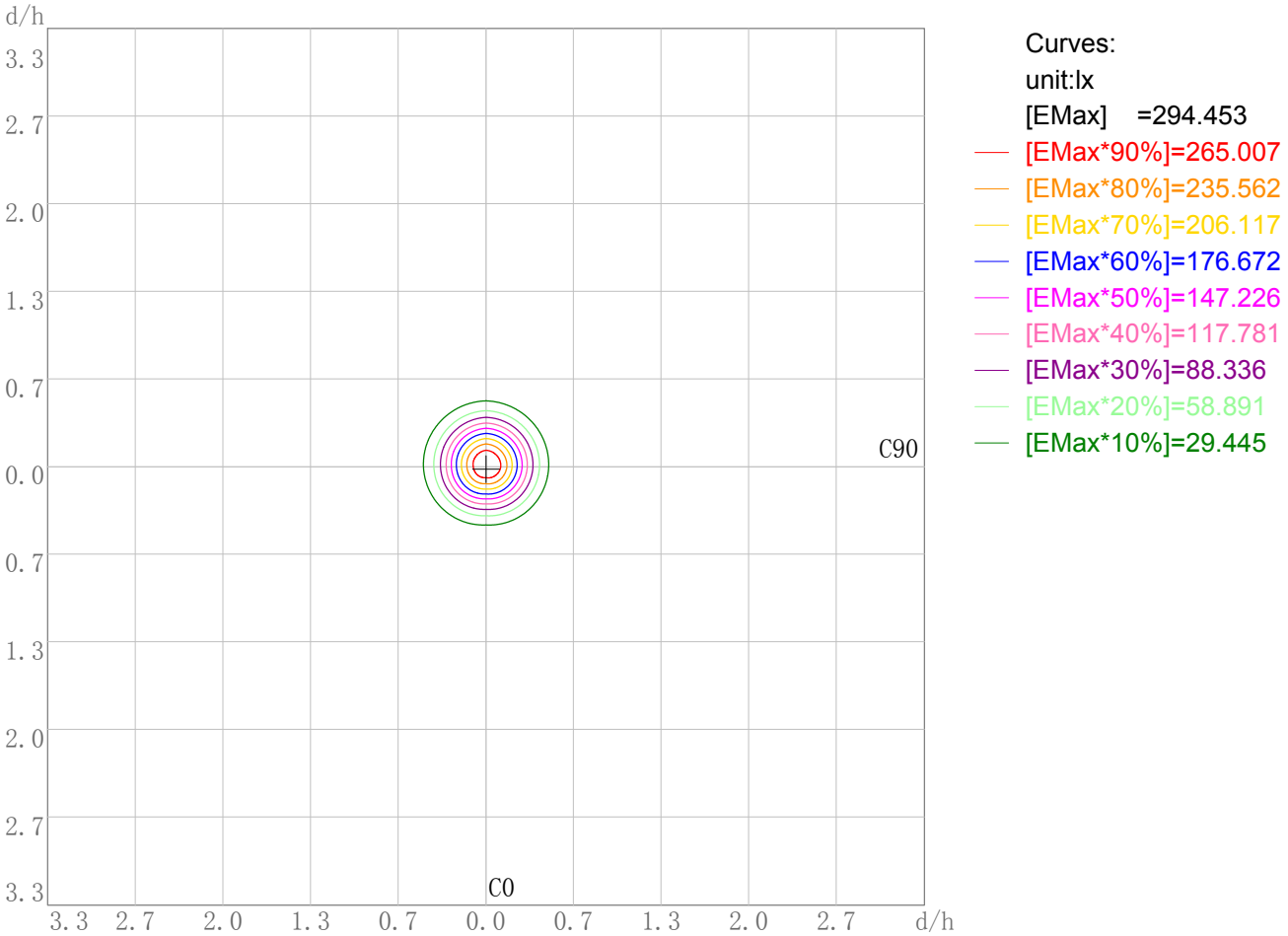



Maximum Light Intensity(cd): 2651.31
Maximum Cand.@Angle: H=2.0°,V=0.0°

# Plane ISO-Illuminance Diagram

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

