

Report No.:

Test Time: 18.06.2020 16:24

## Luminaire Property

Luminaire Manufacturer:

Luminaire Description: FL 60 32W 4000K матовый (opal) iFA40'300(110) s soedineniem

Number of Lamps: 1

Lumens per Lamp: 3752.6 lm

Luminous Length (mm): 1500 mm

Luminous Width (mm): 60 mm

Luminous Height (mm): 70 mm

Voltage: 221.7 V

Current: 0.156 A

Power: 33.52 W

Power Factor: 0.964

## Photometric Results

CIE Class: Direct

Total Rated Lamp Lumens: 3752.6 lm

Measurement Flux: 3752.4 lm

Efficiency: 100.00%

Downward Ratio: 98.63%

Upward Ratio: 1.37%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 165.9, 162.1, 163.1, 163.2

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 111.1, 108.7, 109.9, 109.8

Luminaire Efficacy Rating (LER): 112.00

Central Intensity: 1314.43 cd

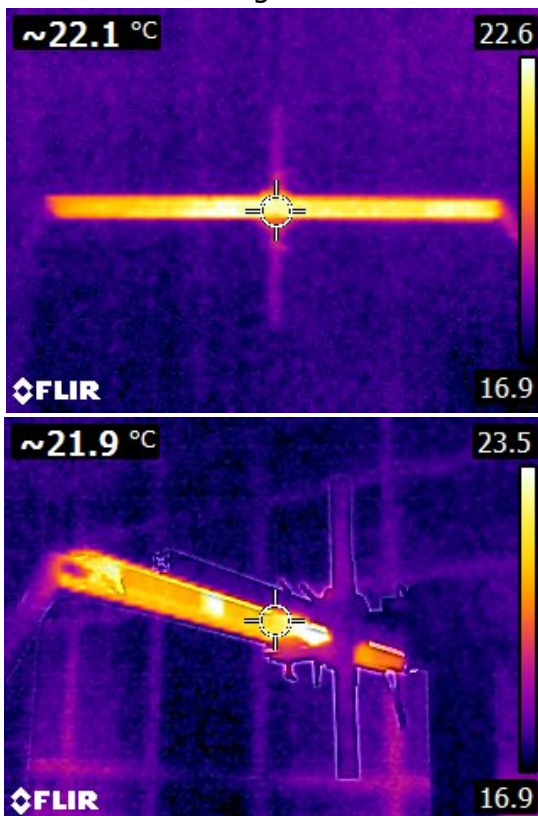
Max. Intensity: 1316 cd

Pos of Max. Intensity: H112.5 V0

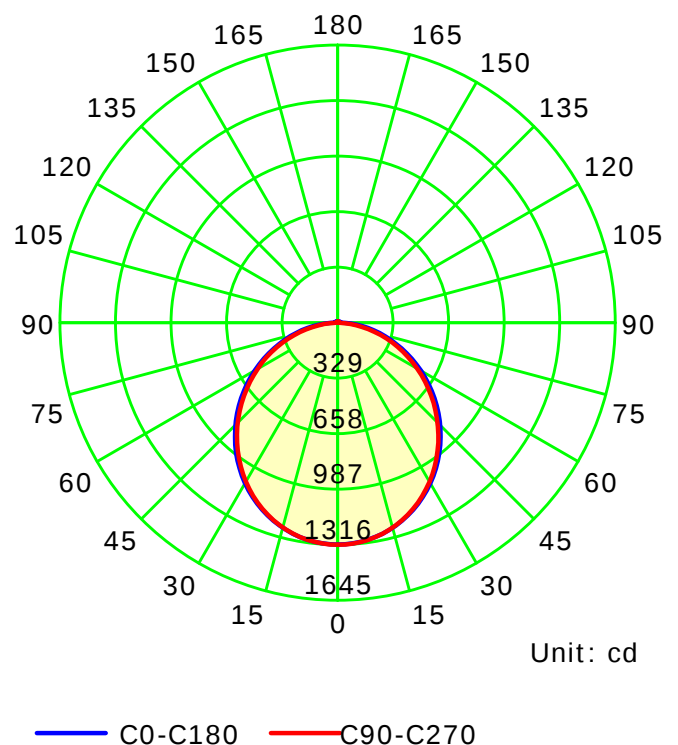
S/MH(C0/C180): 1.24

S/MH(C90/C270): 1.23

Termogramma



Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 22.5

Gamma Plane (°):0.0-180.0:2.0

Test Lab:

