

Report No.: 1

Test Time: 31.01.2020 15:45

Luminaire Property

Luminaire Manufacturer:

Luminaire Description: FP 150 HE 4x28LED 150W 5000K 90x90gr.

Luminous Length (mm): 404

Luminous Width (mm): 153

Luminous Height (mm): 80

Voltage: 221.4 V

Current: 0.699 A

Power: 151.50 W

Power Factor: 0.977

Photometric Results

CIE Class: Direct

Measurement Flux: 20887.9 lm

Downward Ratio: 99%

Total Rated Lamp Lumens: 20887.9 lm

Efficiency: 100%

Upward Ratio: 1%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 111.5, 111.1, 120.6, 120.1

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 82.2, 82.1, 90.7, 90.2

Luminaire Efficacy Rating (LER): 137.92

Central Intensity: 8193.54 cd

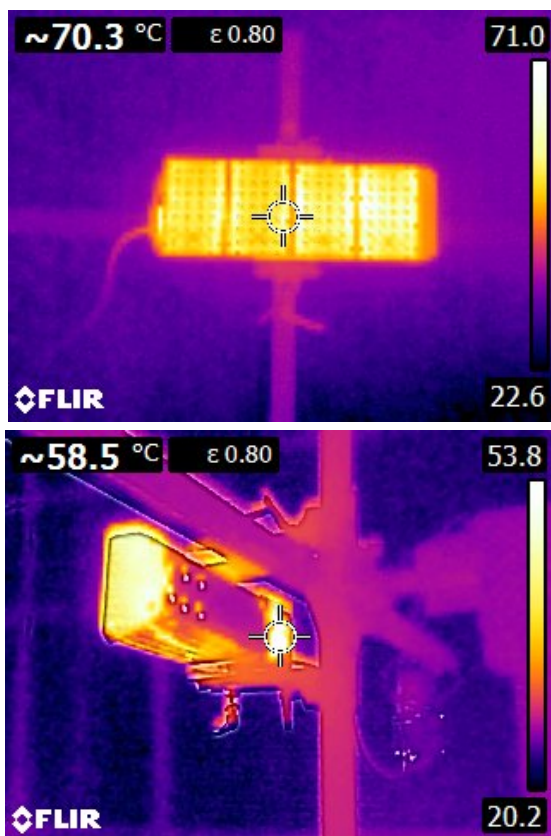
Max. Intensity: 12870.72 cd

Pos of Max. Intensity: H135 V33

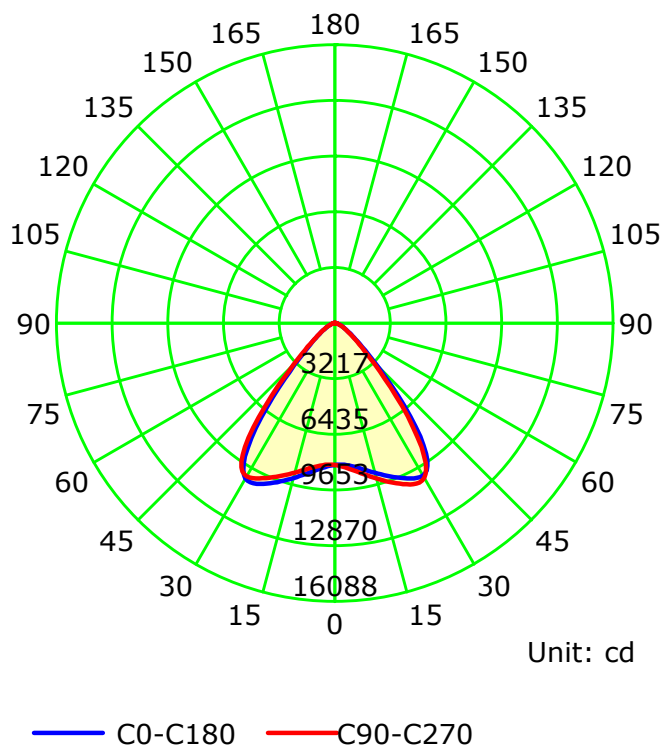
S/MH(C0/C180): 1.50

S/MH(C90/C270): 1.50

Termogramma



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

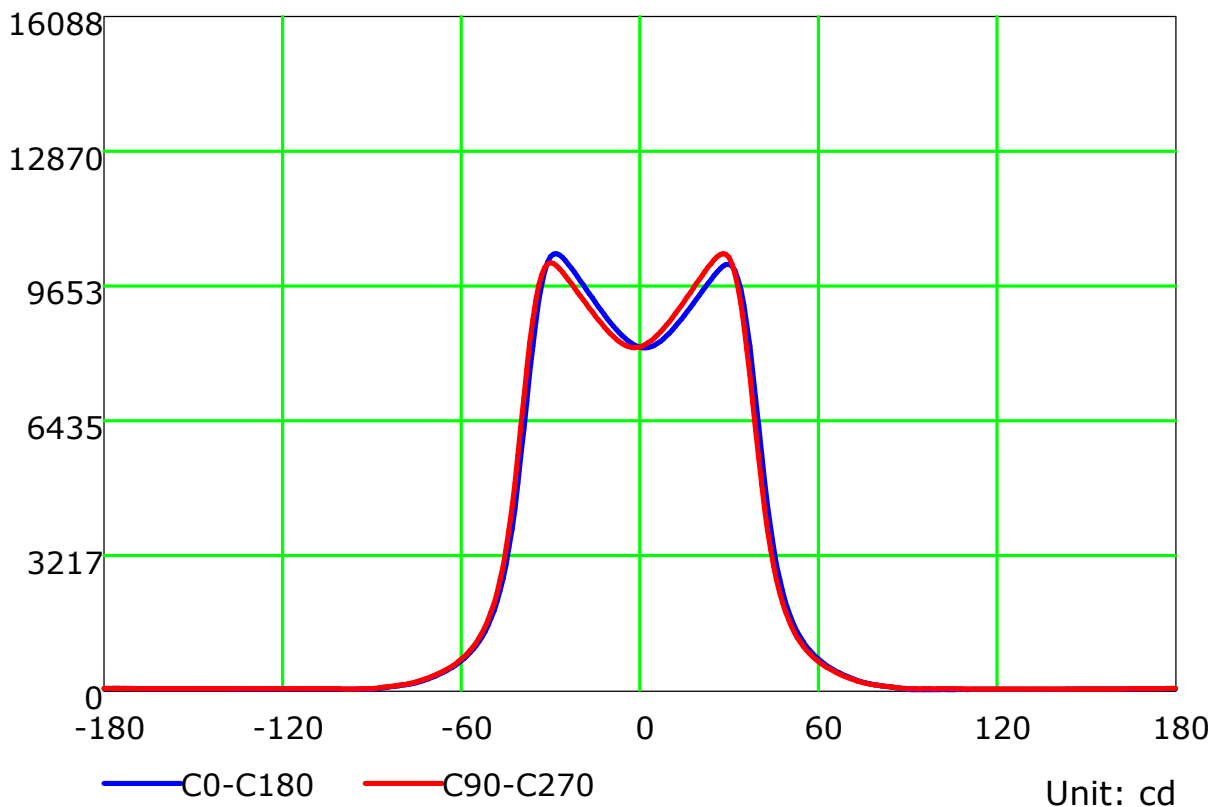
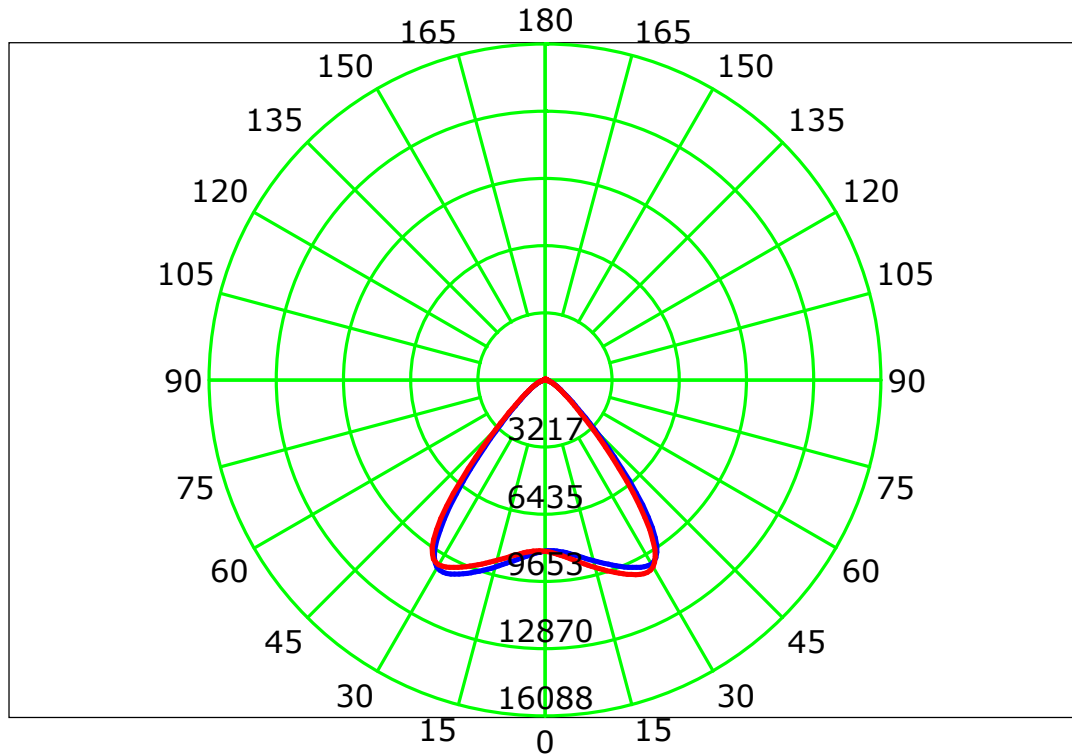
Test Device: LSG-1800B

