Report No.: 1 Test Time: 08.08.2019 12:07

# Luminaire Property

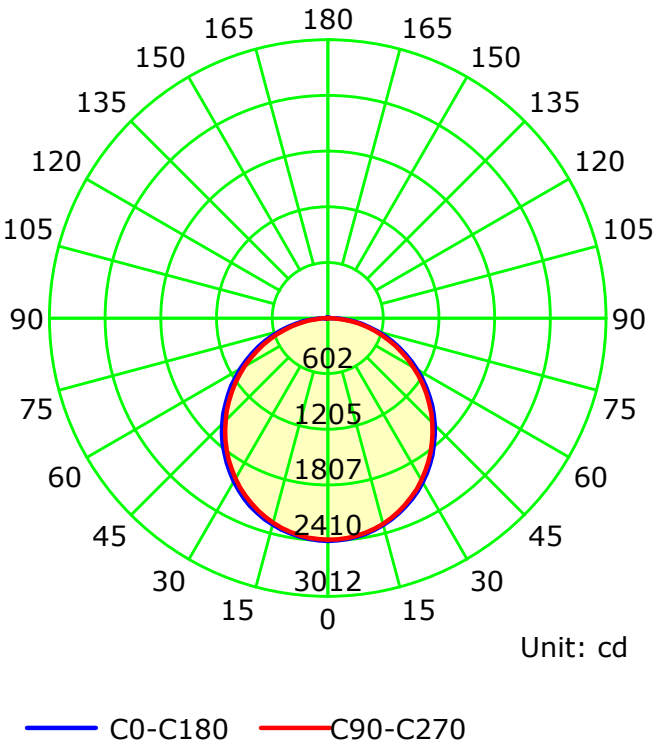
Luminaire Manufacturer:
Luminaire Description: FL 58 2x152 LED 62W 4000K opal
Lamp Description: LED Luminous Length (mm): 1500
Luminous Width (mm): 75 Luminous Height (mm): -60
Voltage: 221.5 V Current: 0.281 A
Power: 61.28 W Power Factor: 0.984

# Photometric Results

CIE Class: Direct Total Rated Lamp Lumens: 7096.0 lm
Measurement Flux: 7096 lm Efficiency: 100%
Downward Ratio: 99% Upward Ratio: 1%
Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 167.0, 164.4, 165.1, 165.8
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 114.6, 112.2, 113.3, 113.9
Luminaire Efficacy Rating (LER): 115.85 Central Intensity: 2410.03 cd
Max. Intensity: 2410.04 cd Pos of Max. Intensity: H0 V0
S/MH(C0/C180): 1.26 S/MH(C90/C270): 1.25

