

Report No.: 20230628

Test Time: 2023/6/28 17:39

Luminaire Property

Luminaire Manufacturer:

Luminaire Category: Pixel Bar

Luminaire Description: Pixel Bar 1200 mm Square Milky RGBW

Lamp Catalog: RGBW30

Luminous Width (mm): 40

Voltage: 219.3 V

Power: 31.37 W

Luminous Length (mm): 1200

Luminous Height (mm): 30

Current: 0.146 A

Power Factor: 0.977

Photometric Results

CIE Class: Semi-Direct

Measurement Flux: 863.1 lm

Downward Ratio: 83%

Horizontal Diffuse Angle(10%,50%): H164,H111.5

Vertical Diffuse Angle(10%,50%): V294.3,V136.9

Luminaire Efficacy Rating (LER): 28

Max. Intensity: 209.12 cd

Total Rated Lamp Lumens: 863.1 lm

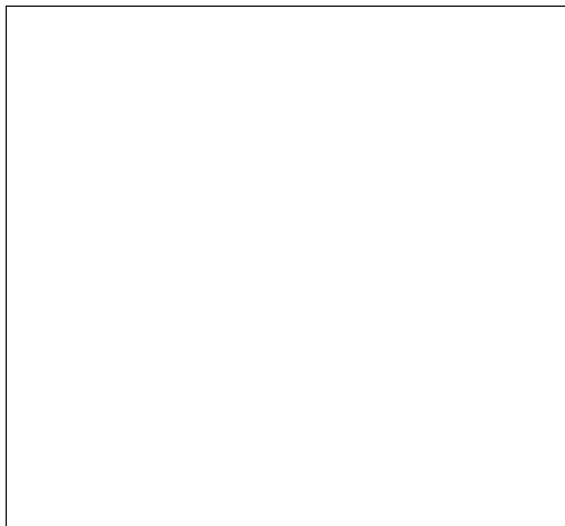
Efficiency: 100%

Upward Ratio: 17%

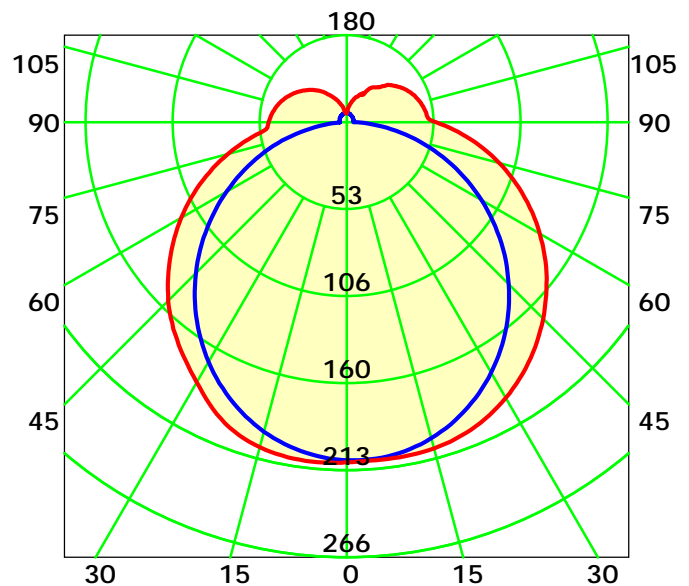
Central Intensity: 207.16 cd

Pos of Max. Intensity: H270 V5

Picture Of Luminaire



Luminous Intensity Distribution Curve



Average Diffuse Angle(50%): 124.2° Unit: cd

— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: Jacky

Gamma Plane (°):0.0-180.0: 1.0

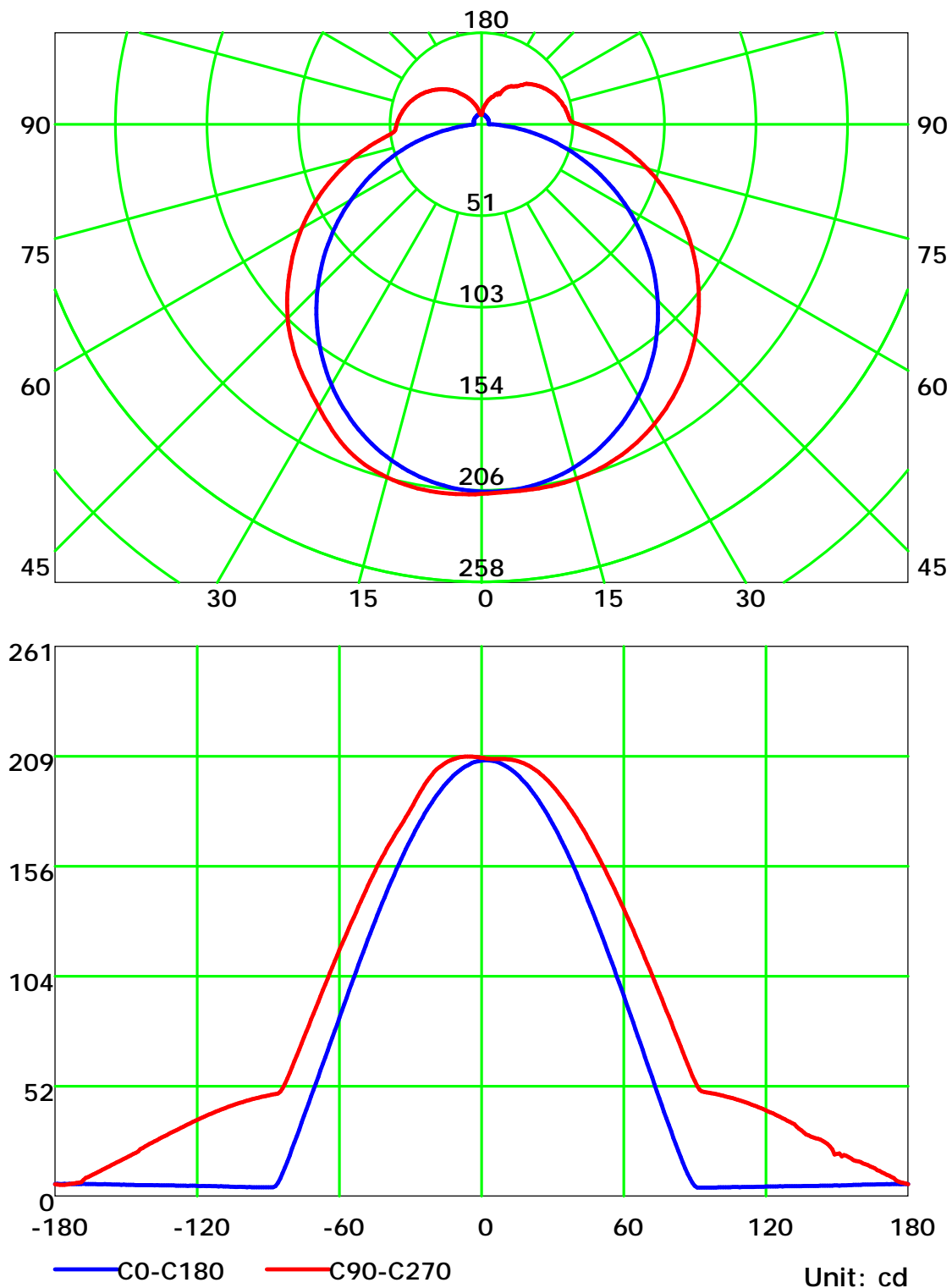
Test Device: GPM-1800B

Distance: 9.028 m

Humidity: 60%

Inspector:

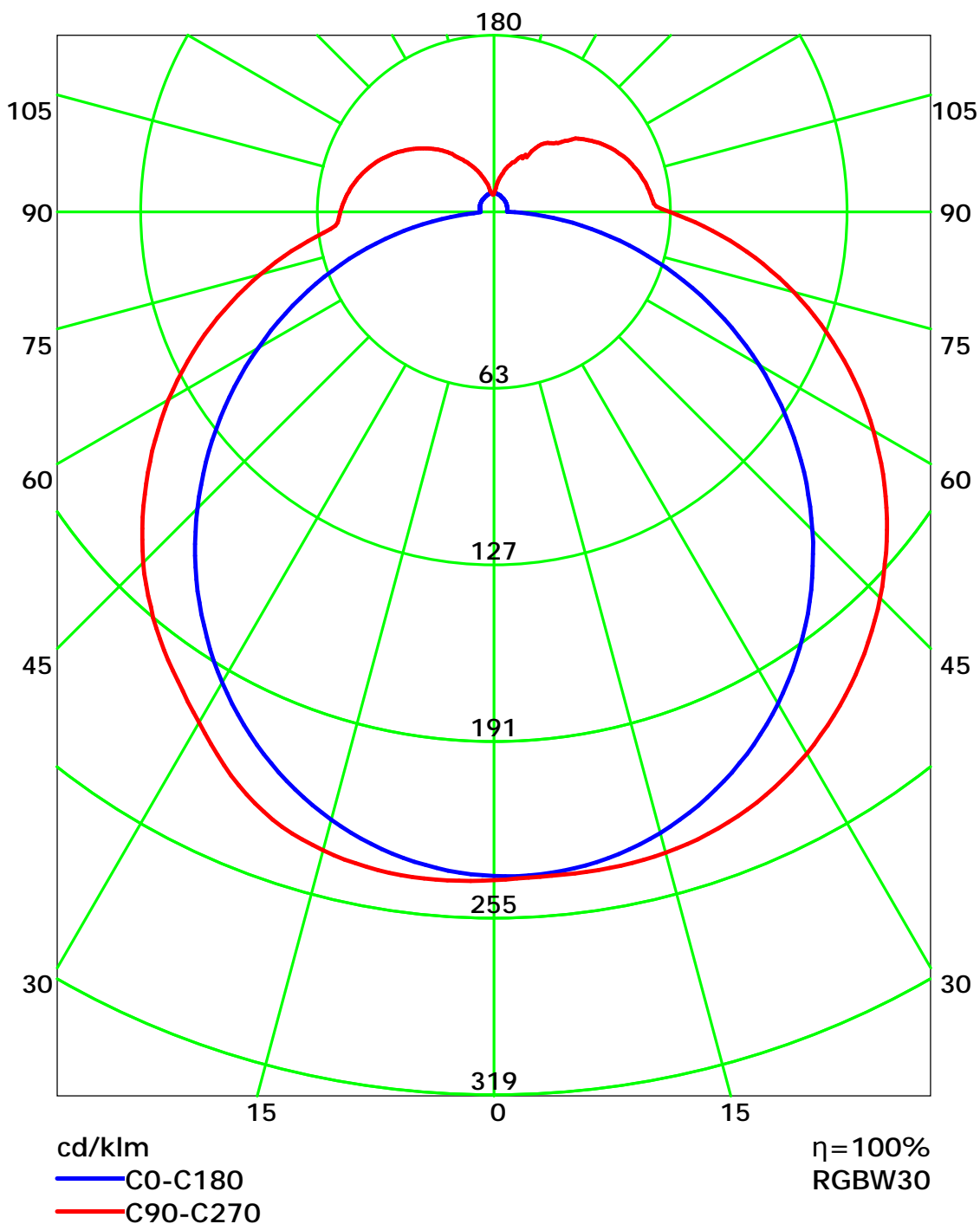
Luminous Intensity Distribution Curve



C Plane (°): 0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

Luminous Intensity Distribution Curve(cd/klm)



C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

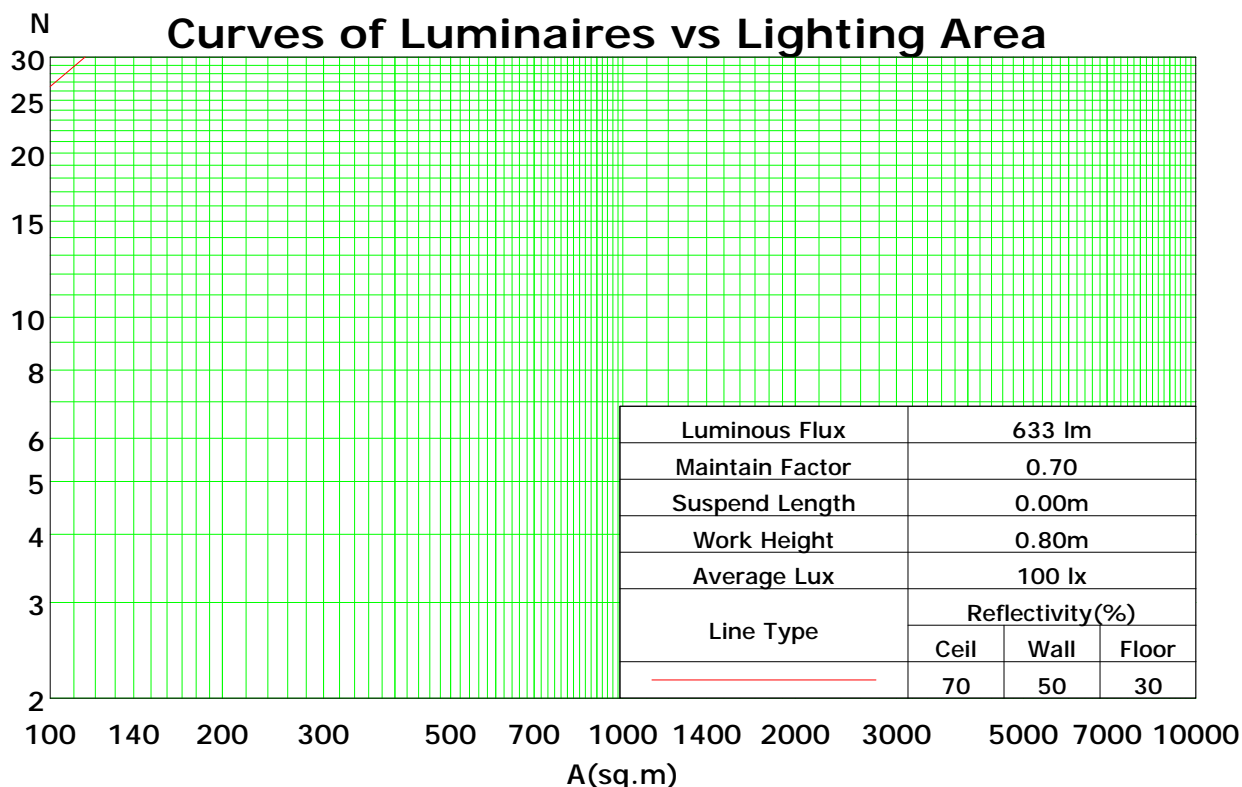
Coefficients Of Utilization - Zonal Cavity Method

| | | | | | | | | | | | | | | | | | | |
|-----|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| RC | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0 |
| RW | 0.7 | 0.5 | 0.3 | 0.1 | 0.7 | 0.5 | 0.3 | 0.1 | 0.5 | 0.3 | 0.1 | 0.5 | 0.3 | 0.1 | 0.5 | 0.3 | 0.1 | 0 |
| RCR | RF = 0.2 | | | | | | | | | | | | | | | | | |
| 0 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 110 | 102 | 102 | 102 | 94 | 94 | 94 | 87 | 87 | 87 | 83 |
| 1 | 103 | 98 | 93 | 88 | 99 | 94 | 89 | 85 | 86 | 83 | 79 | 79 | 77 | 74 | 73 | 71 | 69 | 66 |
| 2 | 93 | 84 | 76 | 70 | 89 | 81 | 74 | 68 | 74 | 69 | 64 | 68 | 64 | 60 | 63 | 59 | 56 | 53 |
| 3 | 84 | 73 | 64 | 57 | 80 | 70 | 62 | 56 | 65 | 58 | 53 | 60 | 54 | 50 | 55 | 51 | 47 | 44 |
| 4 | 77 | 64 | 55 | 48 | 73 | 62 | 53 | 47 | 57 | 50 | 44 | 53 | 47 | 42 | 49 | 44 | 40 | 37 |
| 5 | 70 | 57 | 48 | 41 | 67 | 55 | 46 | 40 | 51 | 44 | 38 | 47 | 41 | 36 | 44 | 38 | 34 | 32 |
| 6 | 65 | 51 | 42 | 35 | 62 | 49 | 41 | 35 | 46 | 38 | 33 | 43 | 36 | 31 | 39 | 34 | 30 | 27 |
| 7 | 60 | 46 | 37 | 31 | 57 | 45 | 36 | 30 | 42 | 34 | 29 | 39 | 32 | 28 | 36 | 31 | 26 | 24 |
| 8 | 56 | 42 | 33 | 27 | 53 | 41 | 32 | 27 | 38 | 31 | 26 | 35 | 29 | 25 | 33 | 28 | 23 | 21 |
| 9 | 52 | 38 | 30 | 24 | 50 | 37 | 29 | 24 | 35 | 28 | 23 | 33 | 26 | 22 | 30 | 25 | 21 | 19 |
| 10 | 49 | 35 | 27 | 22 | 47 | 34 | 27 | 22 | 32 | 25 | 21 | 30 | 24 | 20 | 28 | 23 | 19 | 17 |

Spacing Criteria (0-180): 1.24

Spacing Criteria (90-270): 1.35

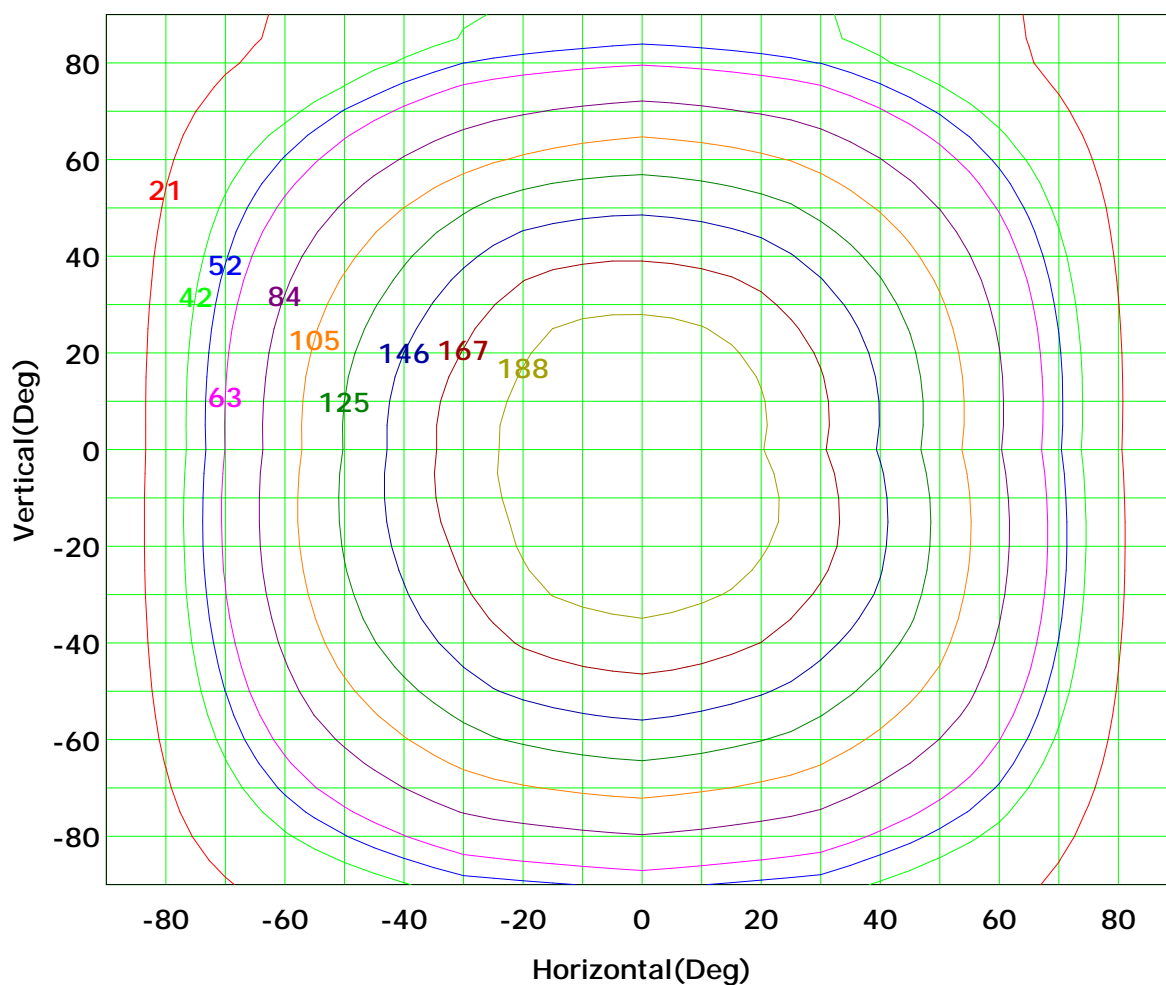
Spacing Criteria (Diagonal): 1.45



C Plane (°): 0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

Isocandela (rectangle)



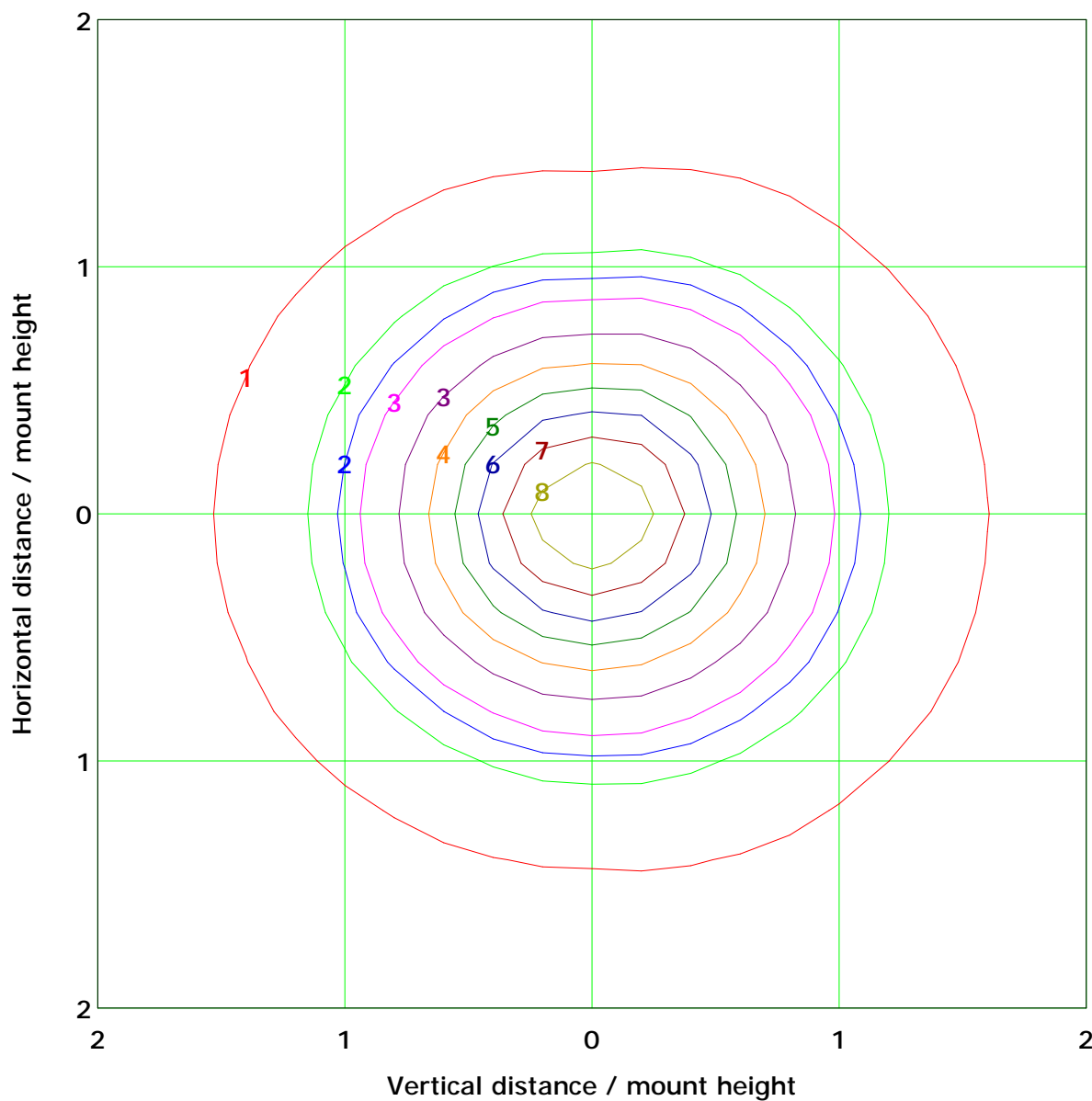
I_{max} (100%): 209 cd

| | | | |
|---------|--------|---------|--------|
| (10%): | 21 cd | (20%): | 42 cd |
| (25%): | 52 cd | (30%): | 63 cd |
| (40%): | 84 cd | (50%): | 105 cd |
| (60%): | 125 cd | (70%): | 146 cd |
| (80%): | 167 cd | (90%): | 188 cd |

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

IsoLux Plot



Mounting Height: 5.0m Max Lux(100%): 8.3 lx

| | |
|----------------|----------------|
| (10%): 0.8 lx | (20%): 1.7 lx |
| (25%): 2.1 lx | (30%): 2.5 lx |
| (40%): 3.3 lx | (50%): 4.2 lx |
| (60%): 5.0 lx | (70%): 5.8 lx |
| (80%): 6.7 lx | (90%): 7.5 lx |

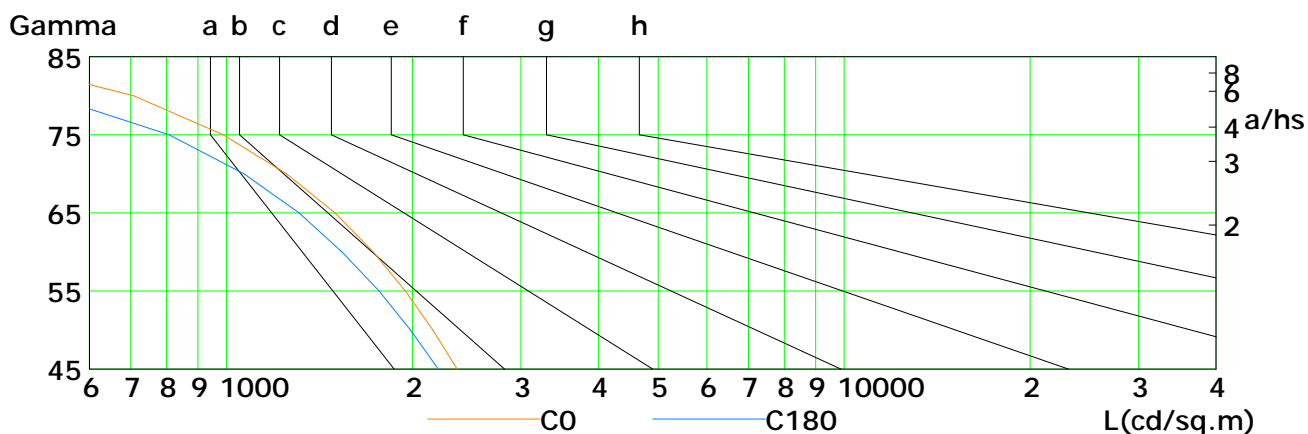
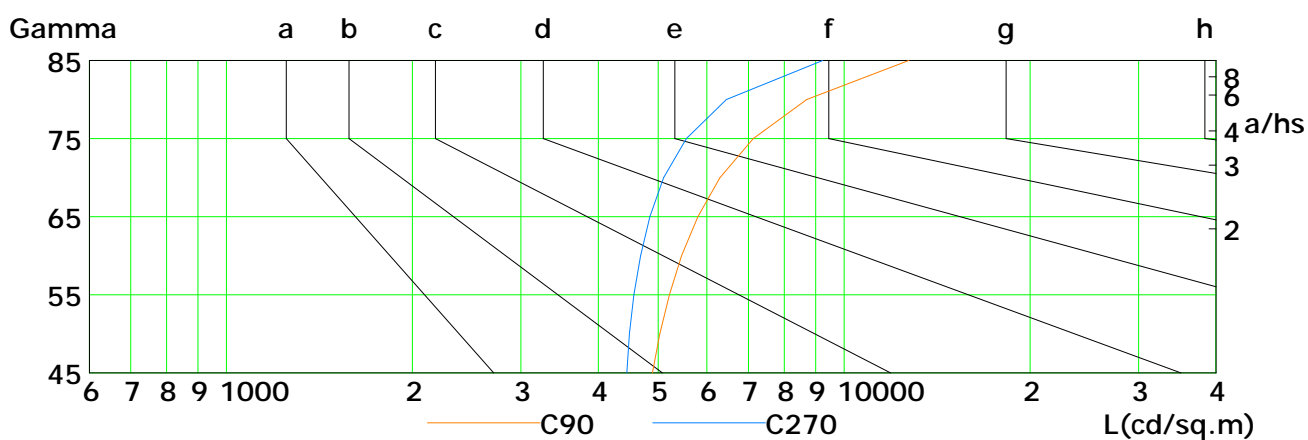
C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

Lum Limit Curve

| Dazzle | Quality | Illuminance (lx) | | | | | | | |
|--------|---------|------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.50 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.20 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | | | | | 2000 | 1000 | 500 | <=300 |

a b c d e f g h

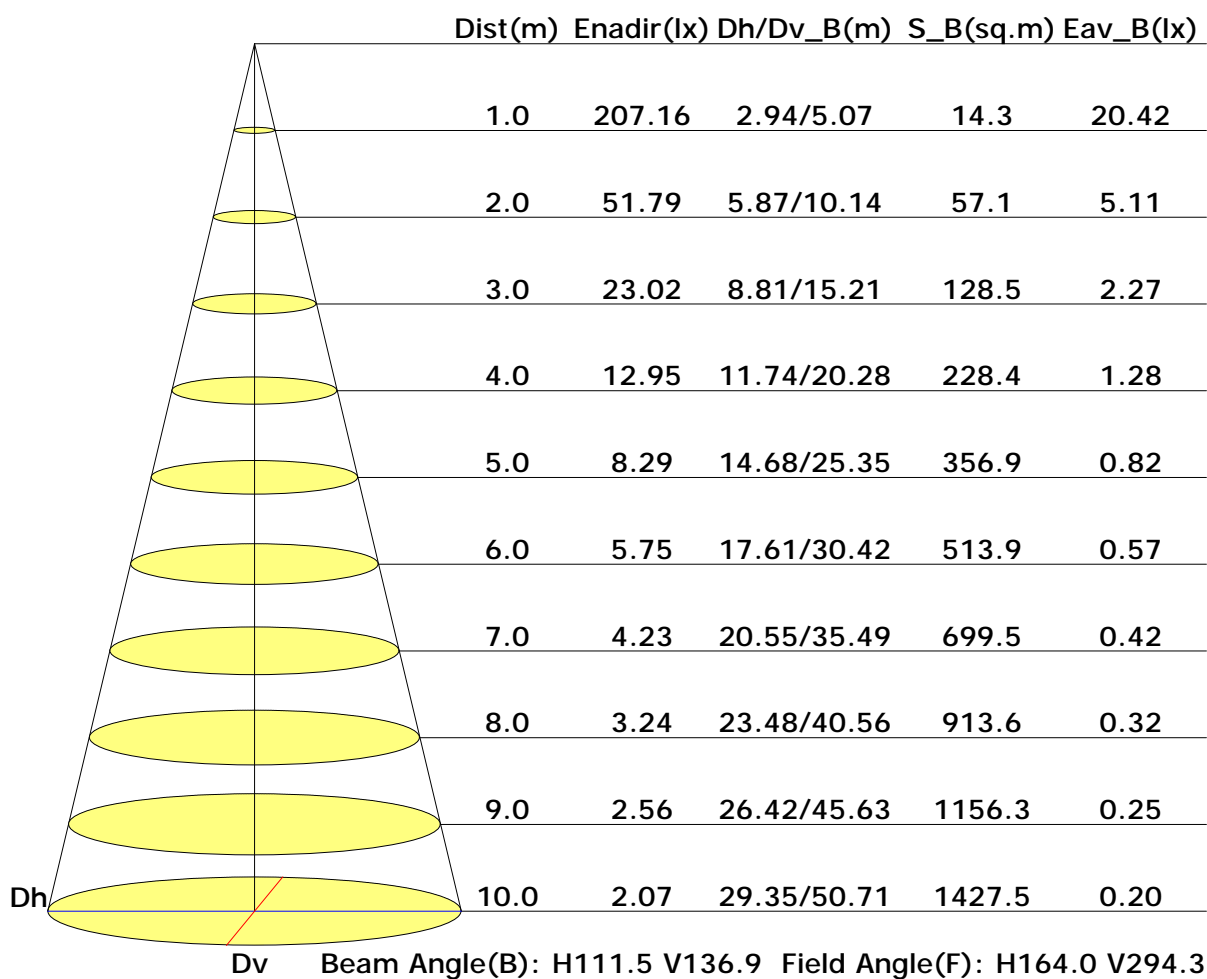


| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|------------|------|------|------|------|------|------|------|------|-------|
| C0 | 2365 | 2160 | 1949 | 1731 | 1500 | 1252 | 988 | 708 | 399 |
| C90 | 4896 | 5034 | 5215 | 5459 | 5799 | 6297 | 7128 | 8703 | 12737 |
| C180 | 2203 | 1987 | 1767 | 1540 | 1311 | 1068 | 808 | 518 | 213 |
| C270 | 4449 | 4492 | 4566 | 4683 | 4847 | 5103 | 5557 | 6453 | 9242 |

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

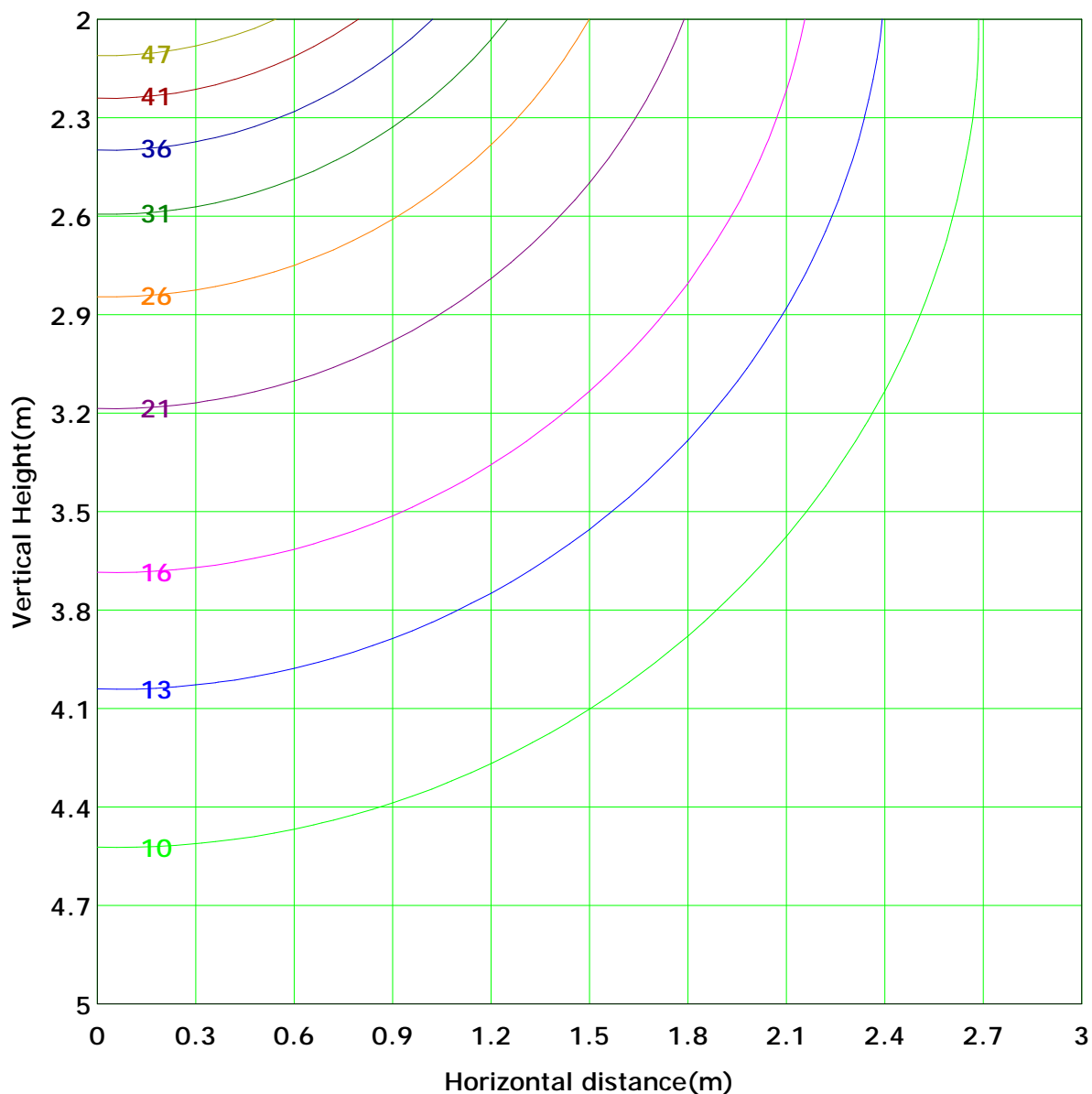
Illuminance at a Distance



C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

Vertical IsoLux Plot



| | | |
|-----------------|------------------|------------------|
| Lowest(m): 2.0m | Highest(m): 5.0m | Max Lux: 51.8 lx |
| (10%): 5.2 lx | (20%): 10.4 lx | |
| (25%): 12.9 lx | (30%): 15.5 lx | |
| (40%): 20.7 lx | (50%): 25.9 lx | |
| (60%): 31.1 lx | (70%): 36.3 lx | |
| (80%): 41.4 lx | (90%): 46.6 lx | |

C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:

Area Flux Table

Unit: lm

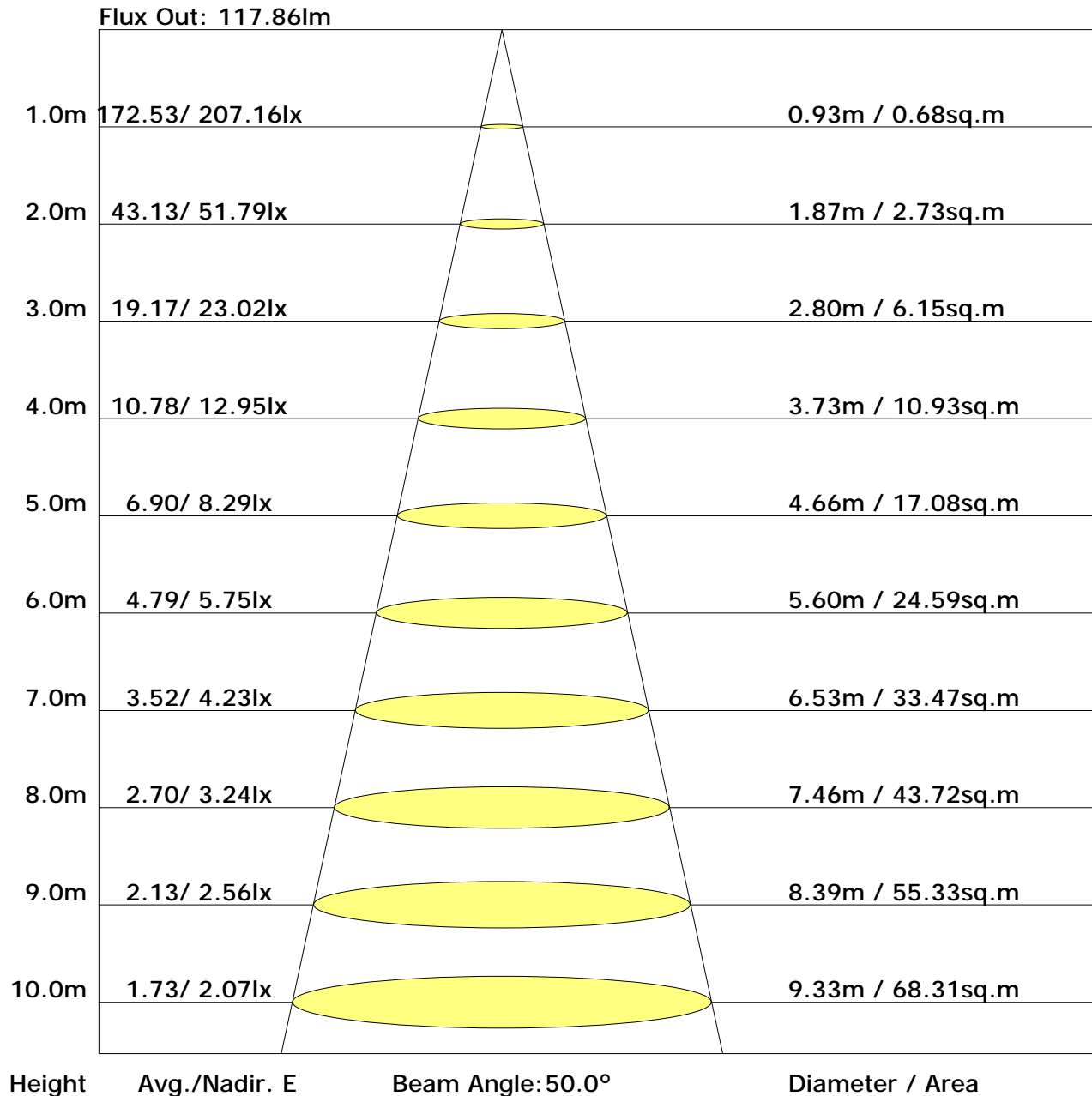
| Flux(E) | Vertical plane | | | | | | | | | | | | | | | | | Flux(T) | Flux(E) |
|---------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|---------|
| | -90 | -80 | -70 | -60 | -50 | -40 | -30 | -20 | -10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
| 0.1 | 0.0 | 0.1 | 0.3 | 0.5 | 0.8 | 1.0 | 1.3 | 1.4 | 1.5 | 1.5 | 1.4 | 1.3 | 1.0 | 0.7 | 0.5 | 0.3 | 0.1 | 0.0 | 0.0 |
| 0.6 | 0.0 | 0.1 | 0.3 | 0.6 | 1.0 | 1.5 | 1.8 | 2.1 | 2.3 | 2.3 | 2.1 | 1.8 | 1.5 | 1.0 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 |
| 4.4 | 0.0 | 0.2 | 0.5 | 0.9 | 1.4 | 2.0 | 2.5 | 2.9 | 3.1 | 3.1 | 2.9 | 2.5 | 2.0 | 1.5 | 0.9 | 0.5 | 0.2 | 0.0 | 0.0 |
| 12.6 | 0.0 | 0.2 | 0.6 | 1.2 | 1.8 | 2.5 | 3.2 | 3.6 | 3.9 | 3.9 | 3.7 | 3.2 | 2.6 | 1.9 | 1.2 | 0.7 | 0.3 | 0.0 | 0.0 |
| 24.3 | 0.0 | 0.2 | 0.7 | 1.4 | 2.2 | 3.0 | 3.8 | 4.3 | 4.6 | 4.7 | 4.4 | 3.9 | 3.1 | 2.2 | 1.4 | 0.8 | 0.3 | 0.0 | 0.0 |
| 38.3 | 0.0 | 0.3 | 0.8 | 1.6 | 2.5 | 3.4 | 4.3 | 4.9 | 5.3 | 5.3 | 5.0 | 4.4 | 3.5 | 2.5 | 1.5 | 0.9 | 0.5 | 0.2 | 0.0 |
| 52.9 | 0.0 | 0.3 | 0.9 | 1.8 | 2.9 | 4.0 | 5.0 | 5.7 | 6.1 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 66.0 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 75.7 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 81.2 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 81.4 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 76.4 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 66.9 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 53.9 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 39.6 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 25.7 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 13.6 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 4.8 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 0.4 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |
| 717 | 0.0 | 0.3 | 1.0 | 2.0 | 3.0 | 4.1 | 5.1 | 5.8 | 6.2 | 6.2 | 5.9 | 5.1 | 4.1 | 3.0 | 2.0 | 1.2 | 0.7 | 0.3 | 0.0 |

C Plane (°): 0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:



The Average Illuminance Effective Figure



C Plane (°): 0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
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 | 15.1 | 16.4 | 15.7 | 17.1 | 17.8 | 15.2 | 16.6 | 15.8 | 17.2 | 17.9 |
| 3H | 17.0 | 18.3 | 17.6 | 18.9 | 19.6 | 17.3 | 18.6 | 17.9 | 19.2 | 19.9 |
| 4H | 17.8 | 19.0 | 18.4 | 19.6 | 20.4 | 18.3 | 19.4 | 18.9 | 20.1 | 20.8 |
| 6H | 18.4 | 19.5 | 19.1 | 20.2 | 20.9 | 19.1 | 20.2 | 19.8 | 20.9 | 21.6 |
| 8H | 18.7 | 19.7 | 19.3 | 20.4 | 21.1 | 19.5 | 20.5 | 20.1 | 21.2 | 22.0 |
| 12H | 18.8 | 19.8 | 19.5 | 20.5 | 21.3 | 19.8 | 20.8 | 20.5 | 21.5 | 22.3 |
| X=4H Y=2H | 15.6 | 16.8 | 16.3 | 17.5 | 18.2 | 15.9 | 17.0 | 16.5 | 17.7 | 18.4 |
| 3H | 17.8 | 18.8 | 18.5 | 19.5 | 20.3 | 18.2 | 19.2 | 18.9 | 19.9 | 20.7 |
| 4H | 18.7 | 19.7 | 19.4 | 20.3 | 21.1 | 19.3 | 20.2 | 20.0 | 20.9 | 21.7 |
| 6H | 19.5 | 20.3 | 20.2 | 21.0 | 21.8 | 20.3 | 21.1 | 21.0 | 21.8 | 22.6 |
| 8H | 19.8 | 20.6 | 20.5 | 21.3 | 22.1 | 20.8 | 21.5 | 21.5 | 22.2 | 23.1 |
| 12H | 20.0 | 20.7 | 20.7 | 21.4 | 22.3 | 21.2 | 21.9 | 21.9 | 22.6 | 23.4 |
| X=8H Y=4H | 19.1 | 19.9 | 19.8 | 20.6 | 21.4 | 19.7 | 20.5 | 20.4 | 21.2 | 22.0 |
| 6H | 20.0 | 20.7 | 20.7 | 21.4 | 22.2 | 20.9 | 21.5 | 21.6 | 22.3 | 23.1 |
| 8H | 20.4 | 21.0 | 21.1 | 21.7 | 22.5 | 21.5 | 22.1 | 22.2 | 22.8 | 23.6 |
| 12H | 20.7 | 21.2 | 21.4 | 22.0 | 22.9 | 22.0 | 22.6 | 22.8 | 23.3 | 24.2 |
| X=12H Y=4H | 19.2 | 19.9 | 19.9 | 20.6 | 21.4 | 19.7 | 20.4 | 20.4 | 21.2 | 22.0 |
| 6H | 20.1 | 20.7 | 20.9 | 21.4 | 22.3 | 21.0 | 21.6 | 21.7 | 22.3 | 23.2 |
| 8H | 20.6 | 21.1 | 21.3 | 21.8 | 22.7 | 21.7 | 22.2 | 22.4 | 22.9 | 23.8 |

Calculate in accordance with CIE 190:2010

 C Plane (°):0.0-360.0: 30.0
 Test Lab:
 Test Type: TYPE C
 Temperature: 25
 Operator: Jacky

 Gamma Plane (°):0.0-180.0:1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector:

Utilisation Factor Table(Floor cavity)

| Utilisation Factors UF(F) | | | SHR NOM = 1.50 | | | | | | | | | |
|--|------|-------|----------------|------|------|------|------|------|------|------|------|--|
| Room Reflectance | | | Room Index(RI) | | | | | | | | | |
| Ceiling | Wall | Floor | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | |
| 0.70 | 0.50 | 0.20 | 0.52 | 0.60 | 0.67 | 0.72 | 0.79 | 0.84 | 0.87 | 0.92 | 0.95 | |
| | 0.30 | | 0.44 | 0.52 | 0.59 | 0.64 | 0.72 | 0.78 | 0.82 | 0.87 | 0.91 | |
| | 0.20 | | 0.38 | 0.46 | 0.53 | 0.59 | 0.67 | 0.72 | 0.77 | 0.83 | 0.87 | |
| 0.50 | 0.50 | 0.20 | 0.48 | 0.56 | 0.62 | 0.67 | 0.73 | 0.78 | 0.81 | 0.85 | 0.88 | |
| | 0.30 | | 0.42 | 0.49 | 0.56 | 0.61 | 0.68 | 0.73 | 0.76 | 0.81 | 0.85 | |
| | 0.20 | | 0.37 | 0.44 | 0.51 | 0.56 | 0.63 | 0.68 | 0.72 | 0.78 | 0.82 | |
| 0.30 | 0.50 | 0.20 | 0.45 | 0.52 | 0.58 | 0.62 | 0.68 | 0.72 | 0.75 | 0.79 | 0.81 | |
| | 0.30 | | 0.40 | 0.46 | 0.53 | 0.57 | 0.63 | 0.68 | 0.71 | 0.75 | 0.79 | |
| | 0.20 | | 0.35 | 0.42 | 0.48 | 0.53 | 0.59 | 0.64 | 0.68 | 0.73 | 0.76 | |
| 0.00 | 0.00 | 0.00 | 0.32 | 0.37 | 0.43 | 0.47 | 0.53 | 0.57 | 0.61 | 0.65 | 0.68 | |
| Rating: 31W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980 | | | | | | | | | | | | |

Utilisation Factor Table(Wall)

| Utilisation Factors UF(W) | | | SHR NOM = 1.50 | | | | | | | | | |
|--|------|-------|----------------|------|------|------|------|------|------|------|------|--|
| Room Reflectance | | | Room Index(RI) | | | | | | | | | |
| Ceiling | Wall | Floor | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | |
| 0.70 | 0.50 | 0.20 | 0.98 | 0.85 | 0.73 | 0.64 | 0.52 | 0.44 | 0.38 | 0.30 | 0.25 | |
| | 0.30 | | 0.82 | 0.72 | 0.63 | 0.57 | 0.47 | 0.41 | 0.36 | 0.29 | 0.24 | |
| | 0.20 | | 0.70 | 0.63 | 0.56 | 0.51 | 0.43 | 0.37 | 0.33 | 0.27 | 0.23 | |
| 0.50 | 0.50 | 0.20 | 0.91 | 0.78 | 0.67 | 0.59 | 0.48 | 0.43 | 0.35 | 0.28 | 0.23 | |
| | 0.30 | | 0.77 | 0.68 | 0.59 | 0.53 | 0.44 | 0.38 | 0.33 | 0.27 | 0.22 | |
| | 0.20 | | 0.67 | 0.60 | 0.53 | 0.48 | 0.41 | 0.35 | 0.31 | 0.25 | 0.21 | |
| 0.30 | 0.50 | 0.20 | 0.85 | 0.73 | 0.62 | 0.55 | 0.45 | 0.38 | 0.33 | 0.26 | 0.22 | |
| | 0.30 | | 0.73 | 0.64 | 0.56 | 0.50 | 0.41 | 0.35 | 0.31 | 0.25 | 0.21 | |
| | 0.20 | | 0.64 | 0.57 | 0.51 | 0.46 | 0.38 | 0.33 | 0.29 | 0.24 | 0.20 | |
| 0.00 | 0.00 | 0.00 | 0.52 | 0.46 | 0.40 | 0.36 | 0.30 | 0.26 | 0.23 | 0.19 | 0.16 | |
| Rating: 31W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980 | | | | | | | | | | | | |

Utilisation Factor Table(Ceiling cavity)

| Utilisation Factors UF(C) | | | SHR NOM = 1.50 | | | | | | | | | |
|--|------|-------|----------------|------|------|------|------|------|------|------|------|--|
| Room Reflectance | | | Room Index(RI) | | | | | | | | | |
| Ceiling | Wall | Floor | 0.75 | 1.00 | 1.25 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 | |
| 0.70 | 0.50 | 0.20 | 0.32 | 0.34 | 0.35 | 0.35 | 0.36 | 0.37 | 0.37 | 0.37 | 0.38 | |
| | 0.30 | | 0.26 | 0.27 | 0.28 | 0.29 | 0.31 | 0.32 | 0.33 | 0.34 | 0.35 | |
| | 0.20 | | 0.21 | 0.22 | 0.24 | 0.25 | 0.27 | 0.28 | 0.29 | 0.31 | 0.32 | |
| 0.50 | 0.50 | 0.20 | 0.31 | 0.33 | 0.33 | 0.34 | 0.35 | 0.35 | 0.36 | 0.36 | 0.36 | |
| | 0.30 | | 0.25 | 0.27 | 0.28 | 0.29 | 0.30 | 0.31 | 0.32 | 0.33 | 0.33 | |
| | 0.20 | | 0.21 | 0.22 | 0.23 | 0.24 | 0.26 | 0.27 | 0.28 | 0.30 | 0.31 | |
| 0.30 | 0.50 | 0.20 | 0.30 | 0.32 | 0.32 | 0.33 | 0.33 | 0.34 | 0.34 | 0.34 | 0.35 | |
| | 0.30 | | 0.25 | 0.26 | 0.27 | 0.28 | 0.29 | 0.30 | 0.31 | 0.32 | 0.32 | |
| | 0.20 | | 0.20 | 0.22 | 0.23 | 0.24 | 0.25 | 0.27 | 0.28 | 0.29 | 0.30 | |
| 0.00 | 0.00 | 0.00 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | |
| Rating: 31W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980 | | | | | | | | | | | | |

Zonal Lumen

| Gamma [°] | I _{mean} [cd] | Zonal Flux [lm] | Sum Zonal Flux [lm] | Rel Zonal Flux [%] | Sum Rel Zonal Flux [%] |
|--------------|---------------------------|--------------------|------------------------|-----------------------|---------------------------|
| 0.0-1.0 | 207.3 | 0.2 | 0.2 | 0.02 | 0.02 |
| 1.0-2.0 | 207.3 | 0.6 | 0.8 | 0.07 | 0.09 |
| 2.0-3.0 | 207.2 | 1.0 | 1.8 | 0.11 | 0.21 |
| 3.0-4.0 | 207.1 | 1.4 | 3.2 | 0.16 | 0.37 |
| 4.0-5.0 | 207.0 | 1.8 | 5.0 | 0.21 | 0.57 |
| 5.0-6.0 | 206.8 | 2.2 | 7.1 | 0.25 | 0.83 |
| 6.0-7.0 | 206.6 | 2.6 | 9.7 | 0.30 | 1.12 |
| 7.0-8.0 | 206.4 | 3.0 | 12.6 | 0.34 | 1.46 |
| 8.0-9.0 | 206.1 | 3.3 | 16.0 | 0.39 | 1.85 |
| 9.0-10.0 | 205.7 | 3.7 | 19.7 | 0.43 | 2.28 |
| 10.0-11.0 | 205.3 | 4.1 | 23.8 | 0.48 | 2.76 |
| 11.0-12.0 | 204.9 | 4.5 | 28.3 | 0.52 | 3.28 |
| 12.0-13.0 | 204.3 | 4.8 | 33.1 | 0.56 | 3.84 |
| 13.0-14.0 | 203.7 | 5.2 | 38.4 | 0.60 | 4.44 |
| 14.0-15.0 | 203.1 | 5.6 | 43.9 | 0.65 | 5.09 |
| 15.0-16.0 | 202.3 | 5.9 | 49.9 | 0.69 | 5.78 |
| 16.0-17.0 | 201.5 | 6.3 | 56.1 | 0.73 | 6.50 |
| 17.0-18.0 | 200.6 | 6.6 | 62.8 | 0.77 | 7.27 |
| 18.0-19.0 | 199.7 | 6.9 | 69.7 | 0.80 | 8.08 |
| 19.0-20.0 | 198.7 | 7.3 | 77.0 | 0.84 | 8.92 |
| 20.0-21.0 | 197.5 | 7.6 | 84.6 | 0.88 | 9.80 |
| 21.0-22.0 | 196.3 | 7.9 | 92.4 | 0.91 | 10.71 |
| 22.0-23.0 | 195.1 | 8.2 | 100.6 | 0.95 | 11.66 |
| 23.0-24.0 | 193.8 | 8.5 | 109.1 | 0.98 | 12.64 |
| 24.0-25.0 | 192.4 | 8.7 | 117.9 | 1.01 | 13.65 |
| 25.0-26.0 | 190.9 | 9.0 | 126.9 | 1.04 | 14.70 |
| 26.0-27.0 | 189.4 | 9.3 | 136.1 | 1.07 | 15.77 |
| 27.0-28.0 | 187.8 | 9.5 | 145.6 | 1.10 | 16.87 |
| 28.0-29.0 | 186.1 | 9.7 | 155.4 | 1.13 | 18.00 |
| 29.0-30.0 | 184.4 | 10.0 | 165.3 | 1.15 | 19.16 |
| 30.0-31.0 | 182.7 | 10.2 | 175.5 | 1.18 | 20.33 |
| 31.0-32.0 | 180.9 | 10.4 | 185.9 | 1.20 | 21.53 |
| 32.0-33.0 | 179.0 | 10.5 | 196.4 | 1.22 | 22.76 |
| 33.0-34.0 | 177.1 | 10.7 | 207.1 | 1.24 | 24.00 |
| 34.0-35.0 | 175.2 | 10.9 | 218.0 | 1.26 | 25.26 |
| 35.0-36.0 | 173.2 | 11.0 | 229.0 | 1.28 | 26.54 |

C Plane (°): 0.0-360.0: 30.0
 Test Lab:
 Test Type: TYPE C
 Temperature: 25
 Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector:

Zonal Lumen (Continue 1)

| Gamma [°] | I _{mean} [cd] | Zonal Flux [lm] | Sum Zonal Flux [lm] | Rel Zonal Flux [%] | Sum Rel Zonal Flux [%] |
|--------------|---------------------------|--------------------|------------------------|-----------------------|---------------------------|
| 36.0-37.0 | 171.2 | 11.2 | 240.2 | 1.29 | 27.83 |
| 37.0-38.0 | 169.1 | 11.3 | 251.5 | 1.31 | 29.14 |
| 38.0-39.0 | 167.0 | 11.4 | 262.9 | 1.32 | 30.46 |
| 39.0-40.0 | 164.8 | 11.5 | 274.4 | 1.33 | 31.79 |
| 40.0-41.0 | 162.6 | 11.6 | 286.0 | 1.34 | 33.13 |
| 41.0-42.0 | 160.3 | 11.7 | 297.6 | 1.35 | 34.48 |
| 42.0-43.0 | 158.1 | 11.7 | 309.3 | 1.36 | 35.84 |
| 43.0-44.0 | 155.7 | 11.8 | 321.1 | 1.36 | 37.20 |
| 44.0-45.0 | 153.4 | 11.8 | 332.9 | 1.37 | 38.57 |
| 45.0-46.0 | 151.0 | 11.8 | 344.7 | 1.37 | 39.93 |
| 46.0-47.0 | 148.5 | 11.8 | 356.5 | 1.37 | 41.30 |
| 47.0-48.0 | 146.0 | 11.8 | 368.3 | 1.37 | 42.67 |
| 48.0-49.0 | 143.6 | 11.8 | 380.1 | 1.37 | 44.04 |
| 49.0-50.0 | 141.0 | 11.8 | 391.9 | 1.36 | 45.40 |
| 50.0-51.0 | 138.5 | 11.7 | 403.6 | 1.36 | 46.76 |
| 51.0-52.0 | 135.9 | 11.7 | 415.2 | 1.35 | 48.11 |
| 52.0-53.0 | 133.2 | 11.6 | 426.8 | 1.34 | 49.45 |
| 53.0-54.0 | 130.6 | 11.5 | 438.3 | 1.33 | 50.78 |
| 54.0-55.0 | 127.9 | 11.4 | 449.8 | 1.32 | 52.11 |
| 55.0-56.0 | 125.2 | 11.3 | 461.1 | 1.31 | 53.42 |
| 56.0-57.0 | 122.4 | 11.2 | 472.3 | 1.30 | 54.71 |
| 57.0-58.0 | 119.6 | 11.1 | 483.3 | 1.28 | 56.00 |
| 58.0-59.0 | 116.7 | 10.9 | 494.2 | 1.26 | 57.26 |
| 59.0-60.0 | 113.9 | 10.8 | 505.0 | 1.25 | 58.51 |
| 60.0-61.0 | 111.0 | 10.6 | 515.6 | 1.23 | 59.73 |
| 61.0-62.0 | 108.1 | 10.4 | 526.0 | 1.21 | 60.94 |
| 62.0-63.0 | 105.2 | 10.2 | 536.2 | 1.19 | 62.13 |
| 63.0-64.0 | 102.2 | 10.0 | 546.3 | 1.16 | 63.29 |
| 64.0-65.0 | 99.4 | 9.8 | 556.1 | 1.14 | 64.43 |
| 65.0-66.0 | 96.5 | 9.6 | 565.7 | 1.12 | 65.54 |
| 66.0-67.0 | 93.6 | 9.4 | 575.1 | 1.09 | 66.63 |
| 67.0-68.0 | 90.7 | 9.2 | 584.3 | 1.06 | 67.70 |
| 68.0-69.0 | 87.8 | 9.0 | 593.3 | 1.04 | 68.73 |
| 69.0-70.0 | 84.8 | 8.7 | 602.0 | 1.01 | 69.74 |
| 70.0-71.0 | 81.9 | 8.5 | 610.5 | 0.98 | 70.73 |
| 71.0-72.0 | 79.0 | 8.2 | 618.7 | 0.95 | 71.68 |

C Plane (°): 0.0-360.0: 30.0
 Test Lab:
 Test Type: TYPE C
 Temperature: 25
 Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector:

Zonal Lumen (Continue 2)

| Gamma [°] | I _{mean} [cd] | Zonal Flux [lm] | Sum Zonal Flux [lm] | Rel Zonal Flux [%] | Sum Rel Zonal Flux [%] |
|--------------|---------------------------|--------------------|------------------------|-----------------------|---------------------------|
| 72.0-73.0 | 76.1 | 8.0 | 626.6 | 0.92 | 72.60 |
| 73.0-74.0 | 73.1 | 7.7 | 634.3 | 0.89 | 73.49 |
| 74.0-75.0 | 70.2 | 7.4 | 641.7 | 0.86 | 74.35 |
| 75.0-76.0 | 67.2 | 7.1 | 648.9 | 0.83 | 75.18 |
| 76.0-77.0 | 64.3 | 6.9 | 655.7 | 0.79 | 75.97 |
| 77.0-78.0 | 61.4 | 6.6 | 662.3 | 0.76 | 76.73 |
| 78.0-79.0 | 58.4 | 6.3 | 668.6 | 0.73 | 77.46 |
| 79.0-80.0 | 55.4 | 6.0 | 674.6 | 0.69 | 78.15 |
| 80.0-81.0 | 52.4 | 5.7 | 680.2 | 0.66 | 78.81 |
| 81.0-82.0 | 49.5 | 5.4 | 685.6 | 0.62 | 79.43 |
| 82.0-83.0 | 46.8 | 5.1 | 690.7 | 0.59 | 80.02 |
| 83.0-84.0 | 44.1 | 4.8 | 695.5 | 0.56 | 80.58 |
| 84.0-85.0 | 41.6 | 4.5 | 700.0 | 0.53 | 81.10 |
| 85.0-86.0 | 39.3 | 4.3 | 704.3 | 0.50 | 81.60 |
| 86.0-87.0 | 37.4 | 4.1 | 708.4 | 0.47 | 82.08 |
| 87.0-88.0 | 35.8 | 3.9 | 712.4 | 0.45 | 82.53 |
| 88.0-89.0 | 34.4 | 3.8 | 716.1 | 0.44 | 82.97 |
| 89.0-90.0 | 33.2 | 3.6 | 719.8 | 0.42 | 83.39 |
| 90.0-91.0 | 32.1 | 3.5 | 723.3 | 0.41 | 83.80 |
| 91.0-92.0 | 31.3 | 3.4 | 726.7 | 0.40 | 84.20 |
| 92.0-93.0 | 30.9 | 3.4 | 730.1 | 0.39 | 84.59 |
| 93.0-94.0 | 30.7 | 3.4 | 733.5 | 0.39 | 84.98 |
| 94.0-95.0 | 30.5 | 3.3 | 736.8 | 0.39 | 85.36 |
| 95.0-96.0 | 30.4 | 3.3 | 740.1 | 0.38 | 85.75 |
| 96.0-97.0 | 30.2 | 3.3 | 743.4 | 0.38 | 86.13 |
| 97.0-98.0 | 30.0 | 3.3 | 746.7 | 0.38 | 86.51 |
| 98.0-99.0 | 29.9 | 3.2 | 749.9 | 0.38 | 86.88 |
| 99.0-100.0 | 29.7 | 3.2 | 753.1 | 0.37 | 87.26 |
| 100.0-101.0 | 29.5 | 3.2 | 756.3 | 0.37 | 87.62 |
| 101.0-102.0 | 29.3 | 3.1 | 759.5 | 0.36 | 87.99 |
| 102.0-103.0 | 29.1 | 3.1 | 762.6 | 0.36 | 88.35 |
| 103.0-104.0 | 28.8 | 3.1 | 765.7 | 0.36 | 88.71 |
| 104.0-105.0 | 28.6 | 3.0 | 768.7 | 0.35 | 89.06 |
| 105.0-106.0 | 28.4 | 3.0 | 771.7 | 0.35 | 89.41 |
| 106.0-107.0 | 28.2 | 3.0 | 774.7 | 0.34 | 89.75 |
| 107.0-108.0 | 28.0 | 2.9 | 777.6 | 0.34 | 90.09 |

C Plane (°): 0.0-360.0: 30.0
 Test Lab:
 Test Type: TYPE C
 Temperature: 25
 Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector:

Zonal Lumen (Continue 3)

| Gamma [°] | I _{mean} [cd] | Zonal Flux [lm] | Sum Zonal Flux [lm] | Rel Zonal Flux [%] | Sum Rel Zonal Flux [%] |
|--------------|---------------------------|--------------------|------------------------|-----------------------|---------------------------|
| 108.0-109.0 | 27.7 | 2.9 | 780.5 | 0.33 | 90.42 |
| 109.0-110.0 | 27.4 | 2.8 | 783.3 | 0.33 | 90.75 |
| 110.0-111.0 | 27.1 | 2.8 | 786.1 | 0.32 | 91.07 |
| 111.0-112.0 | 26.8 | 2.7 | 788.8 | 0.32 | 91.39 |
| 112.0-113.0 | 26.6 | 2.7 | 791.5 | 0.31 | 91.70 |
| 113.0-114.0 | 26.4 | 2.7 | 794.2 | 0.31 | 92.01 |
| 114.0-115.0 | 26.1 | 2.6 | 796.8 | 0.30 | 92.31 |
| 115.0-116.0 | 25.8 | 2.6 | 799.3 | 0.30 | 92.61 |
| 116.0-117.0 | 25.4 | 2.5 | 801.8 | 0.29 | 92.90 |
| 117.0-118.0 | 25.0 | 2.4 | 804.3 | 0.28 | 93.18 |
| 118.0-119.0 | 24.7 | 2.4 | 806.6 | 0.28 | 93.45 |
| 119.0-120.0 | 24.5 | 2.3 | 809.0 | 0.27 | 93.73 |
| 120.0-121.0 | 24.3 | 2.3 | 811.3 | 0.27 | 93.99 |
| 121.0-122.0 | 24.0 | 2.2 | 813.5 | 0.26 | 94.25 |
| 122.0-123.0 | 23.7 | 2.2 | 815.7 | 0.25 | 94.51 |
| 123.0-124.0 | 23.4 | 2.1 | 817.9 | 0.25 | 94.75 |
| 124.0-125.0 | 23.0 | 2.1 | 819.9 | 0.24 | 94.99 |
| 125.0-126.0 | 22.7 | 2.0 | 822.0 | 0.23 | 95.23 |
| 126.0-127.0 | 22.4 | 2.0 | 823.9 | 0.23 | 95.46 |
| 127.0-128.0 | 22.1 | 1.9 | 825.8 | 0.22 | 95.68 |
| 128.0-129.0 | 21.7 | 1.9 | 827.7 | 0.22 | 95.90 |
| 129.0-130.0 | 21.4 | 1.8 | 829.5 | 0.21 | 96.11 |
| 130.0-131.0 | 21.1 | 1.8 | 831.3 | 0.20 | 96.31 |
| 131.0-132.0 | 20.8 | 1.7 | 833.0 | 0.20 | 96.51 |
| 132.0-133.0 | 20.4 | 1.6 | 834.6 | 0.19 | 96.70 |
| 133.0-134.0 | 20.0 | 1.6 | 836.2 | 0.18 | 96.88 |
| 134.0-135.0 | 19.6 | 1.5 | 837.8 | 0.18 | 97.06 |
| 135.0-136.0 | 19.2 | 1.5 | 839.2 | 0.17 | 97.23 |
| 136.0-137.0 | 18.8 | 1.4 | 840.6 | 0.16 | 97.39 |
| 137.0-138.0 | 18.4 | 1.4 | 842.0 | 0.16 | 97.55 |
| 138.0-139.0 | 18.1 | 1.3 | 843.3 | 0.15 | 97.70 |
| 139.0-140.0 | 17.7 | 1.3 | 844.6 | 0.15 | 97.85 |
| 140.0-141.0 | 17.3 | 1.2 | 845.8 | 0.14 | 97.99 |
| 141.0-142.0 | 16.9 | 1.2 | 847.0 | 0.13 | 98.12 |
| 142.0-143.0 | 16.6 | 1.1 | 848.1 | 0.13 | 98.25 |
| 143.0-144.0 | 16.3 | 1.1 | 849.1 | 0.12 | 98.38 |

C Plane (°): 0.0-360.0: 30.0
 Test Lab:
 Test Type: TYPE C
 Temperature: 25
 Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector:

Zonal Lumen (Continue 4)

| Gamma [°] | I _{mean} [cd] | Zonal Flux [lm] | Sum Zonal Flux [lm] | Rel Zonal Flux [%] | Sum Rel Zonal Flux [%] |
|--------------|---------------------------|--------------------|------------------------|-----------------------|---------------------------|
| 144.0-145.0 | 15.9 | 1.0 | 850.1 | 0.12 | 98.49 |
| 145.0-146.0 | 15.5 | 1.0 | 851.1 | 0.11 | 98.60 |
| 146.0-147.0 | 15.1 | 0.9 | 852.0 | 0.11 | 98.71 |
| 147.0-148.0 | 14.7 | 0.9 | 852.9 | 0.10 | 98.81 |
| 148.0-149.0 | 14.2 | 0.8 | 853.7 | 0.09 | 98.91 |
| 149.0-150.0 | 13.8 | 0.8 | 854.5 | 0.09 | 98.99 |
| 150.0-151.0 | 13.5 | 0.7 | 855.2 | 0.08 | 99.08 |
| 151.0-152.0 | 13.2 | 0.7 | 855.9 | 0.08 | 99.16 |
| 152.0-153.0 | 12.8 | 0.6 | 856.5 | 0.07 | 99.23 |
| 153.0-154.0 | 12.4 | 0.6 | 857.1 | 0.07 | 99.30 |
| 154.0-155.0 | 12.1 | 0.6 | 857.7 | 0.07 | 99.37 |
| 155.0-156.0 | 11.8 | 0.5 | 858.2 | 0.06 | 99.43 |
| 156.0-157.0 | 11.4 | 0.5 | 858.7 | 0.06 | 99.49 |
| 157.0-158.0 | 11.0 | 0.5 | 859.2 | 0.05 | 99.54 |
| 158.0-159.0 | 10.7 | 0.4 | 859.6 | 0.05 | 99.59 |
| 159.0-160.0 | 10.3 | 0.4 | 860.0 | 0.05 | 99.64 |
| 160.0-161.0 | 10.0 | 0.4 | 860.4 | 0.04 | 99.68 |
| 161.0-162.0 | 9.7 | 0.3 | 860.7 | 0.04 | 99.72 |
| 162.0-163.0 | 9.4 | 0.3 | 861.0 | 0.04 | 99.76 |
| 163.0-164.0 | 9.1 | 0.3 | 861.3 | 0.03 | 99.79 |
| 164.0-165.0 | 8.8 | 0.3 | 861.6 | 0.03 | 99.82 |
| 165.0-166.0 | 8.5 | 0.2 | 861.8 | 0.03 | 99.85 |
| 166.0-167.0 | 8.2 | 0.2 | 862.0 | 0.02 | 99.87 |
| 167.0-168.0 | 7.8 | 0.2 | 862.2 | 0.02 | 99.89 |
| 168.0-169.0 | 7.5 | 0.2 | 862.4 | 0.02 | 99.91 |
| 169.0-170.0 | 7.2 | 0.1 | 862.5 | 0.02 | 99.93 |
| 170.0-171.0 | 7.0 | 0.1 | 862.6 | 0.01 | 99.94 |
| 171.0-172.0 | 6.8 | 0.1 | 862.8 | 0.01 | 99.96 |
| 172.0-173.0 | 6.7 | 0.1 | 862.9 | 0.01 | 99.97 |
| 173.0-174.0 | 6.5 | 0.1 | 862.9 | 0.01 | 99.98 |
| 174.0-175.0 | 6.2 | 0.1 | 863.0 | 0.01 | 99.98 |
| 175.0-176.0 | 6.1 | 0.1 | 863.1 | 0.01 | 99.99 |
| 176.0-177.0 | 6.0 | 0.0 | 863.1 | 0.00 | 99.99 |
| 177.0-178.0 | 5.9 | 0.0 | 863.1 | 0.00 | 100.00 |
| 178.0-179.0 | 5.9 | 0.0 | 863.1 | 0.00 | 100.00 |
| 179.0-180.0 | 5.9 | 0.0 | 863.1 | 0.00 | 100.00 |

C Plane (°): 0.0-360.0: 30.0
 Test Lab:
 Test Type: TYPE C
 Temperature: 25
 Operator: Jacky

Gamma Plane (°): 0.0-180.0: 1.0
 Test Device: GPM-1800B
 Distance: 9.028 m
 Humidity: 60%
 Inspector: