

Report No.:

Test Time: 2022/3/25 10:59

Luminaire Property

Luminaire Manufacturer:

Luminaire Category: RIBBONLYTE

Lamp Catalog: 5050 RGBWW

Number of Lamps: 96LED/M

Luminous Width (mm): 12

Voltage: 24.0 V

Power: 2.97 W

Luminaire Description: 96LED RGBWW 5IN1

Lamp Description: WW

Luminous Length (mm): 500

Luminous Height (mm): 4

Current: 0.124 A

Power Factor: 1.000

Photometric Results

CIE Class: Direct

Measurement Flux: 238 lm

Downward Ratio: 99%

Horizontal Diffuse Angle(10%,50%): H160.9,H108.9

Vertical Diffuse Angle(10%,50%): V159.8,V112.3

Luminaire Efficacy Rating (LER): 80

Max. Intensity: 84.1 cd

Total Rated Lamp Lumens: 238.0 lm

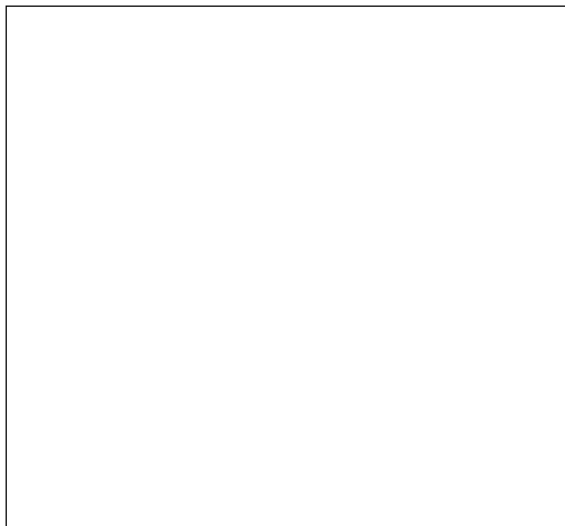
Efficiency: 100%

Upward Ratio: 1%

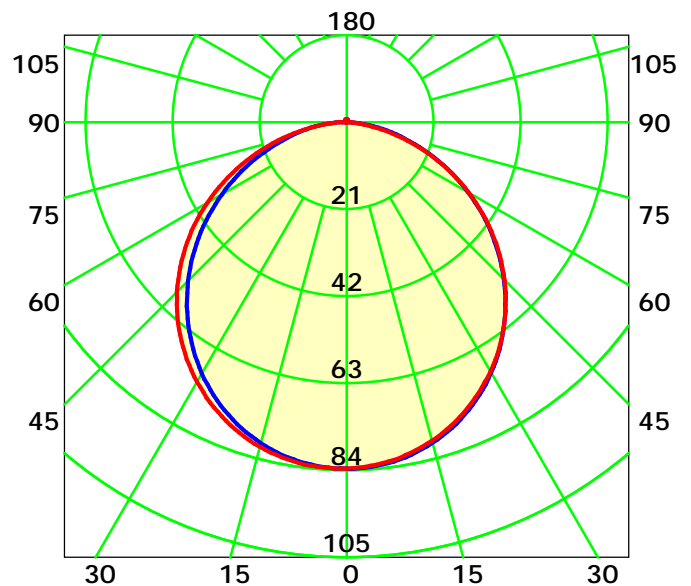
Central Intensity: 84 cd

Pos of Max. Intensity: H0 V1

Picture Of Luminaire



Luminous Intensity Distribution Curve



Average Diffuse Angle(50%): 110.6° Unit: cd

— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 30.0

Test Lab:

Test Type: TYPE C

Temperature: 25

Operator: kerr

Gamma Plane (°):0.0-180.0: 1.0

Test Device: GPM-1800B

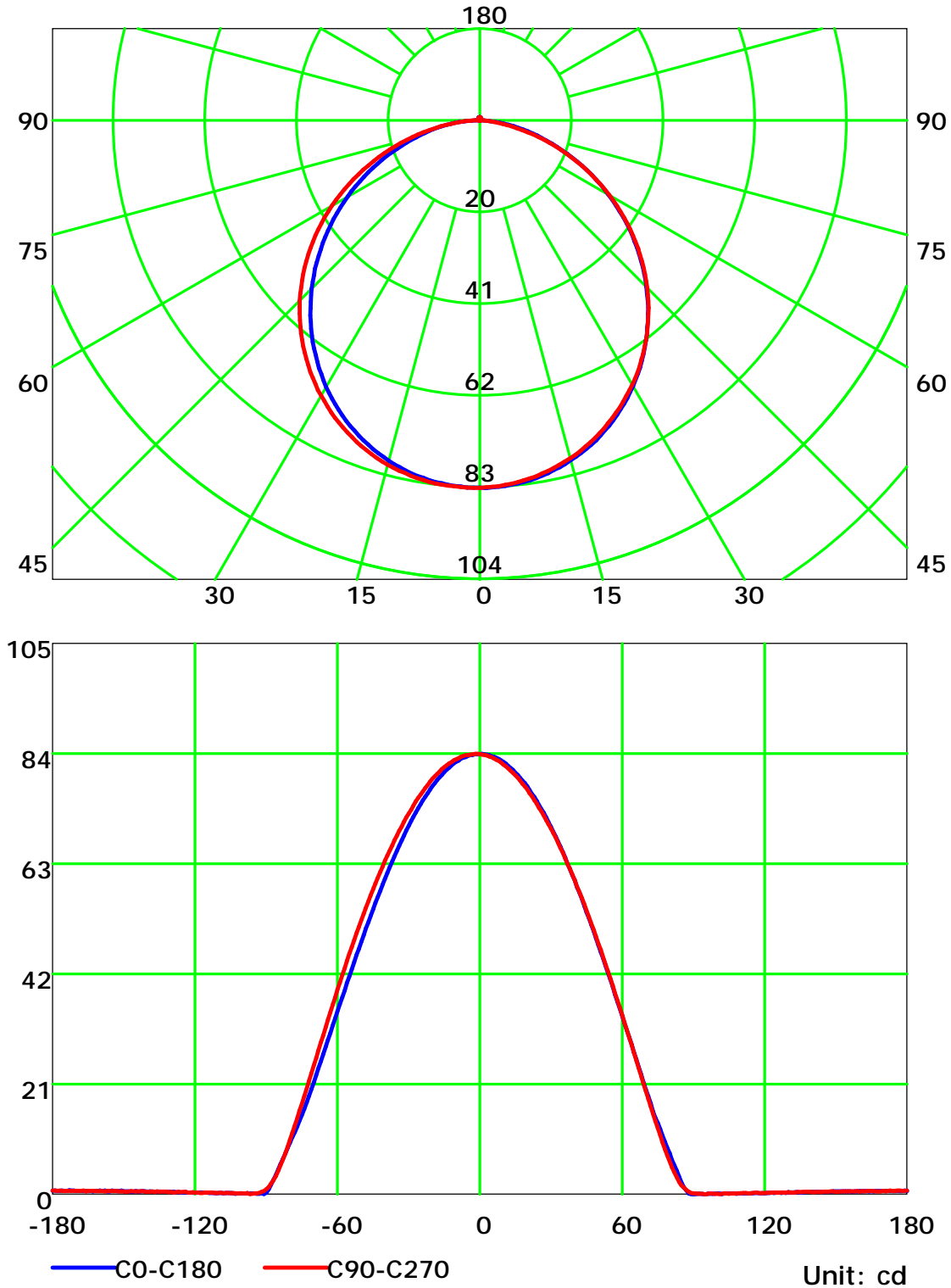
Distance: 9.028 m

Humidity: 60%

Inspector:



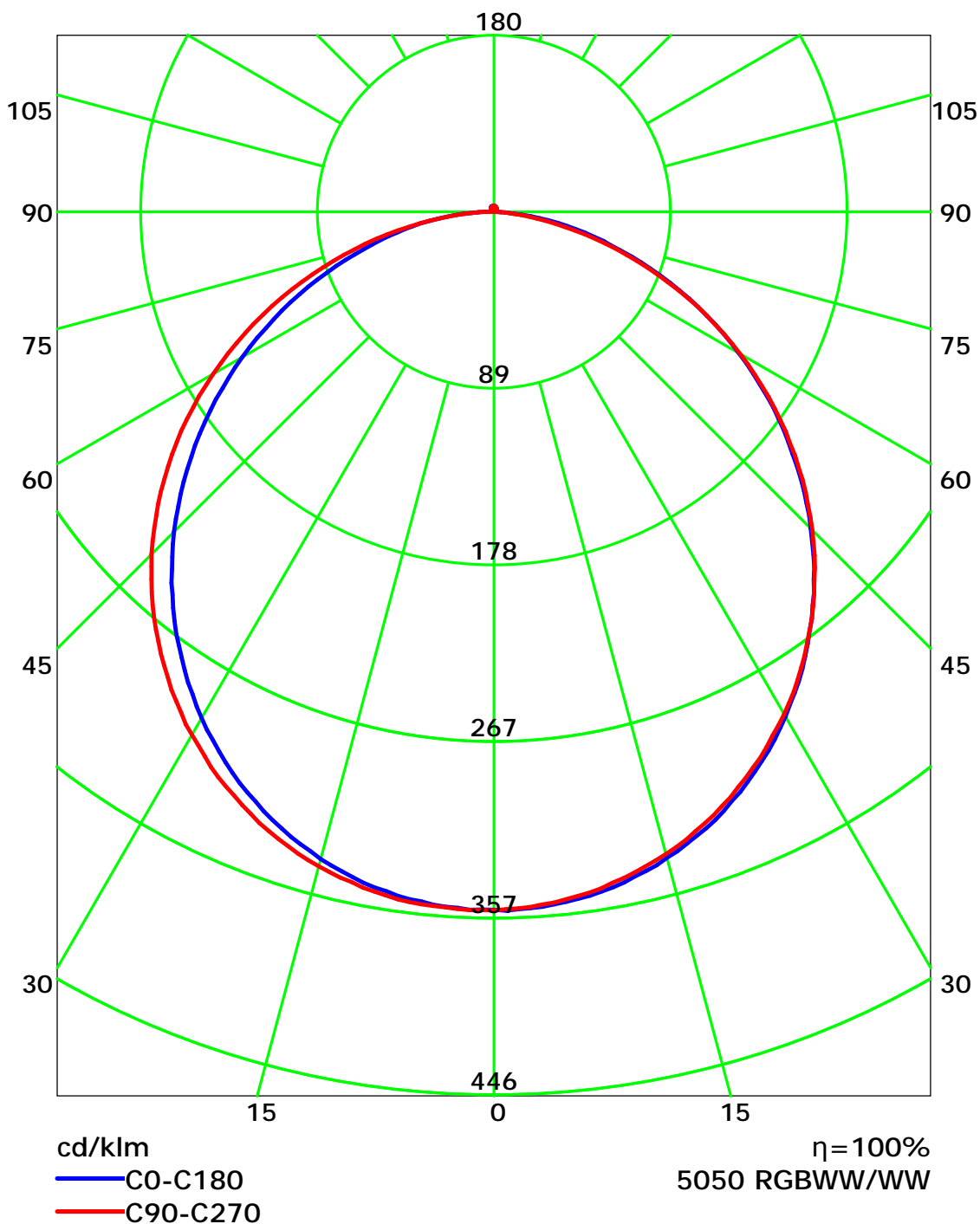
Luminous Intensity Distribution Curve



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

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: kerr

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

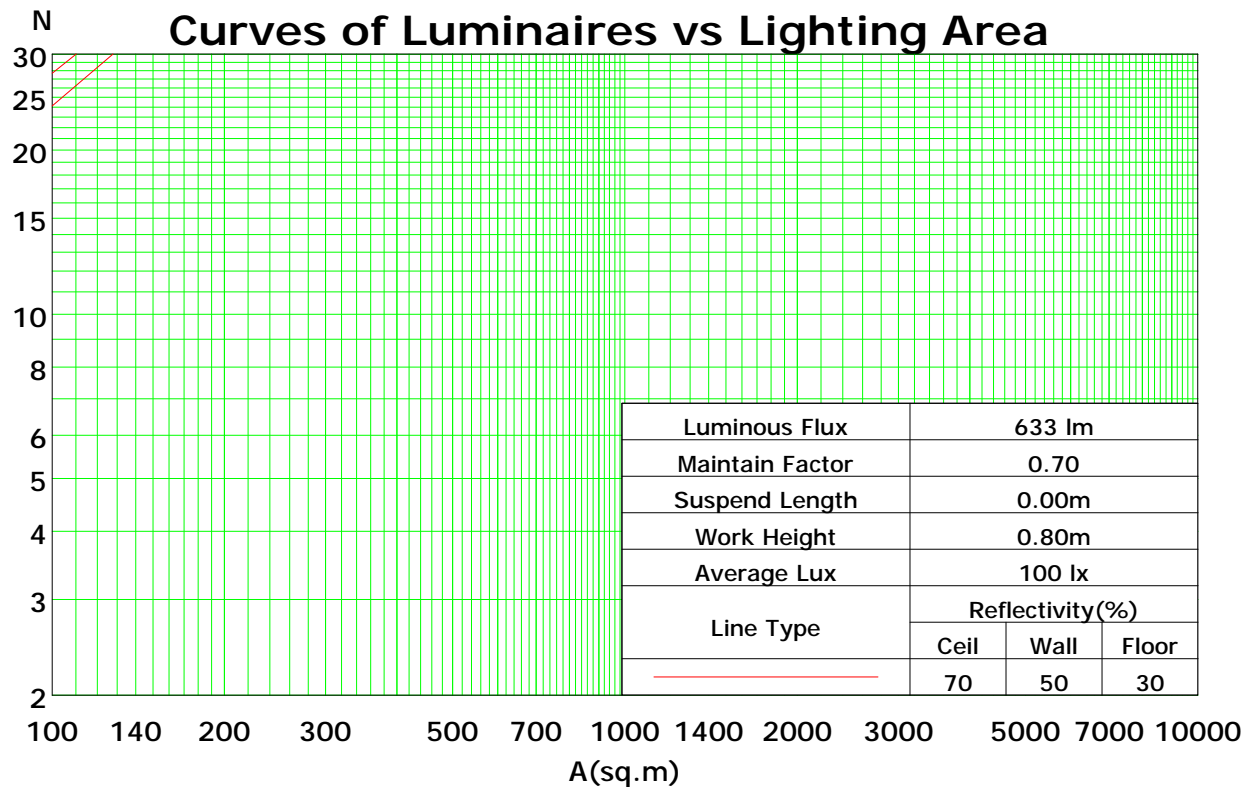
Coefficients Of Utilization - Zonal Cavity Method

| | | | | | | | | | | | | | | | | | | |
|-----|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |
| 1 | 109 | 104 | 100 | 96 | 106 | 101 | 98 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 99 | 90 | 84 | 78 | 96 | 88 | 82 | 77 | 85 | 80 | 75 | 81 | 77 | 73 | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 71 | 65 | 87 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 66 | 62 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 62 | 55 | 80 | 69 | 61 | 54 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 56 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 59 | 52 | 46 | 57 | 51 | 46 | 55 | 50 | 45 | 43 |
| 6 | 70 | 57 | 48 | 41 | 68 | 56 | 47 | 41 | 54 | 46 | 41 | 52 | 45 | 40 | 50 | 44 | 40 | 38 |
| 7 | 65 | 51 | 43 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 45 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 30 |
| 9 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 28 | 27 |
| 10 | 53 | 40 | 32 | 26 | 52 | 39 | 32 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

Spacing Criteria (0-180): 1.24

Spacing Criteria (90-270): 1.26

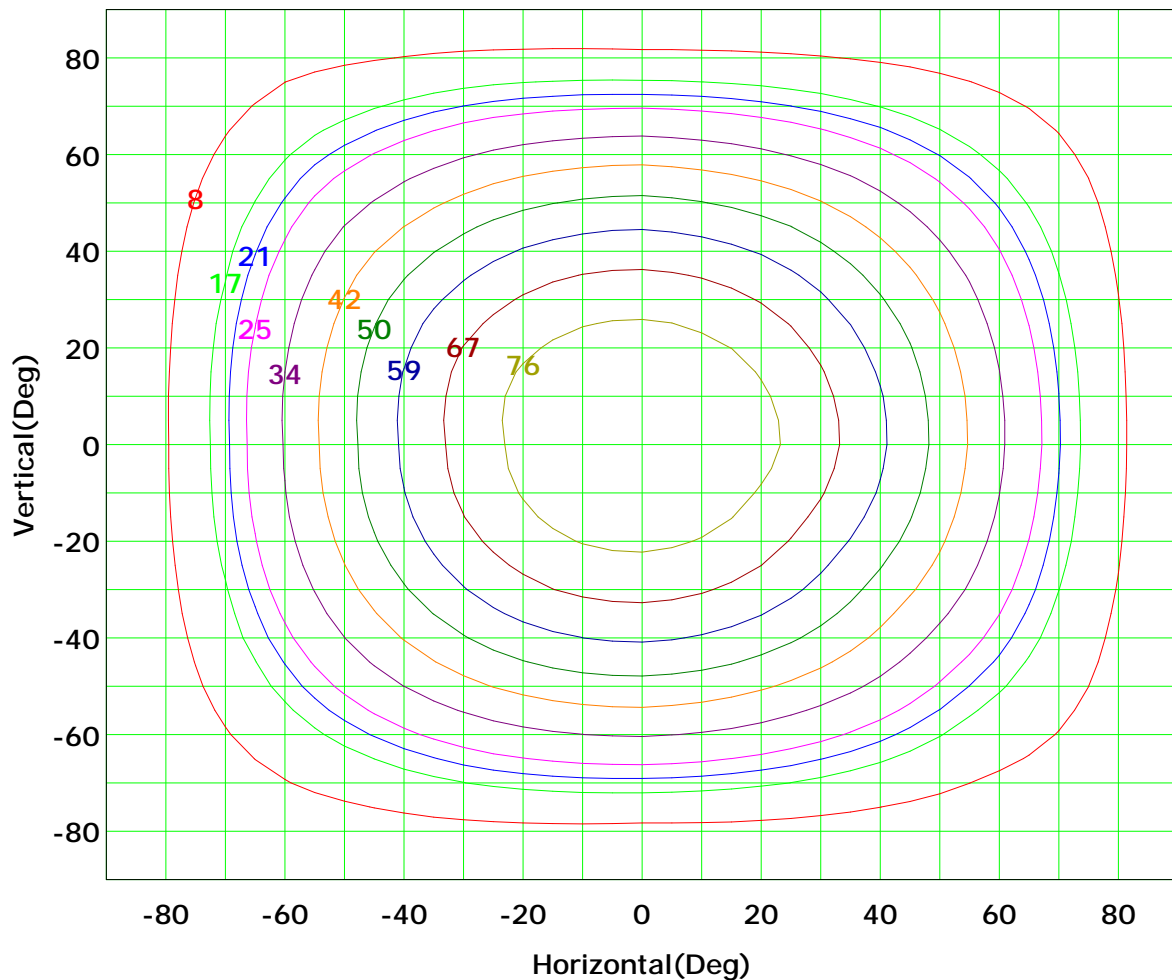
Spacing Criteria (Diagonal): 1.36



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

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

Isocandela (rectangle)



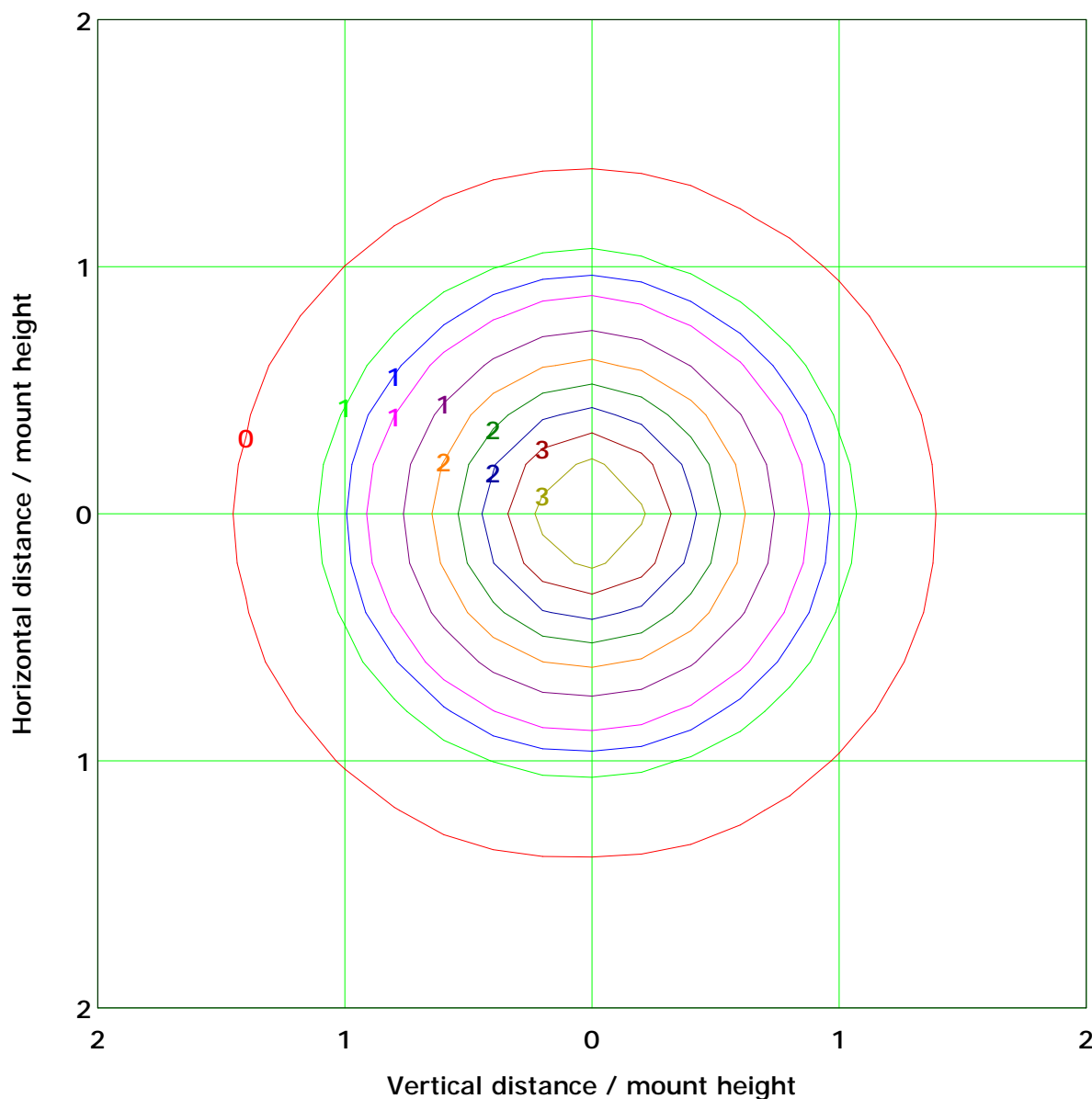
I_{max} (100%): 84 cd

| | | | |
|---------|-------|---------|-------|
| (10%): | 8 cd | (20%): | 17 cd |
| (25%): | 21 cd | (30%): | 25 cd |
| (40%): | 34 cd | (50%): | 42 cd |
| (60%): | 50 cd | (70%): | 59 cd |
| (80%): | 67 cd | (90%): | 76 cd |

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

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%): 3.4 lx

| | |
|----------------|----------------|
| (10%): 0.3 lx | (20%): 0.7 lx |
| (25%): 0.8 lx | (30%): 1.0 lx |
| (40%): 1.3 lx | (50%): 1.7 lx |
| (60%): 2.0 lx | (70%): 2.4 lx |
| (80%): 2.7 lx | (90%): 3.0 lx |

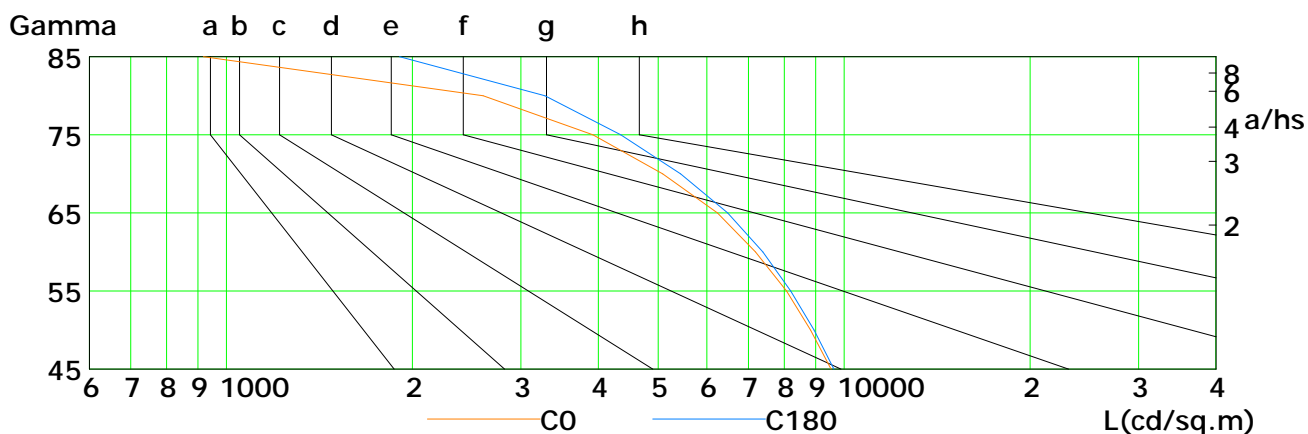
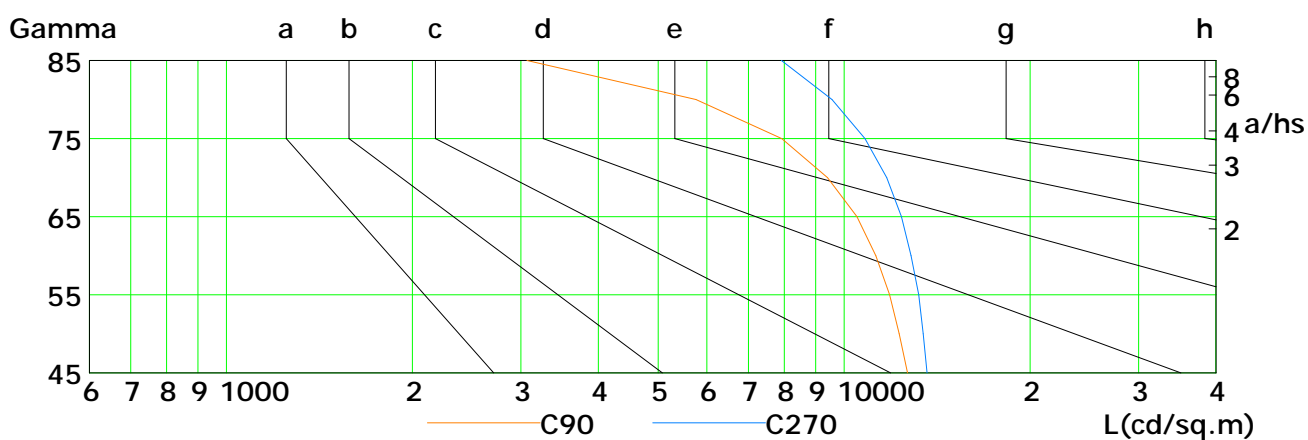
C Plane (°):0.0-360.0: 30.0
Test Lab:
Test Type: TYPE C
Temperature: 25
Operator: kerr

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



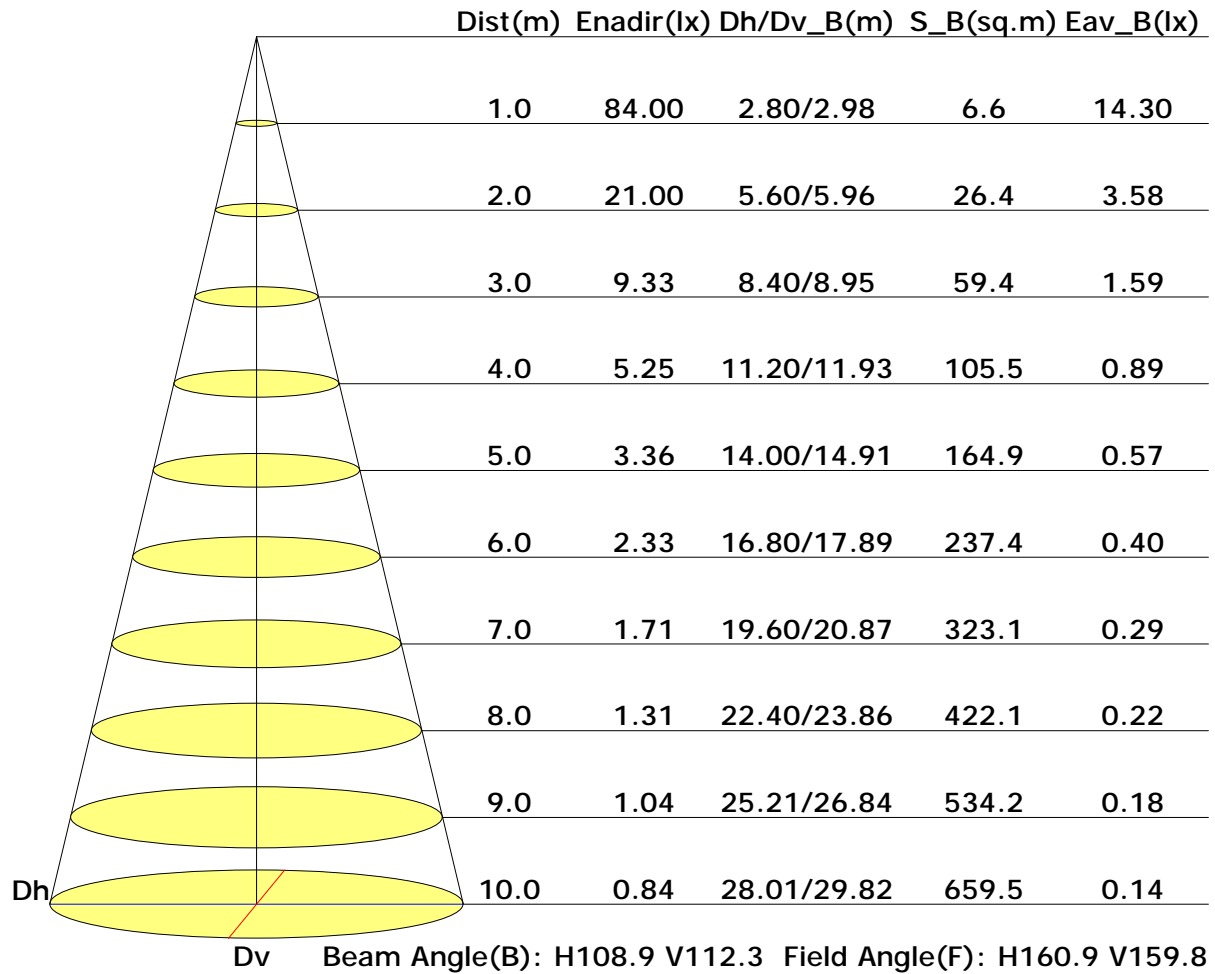
| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|------------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C0 | 9528 | 8831 | 8075 | 7191 | 6235 | 5085 | 3920 | 2603 | 918 |
| C90 | 12669 | 12290 | 11851 | 11254 | 10492 | 9408 | 7929 | 5757 | 3066 |
| C180 | 9627 | 8941 | 8195 | 7386 | 6481 | 5438 | 4350 | 3281 | 1908 |
| C270 | 13630 | 13440 | 13204 | 12842 | 12384 | 11730 | 10811 | 9558 | 7919 |

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

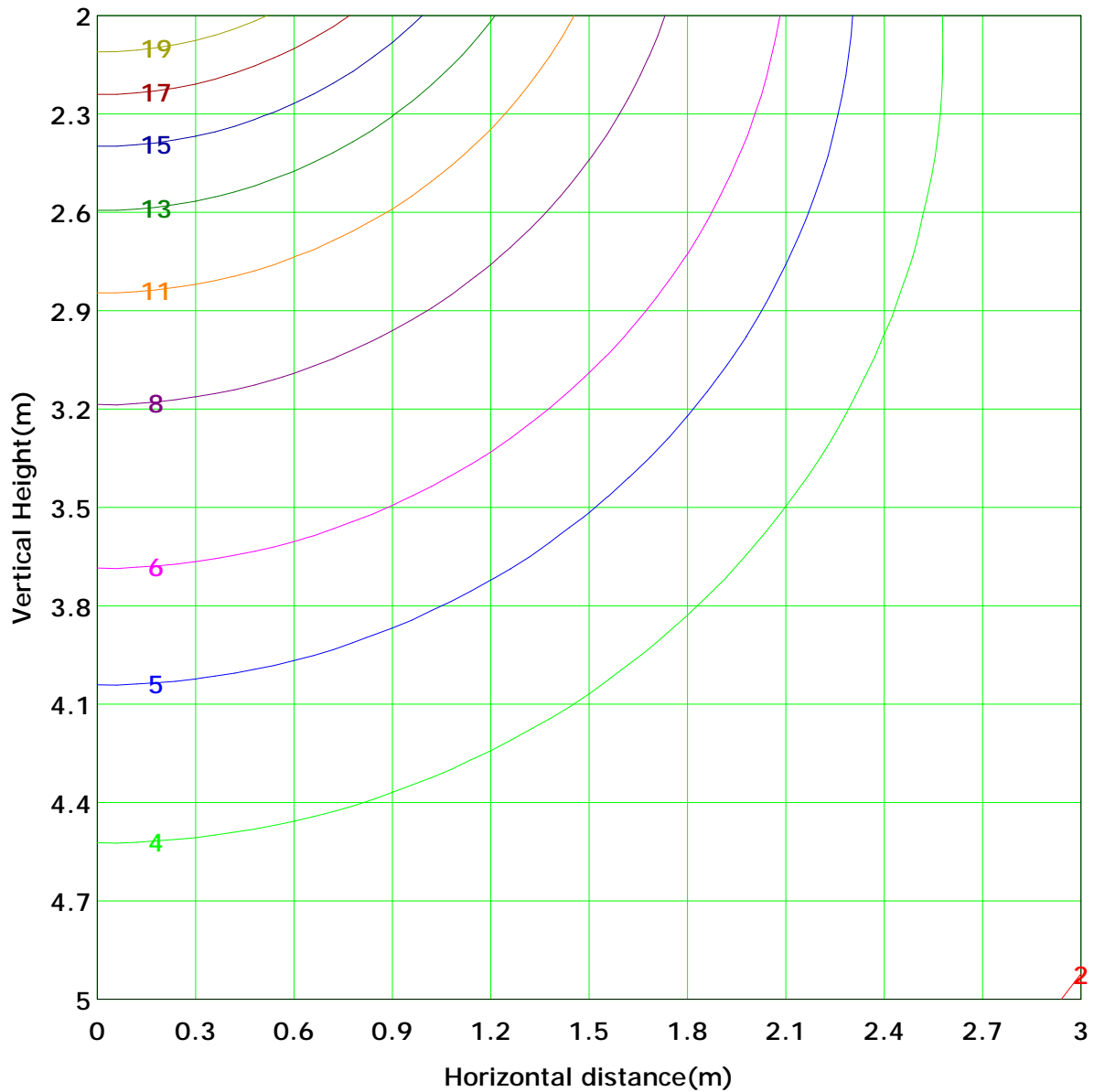
Gamma Plane (°):0.0-180.0:1.0
Test Device: GPM-1800B
Distance: 9.028 m
Humidity: 60%
Inspector:



Illuminance at a Distance



Vertical IsoLux Plot



| | | |
|-----------------|------------------|------------------|
| Lowest(m): 2.0m | Highest(m): 5.0m | Max Lux: 21.0 lx |
| (10%): 2.1 lx | (20%): 4.2 lx | |
| (25%): 5.3 lx | (30%): 6.3 lx | |
| (40%): 8.4 lx | (50%): 10.5 lx | |
| (60%): 12.6 lx | (70%): 14.7 lx | |
| (80%): 16.8 lx | (90%): 18.9 lx | |

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

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

Area Flux Table

Unit: lm

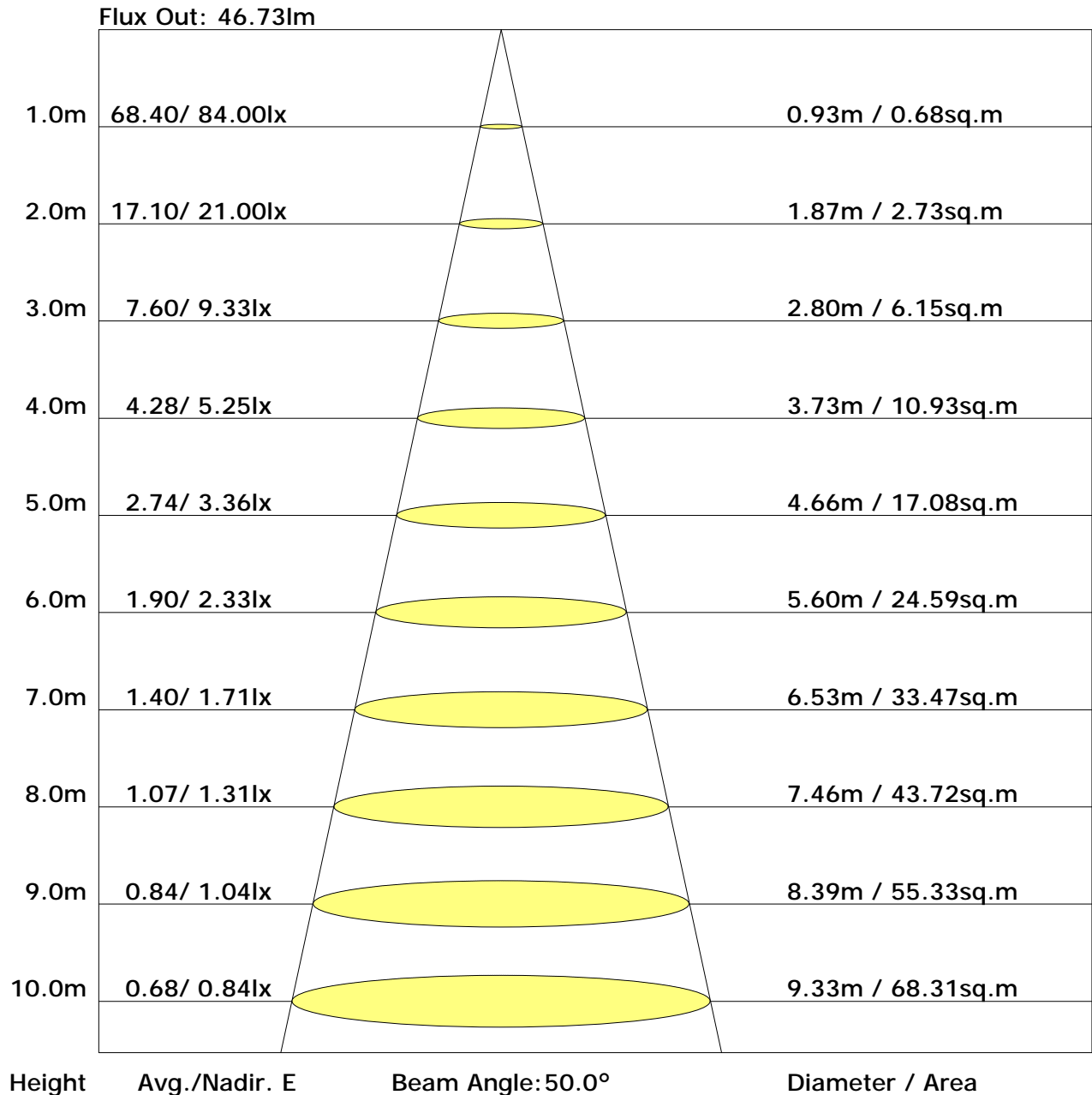
| Vertical plane | Horizontal plane | | | | | | | | | | | | | | | | | Flux(E) | Flux(T) | Flux(E) |
|----------------|------------------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|---------|---------|---------|
| | -90 | -80 | -70 | -60 | -50 | -40 | -30 | -20 | -10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | |
| -90 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| -80 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| -70 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.6 | 0.8 | 1.1 | 1.4 | 1.8 | 2.1 | 2.5 | 2.9 | 3.3 | 3.7 | 4.1 | 4.5 | 4.9 | 5.3 | 5.7 |
| -60 | 0.0 | 0.1 | 0.2 | 0.4 | 0.6 | 0.9 | 1.3 | 1.7 | 2.1 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 |
| -50 | 0.0 | 0.1 | 0.2 | 0.5 | 0.8 | 1.1 | 1.6 | 2.1 | 2.6 | 3.1 | 3.7 | 4.3 | 4.9 | 5.5 | 6.1 | 6.7 | 7.3 | 7.9 | 8.5 | 9.1 |
| -40 | 0.0 | 0.1 | 0.3 | 0.6 | 0.9 | 1.3 | 1.8 | 2.3 | 2.9 | 3.5 | 4.1 | 4.8 | 5.5 | 6.2 | 6.9 | 7.6 | 8.3 | 9.0 | 9.7 | 10.4 |
| -30 | 0.0 | 0.1 | 0.3 | 0.7 | 1.0 | 1.5 | 2.0 | 2.6 | 3.2 | 3.9 | 4.6 | 5.3 | 6.0 | 6.7 | 7.4 | 8.1 | 8.8 | 9.5 | 10.2 | 10.9 |
| -20 | 0.0 | 0.1 | 0.4 | 0.7 | 1.1 | 1.6 | 2.1 | 2.7 | 3.4 | 4.1 | 4.8 | 5.6 | 6.3 | 7.0 | 7.7 | 8.4 | 9.1 | 9.8 | 10.5 | 11.2 |
| -10 | 0.0 | 0.1 | 0.4 | 0.7 | 1.2 | 1.6 | 2.2 | 2.8 | 3.5 | 4.2 | 5.0 | 5.7 | 6.5 | 7.2 | 8.0 | 8.7 | 9.4 | 10.1 | 10.8 | 11.5 |
| 0 | 0.0 | 0.1 | 0.4 | 0.7 | 1.2 | 1.6 | 2.2 | 2.8 | 3.5 | 4.2 | 5.0 | 5.7 | 6.5 | 7.2 | 8.0 | 8.7 | 9.4 | 10.1 | 10.8 | 11.5 |
| 10 | 0.0 | 0.1 | 0.4 | 0.7 | 1.2 | 1.6 | 2.2 | 2.8 | 3.5 | 4.2 | 5.0 | 5.7 | 6.5 | 7.2 | 8.0 | 8.7 | 9.4 | 10.1 | 10.8 | 11.5 |
| 20 | 0.0 | 0.1 | 0.3 | 0.7 | 1.1 | 1.5 | 1.9 | 2.4 | 2.9 | 3.4 | 4.0 | 4.6 | 5.2 | 5.8 | 6.4 | 7.0 | 7.6 | 8.2 | 8.8 | 9.4 |
| 30 | 0.0 | 0.1 | 0.3 | 0.6 | 1.0 | 1.4 | 1.8 | 2.1 | 2.5 | 2.9 | 3.4 | 3.9 | 4.4 | 4.9 | 5.4 | 5.9 | 6.4 | 6.9 | 7.4 | 7.9 |
| 40 | 0.0 | 0.1 | 0.3 | 0.5 | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.8 | 3.2 | 3.6 | 4.0 | 4.4 | 4.8 | 5.2 | 5.6 | 6.0 | 6.4 |
| 50 | 0.0 | 0.1 | 0.2 | 0.4 | 0.7 | 1.0 | 1.3 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3.0 | 3.3 | 3.6 | 3.9 | 4.2 | 4.5 | 4.8 | 5.1 |
| 60 | 0.0 | 0.1 | 0.2 | 0.3 | 0.5 | 0.7 | 1.0 | 1.1 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 | 2.6 | 2.8 | 3.0 | 3.2 | 3.4 |
| 70 | 0.0 | 0.0 | 0.1 | 0.2 | 0.3 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 |
| 80 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| 90 | 0.2 | 1.4 | 3.8 | 7.6 | 12.2 | 17.2 | 21.7 | 25.3 | 27.2 | 27.4 | 25.7 | 22.3 | 17.8 | 12.7 | 7.9 | 3.9 | 1.2 | 0.1 | 236 | |
| Flux(E) | 0.0 | 1.1 | 3.6 | 7.4 | 12.0 | 17.0 | 21.5 | 25.0 | 27.0 | 27.2 | 25.5 | 22.1 | 17.5 | 12.5 | 7.6 | 3.6 | 0.9 | 0.0 | 232 | |

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

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: kerr

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 | 25.1 | 26.8 | 25.5 | 27.1 | 27.4 | 24.0 | 25.7 | 24.4 | 26.0 | 26.3 |
| 3H | 26.8 | 28.3 | 27.2 | 28.6 | 29.0 | 25.4 | 26.9 | 25.8 | 27.2 | 27.6 |
| 4H | 27.4 | 28.7 | 27.8 | 29.1 | 29.5 | 25.8 | 27.2 | 26.2 | 27.6 | 28.0 |
| 6H | 27.8 | 29.1 | 28.2 | 29.4 | 29.9 | 26.0 | 27.3 | 26.4 | 27.7 | 28.1 |
| 8H | 27.9 | 29.1 | 28.3 | 29.5 | 29.9 | 26.0 | 27.2 | 26.5 | 27.6 | 28.1 |
| 12H | 27.9 | 29.1 | 28.4 | 29.5 | 30.0 | 26.0 | 27.2 | 26.5 | 27.6 | 28.0 |
| X=4H Y=2H | 25.6 | 27.0 | 26.1 | 27.4 | 27.8 | 24.6 | 26.0 | 25.0 | 26.4 | 26.8 |
| 3H | 27.5 | 28.7 | 27.9 | 29.1 | 29.5 | 26.2 | 27.3 | 26.6 | 27.7 | 28.2 |
| 4H | 28.2 | 29.2 | 28.6 | 29.7 | 30.1 | 26.7 | 27.7 | 27.1 | 28.1 | 28.6 |
| 6H | 28.7 | 29.6 | 29.2 | 30.1 | 30.6 | 26.9 | 27.8 | 27.4 | 28.3 | 28.8 |
| 8H | 28.9 | 29.7 | 29.3 | 30.2 | 30.7 | 27.0 | 27.8 | 27.4 | 28.3 | 28.8 |
| 12H | 28.9 | 29.7 | 29.4 | 30.2 | 30.7 | 27.0 | 27.7 | 27.5 | 28.2 | 28.7 |
| X=8H Y=4H | 28.4 | 29.3 | 28.9 | 29.7 | 30.2 | 26.9 | 27.8 | 27.4 | 28.2 | 28.7 |
| 6H | 29.0 | 29.7 | 29.5 | 30.2 | 30.7 | 27.2 | 27.9 | 27.7 | 28.4 | 28.9 |
| 8H | 29.2 | 29.9 | 29.8 | 30.4 | 30.9 | 27.3 | 27.9 | 27.8 | 28.4 | 29.0 |
| 12H | 29.4 | 29.9 | 29.9 | 30.4 | 31.0 | 27.3 | 27.9 | 27.8 | 28.4 | 29.0 |
| X=12H Y=4H | 28.4 | 29.2 | 28.9 | 29.7 | 30.2 | 26.9 | 27.7 | 27.4 | 28.2 | 28.7 |
| 6H | 29.1 | 29.7 | 29.6 | 30.2 | 30.7 | 27.3 | 27.9 | 27.8 | 28.4 | 28.9 |
| 8H | 29.3 | 29.9 | 29.8 | 30.4 | 30.9 | 27.3 | 27.9 | 27.9 | 28.4 | 29.0 |

Calculate in accordance with CIE 190:2010

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

 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 = 1.25 | | | | | | | | |
|---|------|-------|----------------|------|------|------|------|------|------|------|------|
| 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 | 0.57 | 0.67 | 0.74 | 0.80 | 0.87 | 0.92 | 0.96 | 1.00 | 1.03 |
| | 0.30 | | 0.49 | 0.59 | 0.67 | 0.73 | 0.81 | 0.86 | 0.90 | 0.96 | 1.00 |
| | 0.20 | | 0.43 | 0.54 | 0.61 | 0.67 | 0.76 | 0.82 | 0.86 | 0.92 | 0.96 |
| 0.50 | 0.50 | 0.20 | 0.55 | 0.65 | 0.72 | 0.77 | 0.84 | 0.88 | 0.92 | 0.96 | 0.99 |
| | 0.30 | | 0.48 | 0.58 | 0.65 | 0.71 | 0.78 | 0.84 | 0.87 | 0.93 | 0.96 |
| | 0.20 | | 0.43 | 0.53 | 0.60 | 0.66 | 0.74 | 0.80 | 0.84 | 0.90 | 0.93 |
| 0.30 | 0.50 | 0.20 | 0.53 | 0.63 | 0.69 | 0.74 | 0.81 | 0.85 | 0.88 | 0.92 | 0.95 |
| | 0.30 | | 0.47 | 0.57 | 0.64 | 0.69 | 0.76 | 0.81 | 0.85 | 0.89 | 0.92 |
| | 0.20 | | 0.42 | 0.52 | 0.59 | 0.65 | 0.72 | 0.78 | 0.82 | 0.87 | 0.90 |
| 0.00 | 0.00 | 0.00 | 0.40 | 0.50 | 0.57 | 0.62 | 0.69 | 0.74 | 0.77 | 0.82 | 0.85 |
| Rating: 3W 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 = 1.25 | | | | | | | | |
|---|------|-------|----------------|------|------|------|------|------|------|------|------|
| 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 | 0.99 | 0.82 | 0.70 | 0.61 | 0.48 | 0.40 | 0.34 | 0.27 | 0.22 |
| | 0.30 | | 0.83 | 0.70 | 0.61 | 0.54 | 0.44 | 0.37 | 0.32 | 0.25 | 0.21 |
| | 0.20 | | 0.71 | 0.61 | 0.54 | 0.48 | 0.40 | 0.34 | 0.30 | 0.24 | 0.20 |
| 0.50 | 0.50 | 0.20 | 0.96 | 0.79 | 0.67 | 0.58 | 0.46 | 0.42 | 0.33 | 0.25 | 0.21 |
| | 0.30 | | 0.81 | 0.68 | 0.59 | 0.52 | 0.42 | 0.35 | 0.31 | 0.24 | 0.20 |
| | 0.20 | | 0.70 | 0.60 | 0.53 | 0.47 | 0.39 | 0.33 | 0.29 | 0.23 | 0.19 |
| 0.30 | 0.50 | 0.20 | 0.93 | 0.76 | 0.64 | 0.56 | 0.44 | 0.37 | 0.31 | 0.24 | 0.20 |
| | 0.30 | | 0.79 | 0.67 | 0.57 | 0.50 | 0.41 | 0.34 | 0.29 | 0.23 | 0.19 |
| | 0.20 | | 0.69 | 0.59 | 0.52 | 0.46 | 0.38 | 0.32 | 0.28 | 0.22 | 0.18 |
| 0.00 | 0.00 | 0.00 | 0.59 | 0.50 | 0.43 | 0.37 | 0.30 | 0.25 | 0.22 | 0.17 | 0.14 |
| Rating: 3W 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 = 1.25 | | | | | | | | |
|---|------|-------|----------------|------|------|------|------|------|------|------|------|
| 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 | 0.17 | 0.19 | 0.19 | 0.20 | 0.21 | 0.21 | 0.22 | 0.22 | 0.23 |
| | 0.30 | | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 | 0.18 | 0.19 | 0.20 |
| | 0.20 | | 0.06 | 0.07 | 0.09 | 0.10 | 0.12 | 0.14 | 0.15 | 0.17 | 0.18 |
| 0.50 | 0.50 | 0.20 | 0.17 | 0.18 | 0.19 | 0.19 | 0.20 | 0.21 | 0.21 | 0.21 | 0.22 |
| | 0.30 | | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 | 0.17 | 0.19 | 0.19 |
| | 0.20 | | 0.05 | 0.07 | 0.09 | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 |
| 0.30 | 0.50 | 0.20 | 0.16 | 0.17 | 0.18 | 0.19 | 0.19 | 0.20 | 0.20 | 0.21 | 0.21 |
| | 0.30 | | 0.10 | 0.12 | 0.13 | 0.14 | 0.15 | 0.16 | 0.17 | 0.18 | 0.19 |
| | 0.20 | | 0.05 | 0.07 | 0.08 | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 |
| 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Rating: 3W 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 | 84.0 | 0.1 | 0.1 | 0.03 | 0.03 |
| 1.0-2.0 | 84.0 | 0.2 | 0.3 | 0.10 | 0.14 |
| 2.0-3.0 | 83.9 | 0.4 | 0.7 | 0.17 | 0.30 |
| 3.0-4.0 | 83.8 | 0.6 | 1.3 | 0.24 | 0.54 |
| 4.0-5.0 | 83.7 | 0.7 | 2.0 | 0.30 | 0.84 |
| 5.0-6.0 | 83.6 | 0.9 | 2.9 | 0.37 | 1.21 |
| 6.0-7.0 | 83.4 | 1.0 | 3.9 | 0.43 | 1.65 |
| 7.0-8.0 | 83.2 | 1.2 | 5.1 | 0.50 | 2.15 |
| 8.0-9.0 | 82.9 | 1.3 | 6.5 | 0.56 | 2.71 |
| 9.0-10.0 | 82.7 | 1.5 | 7.9 | 0.63 | 3.34 |
| 10.0-11.0 | 82.4 | 1.6 | 9.6 | 0.69 | 4.03 |
| 11.0-12.0 | 82.0 | 1.8 | 11.4 | 0.75 | 4.79 |
| 12.0-13.0 | 81.7 | 1.9 | 13.3 | 0.81 | 5.60 |
| 13.0-14.0 | 81.3 | 2.1 | 15.4 | 0.87 | 6.47 |
| 14.0-15.0 | 80.9 | 2.2 | 17.6 | 0.93 | 7.41 |
| 15.0-16.0 | 80.4 | 2.4 | 20.0 | 0.99 | 8.40 |
| 16.0-17.0 | 79.9 | 2.5 | 22.5 | 1.05 | 9.44 |
| 17.0-18.0 | 79.4 | 2.6 | 25.1 | 1.10 | 10.55 |
| 18.0-19.0 | 78.9 | 2.7 | 27.8 | 1.15 | 11.70 |
| 19.0-20.0 | 78.3 | 2.9 | 30.7 | 1.20 | 12.90 |
| 20.0-21.0 | 77.7 | 3.0 | 33.7 | 1.25 | 14.16 |
| 21.0-22.0 | 77.1 | 3.1 | 36.8 | 1.30 | 15.46 |
| 22.0-23.0 | 76.5 | 3.2 | 40.0 | 1.35 | 16.81 |
| 23.0-24.0 | 75.8 | 3.3 | 43.3 | 1.39 | 18.20 |
| 24.0-25.0 | 75.1 | 3.4 | 46.7 | 1.44 | 19.64 |
| 25.0-26.0 | 74.4 | 3.5 | 50.2 | 1.48 | 21.11 |
| 26.0-27.0 | 73.6 | 3.6 | 53.8 | 1.51 | 22.63 |
| 27.0-28.0 | 72.8 | 3.7 | 57.5 | 1.55 | 24.17 |
| 28.0-29.0 | 72.0 | 3.8 | 61.3 | 1.58 | 25.76 |
| 29.0-30.0 | 71.2 | 3.8 | 65.1 | 1.62 | 27.37 |
| 30.0-31.0 | 70.3 | 3.9 | 69.0 | 1.64 | 29.02 |
| 31.0-32.0 | 69.4 | 4.0 | 73.0 | 1.67 | 30.69 |
| 32.0-33.0 | 68.5 | 4.0 | 77.1 | 1.70 | 32.39 |
| 33.0-34.0 | 67.6 | 4.1 | 81.2 | 1.72 | 34.10 |
| 34.0-35.0 | 66.6 | 4.1 | 85.3 | 1.74 | 35.84 |
| 35.0-36.0 | 65.6 | 4.2 | 89.5 | 1.76 | 37.60 |

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

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 | 64.6 | 4.2 | 93.7 | 1.77 | 39.37 |
| 37.0-38.0 | 63.6 | 4.2 | 97.9 | 1.78 | 41.15 |
| 38.0-39.0 | 62.5 | 4.3 | 102.2 | 1.79 | 42.95 |
| 39.0-40.0 | 61.5 | 4.3 | 106.5 | 1.80 | 44.75 |
| 40.0-41.0 | 60.3 | 4.3 | 110.8 | 1.81 | 46.56 |
| 41.0-42.0 | 59.2 | 4.3 | 115.1 | 1.81 | 48.36 |
| 42.0-43.0 | 58.1 | 4.3 | 119.4 | 1.81 | 50.17 |
| 43.0-44.0 | 56.9 | 4.3 | 123.7 | 1.81 | 51.98 |
| 44.0-45.0 | 55.8 | 4.3 | 128.0 | 1.80 | 53.78 |
| 45.0-46.0 | 54.6 | 4.3 | 132.2 | 1.79 | 55.57 |
| 46.0-47.0 | 53.3 | 4.2 | 136.5 | 1.78 | 57.36 |
| 47.0-48.0 | 52.1 | 4.2 | 140.7 | 1.77 | 59.13 |
| 48.0-49.0 | 50.9 | 4.2 | 144.9 | 1.76 | 60.88 |
| 49.0-50.0 | 49.6 | 4.1 | 149.0 | 1.74 | 62.62 |
| 50.0-51.0 | 48.3 | 4.1 | 153.1 | 1.72 | 64.34 |
| 51.0-52.0 | 47.0 | 4.0 | 157.1 | 1.70 | 66.04 |
| 52.0-53.0 | 45.7 | 4.0 | 161.1 | 1.67 | 67.71 |
| 53.0-54.0 | 44.4 | 3.9 | 165.0 | 1.65 | 69.35 |
| 54.0-55.0 | 43.1 | 3.8 | 168.9 | 1.62 | 70.97 |
| 55.0-56.0 | 41.7 | 3.8 | 172.6 | 1.58 | 72.55 |
| 56.0-57.0 | 40.4 | 3.7 | 176.3 | 1.55 | 74.11 |
| 57.0-58.0 | 39.0 | 3.6 | 179.9 | 1.52 | 75.62 |
| 58.0-59.0 | 37.6 | 3.5 | 183.5 | 1.48 | 77.10 |
| 59.0-60.0 | 36.2 | 3.4 | 186.9 | 1.44 | 78.54 |
| 60.0-61.0 | 34.9 | 3.3 | 190.2 | 1.40 | 79.94 |
| 61.0-62.0 | 33.5 | 3.2 | 193.4 | 1.36 | 81.29 |
| 62.0-63.0 | 32.1 | 3.1 | 196.6 | 1.31 | 82.60 |
| 63.0-64.0 | 30.7 | 3.0 | 199.6 | 1.26 | 83.87 |
| 64.0-65.0 | 29.3 | 2.9 | 202.5 | 1.22 | 85.09 |
| 65.0-66.0 | 27.9 | 2.8 | 205.3 | 1.17 | 86.26 |
| 66.0-67.0 | 26.5 | 2.7 | 207.9 | 1.12 | 87.38 |
| 67.0-68.0 | 25.1 | 2.5 | 210.5 | 1.07 | 88.45 |
| 68.0-69.0 | 23.7 | 2.4 | 212.9 | 1.02 | 89.46 |
| 69.0-70.0 | 22.3 | 2.3 | 215.2 | 0.96 | 90.43 |
| 70.0-71.0 | 21.0 | 2.2 | 217.3 | 0.91 | 91.34 |
| 71.0-72.0 | 19.6 | 2.0 | 219.4 | 0.86 | 92.19 |

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

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 | 18.2 | 1.9 | 221.3 | 0.80 | 92.99 |
| 73.0-74.0 | 16.9 | 1.8 | 223.1 | 0.75 | 93.74 |
| 74.0-75.0 | 15.6 | 1.6 | 224.7 | 0.69 | 94.43 |
| 75.0-76.0 | 14.3 | 1.5 | 226.2 | 0.64 | 95.07 |
| 76.0-77.0 | 13.1 | 1.4 | 227.6 | 0.59 | 95.66 |
| 77.0-78.0 | 11.9 | 1.3 | 228.9 | 0.53 | 96.19 |
| 78.0-79.0 | 10.7 | 1.1 | 230.0 | 0.48 | 96.67 |
| 79.0-80.0 | 9.5 | 1.0 | 231.1 | 0.43 | 97.10 |
| 80.0-81.0 | 8.4 | 0.9 | 232.0 | 0.38 | 97.48 |
| 81.0-82.0 | 7.3 | 0.8 | 232.8 | 0.33 | 97.81 |
| 82.0-83.0 | 6.2 | 0.7 | 233.4 | 0.28 | 98.10 |
| 83.0-84.0 | 5.2 | 0.6 | 234.0 | 0.24 | 98.34 |
| 84.0-85.0 | 4.2 | 0.5 | 234.5 | 0.19 | 98.53 |
| 85.0-86.0 | 3.3 | 0.4 | 234.8 | 0.15 | 98.69 |
| 86.0-87.0 | 2.5 | 0.3 | 235.1 | 0.12 | 98.80 |
| 87.0-88.0 | 1.9 | 0.2 | 235.3 | 0.09 | 98.89 |
| 88.0-89.0 | 1.3 | 0.1 | 235.5 | 0.06 | 98.95 |
| 89.0-90.0 | 0.9 | 0.1 | 235.5 | 0.04 | 98.99 |
| 90.0-91.0 | 0.6 | 0.1 | 235.6 | 0.03 | 99.02 |
| 91.0-92.0 | 0.4 | 0.0 | 235.7 | 0.02 | 99.04 |
| 92.0-93.0 | 0.3 | 0.0 | 235.7 | 0.01 | 99.05 |
| 93.0-94.0 | 0.2 | 0.0 | 235.7 | 0.01 | 99.06 |
| 94.0-95.0 | 0.2 | 0.0 | 235.7 | 0.01 | 99.07 |
| 95.0-96.0 | 0.2 | 0.0 | 235.8 | 0.01 | 99.08 |
| 96.0-97.0 | 0.2 | 0.0 | 235.8 | 0.01 | 99.09 |
| 97.0-98.0 | 0.2 | 0.0 | 235.8 | 0.01 | 99.10 |
| 98.0-99.0 | 0.2 | 0.0 | 235.8 | 0.01 | 99.10 |
| 99.0-100.0 | 0.2 | 0.0 | 235.8 | 0.01 | 99.11 |
| 100.0-101.0 | 0.2 | 0.0 | 235.9 | 0.01 | 99.12 |
| 101.0-102.0 | 0.2 | 0.0 | 235.9 | 0.01 | 99.13 |
| 102.0-103.0 | 0.2 | 0.0 | 235.9 | 0.01 | 99.14 |
| 103.0-104.0 | 0.2 | 0.0 | 235.9 | 0.01 | 99.15 |
| 104.0-105.0 | 0.2 | 0.0 | 235.9 | 0.01 | 99.16 |
| 105.0-106.0 | 0.2 | 0.0 | 236.0 | 0.01 | 99.17 |
| 106.0-107.0 | 0.2 | 0.0 | 236.0 | 0.01 | 99.18 |
| 107.0-108.0 | 0.2 | 0.0 | 236.0 | 0.01 | 99.19 |

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

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 | 0.2 | 0.0 | 236.0 | 0.01 | 99.20 |
| 109.0-110.0 | 0.2 | 0.0 | 236.1 | 0.01 | 99.21 |
| 110.0-111.0 | 0.2 | 0.0 | 236.1 | 0.01 | 99.22 |
| 111.0-112.0 | 0.3 | 0.0 | 236.1 | 0.01 | 99.23 |
| 112.0-113.0 | 0.3 | 0.0 | 236.1 | 0.01 | 99.24 |
| 113.0-114.0 | 0.3 | 0.0 | 236.2 | 0.01 | 99.25 |
| 114.0-115.0 | 0.3 | 0.0 | 236.2 | 0.01 | 99.26 |
| 115.0-116.0 | 0.3 | 0.0 | 236.2 | 0.01 | 99.28 |
| 116.0-117.0 | 0.3 | 0.0 | 236.3 | 0.01 | 99.29 |
| 117.0-118.0 | 0.3 | 0.0 | 236.3 | 0.01 | 99.30 |
| 118.0-119.0 | 0.3 | 0.0 | 236.3 | 0.01 | 99.31 |
| 119.0-120.0 | 0.3 | 0.0 | 236.4 | 0.01 | 99.33 |
| 120.0-121.0 | 0.3 | 0.0 | 236.4 | 0.01 | 99.34 |
| 121.0-122.0 | 0.3 | 0.0 | 236.4 | 0.01 | 99.36 |
| 122.0-123.0 | 0.4 | 0.0 | 236.5 | 0.01 | 99.37 |
| 123.0-124.0 | 0.4 | 0.0 | 236.5 | 0.01 | 99.38 |
| 124.0-125.0 | 0.4 | 0.0 | 236.5 | 0.01 | 99.40 |
| 125.0-126.0 | 0.4 | 0.0 | 236.6 | 0.01 | 99.41 |
| 126.0-127.0 | 0.4 | 0.0 | 236.6 | 0.02 | 99.43 |
| 127.0-128.0 | 0.4 | 0.0 | 236.6 | 0.01 | 99.44 |
| 128.0-129.0 | 0.4 | 0.0 | 236.7 | 0.01 | 99.46 |
| 129.0-130.0 | 0.4 | 0.0 | 236.7 | 0.02 | 99.47 |
| 130.0-131.0 | 0.4 | 0.0 | 236.7 | 0.02 | 99.49 |
| 131.0-132.0 | 0.4 | 0.0 | 236.8 | 0.02 | 99.50 |
| 132.0-133.0 | 0.5 | 0.0 | 236.8 | 0.02 | 99.52 |
| 133.0-134.0 | 0.5 | 0.0 | 236.9 | 0.02 | 99.54 |
| 134.0-135.0 | 0.5 | 0.0 | 236.9 | 0.02 | 99.55 |
| 135.0-136.0 | 0.5 | 0.0 | 236.9 | 0.02 | 99.57 |
| 136.0-137.0 | 0.5 | 0.0 | 237.0 | 0.02 | 99.58 |
| 137.0-138.0 | 0.5 | 0.0 | 237.0 | 0.02 | 99.60 |
| 138.0-139.0 | 0.5 | 0.0 | 237.0 | 0.02 | 99.61 |
| 139.0-140.0 | 0.5 | 0.0 | 237.1 | 0.02 | 99.63 |
| 140.0-141.0 | 0.5 | 0.0 | 237.1 | 0.02 | 99.64 |
| 141.0-142.0 | 0.5 | 0.0 | 237.1 | 0.02 | 99.66 |
| 142.0-143.0 | 0.5 | 0.0 | 237.2 | 0.02 | 99.68 |
| 143.0-144.0 | 0.5 | 0.0 | 237.2 | 0.01 | 99.69 |

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

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 | 0.5 | 0.0 | 237.3 | 0.01 | 99.70 |
| 145.0-146.0 | 0.6 | 0.0 | 237.3 | 0.01 | 99.72 |
| 146.0-147.0 | 0.6 | 0.0 | 237.3 | 0.01 | 99.73 |
| 147.0-148.0 | 0.6 | 0.0 | 237.4 | 0.01 | 99.75 |
| 148.0-149.0 | 0.6 | 0.0 | 237.4 | 0.01 | 99.76 |
| 149.0-150.0 | 0.6 | 0.0 | 237.4 | 0.01 | 99.78 |
| 150.0-151.0 | 0.6 | 0.0 | 237.5 | 0.01 | 99.79 |
| 151.0-152.0 | 0.6 | 0.0 | 237.5 | 0.01 | 99.80 |
| 152.0-153.0 | 0.6 | 0.0 | 237.5 | 0.01 | 99.81 |
| 153.0-154.0 | 0.6 | 0.0 | 237.5 | 0.01 | 99.83 |
| 154.0-155.0 | 0.6 | 0.0 | 237.6 | 0.01 | 99.84 |
| 155.0-156.0 | 0.6 | 0.0 | 237.6 | 0.01 | 99.85 |
| 156.0-157.0 | 0.6 | 0.0 | 237.6 | 0.01 | 99.86 |
| 157.0-158.0 | 0.6 | 0.0 | 237.7 | 0.01 | 99.87 |
| 158.0-159.0 | 0.6 | 0.0 | 237.7 | 0.01 | 99.88 |
| 159.0-160.0 | 0.6 | 0.0 | 237.7 | 0.01 | 99.89 |
| 160.0-161.0 | 0.6 | 0.0 | 237.7 | 0.01 | 99.90 |
| 161.0-162.0 | 0.6 | 0.0 | 237.8 | 0.01 | 99.91 |
| 162.0-163.0 | 0.6 | 0.0 | 237.8 | 0.01 | 99.92 |
| 163.0-164.0 | 0.7 | 0.0 | 237.8 | 0.01 | 99.93 |
| 164.0-165.0 | 0.7 | 0.0 | 237.8 | 0.01 | 99.94 |
| 165.0-166.0 | 0.6 | 0.0 | 237.8 | 0.01 | 99.95 |
| 166.0-167.0 | 0.7 | 0.0 | 237.8 | 0.01 | 99.95 |
| 167.0-168.0 | 0.7 | 0.0 | 237.9 | 0.01 | 99.96 |
| 168.0-169.0 | 0.7 | 0.0 | 237.9 | 0.01 | 99.97 |
| 169.0-170.0 | 0.7 | 0.0 | 237.9 | 0.01 | 99.97 |
| 170.0-171.0 | 0.7 | 0.0 | 237.9 | 0.01 | 99.98 |
| 171.0-172.0 | 0.7 | 0.0 | 237.9 | 0.00 | 99.98 |
| 172.0-173.0 | 0.7 | 0.0 | 237.9 | 0.00 | 99.99 |
| 173.0-174.0 | 0.7 | 0.0 | 237.9 | 0.00 | 99.99 |
| 174.0-175.0 | 0.7 | 0.0 | 237.9 | 0.00 | 99.99 |
| 175.0-176.0 | 0.7 | 0.0 | 237.9 | 0.00 | 100.00 |
| 176.0-177.0 | 0.7 | 0.0 | 238.0 | 0.00 | 100.00 |
| 177.0-178.0 | 0.7 | 0.0 | 238.0 | 0.00 | 100.00 |
| 178.0-179.0 | 0.7 | 0.0 | 238.0 | 0.00 | 100.00 |
| 179.0-180.0 | 0.7 | 0.0 | 238.0 | 0.00 | 100.00 |

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

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