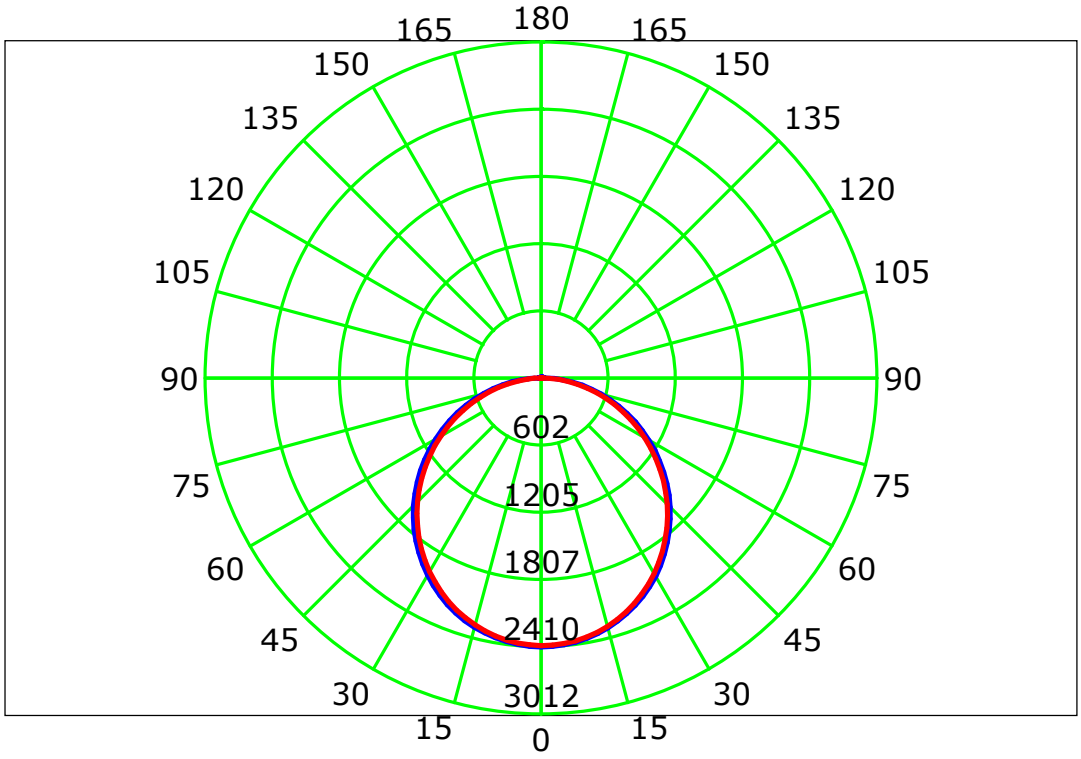
Picture Of Luminaire

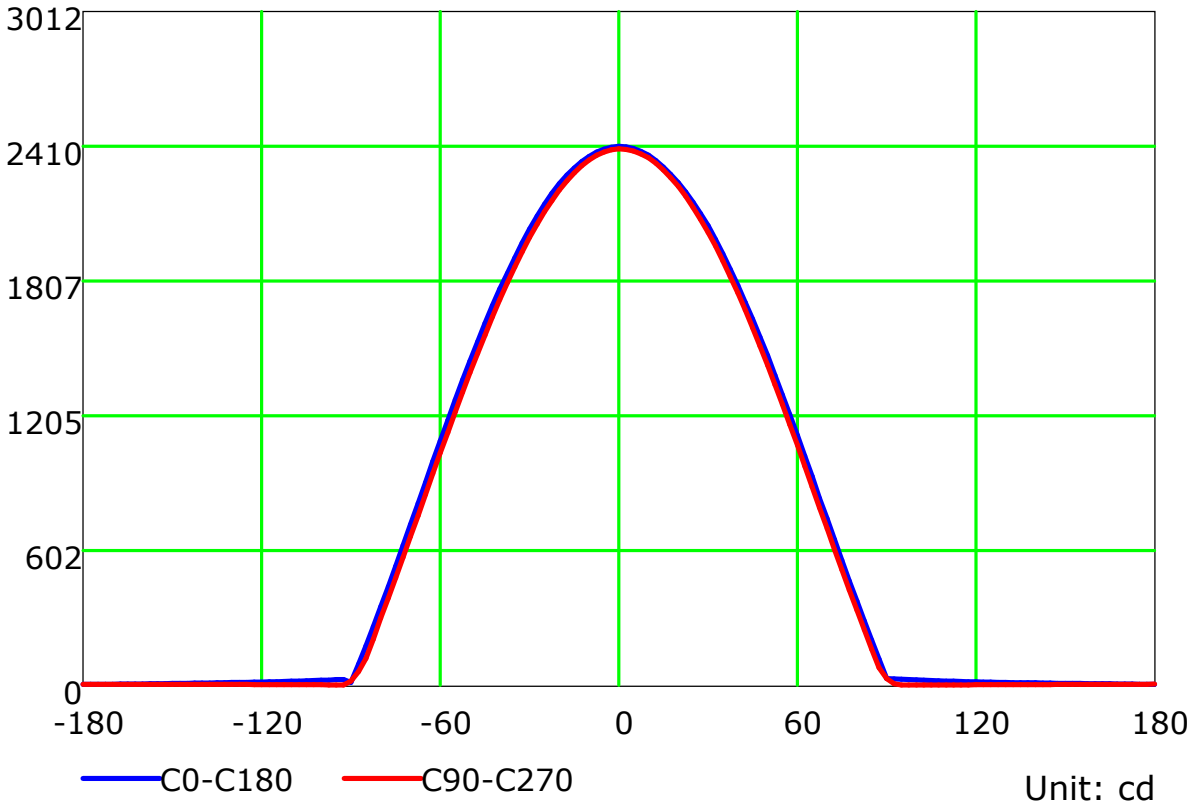
Luminous Intensity Distribution Curve




C Plane (°):0.0-360.0: 22.5 Gamma Plane (°):0.0-180.0:2.5
Test Lab: Test Device: LSG-1800B
Test Type: TYPE C Distance: 12.677 m
Temperature: Humidity:
Operator: Inspector:

# Luminous Intensity Distribution Curve

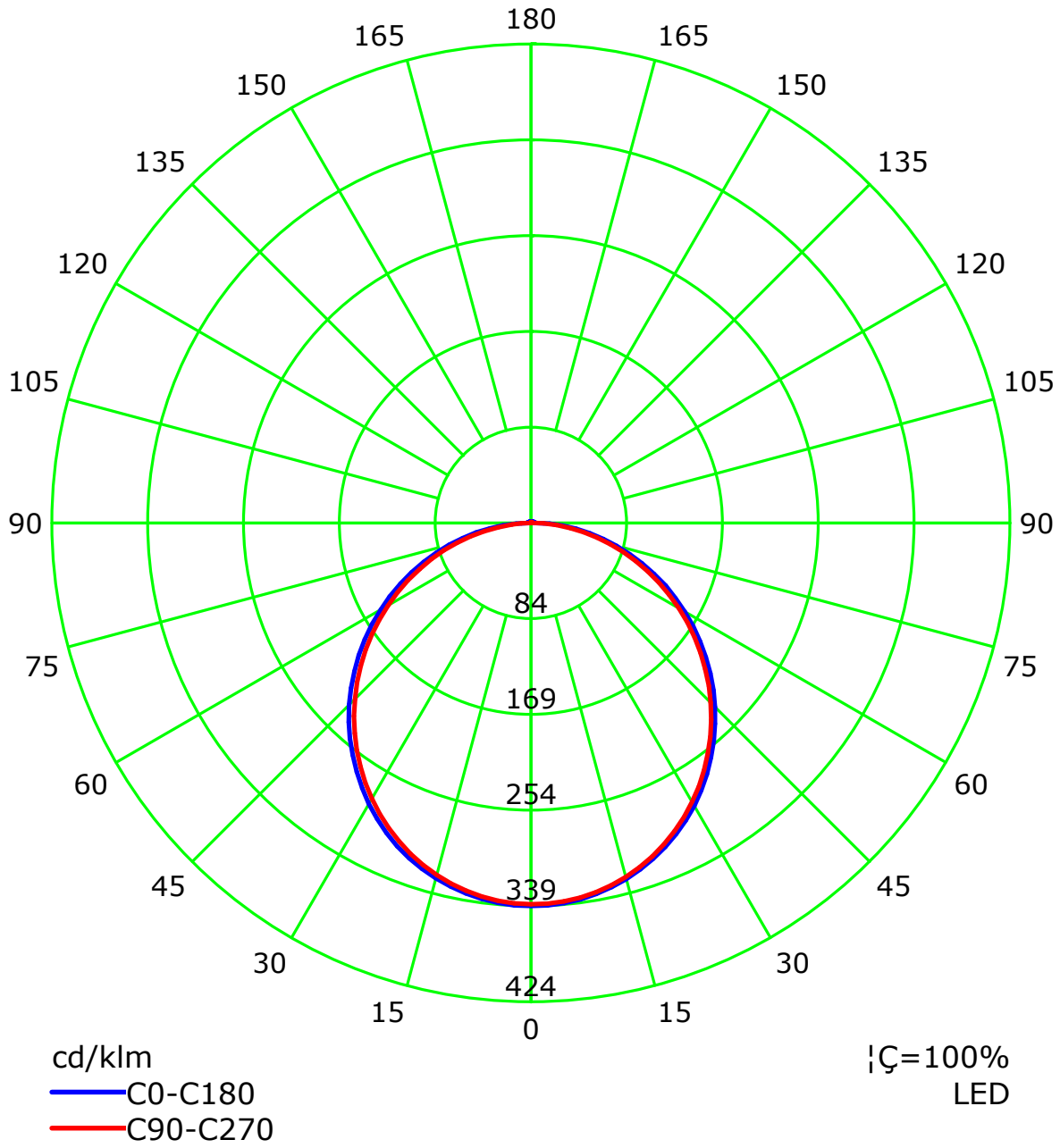



C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# Luminous Intensity Distribution Curve(cd/klm)

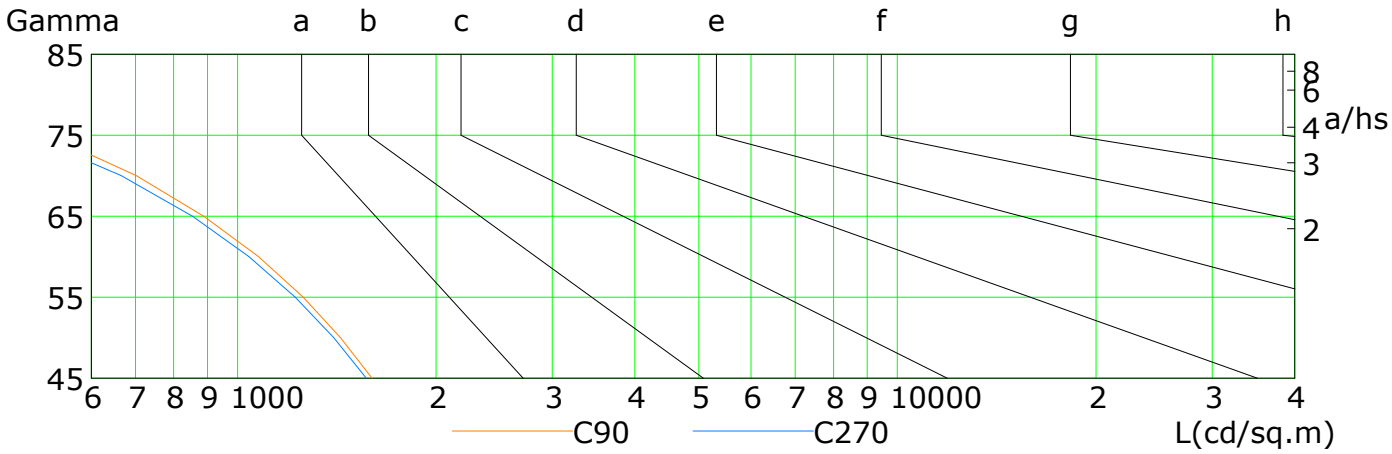


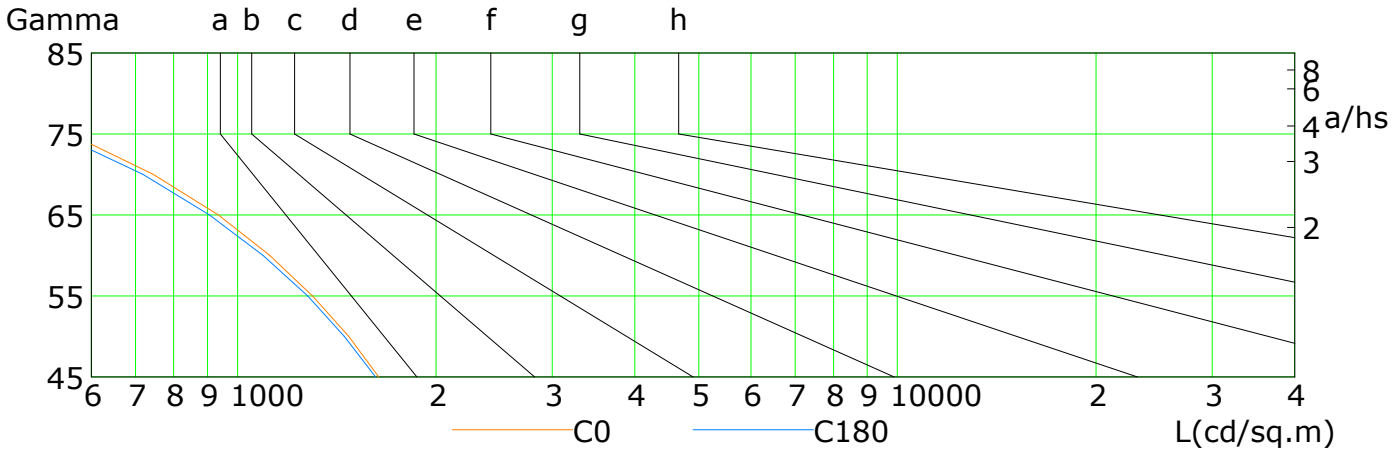

C Plane (°):0.0-360.0: 22.5
Test Lab:
Test Type: TYPE C
Temperature:
Operator:

Gamma Plane (°):0.0-180.0:2.5
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 |



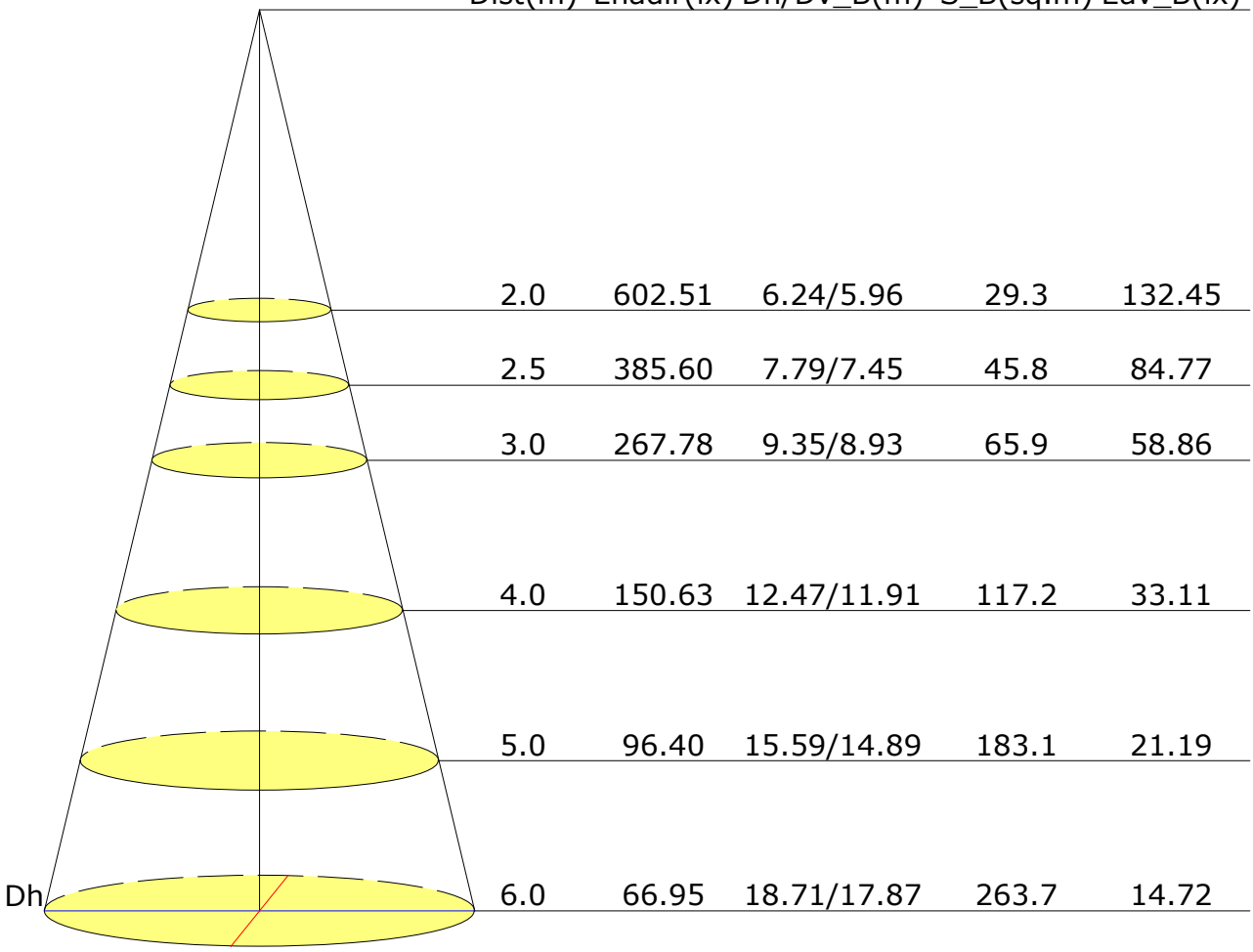




| L(cd/sq.m) | G45 | G50 | G55 | G60 | G65 | G70 | G75 | G80 | G85 |
|---|---|---|---|---|---|---|---|---|---|
| C0 | 1637 | 1474 | 1298 | 1119 | 935 | 745 | 558 | 377 | 202 |
| C90 | 1600 | 1431 | 1257 | 1075 | 889 | 702 | 517 | 337 | 163 |
| C180 | 1619 | 1451 | 1277 | 1092 | 906 | 719 | 533 | 351 | 177 |
| C270 | 1567 | 1399 | 1222 | 1040 | 854 | 666 | 482 | 301 | 120 |

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

Gamma Plane (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# Illuminance at a Distance




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

Gamma Plane (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
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 | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 25.4 | 26.8 | 25.7 | 27.1 | 27.3 |
| 3H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.3 | 28.6 | 27.6 | 28.9 | 29.2 |
| 4H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 28.2 | 29.4 | 28.6 | 29.7 | 30.0 |
| 6H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 29.2 | 30.3 | 29.5 | 30.6 | 31.0 |
| 8H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 29.7 | 30.8 | 30.1 | 31.1 | 31.5 |
| 12H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 29.7 | 30.7 | 30.1 | 31.1 | 31.4 |
| X=4H Y=2H | 18.3 | 19.5 | 18.7 | 19.8 | 20.1 | 28.0 | 29.2 | 28.3 | 29.5 | 29.8 |
| 3H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 28.8 | 29.9 | 29.2 | 30.2 | 30.6 |
| 4H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.5 | 28.5 | 28.0 | 28.9 | 29.2 |
| 6H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.6 | 28.4 | 28.0 | 28.8 | 29.2 |
| 8H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 28.1 | 28.8 | 28.5 | 29.3 | 29.7 |
| 12H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.8 | 28.5 | 28.3 | 29.0 | 29.4 |
| X=8H Y=4H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.1 | 27.9 | 27.6 | 28.3 | 28.7 |
| 6H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 26.9 | 27.5 | 27.4 | 28.0 | 28.5 |
| 8H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.4 | 28.0 | 27.9 | 28.4 | 28.9 |
| 12H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.1 | 27.5 | 27.6 | 28.0 | 28.5 |
| X=12H Y=4H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.0 | 27.7 | 27.5 | 28.2 | 28.6 |
| 6H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 26.8 | 27.4 | 27.3 | 27.9 | 28.4 |
| 8H | -1.$ | -1.$ | -1.$ | -1.$ | -1.$ | 27.3 | 27.8 | 27.8 | 28.3 | 28.8 |
| Variations with the observer position at spacings: | | | | | | | | | | |
| S=1.0H | -1.$/6.2 | | | | | +8.8/-1.$ | | | | |
| S=1.5H | -1.$/7.2 | | | | | +12.0/-1.$ | | | | |
| S=2.0H | -1.$/8.2 | | | | | +14.5/-1.$ | | | | |

Calculate in accordance with CIE Pub.117. The table is revised with 7096lm (8log(F/F0) = 6.8).

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

Gamma Plane (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# Utilisation Factor Table(Floor cavity)

| Utilance U(F) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.51 | 0.62 | 0.69 | 0.75 | 0.83 | 0.89 | 0.93 | 0.98 | 1.01 |
| | 0.30 | | 0.43 | 0.53 | 0.61 | 0.67 | 0.77 | 0.83 | 0.87 | 0.93 | 0.97 |
| | 0.20 | | 0.37 | 0.47 | 0.55 | 0.61 | 0.71 | 0.78 | 0.83 | 0.89 | 0.94 |
| 0.50 | 0.50 | 0.20 | 0.50 | 0.60 | 0.67 | 0.72 | 0.80 | 0.85 | 0.89 | 0.94 | 0.97 |
| | 0.30 | | 0.42 | 0.52 | 0.60 | 0.66 | 0.74 | 0.80 | 0.84 | 0.90 | 0.94 |
| | 0.20 | | 0.36 | 0.46 | 0.54 | 0.60 | 0.69 | 0.76 | 0.80 | 0.87 | 0.91 |
| 0.30 | 0.50 | 0.20 | 0.48 | 0.58 | 0.65 | 0.70 | 0.77 | 0.82 | 0.86 | 0.90 | 0.93 |
| | 0.30 | | 0.41 | 0.51 | 0.58 | 0.64 | 0.72 | 0.78 | 0.82 | 0.87 | 0.91 |
| | 0.20 | | 0.36 | 0.46 | 0.53 | 0.59 | 0.68 | 0.74 | 0.78 | 0.84 | 0.88 |
| 0.00 | 0.00 | 0.00 | 0.34 | 0.43 | 0.51 | 0.56 | 0.65 | 0.70 | 0.74 | 0.80 | 0.83 |

Luminous ceiling reflectance(into room):0.30
Luminous ceiling reflectance(into void):0.20
Luminous ceiling transmittance:0.40
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 (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# Utilisation Factor Table(Wall)

| Utilance U(W) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 1.08 | 0.90 | 0.77 | 0.68 | 0.54 | 0.45 | 0.39 | 0.30 | 0.25 |
| | 0.30 | | 0.90 | 0.77 | 0.68 | 0.60 | 0.49 | 0.41 | 0.36 | 0.28 | 0.23 |
| | 0.20 | | 0.77 | 0.68 | 0.60 | 0.54 | 0.45 | 0.38 | 0.33 | 0.27 | 0.22 |
| 0.50 | 0.50 | 0.20 | 1.04 | 0.87 | 0.75 | 0.65 | 0.52 | 0.46 | 0.37 | 0.29 | 0.23 |
| | 0.30 | | 0.88 | 0.76 | 0.66 | 0.58 | 0.47 | 0.40 | 0.35 | 0.27 | 0.22 |
| | 0.20 | | 0.77 | 0.67 | 0.59 | 0.53 | 0.44 | 0.37 | 0.32 | 0.26 | 0.22 |
| 0.30 | 0.50 | 0.20 | 1.01 | 0.84 | 0.72 | 0.63 | 0.50 | 0.41 | 0.35 | 0.27 | 0.23 |
| | 0.30 | | 0.87 | 0.74 | 0.64 | 0.57 | 0.46 | 0.39 | 0.33 | 0.26 | 0.22 |
| | 0.20 | | 0.76 | 0.66 | 0.58 | 0.52 | 0.43 | 0.36 | 0.32 | 0.25 | 0.21 |
| 0.00 | 0.00 | 0.00 | 0.66 | 0.57 | 0.49 | 0.44 | 0.35 | 0.30 | 0.26 | 0.20 | 0.17 |

Luminous ceiling reflectance(into room):0.30
Luminous ceiling reflectance(into void):0.20
Luminous ceiling transmittance:0.40
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 (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector:

# Utilisation Factor Table(Ceiling cavity)

| Utilance U(C) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.21 | 0.22 | 0.22 |
| | 0.30 | | 0.10 | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 | 0.17 | 0.18 | 0.19 |
| | 0.20 | | 0.04 | 0.06 | 0.07 | 0.09 | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 |
| 0.50 | 0.50 | 0.20 | 0.16 | 0.18 | 0.18 | 0.19 | 0.20 | 0.20 | 0.20 | 0.21 | 0.21 |
| | 0.30 | | 0.09 | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 | 0.17 | 0.18 | 0.18 |
| | 0.20 | | 0.04 | 0.06 | 0.07 | 0.08 | 0.10 | 0.12 | 0.13 | 0.15 | 0.16 |
| 0.30 | 0.50 | 0.20 | 0.16 | 0.17 | 0.18 | 0.18 | 0.19 | 0.19 | 0.20 | 0.20 | 0.20 |
| | 0.30 | | 0.09 | 0.11 | 0.12 | 0.13 | 0.14 | 0.15 | 0.16 | 0.17 | 0.18 |
| | 0.20 | | 0.04 | 0.06 | 0.07 | 0.08 | 0.10 | 0.12 | 0.13 | 0.14 | 0.15 |
| 0.00 | 0.00 | 0.00 | NA | NA | NA | NA | NA | NA | NA | NA | NA |

Luminous ceiling reflectance(into room):0.30
Luminous ceiling reflectance(into void):0.20
Luminous ceiling transmittance:0.40
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 (°):0.0-180.0:2.5
Test Device: LSG-1800B
Distance: 12.677 m
Humidity:
Inspector: