

Report No.: 1

Test Time: 20.12.2019 09:32

## Luminaire Property

Luminaire Manufacturer:

Luminaire Description: FI 135 4x24LED 0.48A 26.5W 4000K matoviy

Luminous Length (mm): 1262

Luminous Width (mm): 124

Luminous Height (mm): 85

Voltage: 221.2 V

Current: 0.121 A

Power: 26.53 W

Power Factor: 0.985

## Photometric Results

CIE Class: Direct

Measurement Flux: 3160 lm

Downward Ratio: 92%

Total Rated Lamp Lumens: 3160.0 lm

Efficiency: 100%

Upward Ratio: 8%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 159.6, 213.5, 191.1, 192.2

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 106.8, 122.5, 114.7, 115.1

Luminaire Efficacy Rating (LER): 119.16

Central Intensity: 935.6 cd

Max. Intensity: 946.55 cd

Pos of Max. Intensity: H270 V8

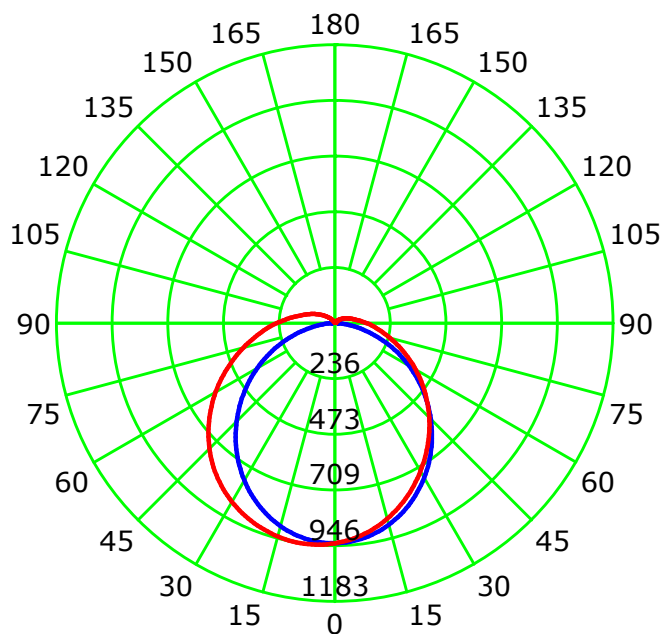
S/MH(C0/C180): 1.22

S/MH(C90/C270): 1.28

Picture Of Luminaire



Luminous Intensity Distribution Curve



Unit: cd

— C0-C180 — C90-C270

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:1.0

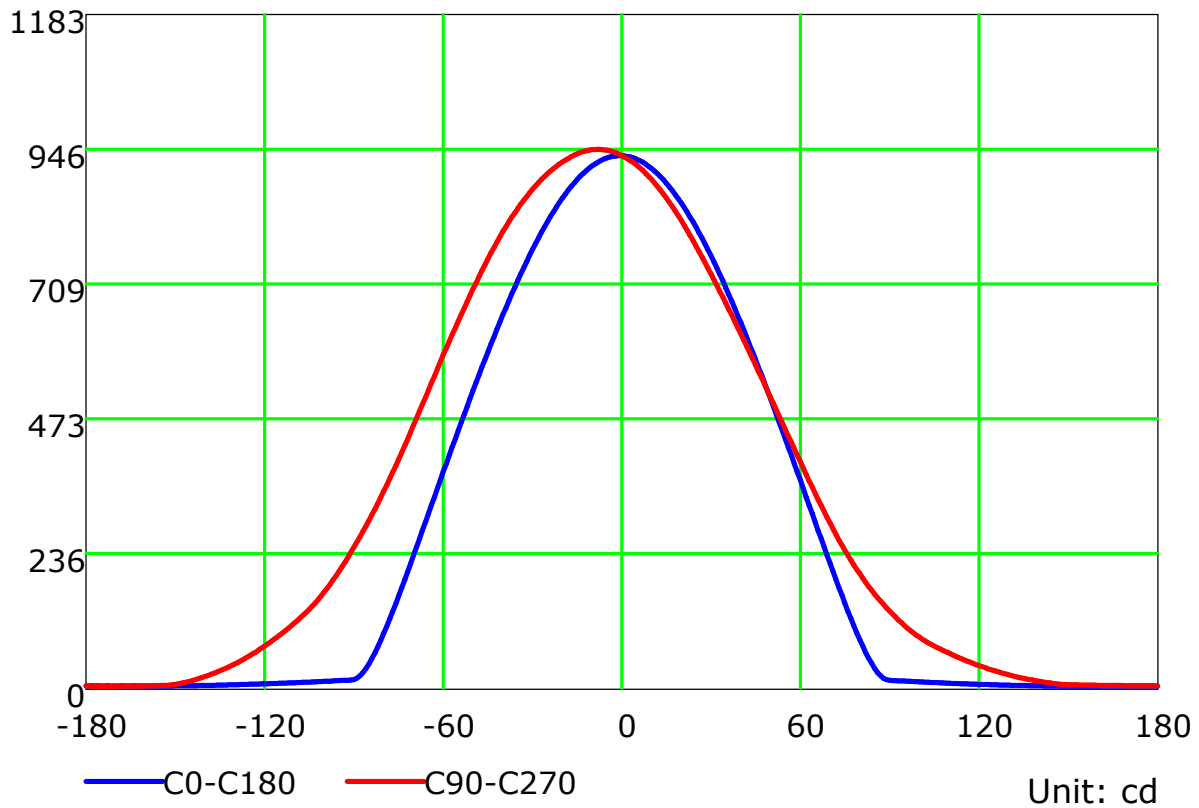
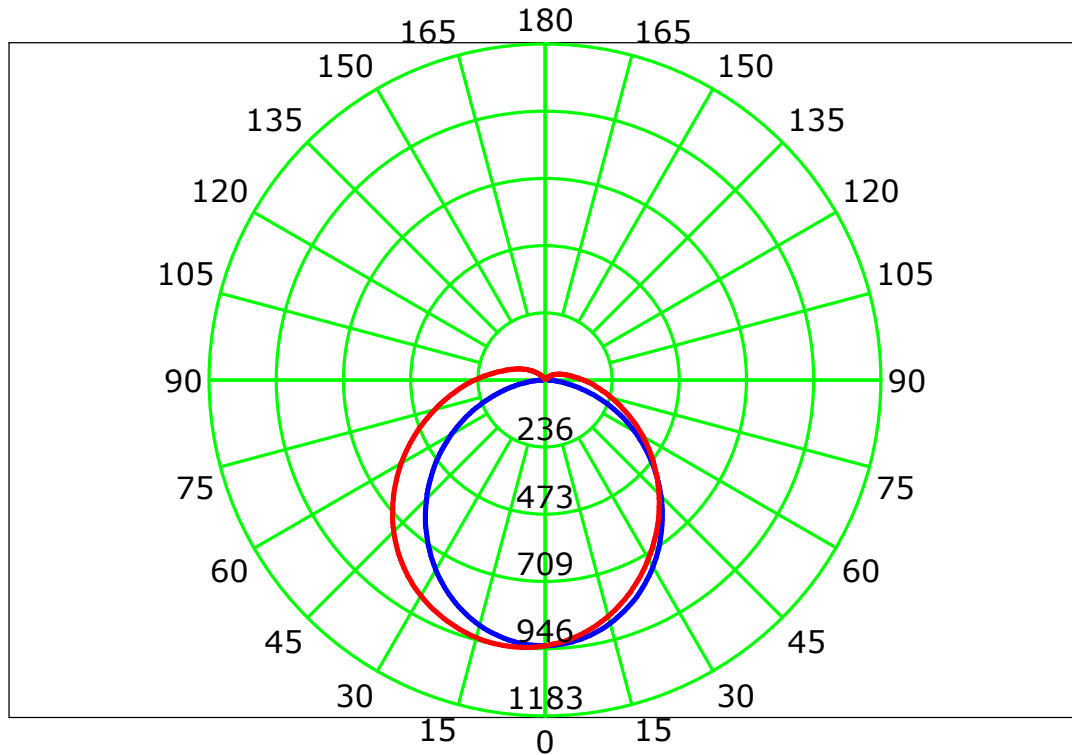
Test Device: LSG-1800B

Distance: 12.677 m

Humidity:

Inspector:

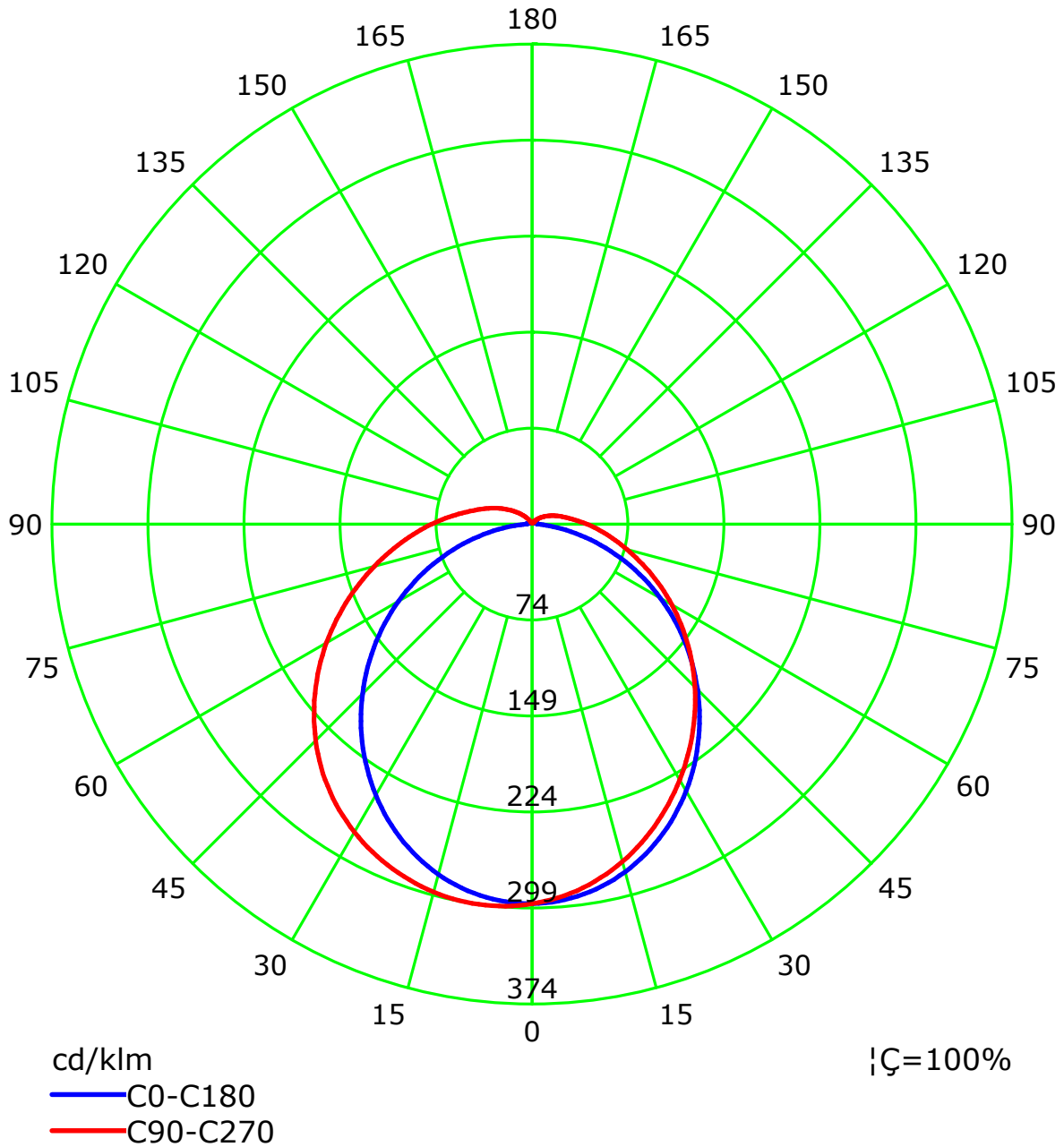
## Luminous Intensity Distribution Curve



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)



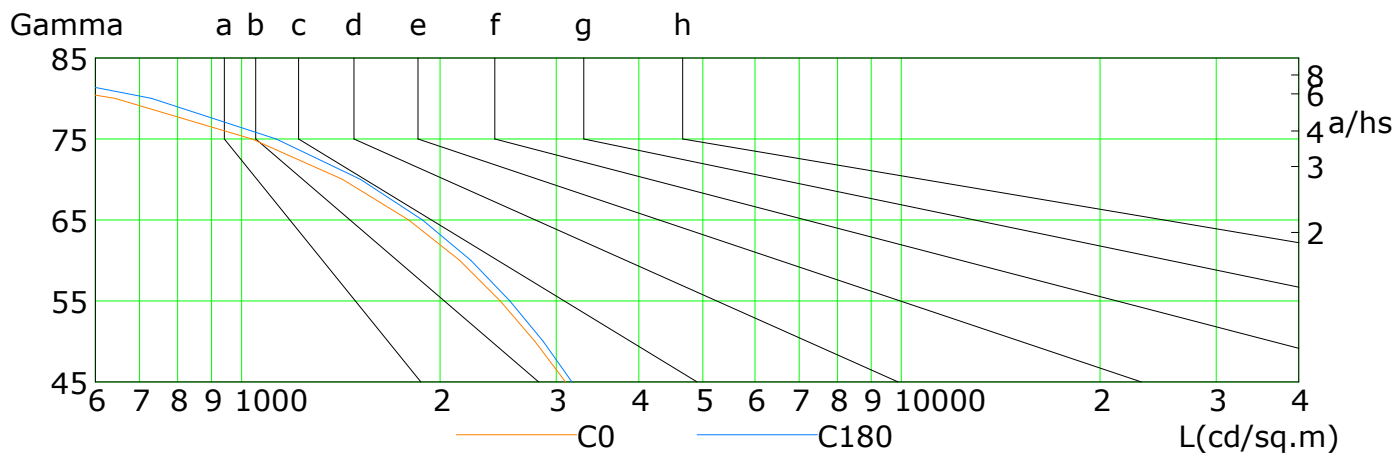
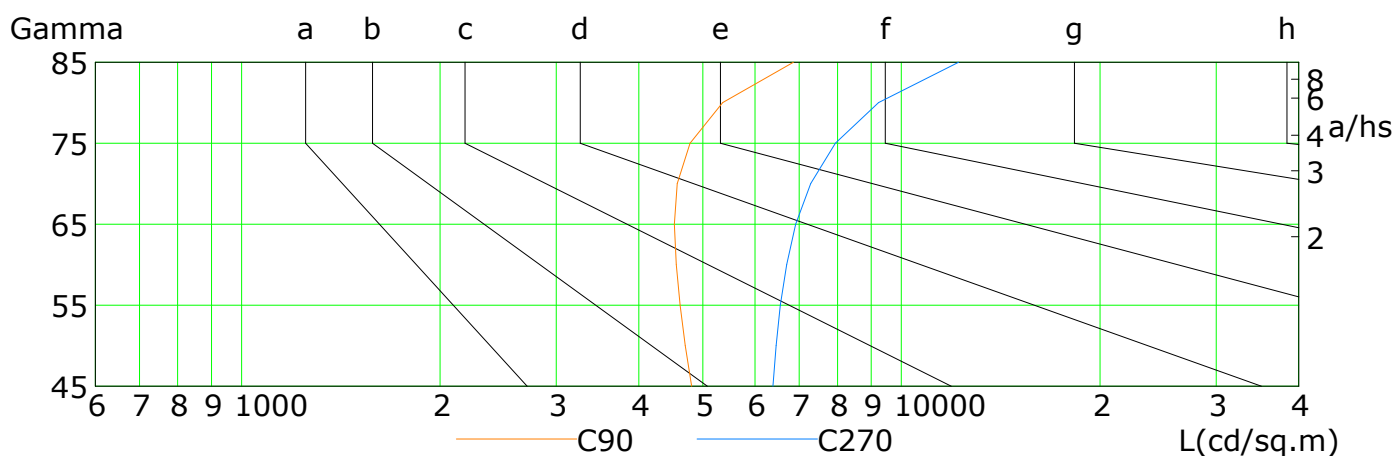
C Plane (°):0.0-360.0: 22.5  
Test Lab:  
Test Type: TYPE C  
Temperature:  
Operator:

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

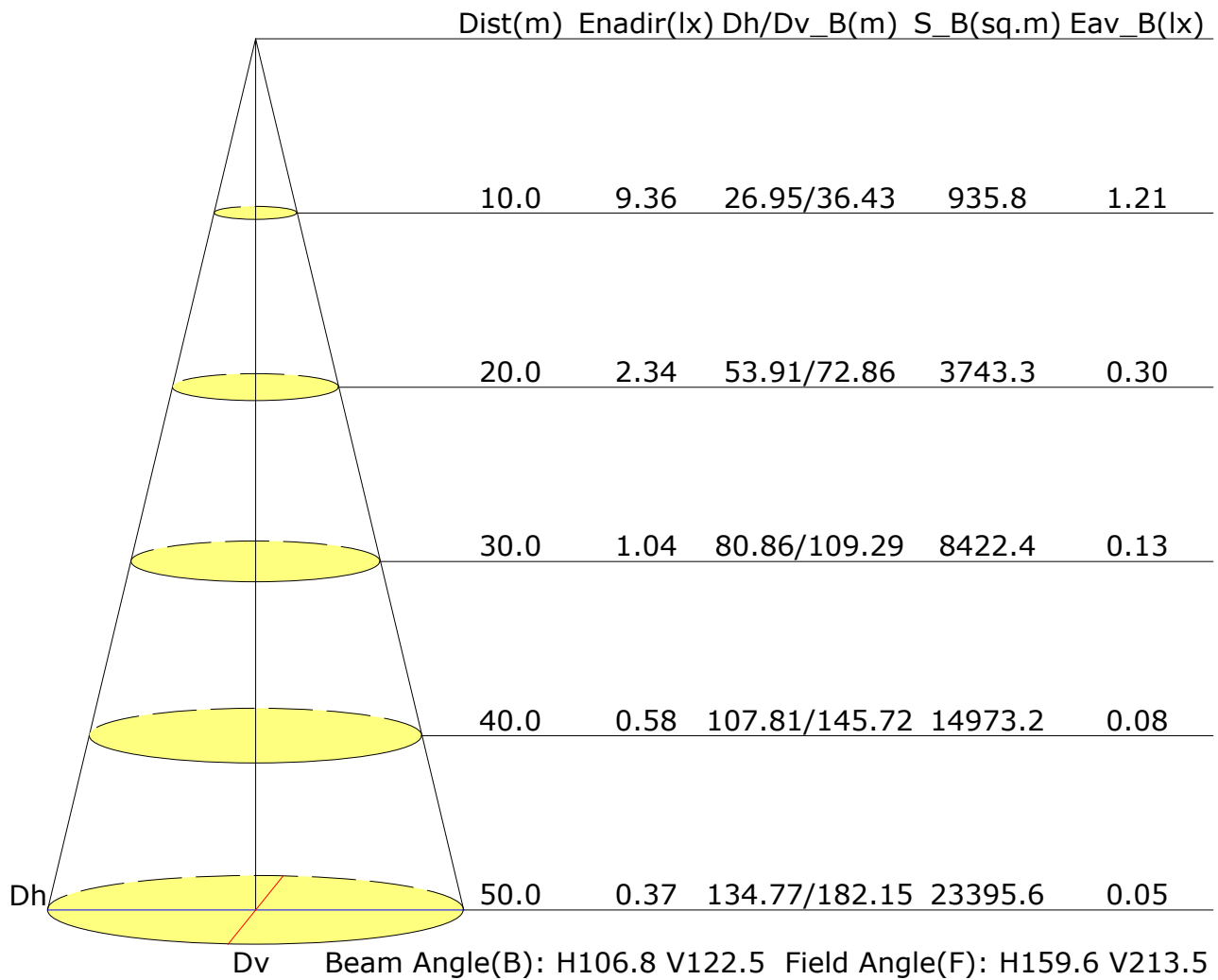


| L(cd/sq.m) | G45  | G50  | G55  | G60  | G65  | G70  | G75  | G80  | G85   |
|------------|------|------|------|------|------|------|------|------|-------|
| C0         | 3096 | 2783 | 2467 | 2139 | 1792 | 1422 | 1037 | 642  | 293   |
| C90        | 4809 | 4702 | 4622 | 4560 | 4527 | 4575 | 4785 | 5362 | 6861  |
| C180       | 3168 | 2863 | 2550 | 2225 | 1881 | 1514 | 1129 | 730  | 357   |
| C270       | 6388 | 6457 | 6556 | 6705 | 6917 | 7285 | 7941 | 9229 | 12212 |

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                                          | 15.0             | 16.4 | 15.5 | 16.8 | 17.2 | 17.5           | 18.8 | 17.9 | 19.2 | 19.6 |
| 3H                                                 | 16.1             | 17.3 | 16.6 | 17.8 | 18.2 | 19.6           | 20.8 | 20.0 | 21.2 | 21.7 |
| 4H                                                 | 16.5             | 17.6 | 16.9 | 18.1 | 18.5 | 20.7           | 21.8 | 21.1 | 22.3 | 22.7 |
| 6H                                                 | 16.7             | 17.8 | 17.2 | 18.2 | 18.7 | 21.8           | 22.9 | 22.3 | 23.3 | 23.8 |
| 8H                                                 | 16.7             | 17.7 | 17.2 | 18.2 | 18.7 | 22.4           | 23.4 | 22.9 | 23.9 | 24.4 |
| 12H                                                | 16.7             | 17.7 | 17.2 | 18.2 | 18.7 | 23.0           | 24.0 | 23.5 | 24.5 | 25.0 |
| X=4H Y=2H                                          | 15.9             | 17.1 | 16.4 | 17.5 | 18.0 | 17.9           | 19.0 | 18.3 | 19.4 | 19.9 |
| 3H                                                 | 17.2             | 18.2 | 17.7 | 18.7 | 19.2 | 20.1           | 21.1 | 20.6 | 21.6 | 22.1 |
| 4H                                                 | 17.7             | 18.6 | 18.2 | 19.1 | 19.7 | 21.4           | 22.3 | 21.9 | 22.8 | 23.3 |
| 6H                                                 | 18.0             | 18.8 | 18.6 | 19.3 | 19.9 | 22.7           | 23.5 | 23.2 | 24.0 | 24.6 |
| 8H                                                 | 18.1             | 18.8 | 18.7 | 19.4 | 20.0 | 23.3           | 24.1 | 23.9 | 24.6 | 25.2 |
| 12H                                                | 18.1             | 18.8 | 18.7 | 19.4 | 20.0 | 24.1           | 24.7 | 24.6 | 25.3 | 25.9 |
| X=8H Y=4H                                          | 18.3             | 19.1 | 18.9 | 19.6 | 20.2 | 21.5           | 22.3 | 22.1 | 22.8 | 23.4 |
| 6H                                                 | 18.8             | 19.5 | 19.4 | 20.0 | 20.7 | 23.0           | 23.6 | 23.6 | 24.2 | 24.8 |
| 8H                                                 | 19.0             | 19.6 | 19.6 | 20.1 | 20.8 | 23.8           | 24.3 | 24.4 | 24.9 | 25.6 |
| 12H                                                | 19.1             | 19.6 | 19.7 | 20.2 | 20.9 | 24.7           | 25.2 | 25.3 | 25.8 | 26.4 |
| X=12H Y=4H                                         | 18.5             | 19.2 | 19.1 | 19.7 | 20.3 | 21.5           | 22.2 | 22.1 | 22.7 | 23.3 |
| 6H                                                 | 19.1             | 19.7 | 19.7 | 20.2 | 20.9 | 23.0           | 23.6 | 23.6 | 24.1 | 24.8 |
| 8H                                                 | 19.4             | 19.8 | 20.0 | 20.4 | 21.1 | 23.9           | 24.3 | 24.5 | 24.9 | 25.6 |
| Variations with the observer position at spacings: |                  |      |      |      |      |                |      |      |      |      |
| S=1.0H                                             | +0.2/-0.2        |      |      |      |      | +0.3/-0.3      |      |      |      |      |
| S=1.5H                                             | +0.3/-0.6        |      |      |      |      | +0.7/-0.7      |      |      |      |      |
| S=2.0H                                             | +0.5/-1.0        |      |      |      |      | +1.0/-1.3      |      |      |      |      |

Calculate in accordance with CIE Pub.117. The table is revised with 3160lm ( $8\log(F/F_0) = 4.0$ ).

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  | 0.52           | 0.62 | 0.69 | 0.74 | 0.81 | 0.86 | 0.90 | 0.95 | 0.98 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.44           | 0.54 | 0.61 | 0.66 | 0.74 | 0.80 | 0.84 | 0.90 | 0.94 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.38           | 0.48 | 0.55 | 0.60 | 0.69 | 0.75 | 0.79 | 0.86 | 0.90 |  |
| 0.50                                                                                                                                                                              | 0.50 | 0.20  | 0.50           | 0.59 | 0.65 | 0.70 | 0.77 | 0.82 | 0.85 | 0.89 | 0.92 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.42           | 0.52 | 0.59 | 0.64 | 0.71 | 0.76 | 0.80 | 0.85 | 0.89 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.37           | 0.47 | 0.53 | 0.59 | 0.66 | 0.72 | 0.76 | 0.82 | 0.86 |  |
| 0.30                                                                                                                                                                              | 0.50 | 0.20  | 0.47           | 0.56 | 0.62 | 0.67 | 0.73 | 0.77 | 0.80 | 0.84 | 0.87 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.41           | 0.50 | 0.56 | 0.61 | 0.68 | 0.73 | 0.76 | 0.81 | 0.84 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.36           | 0.45 | 0.52 | 0.57 | 0.64 | 0.69 | 0.73 | 0.78 | 0.82 |  |
| 0.00                                                                                                                                                                              | 0.00 | 0.00  | 0.33           | 0.42 | 0.48 | 0.53 | 0.59 | 0.64 | 0.67 | 0.72 | 0.75 |  |
| Rating:27W Photometrically tested without ceiling board.<br>Multiply UF values by service correction factors<br>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  | 1.03           | 0.86 | 0.74 | 0.66 | 0.53 | 0.45 | 0.39 | 0.31 | 0.26 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.86           | 0.74 | 0.65 | 0.58 | 0.48 | 0.41 | 0.36 | 0.29 | 0.25 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.73           | 0.64 | 0.58 | 0.52 | 0.44 | 0.38 | 0.34 | 0.28 | 0.23 |  |
| 0.50                                                                                                                                                                              | 0.50 | 0.20  | 0.97           | 0.82 | 0.70 | 0.62 | 0.50 | 0.45 | 0.37 | 0.29 | 0.24 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.82           | 0.71 | 0.62 | 0.56 | 0.46 | 0.39 | 0.35 | 0.28 | 0.23 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.72           | 0.63 | 0.56 | 0.50 | 0.42 | 0.37 | 0.32 | 0.26 | 0.22 |  |
| 0.30                                                                                                                                                                              | 0.50 | 0.20  | 0.93           | 0.77 | 0.67 | 0.59 | 0.48 | 0.40 | 0.35 | 0.28 | 0.23 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.80           | 0.68 | 0.60 | 0.53 | 0.44 | 0.38 | 0.33 | 0.26 | 0.22 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.70           | 0.61 | 0.54 | 0.49 | 0.41 | 0.35 | 0.31 | 0.25 | 0.21 |  |
| 0.00                                                                                                                                                                              | 0.00 | 0.00  | 0.59           | 0.51 | 0.44 | 0.40 | 0.33 | 0.28 | 0.25 | 0.20 | 0.17 |  |
| Rating:27W Photometrically tested without ceiling board.<br>Multiply UF values by service correction factors<br>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  | 0.24           | 0.25 | 0.26 | 0.27 | 0.28 | 0.28 | 0.29 | 0.29 | 0.29 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.17           | 0.19 | 0.20 | 0.21 | 0.22 | 0.24 | 0.24 | 0.26 | 0.26 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.12           | 0.13 | 0.15 | 0.16 | 0.18 | 0.20 | 0.21 | 0.22 | 0.24 |  |
| 0.50                                                                                                                                                                              | 0.50 | 0.20  | 0.23           | 0.24 | 0.25 | 0.26 | 0.27 | 0.27 | 0.28 | 0.28 | 0.28 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.17           | 0.18 | 0.19 | 0.20 | 0.22 | 0.23 | 0.24 | 0.25 | 0.25 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.12           | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 | 0.20 | 0.22 | 0.23 |  |
| 0.30                                                                                                                                                                              | 0.50 | 0.20  | 0.23           | 0.24 | 0.24 | 0.25 | 0.26 | 0.26 | 0.26 | 0.27 | 0.27 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.16           | 0.18 | 0.19 | 0.20 | 0.21 | 0.22 | 0.23 | 0.24 | 0.25 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.12           | 0.13 | 0.14 | 0.16 | 0.17 | 0.19 | 0.20 | 0.21 | 0.22 |  |
| 0.00                                                                                                                                                                              | 0.00 | 0.00  | 0.08           | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |  |
| Rating:27W Photometrically tested without ceiling board.<br>Multiply UF values by service correction factors<br>Calculate in accordance with CIBSE Technical Memorandum NO.5 1980 |      |       |                |      |      |      |      |      |      |      |      |  |