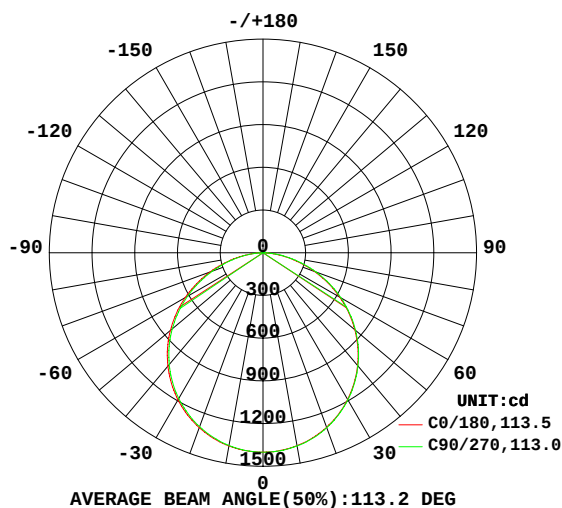


LUMINAIRE PHOTOMETRIC TEST REPORT

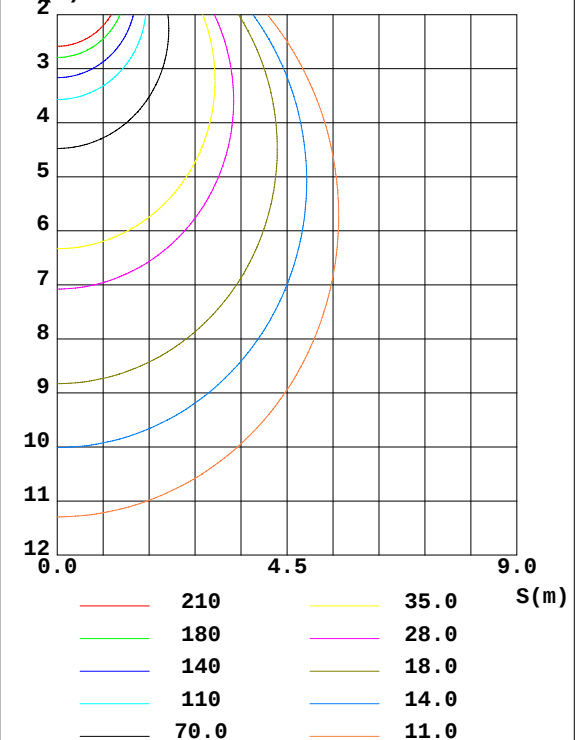
|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |

| DATA OF LAMP     |                       | PHOTOMETRIC DATA Eff: 109.19 lm/W |        |                    |           |
|------------------|-----------------------|-----------------------------------|--------|--------------------|-----------|
| MODEL            | SL2-2X2-40W-L-D-4000K | I <sub>max</sub> (cd)             | 1402   | S/MH(C0/180)       | 1.27      |
| NOMINAL POWER(W) | 40                    | LOR(%)                            | 100.0  | S/MH(C90/270)      | 1.26      |
| RATED VOLTAGE(V) | 120                   | TOTAL FLUX(lm)                    | 4039.0 | η UP, DN(C0-180)   | 0.0, 50.3 |
| NOMINAL FLUX(lm) | 4039.02               | CIE CLASS                         | DIRECT | η UP, DN(C180-360) | 0.0, 49.7 |
| LAMPS INSIDE     | 1                     | η up(%)                           | 0.0    | CIBSE SHR NOM      | 1.25      |
| TEST VOLTAGE(V)  | 120.0                 | η down(%)                         | 100.0  | CIBSE SHR MAX      | 1.35      |

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.2DEG  
Operators: Leo  
Test Date: 2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity: 60.0%  
Test Distance: 26.000m [K=1.3598]  
Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

| γ   | C0                    | C45    | C90    | C135   | C180   | C225   | C270   | C315   | γ       | Φ zone  | Φ total | %lum, lamp |
|-----|-----------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|------------|
| 10  | 1376                  | 1377   | 1378   | 1377   | 1377   | 1376   | 1375   | 1374   | 0- 10   | 132.6   | 132.6   | 3.28, 3.28 |
| 20  | 1305                  | 1306   | 1308   | 1308   | 1308   | 1304   | 1300   | 1301   | 10- 20  | 380.1   | 512.7   | 12.7, 12.7 |
| 30  | 1189                  | 1190   | 1193   | 1193   | 1194   | 1188   | 1182   | 1184   | 20- 30  | 577.2   | 1090    | 27, 27     |
| 40  | 1034                  | 1036   | 1038   | 1040   | 1039   | 1033   | 1024   | 1026   | 30- 40  | 698.2   | 1788    | 44.3, 44.3 |
| 50  | 842.5                 | 846.9  | 848.8  | 852.1  | 848.8  | 841.9  | 831.7  | 835.7  | 40- 50  | 727.0   | 2515    | 62.3, 62.3 |
| 60  | 621.8                 | 628.4  | 631.6  | 634.8  | 630.9  | 622.6  | 612.7  | 615.1  | 50- 60  | 658.4   | 3174    | 78.6, 78.6 |
| 70  | 384.3                 | 392.0  | 396.0  | 399.2  | 395.7  | 386.0  | 379.1  | 378.9  | 60- 70  | 502.0   | 3675    | 91, 91     |
| 80  | 155.7                 | 163.0  | 168.5  | 170.1  | 166.7  | 161.1  | 156.8  | 153.7  | 70- 80  | 288.1   | 3964    | 98.1, 98.1 |
| 90  | 0.0076                | 0.0525 | 0.1368 | 0.1297 | 0      | 0      | 0      | 0      | 80- 90  | 73.96   | 4038    | 100, 100   |
| 100 | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0.0596 | 90-100  | 0.0026  | 4038    | 100, 100   |
| 110 | 0                     | 0      | 0      | 0.1013 | 0.3572 | 0.2647 | 0.3574 | 0.4431 | 100-110 | 0.0739  | 4038    | 100, 100   |
| 120 | 0.3570                | 0.2045 | 0.2812 | 0.3570 | 0.5101 | 0.3077 | 0.4153 | 0.3703 | 110-120 | 0.2440  | 4038    | 100, 100   |
| 130 | 0.4776                | 0.2479 | 0.6135 | 0.3359 | 0.5101 | 0      | 0.4766 | 0.3041 | 120-130 | 0.3671  | 4038    | 100, 100   |
| 140 | 0.4906                | 0      | 0.5797 | 0.0511 | 0.5101 | 0      | 0.5300 | 0.1379 | 130-140 | 0.3129  | 4039    | 100, 100   |
| 150 | 0.5036                | 0      | 0.5625 | 0      | 0.5101 | 0      | 0.6443 | 0.3080 | 140-150 | 0.2294  | 4039    | 100, 100   |
| 160 | 0.3167                | 0      | 0.5625 | 0      | 0.5101 | 0.0519 | 0.5302 | 0.5437 | 150-160 | 0.1443  | 4039    | 100, 100   |
| 170 | 0.3508                | 0      | 0.5625 | 0      | 0.5101 | 0.4091 | 0.5571 | 0.5450 | 160-170 | 0.0874  | 4039    | 100, 100   |
| 180 | 0.3570                | 0      | 0.5625 | 0      | 0.5101 | 0.2045 | 0.4091 | 0.5107 | 170-180 | 0.0318  | 4039    | 100, 100   |
| DEG | LUMINOUS INTENSITY:cd |        |        |        |        |        |        |        |         | UNIT:lm |         |            |

Conical surface Flux(90deg): 2154.1 lm

%lum = 53.3%

%lamp = 53.3%

Conical surface Flux(120deg): 3173.5 lm

%lum = 78.6%

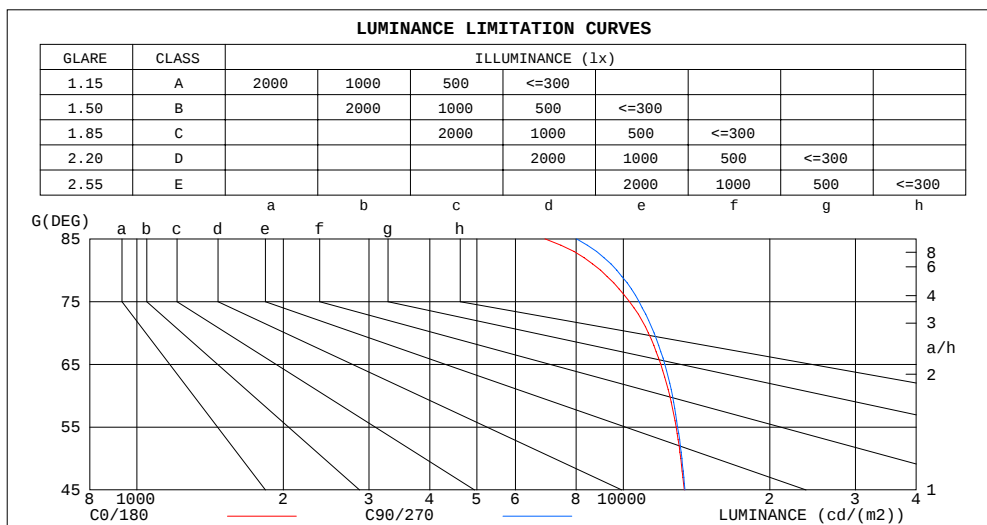
%lamp = 78.6%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.2DEG  
 Operators:Leo  
 Test Date:2016-07-19

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
 Humidity:60.0%  
 Test Distance:26.000m [K=1.3598]  
 Remarks:

## LUMINANCE LIMITATION CURVES

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |



| LUMINANCE cd/(m2) |        |         |
|-------------------|--------|---------|
| G(DEG)            | C0/180 | C90/270 |
| 85                | 6897   | 8010    |
| 80                | 8982   | 9697    |
| 75                | 10289  | 10771   |
| 70                | 11252  | 11569   |
| 65                | 11944  | 12166   |
| 60                | 12454  | 12622   |
| 55                | 12839  | 12923   |
| 50                | 13125  | 13194   |
| 45                | 13346  | 13383   |

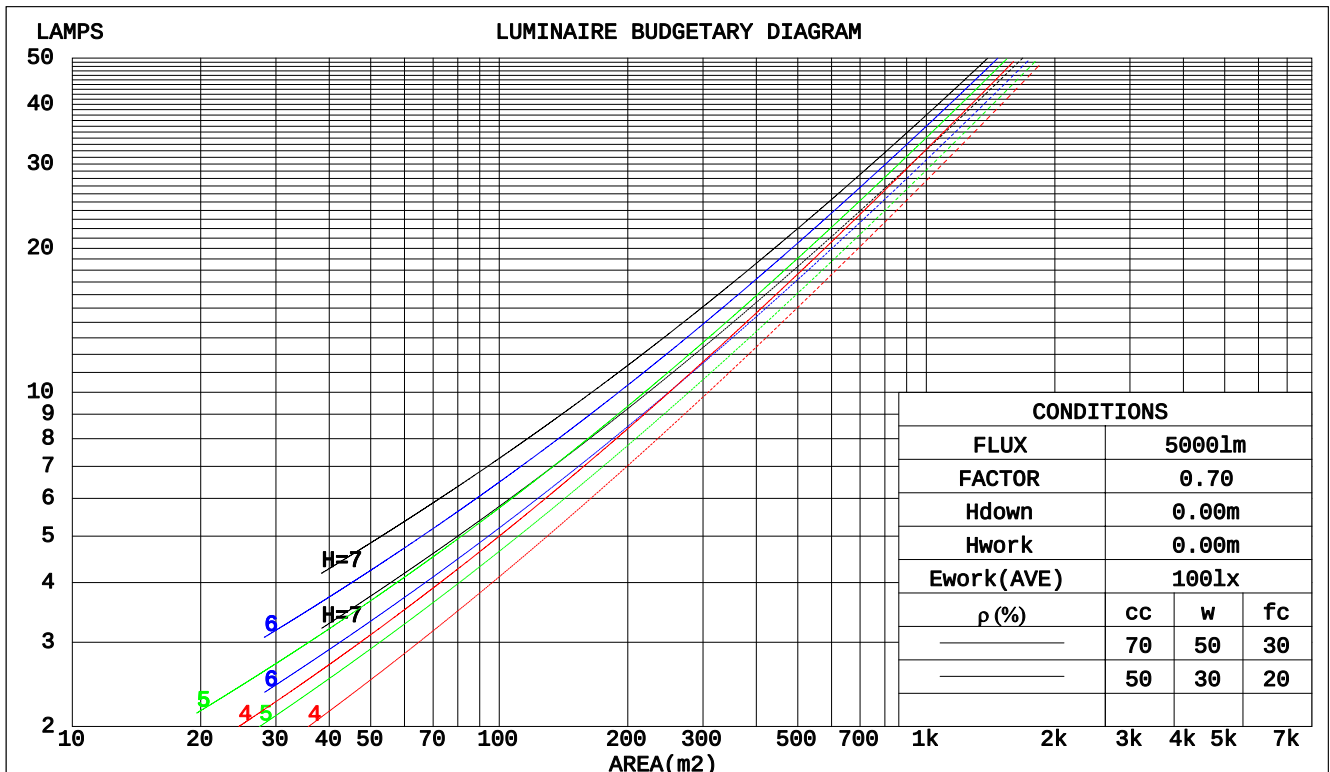
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.2DEG  
Operators: Leo  
Test Date: 2016-07-19

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity: 60.0%  
Test Distance: 26.000m [K=1.3598]  
Remarks:

# CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |

| ρ <sub>CC</sub> | 80%                   |      |      | 70%  |      |      | 50%                             |      |      | 30%  |      |      | 10%  |      |      | 0   |
|-----------------|-----------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|------|------|-----|
| ρ <sub>W</sub>  | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                             | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0   |
| ρ <sub>fc</sub> | 20%                   |      |      | 20%  |      |      | 20%                             |      |      | 20%  |      |      | 20%  |      |      | 0   |
| RCR             | RCR:Room Cavity Ratio |      |      |      |      |      | Coefficients of Utilization(CU) |      |      |      |      |      |      |      |      |     |
| 0.0             | 1.19                  | 1.19 | 1.19 | 1.16 | 1.16 | 1.16 | 1.11                            | 1.11 | 1.11 | 1.06 | 1.06 | 1.06 | 1.02 | 1.02 | 1.02 | .00 |
| 1.0             | 1.04                  | .00  | .96  | 1.02 | .98  | .94  | .97                             | .94  | .91  | .93  | .91  | .88  | .90  | .88  | .86  | .84 |
| 2.0             | .90                   | .83  | .78  | .88  | .82  | .77  | .85                             | .80  | .75  | .82  | .77  | .73  | .79  | .75  | .72  | .69 |
| 3.0             | .79                   | .71  | .64  | .78  | .70  | .64  | .75                             | .68  | .63  | .72  | .66  | .62  | .69  | .65  | .60  | .58 |
| 4.0             | .70                   | .61  | .54  | .69  | .60  | .54  | .66                             | .59  | .53  | .64  | .58  | .53  | .62  | .56  | .52  | .50 |
| 5.0             | .63                   | .54  | .47  | .61  | .53  | .47  | .59                             | .52  | .46  | .57  | .51  | .46  | .55  | .50  | .45  | .43 |
| 6.0             | .56                   | .47  | .41  | .55  | .47  | .41  | .54                             | .46  | .40  | .52  | .45  | .40  | .50  | .44  | .40  | .37 |
| 7.0             | .51                   | .42  | .36  | .50  | .42  | .36  | .49                             | .41  | .36  | .47  | .40  | .35  | .46  | .40  | .35  | .33 |
| 8.0             | .47                   | .38  | .32  | .46  | .38  | .32  | .44                             | .37  | .32  | .43  | .36  | .32  | .42  | .36  | .31  | .29 |
| 9.0             | .43                   | .34  | .29  | .42  | .34  | .29  | .41                             | .34  | .29  | .40  | .33  | .28  | .39  | .33  | .28  | .26 |
| 10.0            | .39                   | .31  | .26  | .39  | .31  | .26  | .38                             | .31  | .26  | .37  | .30  | .26  | .36  | .30  | .26  | .24 |



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.2DEG  
 Operators:Leo  
 Test Date:2016-07-19

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
 Humidity:60.0%  
 Test Distance:26.000m [K=1.3598]  
 Remarks:

### WEC AND CCEC

|                                                                                |  |  |       |  |                  |
|--------------------------------------------------------------------------------|--|--|-------|--|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |  |  |       |  |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    |  |  | TYPE: |  | WEIGHT:          |
| SPEC.:                                                                         |  |  | DIM.: |  | SERIAL No.:      |
| MFR.: LED Waves                                                                |  |  | SUR.: |  | Shielding Angle: |

| $\rho_{cc}$ | 80%                   |      |      | 70%  |      |      | 50%                             |      |      | 30%  |      |      | 10%  |      |      | 0 |  |
|-------------|-----------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|------|------|---|--|
| $\rho_w$    | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                             | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0 |  |
| $\rho_{fc}$ | 20%                   |      |      | 20%  |      |      | 20%                             |      |      | 20%  |      |      | 20%  |      |      | 0 |  |
| RCR         | RCR:Room Cavity Ratio |      |      |      |      |      | Wall Exitance Coefficients(WEC) |      |      |      |      |      |      |      |      |   |  |
| 0.0         |                       |      |      |      |      |      |                                 |      |      |      |      |      |      |      |      |   |  |
| 1.0         | .310                  | .177 | .056 | .303 | .173 | .055 | .290                            | .166 | .053 | .278 | .160 | .051 | .267 | .155 | .050 |   |  |
| 2.0         | .293                  | .160 | .049 | .286 | .158 | .049 | .275                            | .153 | .047 | .264 | .148 | .046 | .254 | .144 | .045 |   |  |
| 3.0         | .271                  | .144 | .043 | .265 | .142 | .043 | .255                            | .138 | .042 | .245 | .134 | .041 | .236 | .131 | .040 |   |  |
| 4.0         | .250                  | .130 | .038 | .245 | .128 | .038 | .236                            | .125 | .037 | .227 | .122 | .037 | .219 | .119 | .036 |   |  |
| 5.0         | .231                  | .118 | .034 | .227 | .116 | .034 | .218                            | .114 | .033 | .211 | .111 | .033 | .204 | .109 | .033 |   |  |
| 6.0         | .214                  | .107 | .031 | .210 | .106 | .031 | .203                            | .104 | .030 | .196 | .102 | .030 | .190 | .100 | .030 |   |  |
| 7.0         | .199                  | .099 | .028 | .196 | .098 | .028 | .189                            | .096 | .028 | .183 | .094 | .027 | .178 | .092 | .027 |   |  |
| 8.0         | .186                  | .091 | .026 | .183 | .090 | .025 | .177                            | .089 | .025 | .172 | .087 | .025 | .167 | .086 | .025 |   |  |
| 9.0         | .174                  | .084 | .024 | .172 | .084 | .023 | .166                            | .082 | .023 | .161 | .081 | .023 | .157 | .080 | .023 |   |  |
| 10.0        | .164                  | .079 | .022 | .161 | .078 | .022 | .157                            | .077 | .022 | .152 | .076 | .022 | .148 | .074 | .021 |   |  |

| ρ <sub>cc</sub> | 80%                   |      |      | 70%  |      |      | 50%                                        |      |      | 30%  |      |      | 10%  |      |      | 0 |
|-----------------|-----------------------|------|------|------|------|------|--------------------------------------------|------|------|------|------|------|------|------|------|---|
| ρ <sub>w</sub>  | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                                        | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0 |
| ρ <sub>fc</sub> | 20%                   |      |      | 20%  |      |      | 20%                                        |      |      | 20%  |      |      | 20%  |      |      | 0 |
| RCR             | RCR:Room Cavity Ratio |      |      |      |      |      | Ceiling Cavity Exitance Coefficients(CCEC) |      |      |      |      |      |      |      |      |   |
| 0.0             | .191                  | .191 | .191 | .163 | .163 | .163 | .111                                       | .111 | .111 | .064 | .064 | .064 | .020 | .020 | .020 |   |
| 1.0             | .181                  | .156 | .135 | .155 | .134 | .116 | .106                                       | .092 | .080 | .061 | .053 | .047 | .019 | .017 | .015 |   |
| 2.0             | .173                  | .132 | .098 | .148 | .114 | .085 | .101                                       | .079 | .059 | .058 | .046 | .035 | .019 | .015 | .011 |   |
| 3.0             | .165                  | .115 | .074 | .141 | .099 | .065 | .097                                       | .069 | .045 | .056 | .040 | .027 | .018 | .013 | .009 |   |
| 4.0             | .157                  | .101 | .058 | .135 | .088 | .051 | .093                                       | .061 | .036 | .054 | .036 | .021 | .017 | .012 | .007 |   |
| 5.0             | .150                  | .091 | .047 | .129 | .079 | .041 | .089                                       | .055 | .029 | .051 | .032 | .017 | .017 | .011 | .006 |   |
| 6.0             | .143                  | .083 | .039 | .123 | .071 | .034 | .085                                       | .050 | .024 | .049 | .029 | .014 | .016 | .010 | .005 |   |
| 7.0             | .136                  | .076 | .033 | .117 | .066 | .029 | .081                                       | .046 | .021 | .047 | .027 | .012 | .015 | .009 | .004 |   |
| 8.0             | .129                  | .070 | .029 | .111 | .061 | .025 | .077                                       | .043 | .018 | .045 | .025 | .011 | .015 | .008 | .004 |   |
| 9.0             | .123                  | .065 | .025 | .106 | .056 | .022 | .074                                       | .040 | .016 | .043 | .023 | .009 | .014 | .008 | .003 |   |
| 10.0            | .118                  | .061 | .023 | .101 | .053 | .020 | .070                                       | .037 | .014 | .041 | .022 | .008 | .013 | .007 | .003 |   |

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Leo  
Test Date:2016-07-19

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity:60.0%  
Test Distance:26.000m [K=1.3598]  
Remarks:

### UGR(Unified Glare Rating) Table

|                                                                                |               |                  |      |      |       |                |      |                  |      |      |      |
|--------------------------------------------------------------------------------|---------------|------------------|------|------|-------|----------------|------|------------------|------|------|------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |               |                  |      |      |       |                |      |                  |      |      |      |
| NAME: SL2-2X2-40W-L-D-4000K                                                    |               |                  |      |      | TYPE: |                |      | WEIGHT:          |      |      |      |
| SPEC.:                                                                         |               |                  |      |      | DIM.: |                |      | SERIAL No.:      |      |      |      |
| MFR.: LED Waves                                                                |               |                  |      |      | SUR.: |                |      | Shielding Angle: |      |      |      |
| ceiling/cavity                                                                 | 0.7           | 0.7              | 0.5  | 0.5  | 0.3   | 0.7            | 0.7  | 0.5              | 0.5  | 0.3  |      |
| walls                                                                          | 0.5           | 0.3              | 0.5  | 0.3  | 0.3   | 0.5            | 0.3  | 0.5              | 0.3  | 0.3  |      |
| working 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                                                                  | 2H            | 21.8             | 23.3 | 22.0 | 23.5  | 23.7           | 21.8 | 23.3             | 22.1 | 23.5 | 23.7 |
|                                                                                | 3H            | 23.3             | 24.7 | 23.6 | 24.9  | 25.2           | 23.3 | 24.8             | 23.6 | 25.0 | 25.2 |
|                                                                                | 4H            | 23.9             | 25.2 | 24.2 | 25.5  | 25.7           | 24.0 | 25.3             | 24.3 | 25.6 | 25.8 |
|                                                                                | 6H            | 24.3             | 25.5 | 24.6 | 25.8  | 26.1           | 24.4 | 25.7             | 24.7 | 25.9 | 26.2 |
|                                                                                | 8H            | 24.4             | 25.6 | 24.7 | 25.9  | 26.2           | 24.5 | 25.8             | 24.9 | 26.0 | 26.3 |
|                                                                                | 12H           | 24.4             | 25.6 | 24.8 | 25.9  | 26.2           | 24.6 | 25.8             | 25.0 | 26.1 | 26.4 |
| 4H                                                                             | 2H            | 22.4             | 23.7 | 22.7 | 24.0  | 24.2           | 22.4 | 23.8             | 22.7 | 24.0 | 24.3 |
|                                                                                | 3H            | 24.1             | 25.3 | 24.4 | 25.6  | 25.9           | 24.1 | 25.3             | 24.5 | 25.6 | 25.9 |
|                                                                                | 4H            | 24.8             | 25.9 | 25.2 | 26.2  | 26.5           | 24.9 | 26.0             | 25.3 | 26.3 | 26.6 |
|                                                                                | 6H            | 25.3             | 26.3 | 25.7 | 26.6  | 27.0           | 25.4 | 26.4             | 25.8 | 26.8 | 27.1 |
|                                                                                | 8H            | 25.5             | 26.4 | 25.9 | 26.7  | 27.1           | 25.6 | 26.5             | 26.1 | 26.9 | 27.3 |
|                                                                                | 12H           | 25.6             | 26.4 | 26.0 | 26.8  | 27.2           | 25.8 | 26.6             | 26.2 | 27.0 | 27.4 |
| 8H                                                                             | 4H            | 25.1             | 26.0 | 25.5 | 26.3  | 26.7           | 25.1 | 26.0             | 25.6 | 26.4 | 26.8 |
|                                                                                | 6H            | 25.7             | 26.5 | 26.2 | 26.9  | 27.3           | 25.9 | 26.6             | 26.3 | 27.0 | 27.4 |
|                                                                                | 8H            | 26.0             | 26.6 | 26.4 | 27.0  | 27.5           | 26.1 | 26.8             | 26.6 | 27.2 | 27.7 |
|                                                                                | 12H           | 26.1             | 26.7 | 26.6 | 27.1  | 27.6           | 26.3 | 26.9             | 26.8 | 27.3 | 27.8 |
| 12H                                                                            | 4H            | 25.1             | 25.9 | 25.5 | 26.3  | 26.7           | 25.2 | 26.0             | 25.6 | 26.4 | 26.8 |
|                                                                                | 6H            | 25.8             | 26.4 | 26.2 | 26.9  | 27.3           | 25.9 | 26.6             | 26.4 | 27.0 | 27.4 |
|                                                                                | 8H            | 26.1             | 26.6 | 26.5 | 27.1  | 27.6           | 26.2 | 26.8             | 26.7 | 27.2 | 27.7 |
| Variations with the observer position at spacings:                             |               |                  |      |      |       |                |      |                  |      |      |      |
| S = 1.0H                                                                       | + 0.2 / - 0.2 |                  |      |      |       | + 0.1 / - 0.2  |      |                  |      |      |      |
| 1.5H                                                                           | + 0.2 / - 0.3 |                  |      |      |       | + 0.2 / - 0.3  |      |                  |      |      |      |
| 2.0H                                                                           | + 0.2 / - 0.3 |                  |      |      |       | + 0.2 / - 0.3  |      |                  |      |      |      |

CIE Pub.117 Corrected 4039 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.9)

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Leo  
Test Date:2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity:60.0%  
Test Distance:26.000m [K=1.3598]  
Remarks:

### UTILIZATION FACTORS TABLE

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |

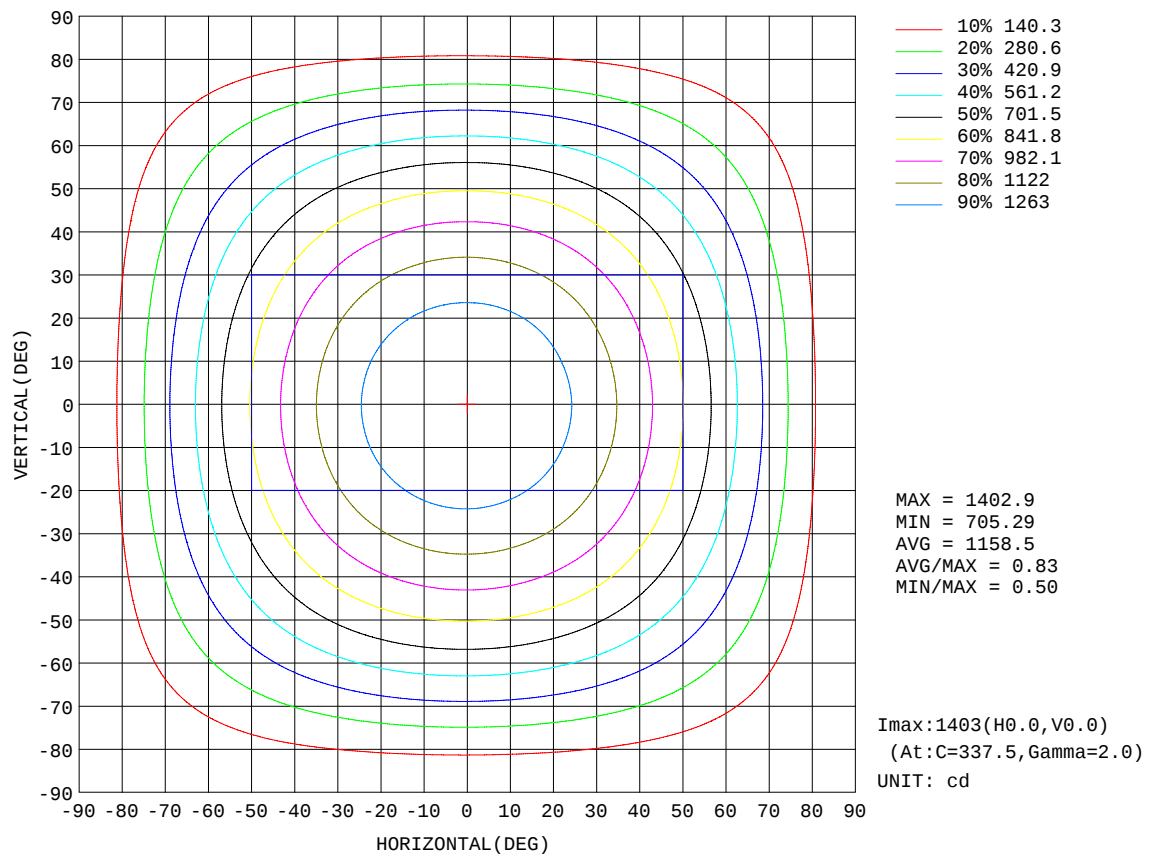
| REFLECTANCE                      |                                                     |     |           |     |     |     |     |               |     |        |
|----------------------------------|-----------------------------------------------------|-----|-----------|-----|-----|-----|-----|---------------|-----|--------|
| Ceiling                          | 0.8                                                 | 0.8 | 0.8       | 0.7 | 0.7 | 0.7 | 0.5 | 0.5           | 0.5 | 0      |
| Walls                            | 0.7                                                 | 0.5 | 0.3       | 0.7 | 0.5 | 0.3 | 0.7 | 0.5           | 0.3 | 0      |
| Working plane                    | 0.2                                                 | 0.2 | 0.2       | 0.2 | 0.2 | 0.2 | 0.2 | 0.2           | 0.2 | 0      |
| ROOM INDEX                       | UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$ |     |           |     |     |     |     |               |     |        |
| k = 0.60                         | 57                                                  | 46  | 39        | 57  | 45  | 39  | 55  | 45            | 38  | 32     |
| 0.80                             | 67                                                  | 56  | 48        | 66  | 55  | 48  | 65  | 54            | 48  | 41     |
| 1.00                             | 76                                                  | 65  | 57        | 75  | 64  | 57  | 72  | 65            | 56  | 49     |
| 1.25                             | 83                                                  | 72  | 65        | 81  | 72  | 65  | 79  | 70            | 64  | 57     |
| 1.50                             | 88                                                  | 78  | 71        | 86  | 77  | 70  | 83  | 75            | 69  | 62     |
| 2.00                             | 95                                                  | 86  | 80        | 93  | 85  | 79  | 89  | 83            | 77  | 70     |
| 2.50                             | 99                                                  | 91  | 85        | 97  | 90  | 84  | 93  | 87            | 82  | 74     |
| 3.00                             | 102                                                 | 95  | 90        | 100 | 94  | 89  | 96  | 91            | 86  | 78     |
| 4.00                             | 106                                                 | 100 | 96        | 104 | 99  | 94  | 100 | 95            | 92  | 83     |
| 5.00                             | 109                                                 | 104 | 100       | 106 | 102 | 98  | 102 | 98            | 95  | 86     |
| ROOM INDEX                       | UF(total)                                           |     |           |     |     |     |     |               |     | Direct |
| According to DIN EN 13032-2 2004 |                                                     |     | Suspended |     |     |     |     | SHRNOM = 1.25 |     |        |

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Leo  
Test Date:2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity:60.0%  
Test Distance:26.000m [K=1.3598]  
Remarks:

# ISOCANDELA DIAGRAM

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |

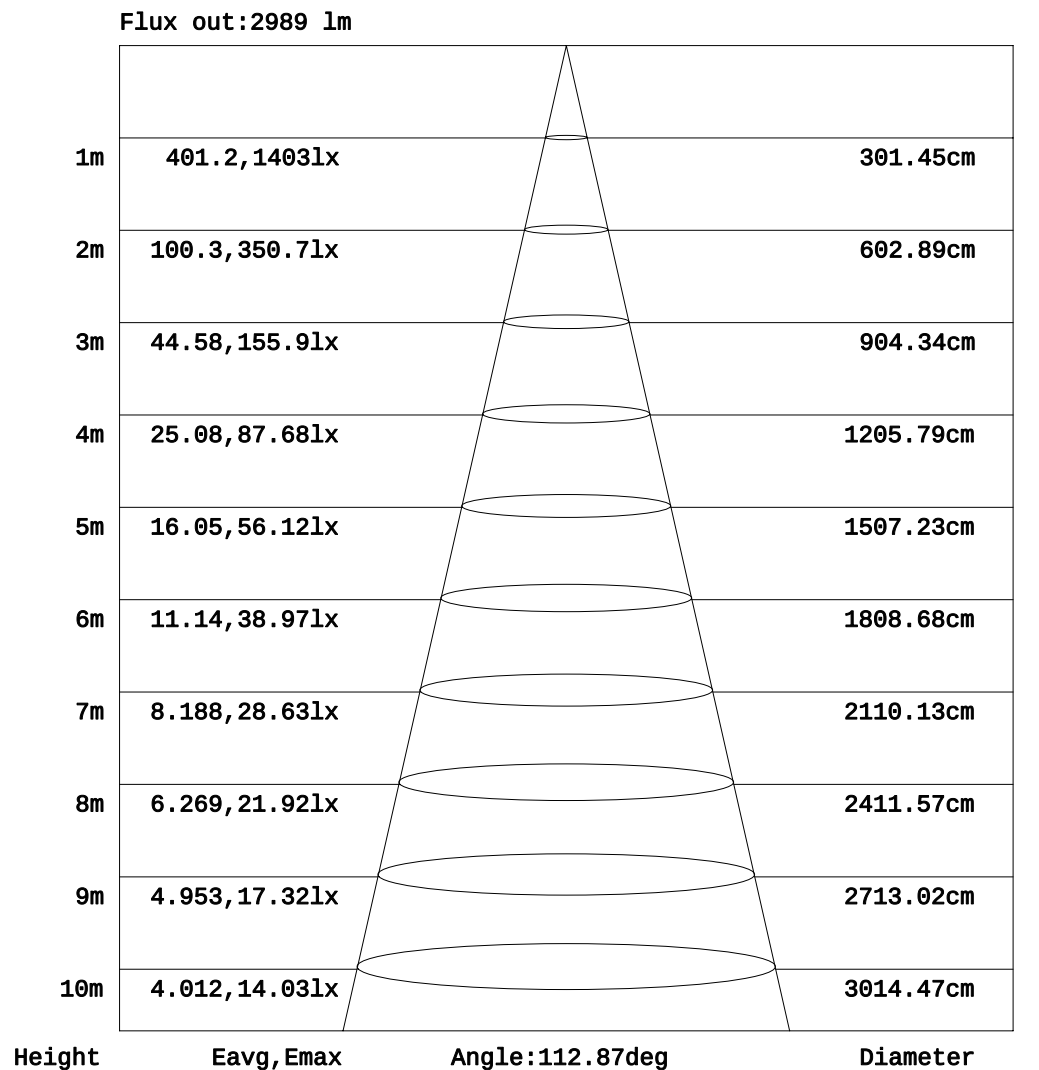


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Leo  
Test Date:2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity:60.0%  
Test Distance:26.000m [K=1.3598]  
Remarks:

### AAI Figure

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |



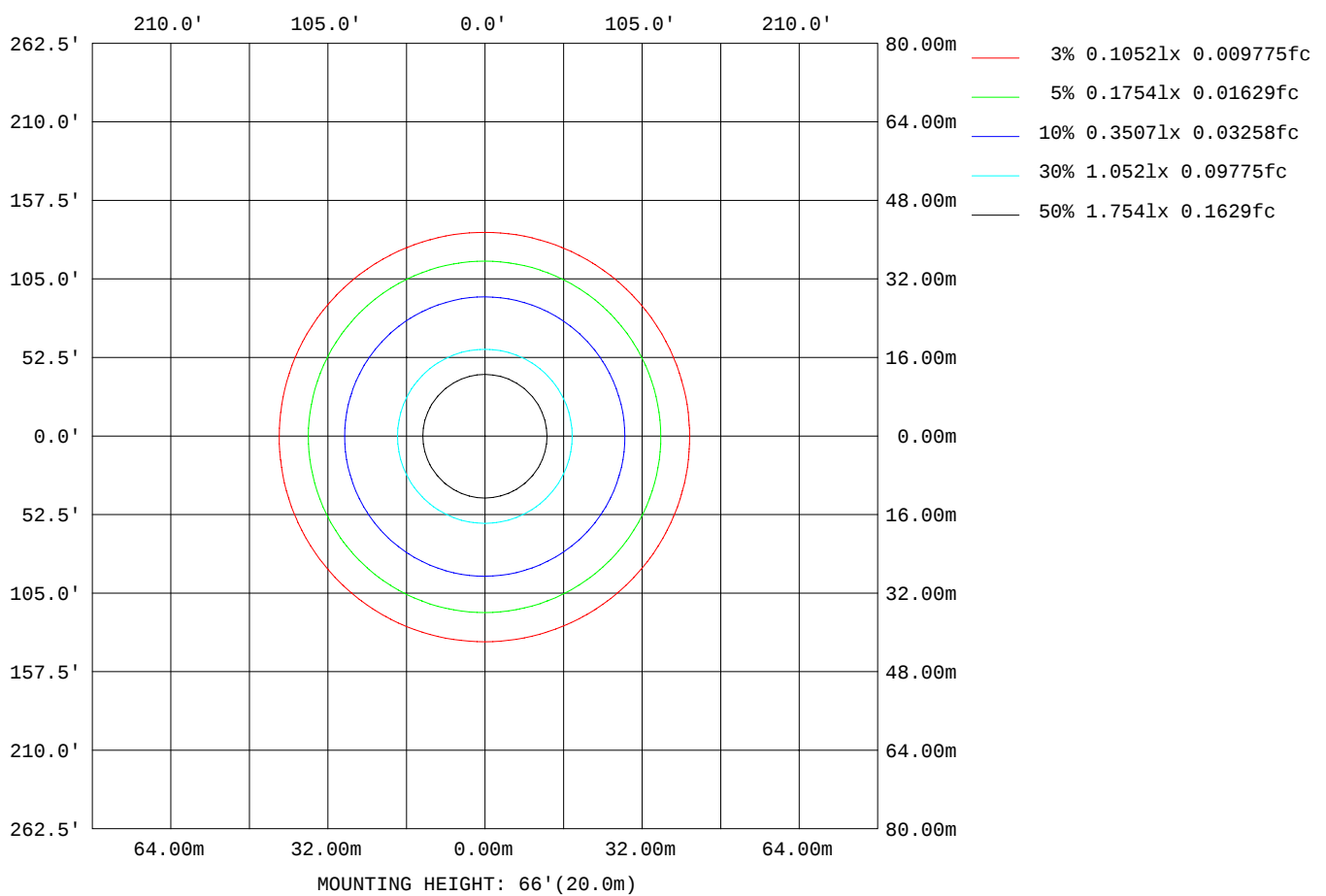
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Leo  
Test Date:2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity:60.0%  
Test Distance:26.000m [K=1.3598]  
Remarks:

# ISOLUX DIAGRAM

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.2DEG  
Operators: Leo  
Test Date: 2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity: 60.0%  
Test Distance: 26.000m [K=1.3598]  
Remarks:

## LED Avg.L Report

|                                                                                |       |                  |
|--------------------------------------------------------------------------------|-------|------------------|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |       |                  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    | TYPE: | WEIGHT:          |
| SPEC.:                                                                         | DIM.: | SERIAL No.:      |
| MFR.: LED Waves                                                                | SUR.: | Shielding Angle: |

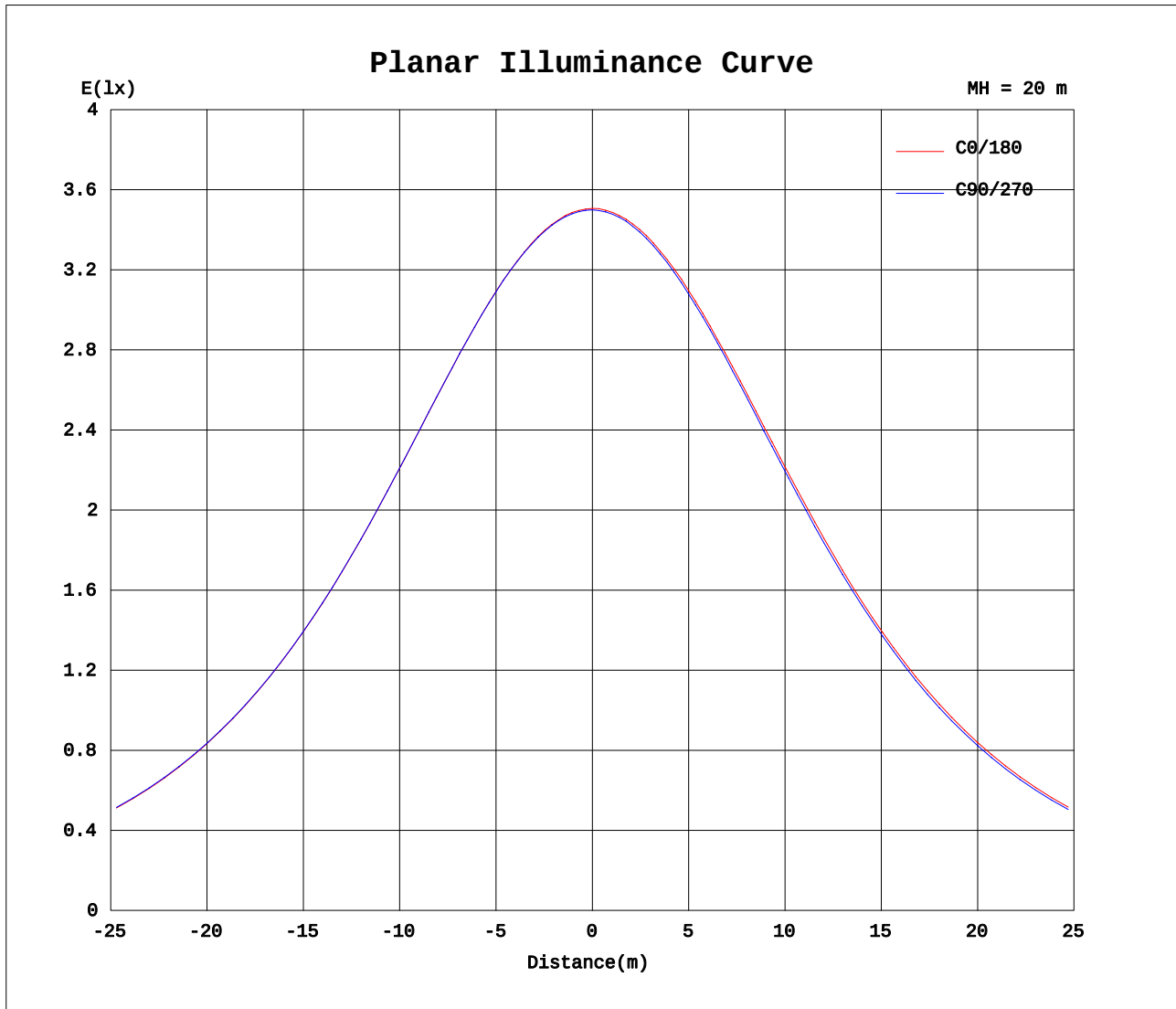
| AvgL           | cd/m2 |
|----------------|-------|
| L_0~180(65)av  | 12042 |
| L_0~180(75)av  | 10509 |
| L_0~180(85)av  | 7217  |
| L_90~270(65)av | 11953 |
| L_90~270(75)av | 10492 |
| L_90~270(85)av | 7471  |
| L_45(65)av     | 12015 |
| L_45(75)av     | 10510 |
| L_45(85)av     | 7201  |

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.2DEG  
 Operators:Leo  
 Test Date:2016-07-19

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
 Humidity:60.0%  
 Test Distance:26.000m [K=1.3598]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.2DEG  
Operators: Leo  
Test Date: 2016-07-19

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity: 60.0%  
Test Distance: 26.000m [K=1.3598]  
Remarks:

# LUMINOUS DISTRIBUTION INTENSITY DATA

|                                                                                |  |  |  |  |  |  |  |  |       |  |  |  |  |  |                  |  |  |
|--------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|-------|--|--|--|--|--|------------------|--|--|
| Test:U:120.0V I:0.3082A P:36.99W PF:0.8876 Freq:50.00Hz Lamp Flux:4039.02x1 lm |  |  |  |  |  |  |  |  |       |  |  |  |  |  |                  |  |  |
| NAME: SL2-2X2-40W-L-D-4000K                                                    |  |  |  |  |  |  |  |  | TYPE: |  |  |  |  |  | WEIGHT:          |  |  |
| SPEC.:                                                                         |  |  |  |  |  |  |  |  | DIM.: |  |  |  |  |  | SERIAL No.:      |  |  |
| MFR.: LED Waves                                                                |  |  |  |  |  |  |  |  | SUR.: |  |  |  |  |  | Shielding Angle: |  |  |

Table--1

UNIT: cd

| C(DEG)<br>γ (DEG) | 0    | 22.5 | 45   | 67.5 | 90   | 112.5 | 135  | 157.5 | 180  | 202.5 | 225  | 247.5 | 270  | 292.5 | 315  | 337.5 |      |  |  |
|-------------------|------|------|------|------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|--|--|
| 0                 | 1401 | 1401 | 1401 | 1401 | 1401 | 1401  | 1401 | 1401  | 1401 | 1401  | 1401 | 1401  | 1401 | 1401  | 1401 | 1401  |      |  |  |
| 5                 | 1394 | 1395 | 1395 | 1395 | 1396 | 1395  | 1395 | 1397  | 1395 | 1395  | 1395 | 1395  | 1395 | 1394  | 1394 | 1393  | 1396 |  |  |
| 10                | 1376 | 1377 | 1377 | 1377 | 1378 | 1378  | 1377 | 1380  | 1377 | 1377  | 1376 | 1376  | 1375 | 1375  | 1374 | 1377  |      |  |  |
| 15                | 1347 | 1347 | 1347 | 1348 | 1349 | 1348  | 1348 | 1350  | 1348 | 1347  | 1346 | 1345  | 1343 | 1343  | 1344 | 1346  |      |  |  |
| 20                | 1305 | 1305 | 1306 | 1307 | 1308 | 1307  | 1308 | 1310  | 1308 | 1306  | 1304 | 1303  | 1300 | 1300  | 1301 | 1303  |      |  |  |
| 25                | 1252 | 1253 | 1254 | 1254 | 1255 | 1255  | 1256 | 1258  | 1256 | 1254  | 1252 | 1249  | 1247 | 1247  | 1247 | 1251  |      |  |  |
| 30                | 1189 | 1190 | 1190 | 1191 | 1193 | 1192  | 1193 | 1196  | 1194 | 1191  | 1188 | 1185  | 1182 | 1182  | 1184 | 1188  |      |  |  |
| 35                | 1116 | 1117 | 1118 | 1119 | 1120 | 1119  | 1121 | 1123  | 1121 | 1118  | 1115 | 1111  | 1109 | 1108  | 1110 | 1113  |      |  |  |
| 40                | 1034 | 1035 | 1036 | 1037 | 1038 | 1038  | 1040 | 1042  | 1039 | 1036  | 1033 | 1028  | 1024 | 1024  | 1026 | 1031  |      |  |  |
| 45                | 942  | 944  | 945  | 946  | 947  | 948   | 950  | 952   | 948  | 945   | 941  | 936   | 932  | 933   | 936  | 940   |      |  |  |
| 50                | 842  | 845  | 847  | 848  | 849  | 851   | 852  | 853   | 849  | 846   | 842  | 836   | 832  | 833   | 836  | 839   |      |  |  |
| 55                | 735  | 738  | 741  | 741  | 742  | 744   | 748  | 745   | 743  | 740   | 735  | 729   | 725  | 726   | 729  | 732   |      |  |  |
| 60                | 622  | 625  | 628  | 630  | 632  | 633   | 635  | 634   | 631  | 628   | 623  | 616   | 613  | 612   | 615  | 619   |      |  |  |
| 65                | 504  | 507  | 511  | 513  | 515  | 517   | 518  | 517   | 514  | 511   | 505  | 499   | 496  | 496   | 497  | 501   |      |  |  |
| 70                | 384  | 388  | 392  | 394  | 396  | 397   | 399  | 399   | 396  | 392   | 386  | 382   | 379  | 378   | 379  | 382   |      |  |  |
| 75                | 266  | 270  | 275  | 277  | 279  | 280   | 281  | 281   | 278  | 274   | 269  | 266   | 264  | 262   | 263  | 264   |      |  |  |
| 80                | 156  | 159  | 163  | 167  | 169  | 169   | 170  | 169   | 167  | 163   | 161  | 159   | 157  | 156   | 154  | 154   |      |  |  |
| 85                | 60.0 | 61.3 | 63.4 | 67.2 | 69.9 | 70.5  | 68.9 | 67.2  | 65.8 | 63.1  | 61.7 | 61.8  | 60.4 | 58.8  | 57.1 | 57.9  |      |  |  |
| 90                | 0.01 | 0.03 | 0.05 | 0.09 | 0.14 | 0.14  | 0.13 | 0.10  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  |      |  |  |
| 95                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  |      |  |  |
| 100               | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.06  | 0.00 |  |  |
| 105               | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  | 0.15 | 0.06  | 0.26 | 0.10  | 0.05 | 0.10  | 0.36 | 0.05  |      |  |  |
| 110               | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.10 | 0.00  | 0.36 | 0.31  | 0.26 | 0.31  | 0.36 | 0.15  | 0.44 | 0.36  |      |  |  |
| 115               | 0.23 | 0.20 | 0.00 | 0.00 | 0.00 | 0.05  | 0.24 | 0.36  | 0.56 | 0.51  | 0.31 | 0.20  | 0.34 | 0.15  | 0.42 | 0.45  |      |  |  |
| 120               | 0.36 | 0.34 | 0.20 | 0.00 | 0.28 | 0.05  | 0.36 | 0.51  | 0.51 | 0.51  | 0.31 | 0.27  | 0.42 | 0.41  | 0.37 | 0.43  |      |  |  |
| 125               | 0.41 | 0.46 | 0.28 | 0.41 | 0.61 | 0.56  | 0.38 | 0.50  | 0.51 | 0.51  | 0.05 | 0.32  | 0.45 | 0.57  | 0.34 | 0.41  |      |  |  |
| 130               | 0.48 | 0.50 | 0.25 | 0.41 | 0.61 | 0.64  | 0.34 | 0.48  | 0.51 | 0.51  | 0.00 | 0.38  | 0.48 | 0.61  | 0.30 | 0.38  |      |  |  |
| 135               | 0.48 | 0.46 | 0.21 | 0.42 | 0.66 | 0.61  | 0.31 | 0.44  | 0.51 | 0.51  | 0.00 | 0.43  | 0.51 | 0.59  | 0.11 | 0.41  |      |  |  |
| 140               | 0.49 | 0.51 | 0.00 | 0.44 | 0.58 | 0.58  | 0.05 | 0.38  | 0.51 | 0.51  | 0.00 | 0.51  | 0.54 | 0.56  | 0.14 | 0.36  |      |  |  |
| 145               | 0.50 | 0.37 | 0.00 | 0.42 | 0.56 | 0.51  | 0.00 | 0.32  | 0.51 | 0.51  | 0.00 | 0.43  | 0.56 | 0.61  | 0.20 | 0.29  |      |  |  |
| 150               | 0.50 | 0.23 | 0.00 | 0.41 | 0.56 | 0.48  | 0.00 | 0.31  | 0.51 | 0.51  | 0.00 | 0.36  | 0.64 | 0.62  | 0.31 | 0.10  |      |  |  |
| 155               | 0.51 | 0.15 | 0.00 | 0.34 | 0.56 | 0.41  | 0.00 | 0.23  | 0.51 | 0.51  | 0.05 | 0.15  | 0.52 | 0.63  | 0.46 | 0.05  |      |  |  |
| 160               | 0.32 | 0.00 | 0.00 | 0.28 | 0.56 | 0.36  | 0.00 | 0.17  | 0.51 | 0.51  | 0.05 | 0.00  | 0.53 | 0.64  | 0.54 | 0.15  |      |  |  |
| 165               | 0.34 | 0.00 | 0.00 | 0.36 | 0.56 | 0.31  | 0.00 | 0.14  | 0.51 | 0.51  | 0.31 | 0.00  | 0.54 | 0.65  | 0.55 | 0.21  |      |  |  |
| 170               | 0.35 | 0.00 | 0.00 | 0.40 | 0.56 | 0.41  | 0.00 | 0.31  | 0.51 | 0.50  | 0.41 | 0.00  | 0.56 | 0.66  | 0.55 | 0.22  |      |  |  |
| 175               | 0.36 | 0.10 | 0.00 | 0.41 | 0.56 | 0.51  | 0.00 | 0.39  | 0.51 | 0.47  | 0.25 | 0.00  | 0.47 | 0.61  | 0.48 | 0.05  |      |  |  |
| 180               | 0.36 | 0.20 | 0.00 | 0.41 | 0.56 | 0.66  | 0.00 | 0.00  | 0.51 | 0.36  | 0.20 | 0.00  | 0.41 | 0.56  | 0.51 | 0.00  |      |  |  |

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Leo  
Test Date:2016-07-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE G0-R5000\_V2 SYSTEM V2.0.284  
Humidity:60.0%  
Test Distance:26.000m [K=1.3598]  
Remarks: