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Report No.: 1 Test Time: 12.12.2019 17:53

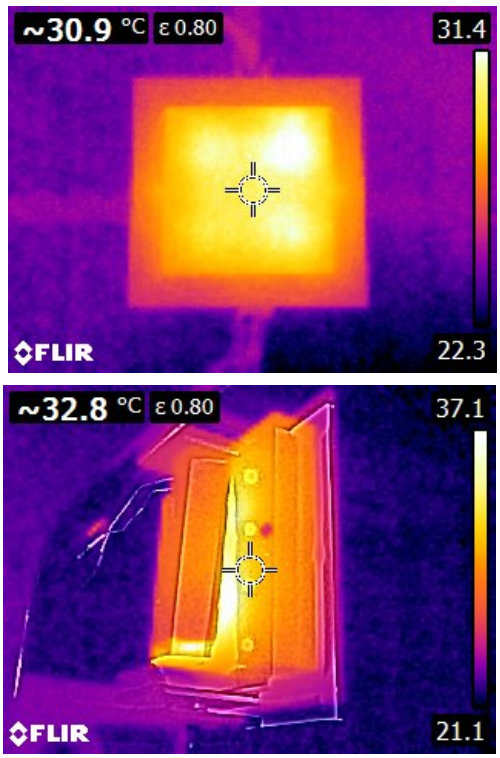
# Luminaire Property

Luminaire Manufacturer:
Luminaire Description: FG 250 4x40LED 0,3A 15W 5000K opal
Luminous Length (mm): 250 Luminous Width (mm): 250
Luminous Height (mm): 76 Voltage: 221.4 V
Current: 0.072 A Power: 15.14 W
Power Factor: 0.942

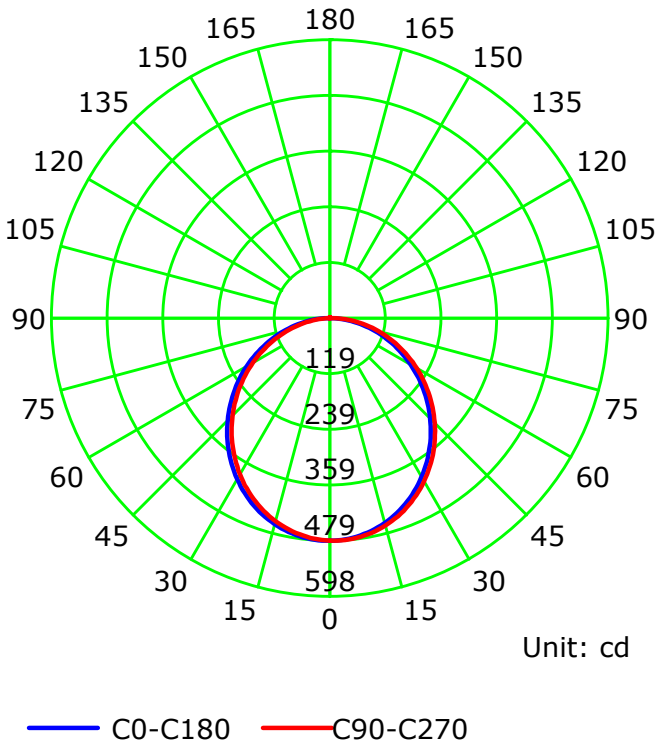
# Photometric Results

CIE Class: Direct Total Rated Lamp Lumens: 1360.9 lm
Measurement Flux: 1360.9 lm Efficiency: 100%
Downward Ratio: 99% Upward Ratio: 1%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 164.3, 164.2, 164.2, 164.3
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 110.1, 110.0, 110.0, 110.0
Luminaire Efficacy Rating (LER): 89.94 Central Intensity: 479.11 cd
Max. Intensity: 479.2 cd Pos of Max. Intensity: H180 V1
S/MH(C0/C180): 1.23 S/MH(C90/C270): 1.23

Termogramma




Luminous Intensity Distribution Curve




C Plane (°):0.0-360.0: 22.5 Gamma Plane (°):0.0-180.0:1.0
Test Lab: Test Device: LSG-1800B
Test Type: TYPE C Distance: 12.677 m
Temperature: Humidity:
Operator: Inspector:

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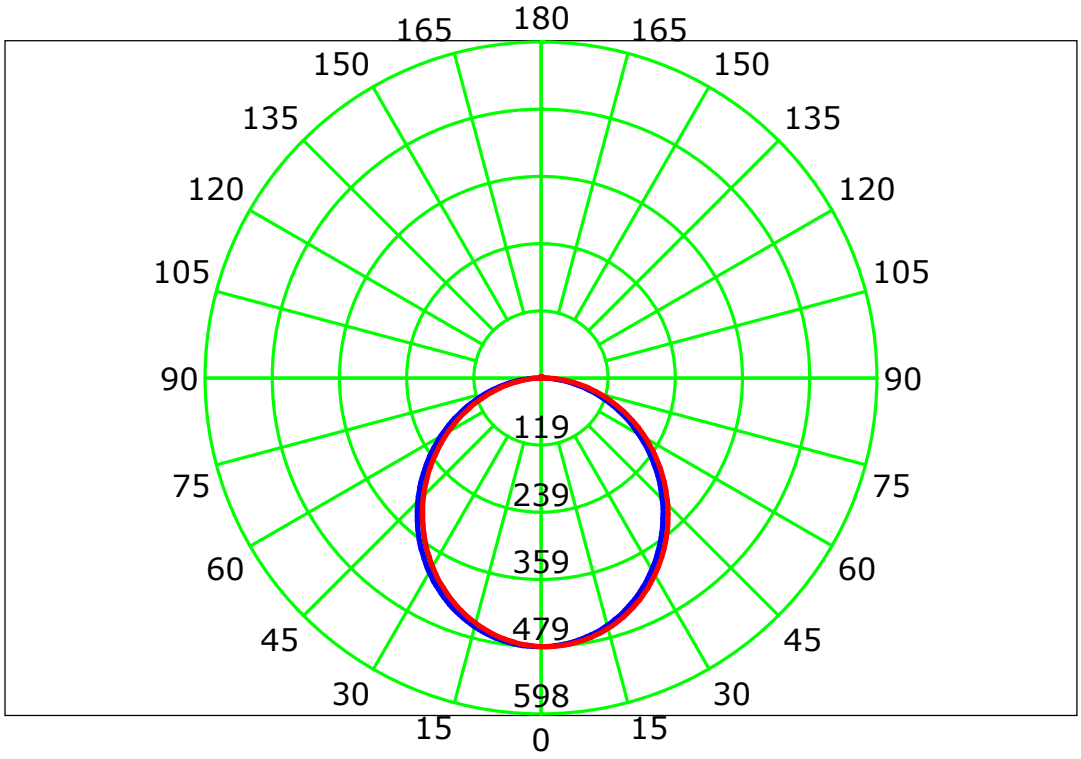
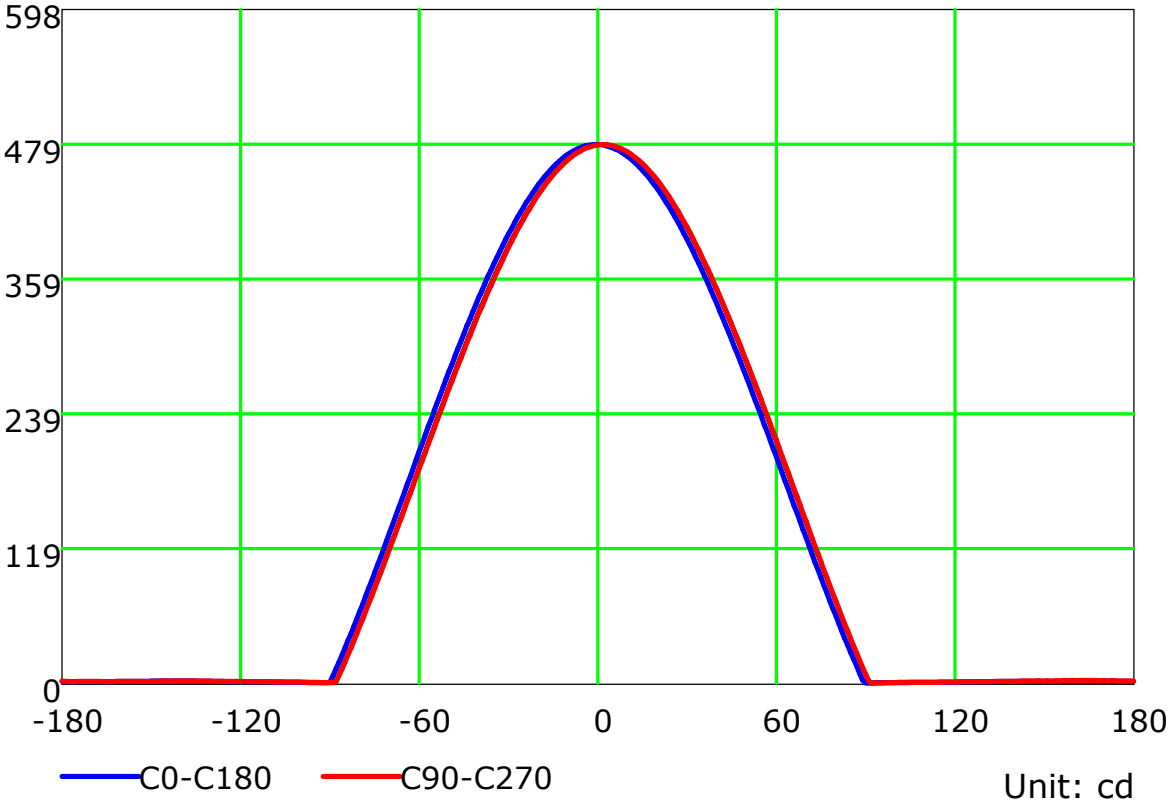
# Luminous Intensity Distribution Curve

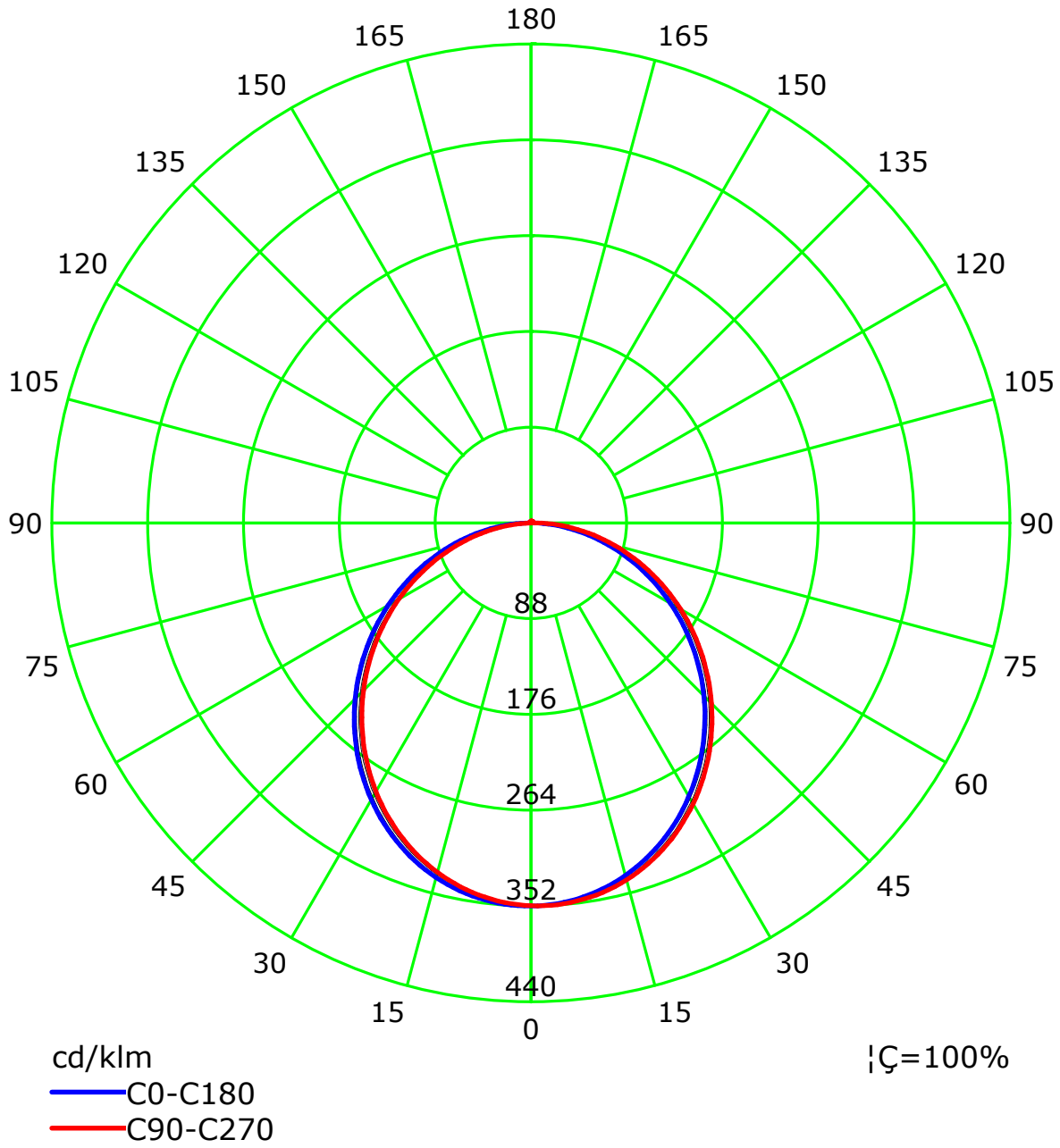



C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# Luminous Intensity Distribution Curve(cd/klm)




C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

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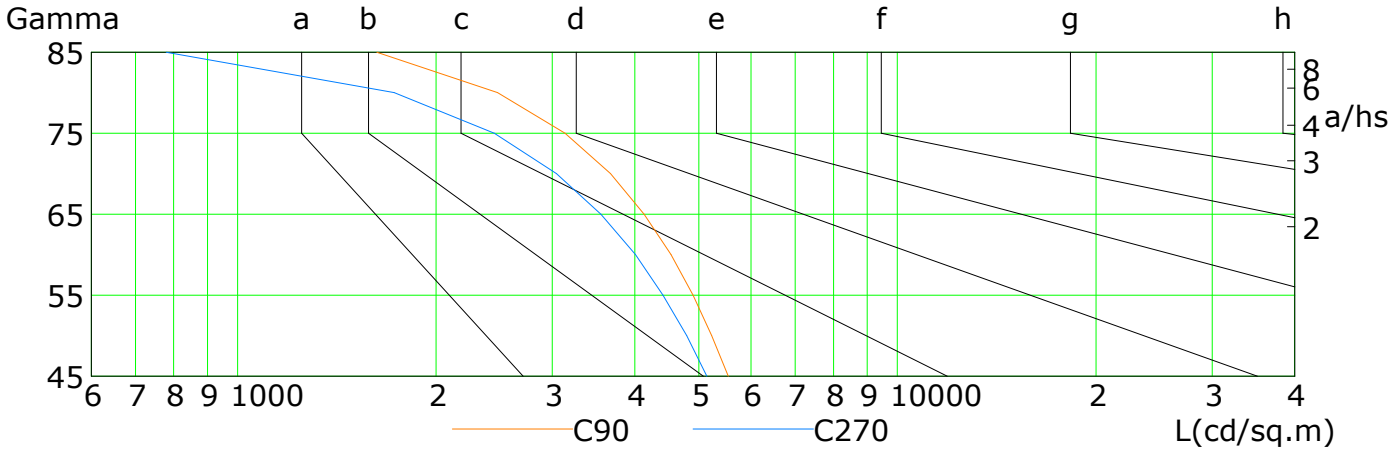
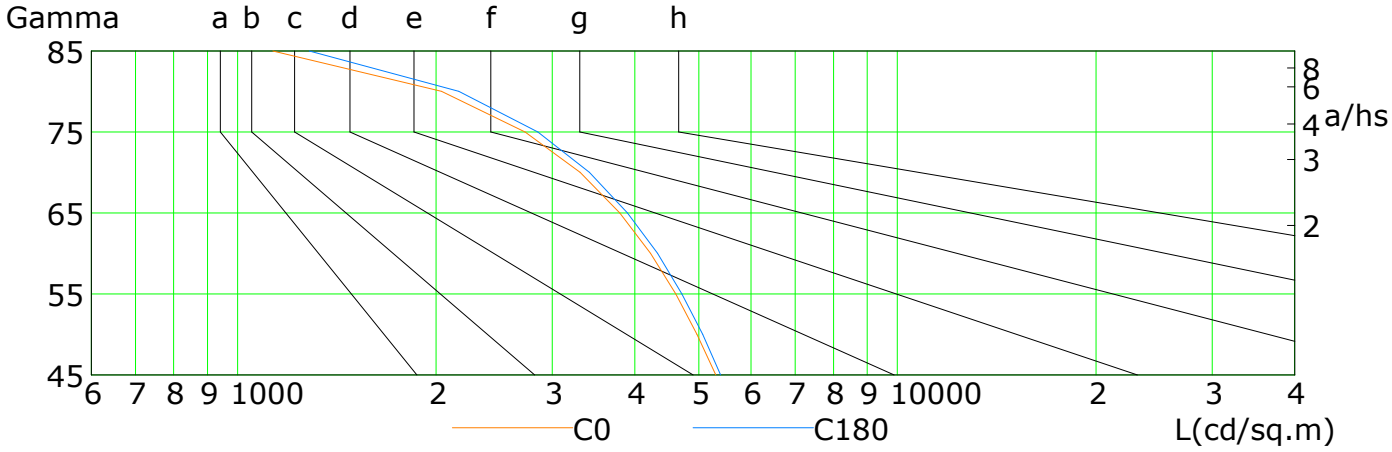
# Lum Limit Curve

| 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 | 5304 | 4968 | 4617 | 4223 | 3795 | 3306 | 2728 | 2038 | 1131 |
| C90 | 5544 | 5228 | 4901 | 4538 | 4131 | 3673 | 3135 | 2478 | 1627 |
| C180 | 5398 | 5070 | 4716 | 4328 | 3897 | 3414 | 2852 | 2163 | 1285 |
| C270 | 5140 | 4791 | 4415 | 4010 | 3552 | 3044 | 2449 | 1727 | 780 |

C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

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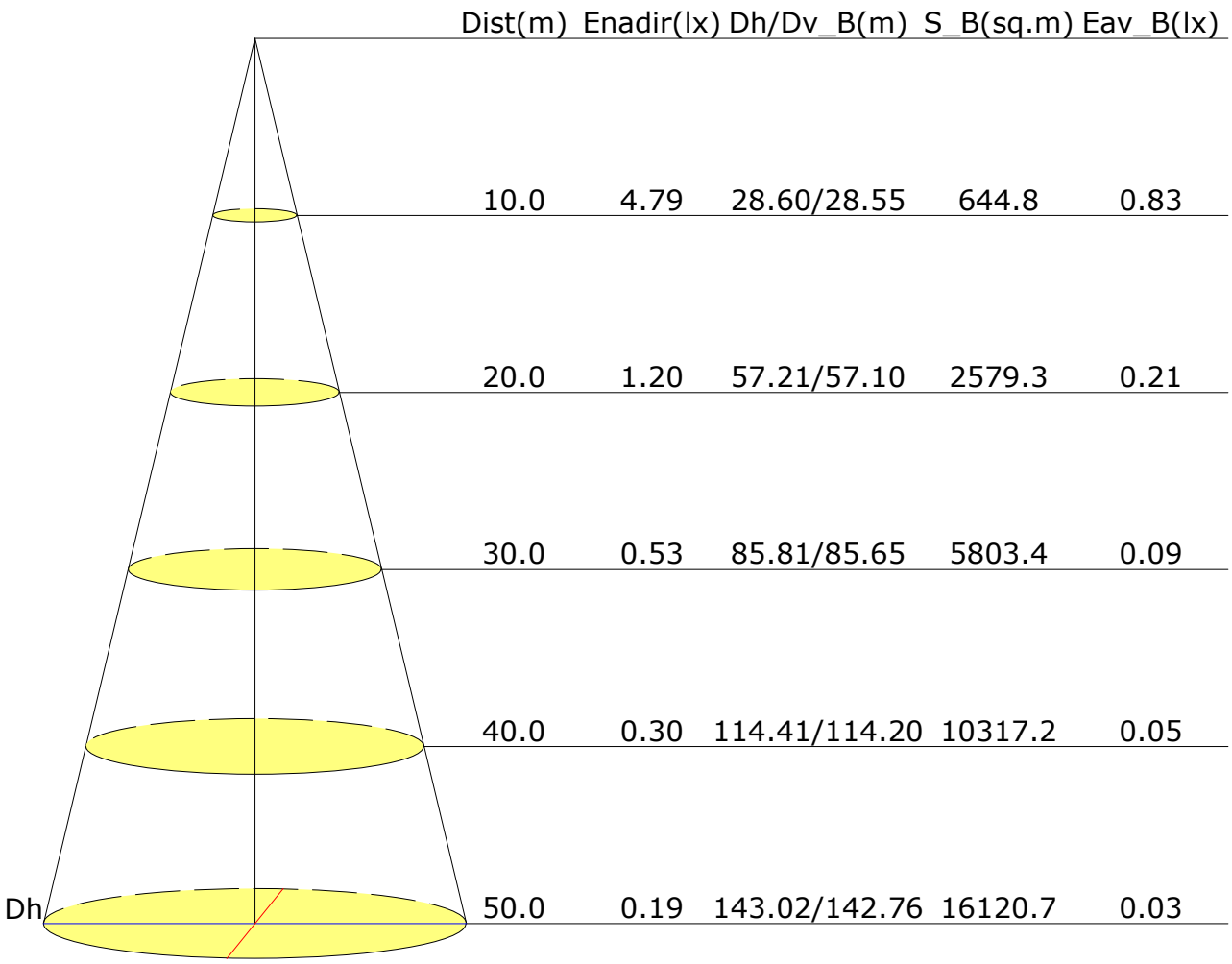
# Illuminance at a Distance




C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

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# 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 | 17.5 | 18.9 | 17.9 | 19.2 | 19.4 | 17.6 | 19.0 | 17.9 | 19.2 | 19.5 |
| 3H | 18.9 | 20.2 | 19.2 | 20.4 | 20.7 | 19.0 | 20.2 | 19.3 | 20.5 | 20.8 |
| 4H | 19.4 | 20.6 | 19.8 | 20.9 | 21.2 | 19.5 | 20.7 | 19.9 | 21.0 | 21.3 |
| 6H | 19.8 | 20.9 | 20.1 | 21.2 | 21.5 | 19.9 | 21.0 | 20.3 | 21.3 | 21.7 |
| 8H | 19.9 | 20.9 | 20.2 | 21.3 | 21.6 | 20.0 | 21.1 | 20.4 | 21.4 | 21.7 |
| 12H | 19.9 | 20.9 | 20.3 | 21.3 | 21.6 | 20.0 | 21.1 | 20.4 | 21.4 | 21.8 |
| X=4H Y=2H | 18.1 | 19.3 | 18.4 | 19.6 | 19.9 | 18.1 | 19.3 | 18.5 | 19.6 | 19.9 |
| 3H | 19.6 | 20.7 | 20.0 | 21.0 | 21.4 | 19.7 | 20.7 | 20.1 | 21.1 | 21.4 |
| 4H | 20.2 | 21.2 | 20.7 | 21.5 | 21.9 | 20.3 | 21.3 | 20.7 | 21.6 | 22.0 |
| 6H | 20.7 | 21.5 | 21.1 | 21.9 | 22.3 | 20.8 | 21.6 | 21.2 | 22.0 | 22.5 |
| 8H | 20.8 | 21.6 | 21.3 | 22.0 | 22.5 | 21.0 | 21.7 | 21.4 | 22.1 | 22.6 |
| 12H | 20.9 | 21.6 | 21.4 | 22.0 | 22.5 | 21.1 | 21.7 | 21.5 | 22.2 | 22.6 |
| X=8H Y=4H | 20.5 | 21.2 | 20.9 | 21.6 | 22.1 | 20.5 | 21.3 | 21.0 | 21.7 | 22.2 |
| 6H | 21.0 | 21.6 | 21.5 | 22.1 | 22.6 | 21.1 | 21.8 | 21.6 | 22.2 | 22.7 |
| 8H | 21.2 | 21.8 | 21.7 | 22.2 | 22.7 | 21.4 | 21.9 | 21.8 | 22.4 | 22.9 |
| 12H | 21.4 | 21.8 | 21.9 | 22.3 | 22.8 | 21.5 | 22.0 | 22.0 | 22.5 | 23.0 |
| X=12H Y=4H | 20.5 | 21.2 | 20.9 | 21.6 | 22.0 | 20.5 | 21.2 | 21.0 | 21.7 | 22.1 |
| 6H | 21.1 | 21.6 | 21.6 | 22.1 | 22.6 | 21.2 | 21.7 | 21.7 | 22.2 | 22.7 |
| 8H | 21.3 | 21.8 | 21.8 | 22.3 | 22.8 | 21.4 | 21.9 | 21.9 | 22.4 | 22.9 |
| Variations with the observer position at spacings: | | | | | | | | | | |
| S=1.0H | +0.2/-0.2 | | | | | +0.2/-0.2 | | | | |
| S=1.5H | +0.3/-0.5 | | | | | +0.4/-0.6 | | | | |
| S=2.0H | +0.6/-0.9 | | | | | +0.6/-1.0 | | | | |

Calculate in accordance with CIE Pub.117. The table is revised with 1361lm (8log(F/F0) = 1.1).

C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
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 | 0.56 | 0.66 | 0.74 | 0.79 | 0.86 | 0.91 | 0.95 | 1.00 | 1.03 |
| | 0.30 | | 0.48 | 0.59 | 0.66 | 0.72 | 0.80 | 0.86 | 0.90 | 0.95 | 0.99 |
| | 0.20 | | 0.42 | 0.53 | 0.60 | 0.66 | 0.75 | 0.81 | 0.85 | 0.92 | 0.96 |
| 0.50 | 0.50 | 0.20 | 0.54 | 0.64 | 0.71 | 0.76 | 0.83 | 0.88 | 0.91 | 0.96 | 0.98 |
| | 0.30 | | 0.47 | 0.57 | 0.65 | 0.70 | 0.78 | 0.83 | 0.87 | 0.92 | 0.95 |
| | 0.20 | | 0.42 | 0.52 | 0.59 | 0.65 | 0.73 | 0.79 | 0.83 | 0.89 | 0.93 |
| 0.30 | 0.50 | 0.20 | 0.53 | 0.62 | 0.69 | 0.74 | 0.80 | 0.84 | 0.88 | 0.92 | 0.94 |
| | 0.30 | | 0.47 | 0.56 | 0.63 | 0.68 | 0.76 | 0.81 | 0.84 | 0.89 | 0.92 |
| | 0.20 | | 0.42 | 0.51 | 0.59 | 0.64 | 0.72 | 0.77 | 0.81 | 0.86 | 0.90 |
| 0.00 | 0.00 | 0.00 | 0.39 | 0.49 | 0.56 | 0.61 | 0.68 | 0.73 | 0.77 | 0.82 | 0.85 |

Rating:15W Photometrically tested without ceiling board.

Multiply UF values by service correction factors

Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

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# 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 | 1.01 | 0.83 | 0.71 | 0.62 | 0.50 | 0.42 | 0.36 | 0.28 | 0.23 |
| | 0.30 | | 0.84 | 0.71 | 0.62 | 0.55 | 0.45 | 0.38 | 0.33 | 0.26 | 0.22 |
| | 0.20 | | 0.72 | 0.62 | 0.55 | 0.49 | 0.41 | 0.35 | 0.31 | 0.25 | 0.21 |
| 0.50 | 0.50 | 0.20 | 0.97 | 0.80 | 0.68 | 0.60 | 0.48 | 0.43 | 0.34 | 0.26 | 0.22 |
| | 0.30 | | 0.82 | 0.69 | 0.60 | 0.53 | 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 |
| 0.30 | 0.50 | 0.20 | 0.94 | 0.77 | 0.66 | 0.57 | 0.46 | 0.38 | 0.32 | 0.25 | 0.21 |
| | 0.30 | | 0.80 | 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 |
| 0.00 | 0.00 | 0.00 | 0.60 | 0.51 | 0.44 | 0.39 | 0.32 | 0.27 | 0.23 | 0.18 | 0.15 |

Rating:15W Photometrically tested without ceiling board.

Multiply UF values by service correction factors

Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:1.0
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# 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 | 0.18 | 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 | | 0.05 | 0.07 | 0.08 | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 |
| 0.50 | 0.50 | 0.20 | 0.16 | 0.18 | 0.18 | 0.19 | 0.20 | 0.20 | 0.21 | 0.21 | 0.22 |
| | 0.30 | | 0.10 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 | 0.17 | 0.18 | 0.19 |
| | 0.20 | | 0.05 | 0.07 | 0.08 | 0.09 | 0.11 | 0.13 | 0.14 | 0.16 | 0.17 |
| 0.30 | 0.50 | 0.20 | 0.16 | 0.17 | 0.18 | 0.18 | 0.19 | 0.20 | 0.20 | 0.20 | 0.21 |
| | 0.30 | | 0.10 | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 | 0.17 | 0.18 | 0.18 |
| | 0.20 | | 0.05 | 0.07 | 0.08 | 0.09 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 |
| 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:15W Photometrically tested without ceiling board.

Multiply UF values by service correction factors

Calculate in accordance with CIBSE Technical Memorandum NO.5 1980