Distance: 12.677 m

Humidity:

Inspector:

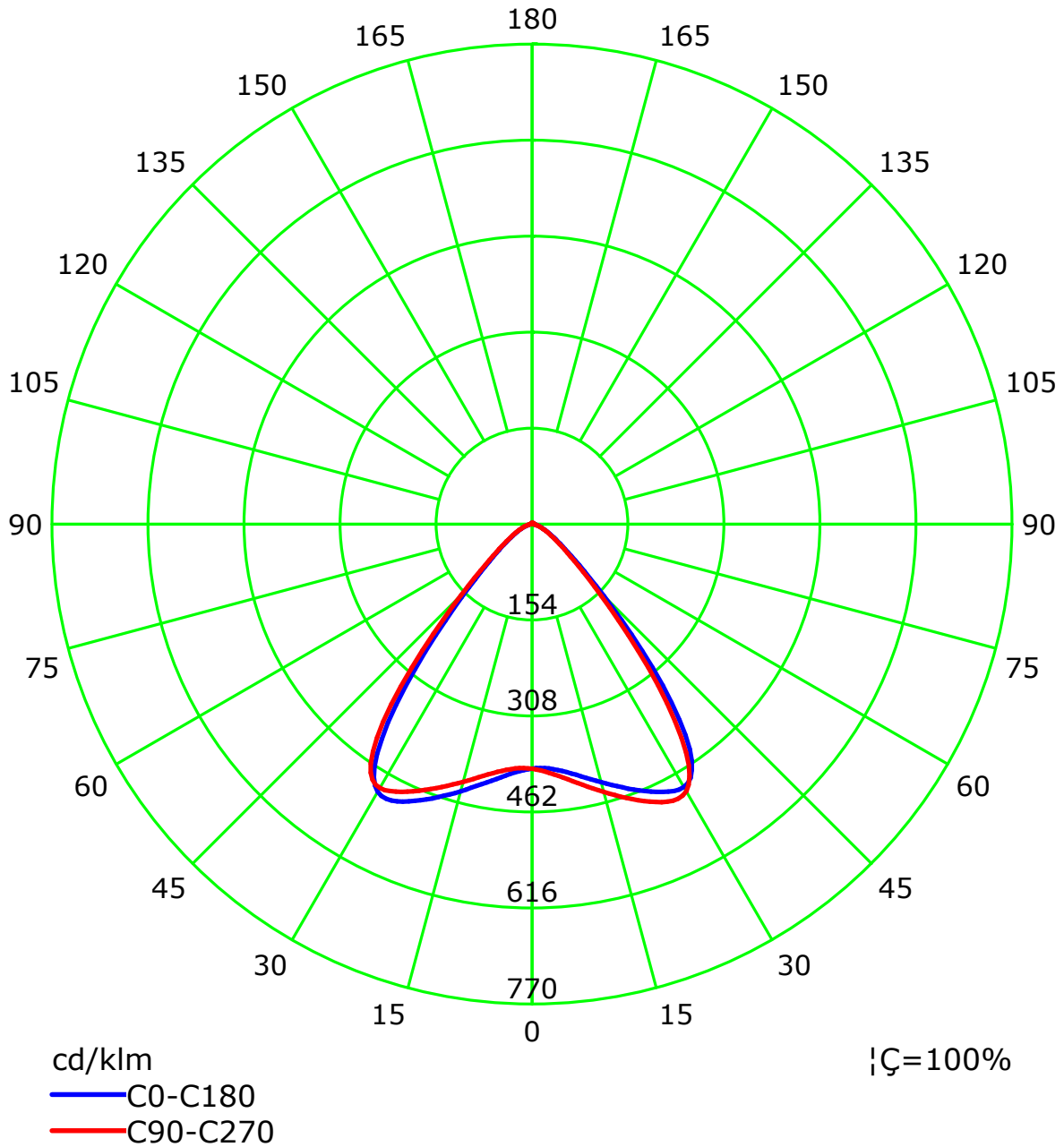
Luminous Intensity Distribution Curve



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)



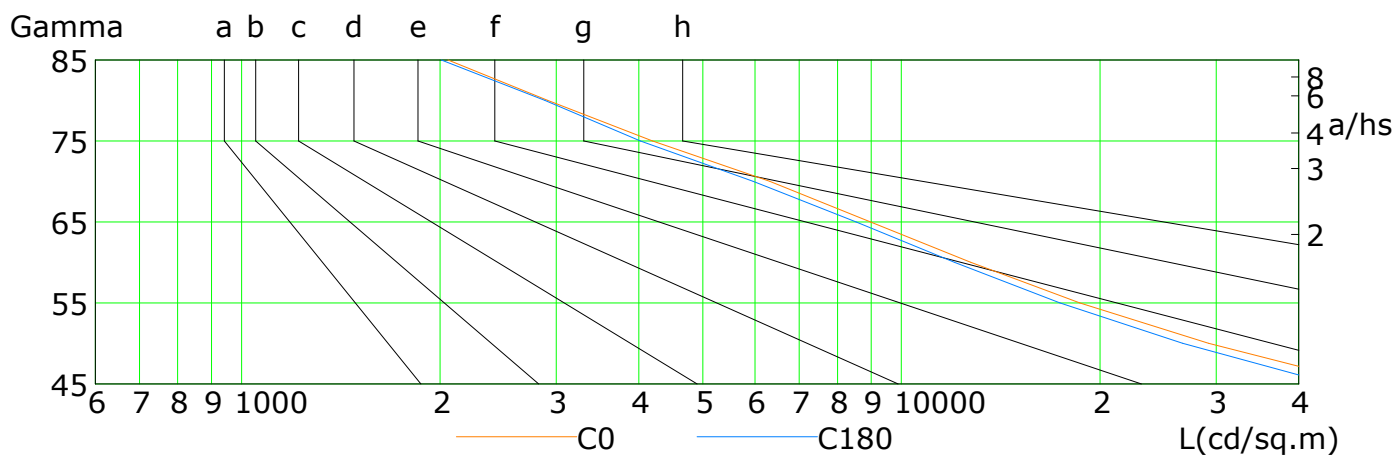
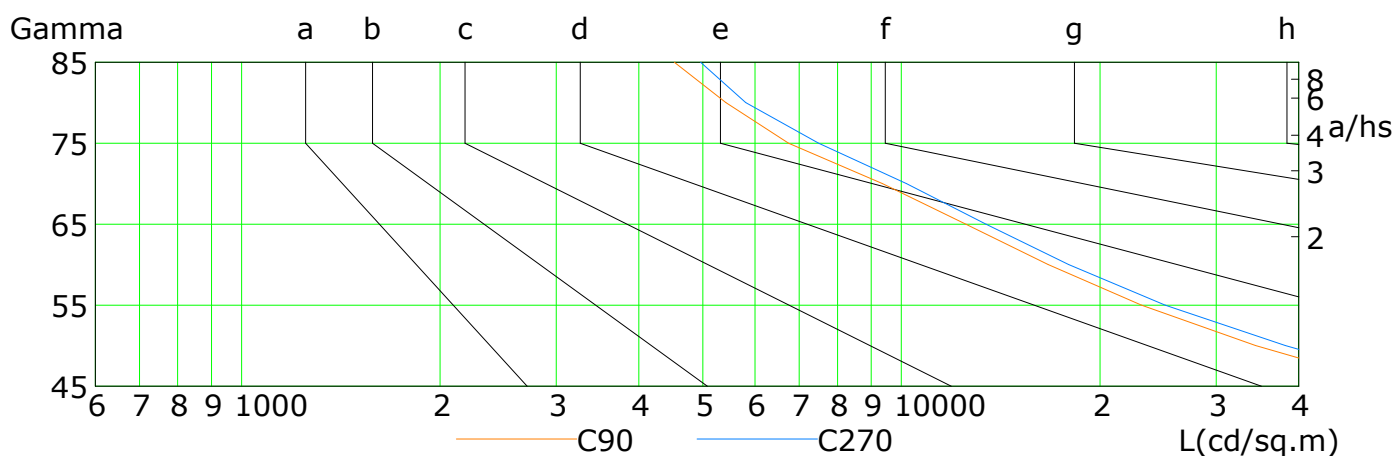
C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

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

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

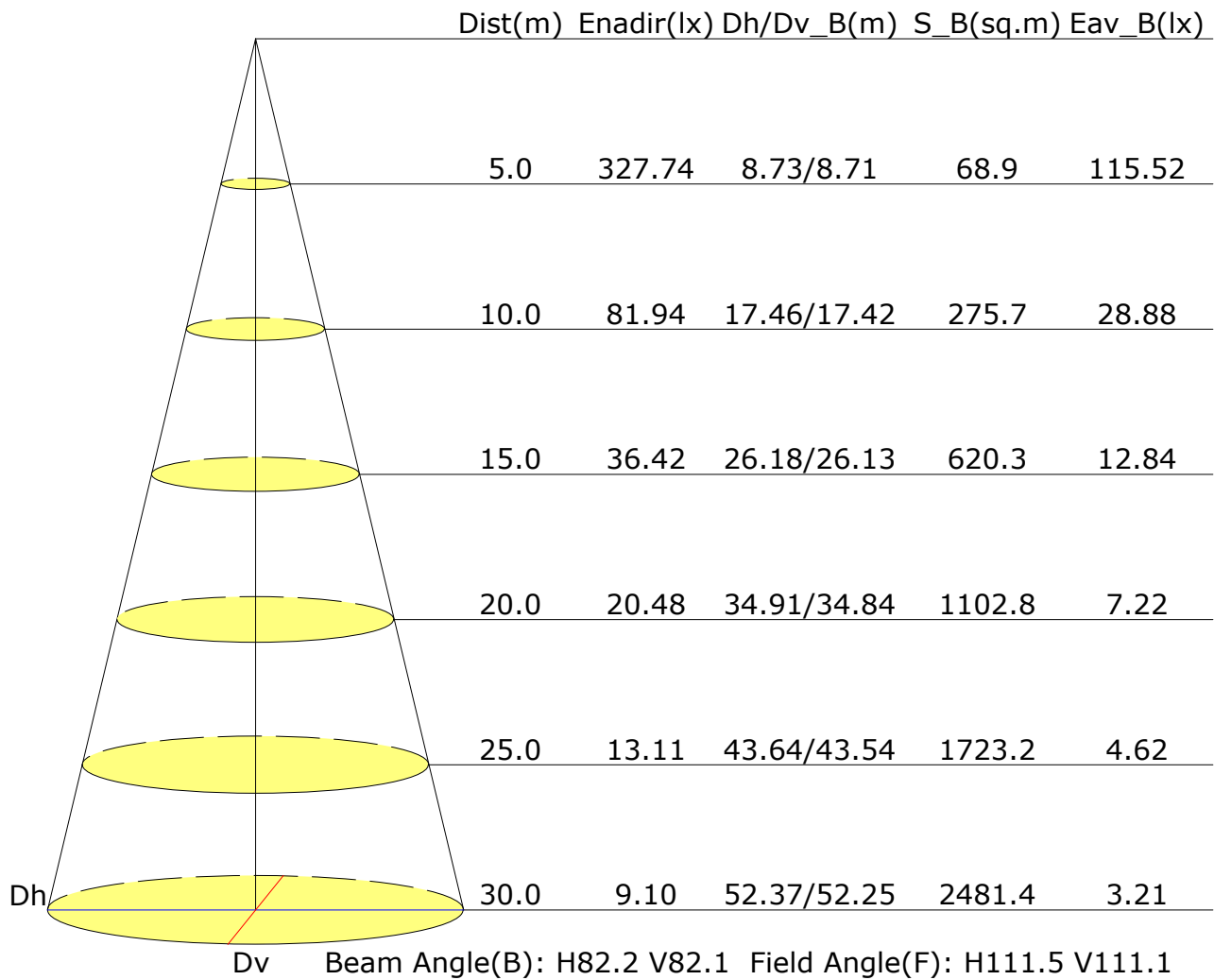


| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|
| C0 | 51297 | 29221 | 18644 | 12733 | 8984 | 6318 | 4195 | 2909 | 2055 |
| C90 | 56785 | 34418 | 23119 | 16682 | 12530 | 9356 | 6749 | 5420 | 4527 |
| C180 | 45092 | 26680 | 17397 | 12032 | 8538 | 5957 | 4020 | 2881 | 2008 |
| C270 | 64508 | 38188 | 25115 | 17932 | 13441 | 10177 | 7491 | 5808 | 4963 |

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:

Illuminance at a Distance



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 | 24.5 | 25.6 | 24.8 | 25.8 | 26.1 | 24.7 | 25.8 | 25.0 | 26.0 | 26.3 |
| 3H | 24.4 | 25.4 | 24.8 | 25.7 | 26.0 | 24.6 | 25.6 | 25.0 | 25.9 | 26.2 |
| 4H | 24.4 | 25.3 | 24.7 | 25.6 | 25.9 | 24.6 | 25.6 | 25.0 | 25.8 | 26.1 |
| 6H | 24.3 | 25.2 | 24.7 | 25.5 | 25.9 | 24.6 | 25.4 | 24.9 | 25.8 | 26.1 |
| 8H | 24.3 | 25.1 | 24.7 | 25.5 | 25.8 | 24.6 | 25.4 | 24.9 | 25.7 | 26.0 |
| 12H | 24.3 | 25.1 | 24.7 | 25.4 | 25.8 | 24.5 | 25.3 | 24.9 | 25.7 | 26.0 |
| X=4H Y=2H | 24.5 | 25.4 | 24.8 | 25.7 | 26.0 | 24.6 | 25.6 | 25.0 | 25.9 | 26.2 |
| 3H | 24.5 | 25.3 | 24.9 | 25.6 | 26.0 | 24.7 | 25.5 | 25.1 | 25.8 | 26.2 |
| 4H | 24.5 | 25.2 | 24.9 | 25.5 | 25.9 | 24.7 | 25.4 | 25.1 | 25.7 | 26.1 |
| 6H | 24.4 | 25.1 | 24.9 | 25.4 | 25.9 | 24.7 | 25.3 | 25.1 | 25.7 | 26.1 |
| 8H | 24.4 | 25.0 | 24.9 | 25.4 | 25.8 | 24.7 | 25.2 | 25.1 | 25.6 | 26.1 |
| 12H | 24.4 | 24.9 | 24.8 | 25.3 | 25.8 | 24.6 | 25.1 | 25.1 | 25.6 | 26.0 |
| X=8H Y=4H | 24.4 | 25.0 | 24.9 | 25.4 | 25.8 | 24.6 | 25.2 | 25.1 | 25.6 | 26.0 |
| 6H | 24.4 | 24.9 | 24.9 | 25.3 | 25.8 | 24.6 | 25.1 | 25.1 | 25.5 | 26.0 |
| 8H | 24.4 | 24.8 | 24.9 | 25.3 | 25.8 | 24.6 | 25.0 | 25.1 | 25.5 | 26.0 |
| 12H | 24.4 | 24.7 | 24.9 | 25.2 | 25.7 | 24.6 | 25.0 | 25.1 | 25.5 | 26.0 |
| X=12H Y=4H | 24.4 | 24.9 | 24.8 | 25.3 | 25.8 | 24.6 | 25.1 | 25.1 | 25.5 | 26.0 |
| 6H | 24.4 | 24.8 | 24.9 | 25.2 | 25.7 | 24.6 | 25.0 | 25.1 | 25.5 | 26.0 |
| 8H | 24.4 | 24.7 | 24.9 | 25.2 | 25.7 | 24.6 | 25.0 | 25.1 | 25.4 | 26.0 |
| Variations with the observer position at spacings: | | | | | | | | | | |
| S=1.0H | +3.0/-4.0 | | | | | +2.7/-3.7 | | | | |
| S=1.5H | +3.8/-5.7 | | | | | +3.6/-5.3 | | | | |
| S=2.0H | +5.6/-6.9 | | | | | +5.3/-6.5 | | | | |

Calculate in accordance with CIE Pub.117. The table is revised with 20888lm ($8\log(F/F_0) = 10.6$).

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 | 0.73 | 0.82 | 0.88 | 0.92 | 0.97 | 1.00 | 1.03 | 1.06 | 1.08 | |
| | 0.30 | | 0.67 | 0.76 | 0.82 | 0.87 | 0.93 | 0.97 | 0.99 | 1.03 | 1.05 | |
| | 0.20 | | 0.62 | 0.72 | 0.78 | 0.83 | 0.89 | 0.93 | 0.96 | 1.01 | 1.03 | |
| 0.50 | 0.50 | 0.20 | 0.71 | 0.80 | 0.85 | 0.89 | 0.94 | 0.97 | 0.99 | 1.02 | 1.04 | |
| | 0.30 | | 0.66 | 0.75 | 0.81 | 0.85 | 0.90 | 0.94 | 0.96 | 1.00 | 1.02 | |
| | 0.20 | | 0.62 | 0.71 | 0.77 | 0.81 | 0.87 | 0.91 | 0.94 | 0.98 | 1.00 | |
| 0.30 | 0.50 | 0.20 | 0.70 | 0.78 | 0.83 | 0.86 | 0.91 | 0.94 | 0.96 | 0.98 | 1.00 | |
| | 0.30 | | 0.65 | 0.74 | 0.79 | 0.83 | 0.88 | 0.91 | 0.93 | 0.96 | 0.98 | |
| | 0.20 | | 0.61 | 0.70 | 0.76 | 0.80 | 0.86 | 0.89 | 0.91 | 0.95 | 0.97 | |
| 0.00 | 0.00 | 0.00 | 0.60 | 0.68 | 0.74 | 0.77 | 0.82 | 0.85 | 0.87 | 0.90 | 0.92 | |
| Rating:152W 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 | 0.75 | 0.60 | 0.50 | 0.43 | 0.34 | 0.28 | 0.23 | 0.18 | 0.15 | |
| | 0.30 | | 0.63 | 0.51 | 0.43 | 0.38 | 0.30 | 0.25 | 0.22 | 0.17 | 0.14 | |
| | 0.20 | | 0.54 | 0.45 | 0.38 | 0.34 | 0.28 | 0.23 | 0.20 | 0.16 | 0.13 | |
| 0.50 | 0.50 | 0.20 | 0.72 | 0.57 | 0.47 | 0.40 | 0.31 | 0.30 | 0.22 | 0.17 | 0.14 | |
| | 0.30 | | 0.61 | 0.49 | 0.42 | 0.36 | 0.29 | 0.24 | 0.20 | 0.16 | 0.13 | |
| | 0.20 | | 0.53 | 0.44 | 0.37 | 0.33 | 0.26 | 0.22 | 0.19 | 0.15 | 0.13 | |
| 0.30 | 0.50 | 0.20 | 0.69 | 0.54 | 0.45 | 0.38 | 0.30 | 0.24 | 0.20 | 0.16 | 0.13 | |
| | 0.30 | | 0.59 | 0.48 | 0.40 | 0.34 | 0.27 | 0.23 | 0.19 | 0.15 | 0.12 | |
| | 0.20 | | 0.52 | 0.42 | 0.36 | 0.32 | 0.25 | 0.21 | 0.18 | 0.14 | 0.12 | |
| 0.00 | 0.00 | 0.00 | 0.40 | 0.31 | 0.26 | 0.22 | 0.17 | 0.14 | 0.12 | 0.09 | 0.07 | |
| Rating:152W 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 | 0.15 | 0.17 | 0.18 | 0.18 | 0.19 | 0.20 | 0.21 | 0.22 | 0.22 | |
| | 0.30 | | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 | 0.18 | 0.19 | 0.20 | |
| | 0.20 | | 0.06 | 0.08 | 0.10 | 0.11 | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 | |
| 0.50 | 0.50 | 0.20 | 0.15 | 0.16 | 0.17 | 0.18 | 0.19 | 0.19 | 0.20 | 0.21 | 0.21 | |
| | 0.30 | | 0.10 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 | 0.18 | 0.19 | 0.20 | |
| | 0.20 | | 0.06 | 0.08 | 0.10 | 0.11 | 0.13 | 0.14 | 0.16 | 0.17 | 0.18 | |
| 0.30 | 0.50 | 0.20 | 0.14 | 0.15 | 0.16 | 0.17 | 0.18 | 0.19 | 0.19 | 0.20 | 0.20 | |
| | 0.30 | | 0.10 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 | 0.17 | 0.18 | 0.19 | |
| | 0.20 | | 0.06 | 0.08 | 0.10 | 0.11 | 0.13 | 0.14 | 0.15 | 0.17 | 0.18 | |
| 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:152W Photometrically tested without ceiling board. Multiply UF values by service correction factors Calculate in accordance with CIBSE Technical Memorandum NO.5 1980 | | | | | | | | | | | | |