Test Device: LSG-1800B

Test Type: TYPE C

Distance: 12.677 m

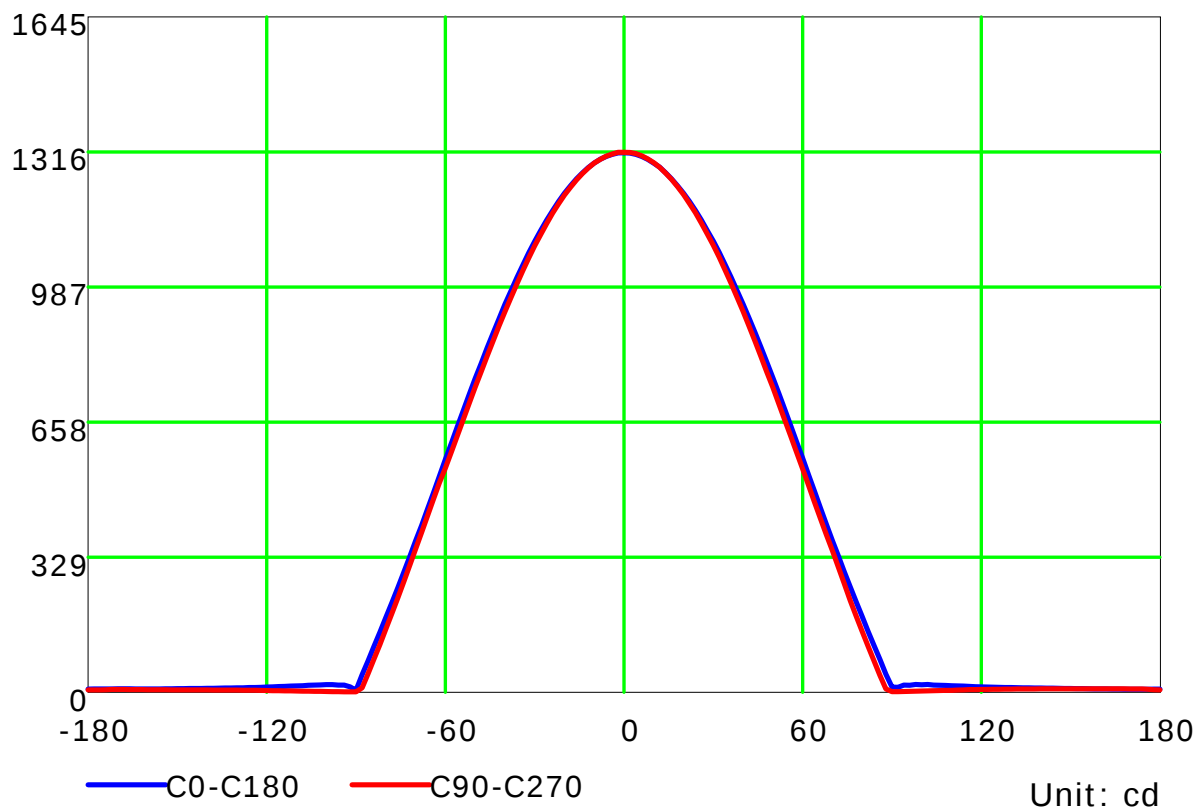
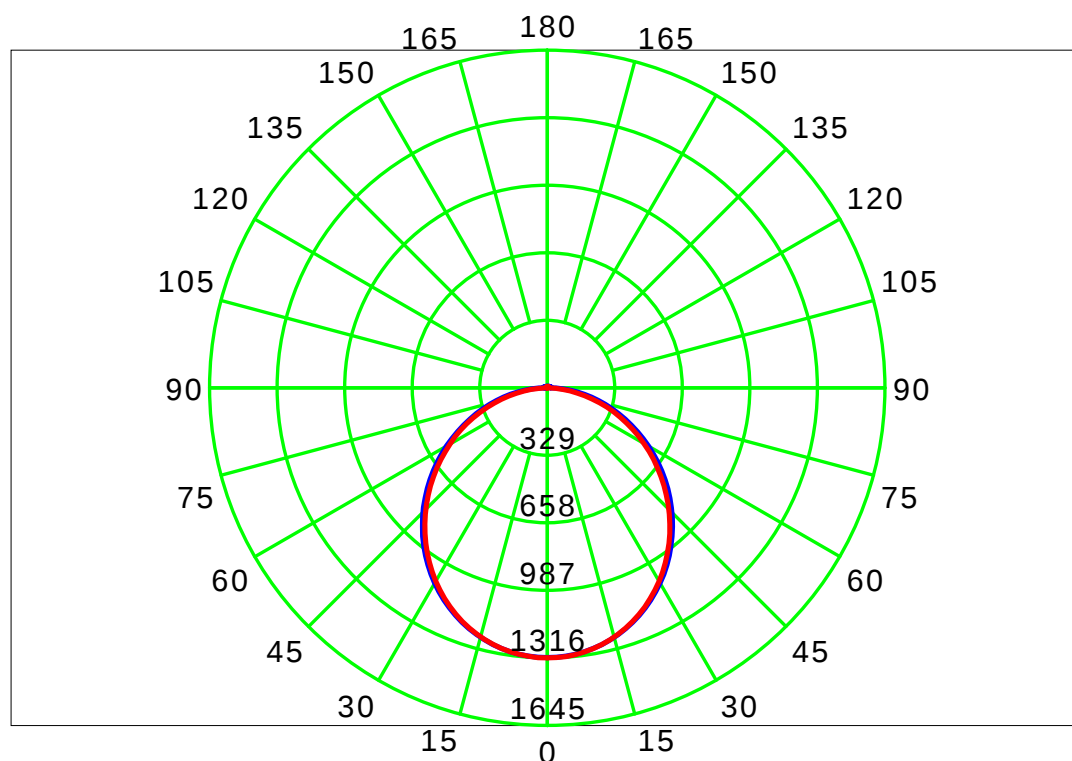
Temperature:

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: 2.0

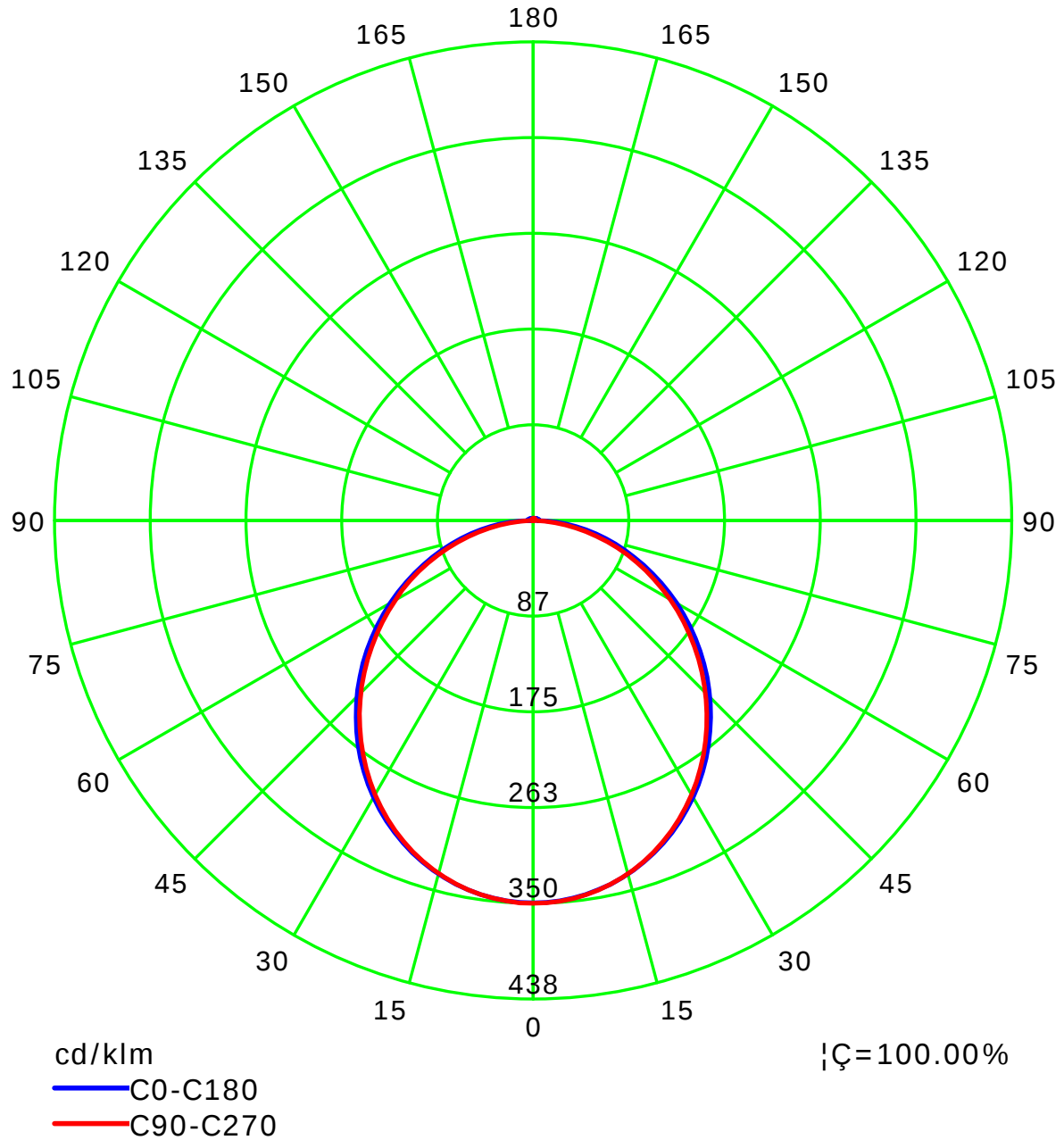
Test Device: LSG-1800B

Distance: 12.677 m

Humidity:

Inspector:

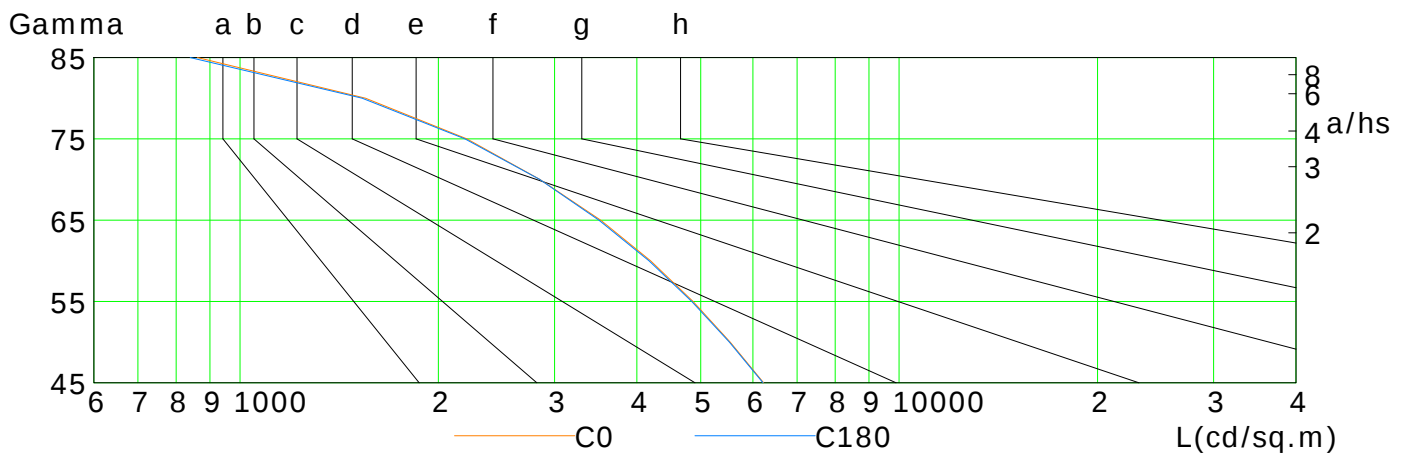
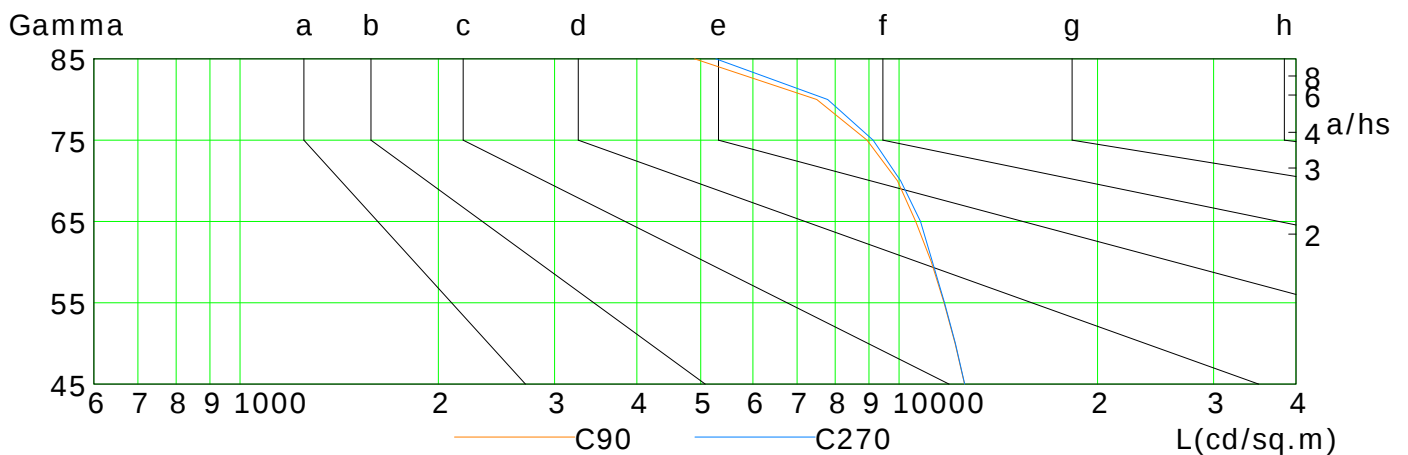
## Luminous Intensity Distribution Curve(cd / klm)



## 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         | 6229  | 5542  | 4867  | 4197  | 3525  | 2852  | 2208 | 1551 | 862  |
| C90        | 12566 | 12161 | 11696 | 11192 | 10598 | 9943  | 8939 | 7498 | 4896 |
| C180       | 6214  | 5525  | 4845  | 4173  | 3503  | 2851  | 2193 | 1532 | 841  |
| C270       | 12573 | 12169 | 11719 | 11235 | 10773 | 10052 | 9130 | 7791 | 5273 |

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:2.0

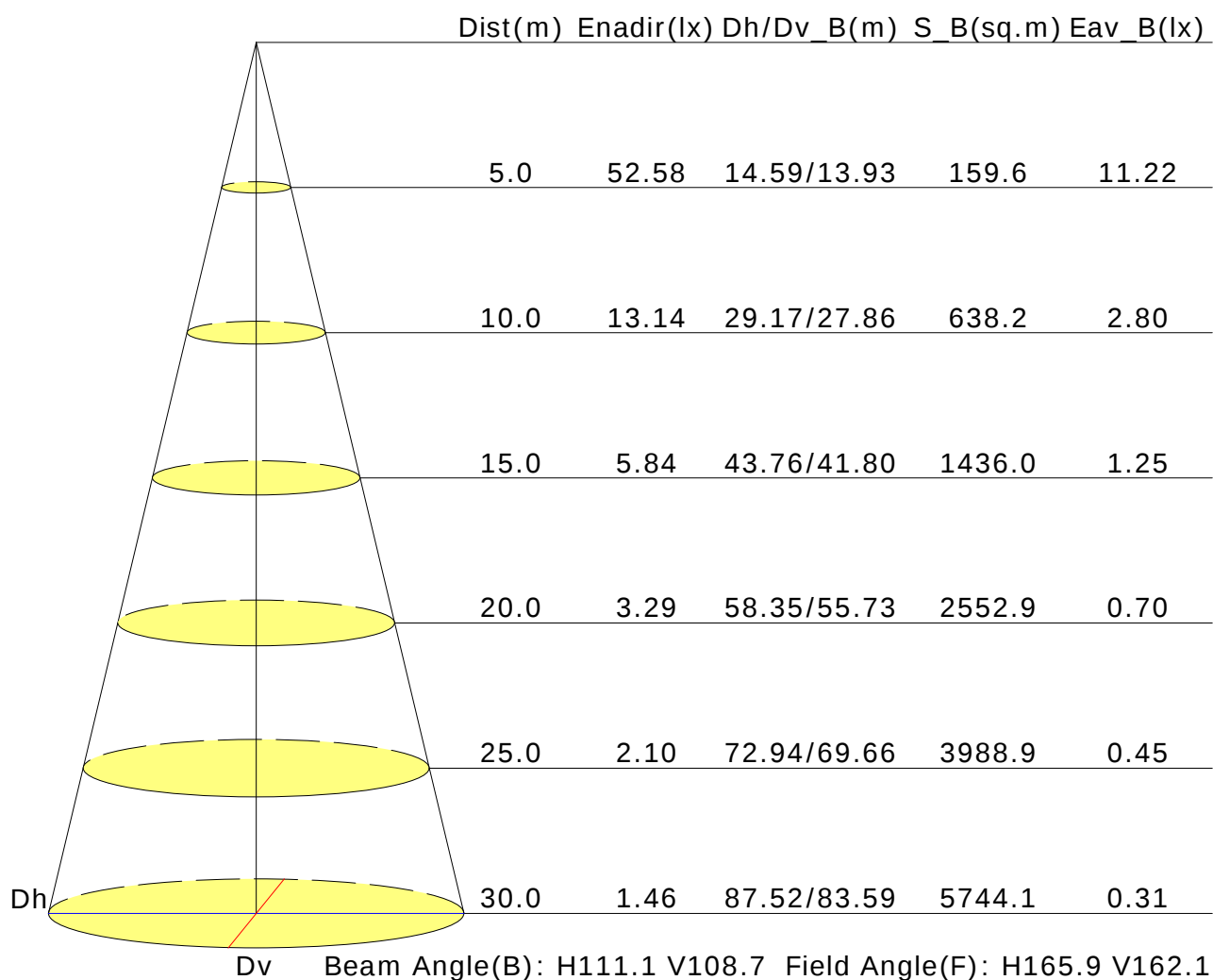
Test Device: LSG-1800B

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                                          | 18.2             | 19.5 | 18.5 | 19.8 | 20.1 | 19.8           | 21.1 | 20.1 | 21.4 | 21.7 |
| 3H                                                 | 19.3             | 20.6 | 19.6 | 20.8 | 21.2 | 21.3           | 22.5 | 21.6 | 22.8 | 23.1 |
| 4H                                                 | 19.7             | 20.9 | 20.1 | 21.2 | 21.5 | 21.9           | 23.1 | 22.3 | 23.4 | 23.7 |
| 6H                                                 | 20.0             | 21.1 | 20.4 | 21.4 | 21.8 | 22.3           | 23.4 | 22.7 | 23.8 | 24.1 |
| 8H                                                 | 20.1             | 21.1 | 20.4 | 21.5 | 21.8 | 22.5           | 23.5 | 22.9 | 23.9 | 24.2 |
| 12H                                                | 20.1             | 21.1 | 20.5 | 21.5 | 21.8 | 22.5           | 23.6 | 22.9 | 23.9 | 24.3 |
| X=4H Y=2H                                          | 18.8             | 20.0 | 19.2 | 20.3 | 20.6 | 20.1           | 21.3 | 20.4 | 21.6 | 21.9 |
| 3H                                                 | 20.1             | 21.1 | 20.5 | 21.5 | 21.8 | 21.7           | 22.8 | 22.1 | 23.1 | 23.5 |
| 4H                                                 | 20.6             | 21.5 | 21.0 | 21.9 | 22.3 | 22.4           | 23.4 | 22.9 | 23.7 | 24.1 |
| 6H                                                 | 21.0             | 21.8 | 21.4 | 22.2 | 22.6 | 23.0           | 23.8 | 23.4 | 24.2 | 24.6 |
| 8H                                                 | 21.1             | 21.8 | 21.5 | 22.3 | 22.7 | 23.1           | 23.9 | 23.6 | 24.3 | 24.8 |
| 12H                                                | 21.1             | 21.8 | 21.6 | 22.3 | 22.7 | 23.2           | 23.9 | 23.7 | 24.4 | 24.8 |
| X=8H Y=4H                                          | 20.9             | 21.6 | 21.3 | 22.0 | 22.5 | 22.5           | 23.3 | 23.0 | 23.7 | 24.2 |
| 6H                                                 | 21.3             | 21.9 | 21.8 | 22.4 | 22.9 | 23.2           | 23.8 | 23.6 | 24.2 | 24.7 |
| 8H                                                 | 21.5             | 22.0 | 22.0 | 22.5 | 23.0 | 23.4           | 23.9 | 23.9 | 24.4 | 24.9 |
| 12H                                                | 21.6             | 22.1 | 22.1 | 22.6 | 23.1 | 23.5           | 24.0 | 24.0 | 24.5 | 25.0 |
| X=12H Y=4H                                         | 20.9             | 21.5 | 21.3 | 22.0 | 22.5 | 22.5           | 23.2 | 23.0 | 23.6 | 24.1 |
| 6H                                                 | 21.4             | 21.9 | 21.9 | 22.4 | 22.9 | 23.2           | 23.7 | 23.7 | 24.2 | 24.7 |
| 8H                                                 | 21.6             | 22.0 | 22.1 | 22.5 | 23.0 | 23.4           | 23.9 | 23.9 | 24.3 | 24.9 |
| Variations with the observer position at spacings: |                  |      |      |      |      |                |      |      |      |      |
| S=1.0H                                             | +0.2/-0.2        |      |      |      |      | +0.1/-0.2      |      |      |      |      |
| S=1.5H                                             | +0.4/-0.7        |      |      |      |      | +0.5/-0.6      |      |      |      |      |
| S=2.0H                                             | +0.7/-1.2        |      |      |      |      | +1.0/-1.2      |      |      |      |      |

Calculate in accordance with CIE Pub.117. The table is revised with 3753lm ( $8\log(F/F_0) = 4.6$ ).

C Plane (°):0.0-360.0: 22.5

Test Lab:

Test Type: TYPE C

Temperature:

Operator:

Gamma Plane (°):0.0-180.0:2.0

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 |       | 0.43           | 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 | 0.95 | 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 | 0.92 |  |
| 0.30                                                                                                                                                                              | 0.50 | 0.20  | 0.53           | 0.62 | 0.69 | 0.73 | 0.80 | 0.84 | 0.87 | 0.91 | 0.94 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.46           | 0.56 | 0.63 | 0.68 | 0.75 | 0.80 | 0.84 | 0.89 | 0.92 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.42           | 0.51 | 0.59 | 0.64 | 0.71 | 0.77 | 0.81 | 0.86 | 0.89 |  |
| 0.00                                                                                                                                                                              | 0.00 | 0.00  | 0.39           | 0.49 | 0.56 | 0.61 | 0.68 | 0.73 | 0.76 | 0.81 | 0.84 |  |
| Rating:34W 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  | 1.00           | 0.83 | 0.71 | 0.62 | 0.49 | 0.41 | 0.35 | 0.27 | 0.22 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.84           | 0.71 | 0.62 | 0.55 | 0.45 | 0.38 | 0.33 | 0.26 | 0.21 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.72           | 0.62 | 0.55 | 0.49 | 0.41 | 0.35 | 0.30 | 0.24 | 0.20 |  |
| 0.50                                                                                                                                                                              | 0.50 | 0.20  | 0.96           | 0.79 | 0.68 | 0.59 | 0.47 | 0.42 | 0.34 | 0.26 | 0.21 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.82           | 0.69 | 0.60 | 0.53 | 0.43 | 0.36 | 0.31 | 0.25 | 0.20 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.71           | 0.61 | 0.54 | 0.48 | 0.40 | 0.34 | 0.29 | 0.23 | 0.20 |  |
| 0.30                                                                                                                                                                              | 0.50 | 0.20  | 0.93           | 0.76 | 0.65 | 0.57 | 0.45 | 0.37 | 0.32 | 0.25 | 0.20 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.80           | 0.67 | 0.58 | 0.51 | 0.42 | 0.35 | 0.30 | 0.24 | 0.20 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.70           | 0.60 | 0.53 | 0.47 | 0.39 | 0.33 | 0.28 | 0.23 | 0.19 |  |
| 0.00                                                                                                                                                                              | 0.00 | 0.00  | 0.60           | 0.50 | 0.43 | 0.38 | 0.31 | 0.26 | 0.22 | 0.18 | 0.15 |  |
| Rating:34W 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  | 0.18           | 0.19 | 0.20 | 0.20 | 0.21 | 0.22 | 0.22 | 0.23 | 0.23 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.11           | 0.12 | 0.14 | 0.15 | 0.16 | 0.18 | 0.18 | 0.20 | 0.21 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.06           | 0.08 | 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 | 0.20 | 0.21 | 0.21 | 0.21 | 0.22 | 0.22 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.11           | 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 | 0.16 | 0.17 |  |
| 0.30                                                                                                                                                                              | 0.50 | 0.20  | 0.17           | 0.18 | 0.18 | 0.19 | 0.20 | 0.20 | 0.21 | 0.21 | 0.21 |  |
|                                                                                                                                                                                   | 0.30 |       | 0.10           | 0.12 | 0.13 | 0.14 | 0.15 | 0.17 | 0.17 | 0.18 | 0.19 |  |
|                                                                                                                                                                                   | 0.20 |       | 0.06           | 0.07 | 0.09 | 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:34W Photometrically tested without ceiling board.<br>Multiply UF values by service correction factors<br>Calculate in accordance with CIBSE Technical Memorandum NO.5 1980 |      |       |                |      |      |      |      |      |      |      |      |  |