## Plane ISO-Illuminance Curve

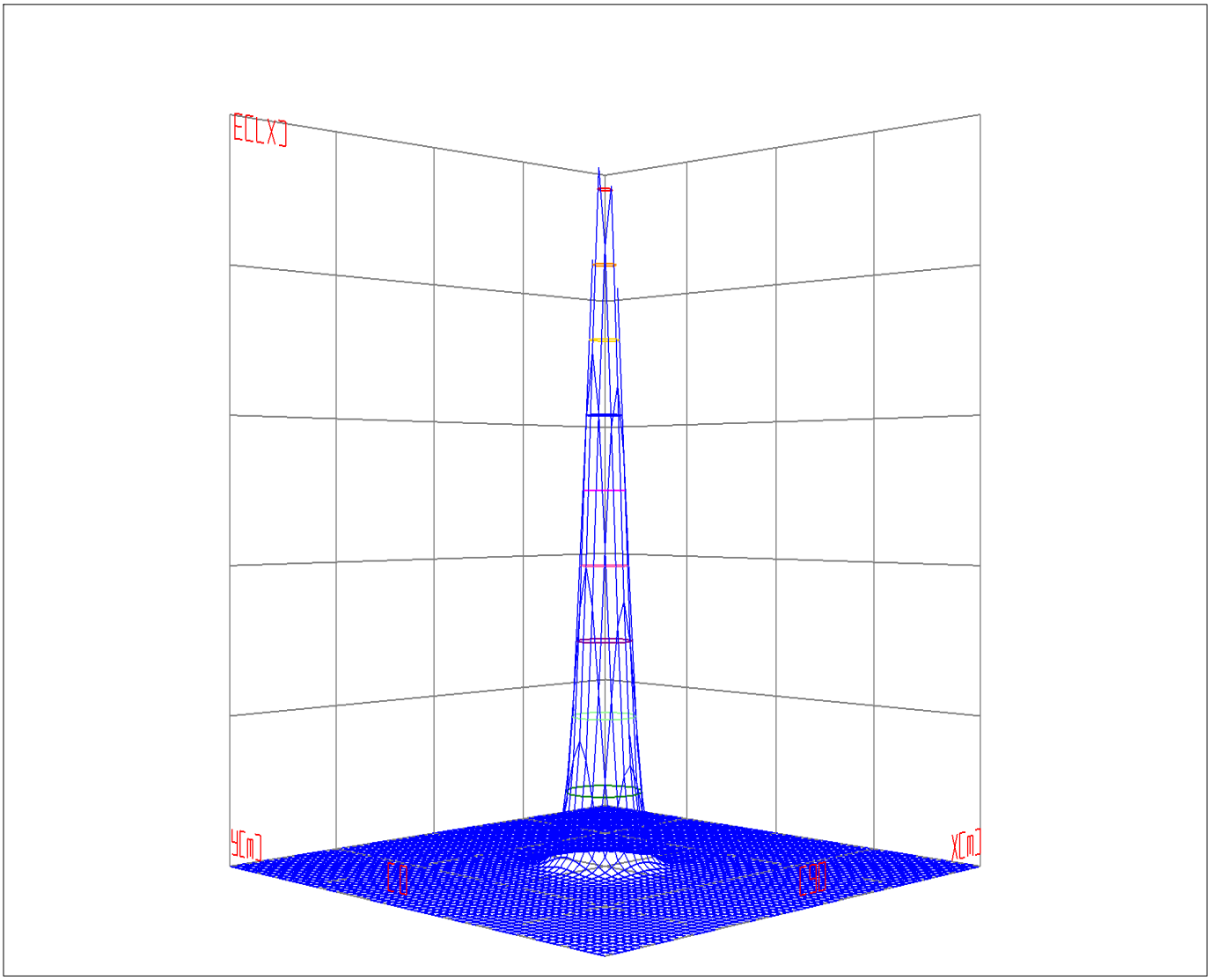



Working Plane Luminaire Mounting Height(m): 3.00
Working Plane Maximum Illuminance(lx): 294.45
Working Plane Maximum Illuminance Position(d/h):H0.0 V0.0

# 3D Plane ISO Illuminance Diagram

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

3D Plane Illuminance Modal

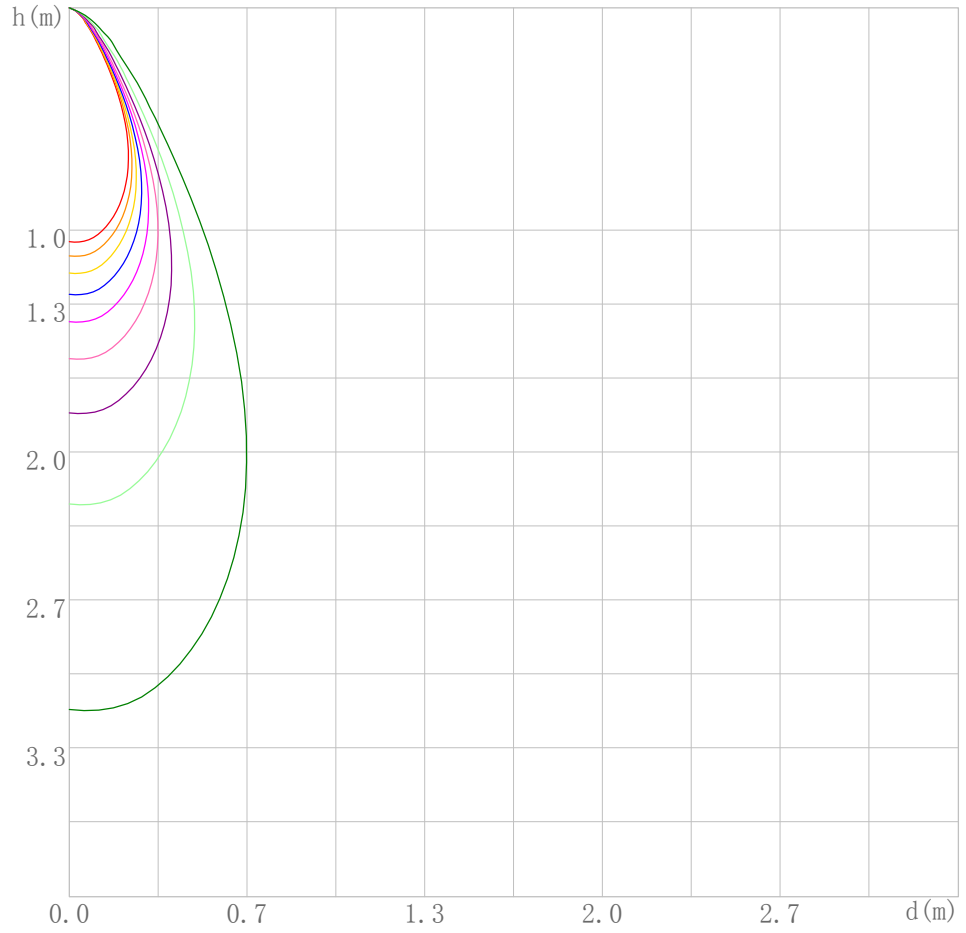



Curves: 3D Model 90% 80% 70% 60% 50% 40% 30% 20% 10%
View Angles(deg): 0 Height(m): 3.0 Distance(m): 10.0

# Space ISO Illuminance Diagram

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

## Space ISO Illuminance Curve

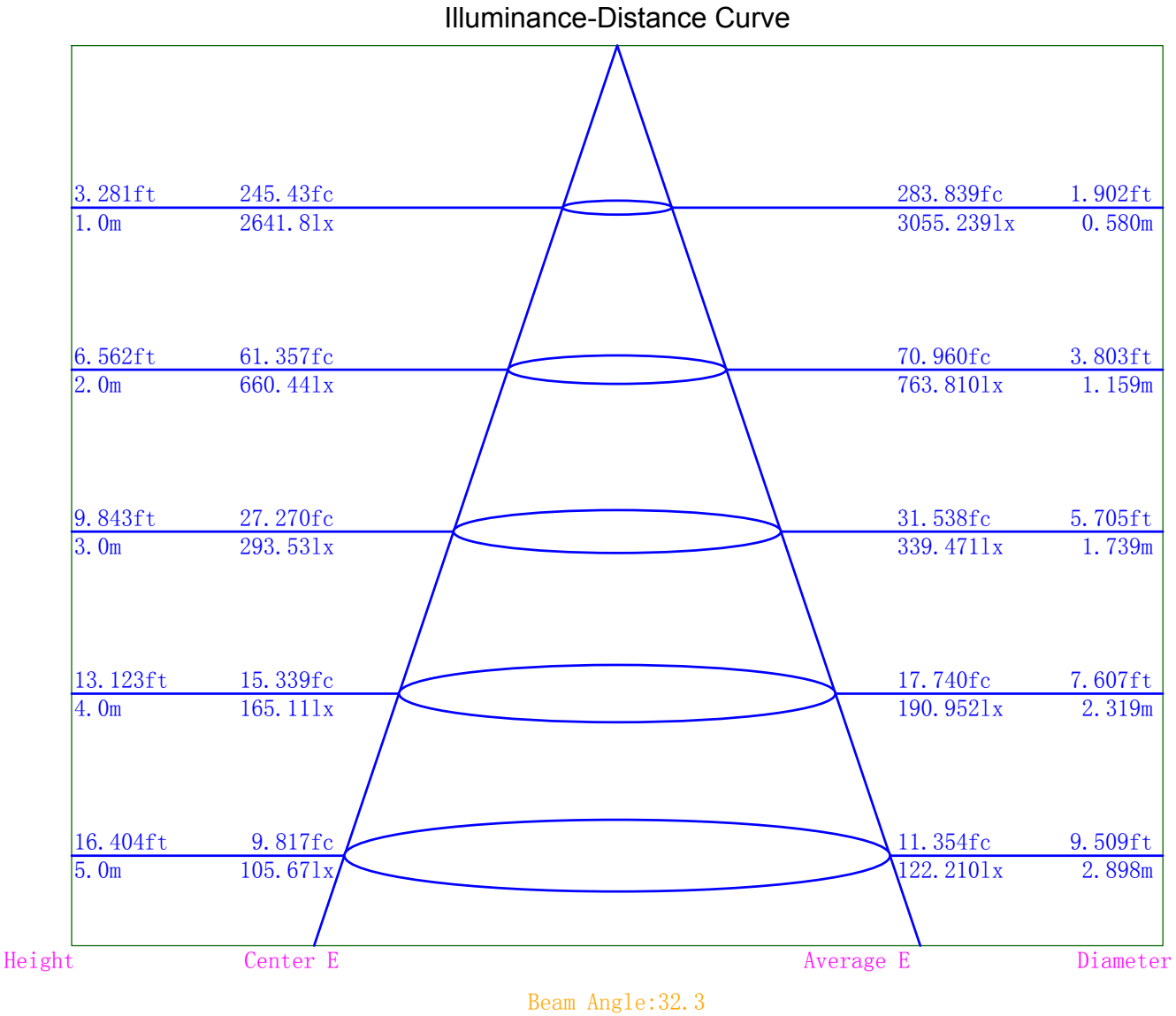



Curves:
[Unit: lx]
[EMax] =2650.073
[EMax*90%]=2385.065
[EMax*80%]=2120.058
[EMax*70%]=1855.051
[EMax*60%]=1590.044
[EMax*50%]=1325.036
[EMax*40%]=1060.029
[EMax*30%]=795.022
[EMax*20%]=530.015
[EMax*10%]=265.007

Space Plane Maximum Illuminance and @Angle:2650.07lx,1.0deg
Plane Maximum Lighting Intensity and @Angle:2651.311cd,0eg

# Illuminance-Distance Diagram

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |



# Indoor Luminance Limiting Curves

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

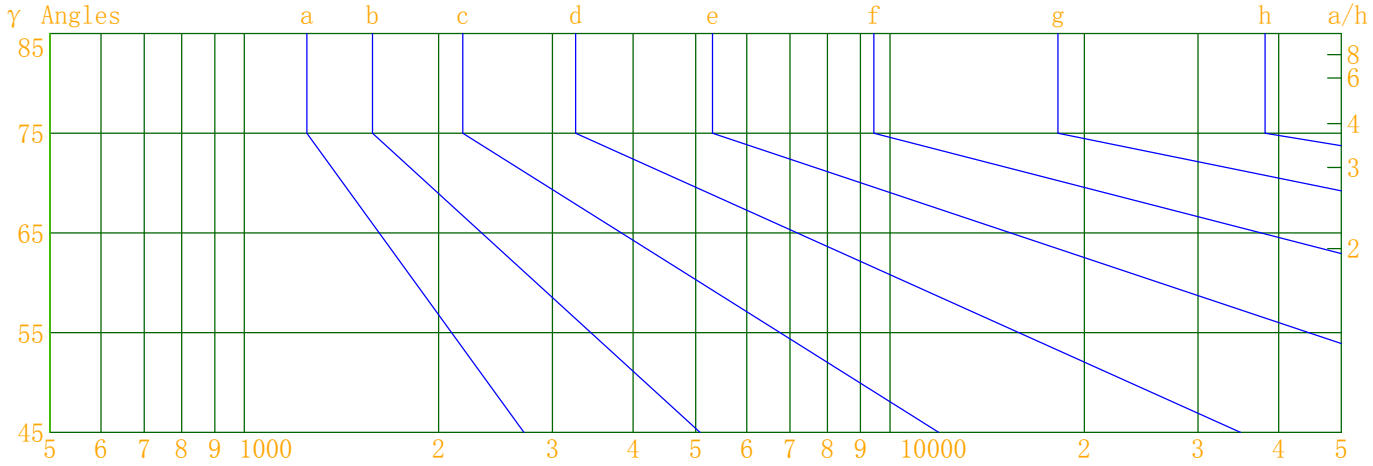
Glare Grade Table

| GI | Quality | Using Illuminace | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

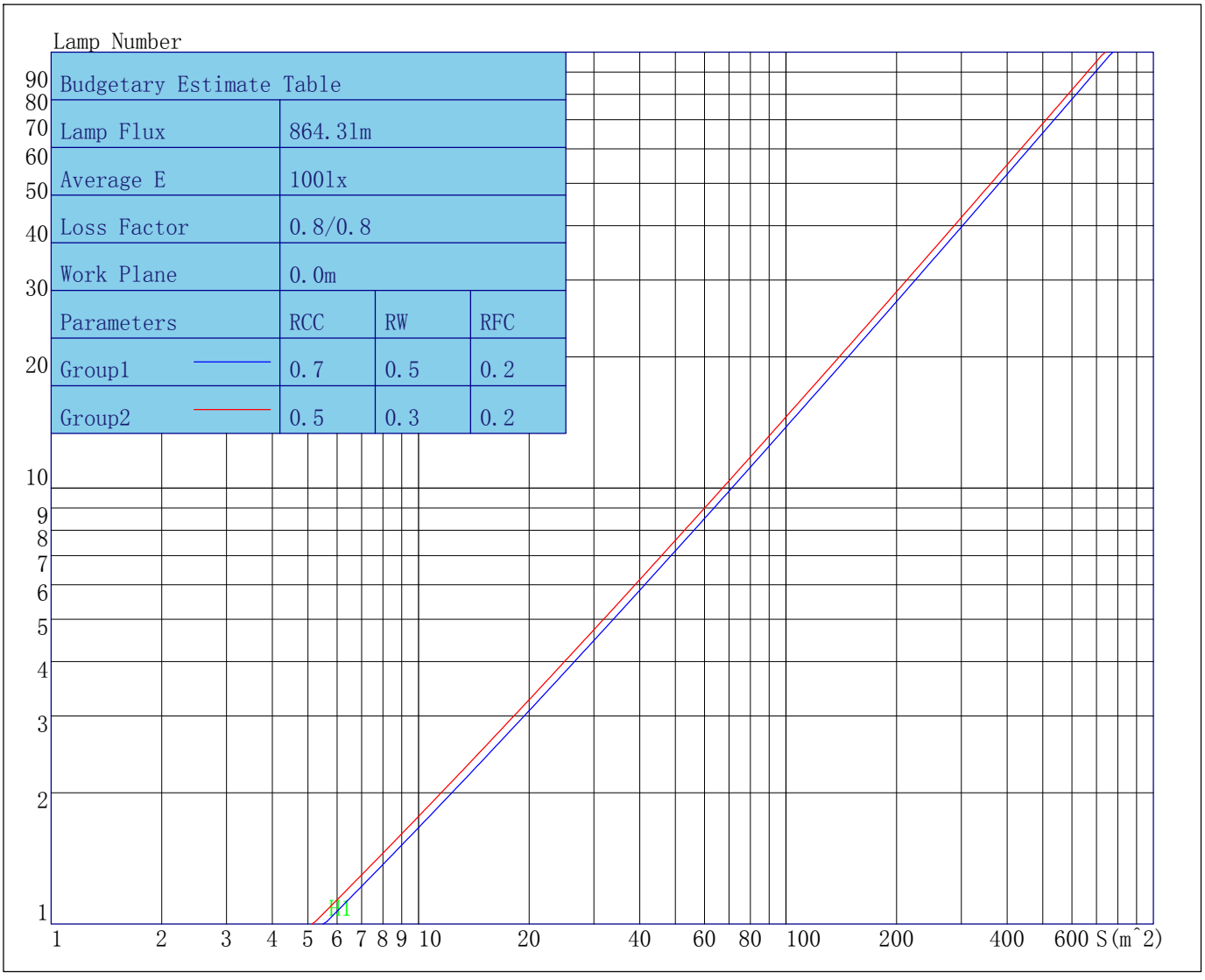
Luminance Limiting Curve




Luminous Size: Length(m)=0.000 Width(m)=0.000 Height(m)=0.000 Area(m^2)=0.000000
Luminous Type: Without Luminous Side
Luminous Curves: C0-C180 Color: C90-C270 Color:

# Indoor Budgetary Estimate Table

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |




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

# Indoor Coefficient of Utilization Table

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

| 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 | 112 | 110 | 109 | 112 | 110 | 109 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 99 | 98 | 98 | 96 |
| 2 | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 100 | 102 | 100 | 98 | 99 | 97 | 96 | 96 | 95 | 94 | 92 |
| 3 | 107 | 102 | 98 | 95 | 105 | 100 | 97 | 94 | 98 | 95 | 92 | 96 | 93 | 91 | 93 | 91 | 90 | 88 |
| 4 | 103 | 97 | 93 | 90 | 101 | 96 | 92 | 89 | 94 | 91 | 88 | 92 | 89 | 87 | 90 | 88 | 86 | 85 |
| 5 | 99 | 93 | 89 | 85 | 98 | 92 | 88 | 85 | 91 | 87 | 84 | 89 | 86 | 83 | 88 | 85 | 83 | 82 |
| 6 | 96 | 89 | 85 | 81 | 95 | 89 | 84 | 81 | 87 | 83 | 81 | 86 | 83 | 80 | 85 | 82 | 80 | 79 |
| 7 | 93 | 86 | 81 | 78 | 92 | 85 | 81 | 78 | 84 | 80 | 78 | 83 | 80 | 77 | 82 | 79 | 77 | 76 |
| 8 | 90 | 83 | 78 | 75 | 89 | 82 | 78 | 75 | 81 | 77 | 75 | 80 | 77 | 74 | 80 | 76 | 74 | 73 |
| 9 | 87 | 80 | 75 | 72 | 86 | 79 | 75 | 72 | 79 | 75 | 72 | 78 | 74 | 72 | 77 | 74 | 72 | 71 |
| 10 | 85 | 77 | 73 | 70 | 84 | 77 | 73 | 70 | 76 | 72 | 70 | 75 | 72 | 69 | 75 | 72 | 69 | 68 |

# Unified Glare Rating Table

| | | |
|---|---|---|
| Lum.Name: HCP-1022222+HCP-1032222 3000K 36D | Lum.Catelog: | Test ID: 01 |
| Lamp Name: | Lamp Catelog: LED | Test Lab: Quality Department |
| Manufacture: Havit Commercial | Test Machine:GON-2000 | Test Date: 2020/11/25 |

## 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 | -1.3 | -0.4 | -1.0 | -0.1 | 0.2 | -1.3 | -0.4 | -1.0 | -0.1 | 0.2 |
| | Y=3H | -1.5 | -0.7 | -1.2 | -0.4 | -0.0 | -1.5 | -0.7 | -1.2 | -0.4 | -0.0 |
| | Y=4H | -1.7 | -0.9 | -1.2 | -0.5 | -0.1 | -1.7 | -0.9 | -1.2 | -0.5 | -0.1 |
| | Y=6H | -1.8 | -1.1 | -1.4 | -0.7 | -0.3 | -1.8 | -1.1 | -1.4 | -0.7 | -0.3 |
| | Y=8H | -1.8 | -1.2 | -1.4 | -0.8 | -0.4 | -1.8 | -1.2 | -1.4 | -0.8 | -0.4 |
| | Y=12H | -1.9 | -1.3 | -1.5 | -0.9 | -0.4 | -1.9 | -1.3 | -1.5 | -0.9 | -0.4 |
| X=4H | Y=2H | -1.7 | -0.9 | -1.2 | -0.5 | -0.1 | -1.7 | -0.9 | -1.2 | -0.5 | -0.1 |
| | Y=3H | -1.9 | -1.2 | -1.5 | -0.8 | -0.4 | -1.9 | -1.2 | -1.5 | -0.8 | -0.4 |
| | Y=4H | -2.0 | -1.4 | -1.6 | -1.0 | -0.6 | -2.0 | -1.4 | -1.6 | -1.0 | -0.6 |
| | Y=6H | -2.1 | -1.6 | -1.7 | -1.2 | -0.7 | -2.1 | -1.6 | -1.7 | -1.2 | -0.7 |
| | Y=8H | -2.2 | -1.7 | -1.7 | -1.3 | -0.8 | -2.2 | -1.7 | -1.7 | -1.3 | -0.8 |
| | Y=12H | -2.3 | -1.9 | -1.8 | -1.4 | -0.9 | -2.3 | -1.9 | -1.8 | -1.4 | -0.9 |
| X=8H | Y=4H | -2.2 | -1.7 | -1.7 | -1.3 | -0.8 | -2.2 | -1.7 | -1.7 | -1.3 | -0.8 |
| | Y=6H | -2.3 | -2.0 | -1.8 | -1.5 | -0.9 | -2.3 | -2.0 | -1.8 | -1.5 | -0.9 |
| | Y=8H | -2.4 | -2.1 | -1.9 | -1.6 | -1.1 | -2.4 | -2.1 | -1.9 | -1.6 | -1.1 |
| | Y=12H | -2.5 | -2.2 | -2.0 | -1.7 | -1.1 | -2.5 | -2.2 | -2.0 | -1.7 | -1.1 |
| X=12H | Y=4H | -2.3 | -1.9 | -1.8 | -1.4 | -0.9 | -2.3 | -1.9 | -1.8 | -1.4 | -0.9 |
| | Y=6H | -2.4 | -2.1 | -1.9 | -1.6 | -1.1 | -2.4 | -2.1 | -1.9 | -1.6 | -1.1 |
| | Y=8H | -2.5 | -2.2 | -2.0 | -1.7 | -1.1 | -2.5 | -2.2 | -2.0 | -1.7 | -1.1 |
| Variations with the objerver position at spacings | | | | | | | | | | | |
| S=1.0H | | 0.0/0.0 | | | | | 0.0/0.0 | | | | |
| S=1.5H | | 0.0/0.0 | | | | | 0.0/0.0 | | | | |
| S=2.0H | | 0.0/0.0 | | | | | 0.0/0.0 | | | | |
| Reduced UGR Table: | | | | | | | | | | | |
| Nordic Standard Table: | | BK0 | | | | | BK0 | | | | |
| Correction Value | | 0.0 | | | | | 0.0 | | | | |

o the CIE Pub.117,data has been corrected,refers to the lamp's lumens 8.2flm.

## Candela Tabulation

| V/H | C0.0 | C90.0 | C180.0 | C270.0 |
|---|---|---|---|---|
| γ 0.0 | 2641.78 | 2641.78 | 2641.78 | 2641.78 |
| γ 1.0 | 2651.28 | 2648.05 | 2615.80 | 2634.84 |
| γ 2.0 | 2651.31 | 2637.16 | 2577.57 | 2605.98 |
| γ 3.0 | 2641.02 | 2610.47 | 2529.22 | 2566.35 |
| γ 4.0 | 2616.72 | 2574.69 | 2463.19 | 2518.32 |
| γ 5.0 | 2577.77 | 2524.20 | 2388.99 | 2458.72 |
| γ 6.0 | 2521.97 | 2460.38 | 2302.74 | 2386.22 |
| γ 7.0 | 2454.51 | 2381.15 | 2206.28 | 2306.30 |
| γ 8.0 | 2379.17 | 2294.36 | 2104.99 | 2215.96 |
| γ 9.0 | 2293.33 | 2200.69 | 2001.56 | 2118.52 |
| γ 10.0 | 2201.98 | 2095.63 | 1887.19 | 2015.43 |
| γ 11.0 | 2104.41 | 1986.65 | 1770.78 | 1905.46 |
| γ 12.0 | 1999.01 | 1875.63 | 1651.75 | 1793.13 |
| γ 13.0 | 1889.77 | 1759.88 | 1527.70 | 1676.88 |
| γ 14.0 | 1774.91 | 1641.22 | 1403.31 | 1559.64 |
| γ 15.0 | 1657.40 | 1517.70 | 1277.61 | 1440.11 |
| γ 16.0 | 1538.29 | 1394.79 | 1155.83 | 1319.25 |
| γ 17.0 | 1415.36 | 1270.76 | 1033.45 | 1188.79 |
| γ 18.0 | 1288.60 | 1148.08 | 913.67 | 1075.16 |
| γ 19.0 | 1164.79 | 1026.13 | 796.84 | 953.44 |
| γ 20.0 | 1041.87 | 908.35 | 686.43 | 834.73 |
| γ 21.0 | 921.30 | 793.46 | 581.58 | 723.39 |
| γ 22.0 | 802.27 | 679.27 | 488.22 | 624.17 |
| γ 23.0 | 689.61 | 573.71 | 406.83 | 535.63 |
| γ 24.0 | 587.76 | 477.59 | 335.80 | 457.01 |
| γ 25.0 | 497.34 | 394.21 | 273.50 | 387.13 |
| γ 26.0 | 415.99 | 319.37 | 218.31 | 326.22 |
| γ 27.0 | 344.34 | 252.46 | 171.52 | 270.87 |
| γ 28.0 | 283.22 | 197.93 | 135.60 | 225.45 |
| γ 29.0 | 232.93 | 157.84 | 108.39 | 187.76 |
| γ 30.0 | 191.17 | 127.68 | 88.12 | 156.17 |
| γ 31.0 | 158.44 | 105.51 | 73.09 | 129.76 |
| γ 32.0 | 130.57 | 87.93 | 60.83 | 108.82 |
| γ 33.0 | 111.02 | 75.63 | 52.22 | 91.19 |
| γ 34.0 | 92.98 | 64.63 | 43.76 | 77.25 |
| γ 35.0 | 80.98 | 55.99 | 36.45 | 65.02 |
| γ 36.0 | 69.16 | 47.61 | 29.67 | 54.31 |
| γ 37.0 | 59.21 | 40.60 | 23.95 | 44.48 |
| γ 38.0 | 49.94 | 34.42 | 19.60 | 36.24 |
| γ 39.0 | 42.09 | 29.30 | 16.32 | 29.44 |
| γ 40.0 | 35.68 | 25.31 | 14.06 | 24.76 |
| γ 41.0 | 30.66 | 22.08 | 12.45 | 21.38 |
| γ 42.0 | 27.01 | 19.64 | 11.43 | 19.26 |
| γ 43.0 | 24.33 | 17.73 | 10.55 | 17.80 |
| γ 44.0 | 22.22 | 15.95 | 9.80 | 16.47 |
| γ 45.0 | 20.43 | 14.39 | 9.20 | 15.18 |
| γ 46.0 | 18.87 | 13.05 | 8.55 | 13.58 |

## Candela Tabulation - (Cont.)

| V/H | C0.0 | C90.0 | C180.0 | C270.0 |
|---|---|---|---|---|
| γ 47.0 | 17.10 | 11.84 | 7.38 | 11.16 |
| γ 48.0 | 14.84 | 10.45 | 5.95 | 8.66 |
| γ 49.0 | 12.13 | 8.50 | 5.27 | 7.47 |
| γ 50.0 | 10.44 | 7.45 | 4.94 | 6.93 |
| γ 51.0 | 9.33 | 6.52 | 4.42 | 6.38 |
| γ 52.0 | 8.34 | 5.68 | 4.03 | 5.93 |
| γ 53.0 | 7.39 | 4.95 | 3.63 | 5.43 |
| γ 54.0 | 6.53 | 4.18 | 3.21 | 4.99 |
| γ 55.0 | 5.75 | 3.48 | 2.84 | 4.59 |
| γ 56.0 | 5.01 | 2.82 | 2.39 | 4.10 |
| γ 57.0 | 4.22 | 2.29 | 2.08 | 3.71 |
| γ 58.0 | 3.67 | 1.80 | 1.59 | 3.25 |
| γ 59.0 | 3.04 | 1.26 | 1.17 | 2.78 |
| γ 60.0 | 2.59 | 0.73 | 0.66 | 2.38 |
| γ 61.0 | 1.95 | 0.24 | 0.26 | 1.82 |
| γ 62.0 | 1.44 | 0.00 | 0.00 | 1.21 |
| γ 63.0 | 0.85 | 0.00 | 0.00 | 0.76 |
| γ 64.0 | 0.26 | 0.00 | 0.00 | 0.27 |
| γ 65.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 66.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 67.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 68.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 69.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 70.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 71.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 72.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 73.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 74.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 75.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 76.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 77.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 78.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 79.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 80.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 81.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 82.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 83.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 84.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 85.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 86.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 87.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 88.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 89.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 90.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 91.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 92.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 93.0 | 0.00 | 0.00 | 0.00 | 0.00 |

## Candela Tabulation - (Cont.)

| V/H | C0.0 | C90.0 | C180.0 | C270.0 |
|---|---|---|---|---|
| γ 94.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 95.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 96.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 97.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 98.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 99.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 100.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 101.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 102.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 103.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 104.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 105.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 106.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 107.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 108.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 109.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 110.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 111.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 112.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 113.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 114.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 115.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 116.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 117.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 118.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 119.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 121.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 122.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 123.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 124.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 125.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 126.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 127.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 128.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 129.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 130.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 131.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 132.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 133.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 134.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 135.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 136.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 137.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 138.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 139.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 140.0 | 0.00 | 0.00 | 0.00 | 0.00 |

## Candela Tabulation - (Cont.)

| V/H | C0.0 | C90.0 | C180.0 | C270.0 |
|---|---|---|---|---|
| γ 141.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 142.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 143.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 144.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 145.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 146.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 147.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 148.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 149.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 150.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 151.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 152.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 153.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 154.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 155.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 156.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 157.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 158.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 159.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 160.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 161.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 162.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 163.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 164.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 165.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 166.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 167.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 168.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 169.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 170.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 171.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 172.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 173.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 174.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 175.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 176.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 177.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 178.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 179.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| γ 180.0 | 0.00 | 0.00 | 0.00 | 0.00 |