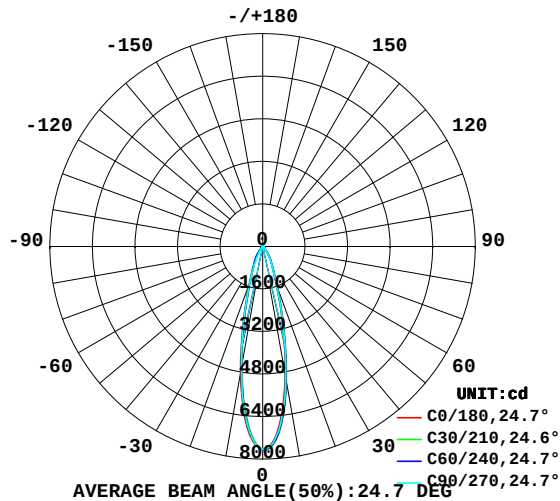


LUMINAIRE PHOTOMETRIC TEST REPORT

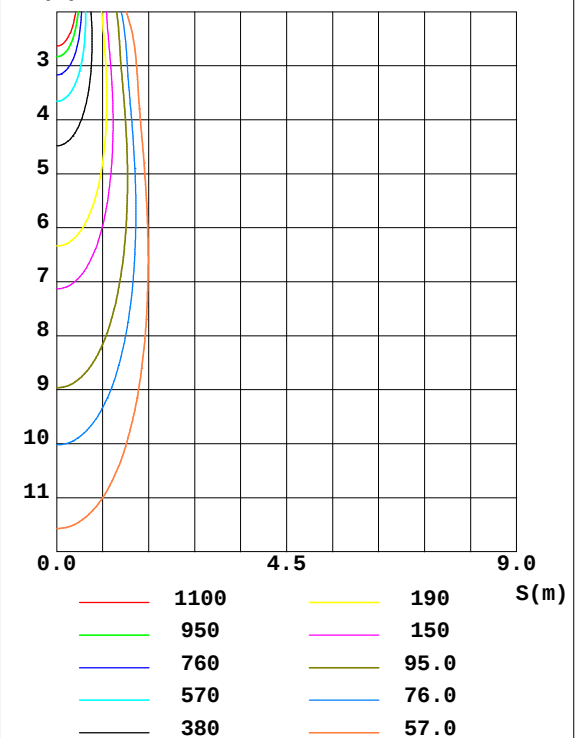
|                                                                   |           |  |
|-------------------------------------------------------------------|-----------|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |           |  |
| NAME: PS-TL-20W-4000K                                             | TYPE: LED |  |
| MFR.:                                                             |           |  |
|                                                                   |           |  |

| DATA OF LAMP     |                 | PHOTOMETRIC DATA Eff: 103.43 lm/W |        |                    |           |
|------------------|-----------------|-----------------------------------|--------|--------------------|-----------|
| MODEL            | PS-TL-20W-4000K | I <sub>max</sub> (cd)             | 7648   | S/MH(C0/180)       | 0.42      |
| NOMINAL POWER(W) | 20              | LOR(%)                            | 100.0  | S/MH(C90/270)      | 0.43      |
| RATED VOLTAGE(V) | 222             | TOTAL FLUX(lm)                    | 2120.3 | η UP, DN(C0-180)   | 1.5, 48.9 |
| NOMINAL FLUX(lm) | 2120.35         | CIE CLASS                         | DIRECT | η UP, DN(C180-360) | 1.7, 47.9 |
| LAMPS INSIDE     | 1               | η up(%)                           | 3.2    | CIBSE SHR NOM      | 0.00      |
| TEST VOLTAGE(V)  | 221.7           | η down(%)                         | 96.8   | CIBSE SHR MAX      | 1.00      |

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT: lx)



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2016-11-19

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.267  
Humidity: 65.0%  
Test Distance: 8.000m [K=0.7063]  
Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

| $\gamma$ | C0                    | C45    | C90    | C135   | C180  | C225  | C270  | C315  | $\gamma$ | $\Phi$ zone | $\Phi$ total | %lum, lamp |
|----------|-----------------------|--------|--------|--------|-------|-------|-------|-------|----------|-------------|--------------|------------|
| 10       | 4881                  | 5129   | 5042   | 4592   | 4807  | 4546  | 4600  | 5077  | 0- 10    | 587.0       | 587.0        | 27.7,27.7  |
| 20       | 1497                  | 1592   | 1547   | 1366   | 1444  | 1362  | 1389  | 1611  | 10- 20   | 777.4       | 1364         | 64.3,64.3  |
| 30       | 609.5                 | 614.9  | 582.0  | 541.2  | 580.7 | 550.7 | 330.3 | 636.7 | 20- 30   | 413.1       | 1778         | 83.8,83.8  |
| 40       | 168.1                 | 169.4  | 154.9  | 135.8  | 162.9 | 150.1 | 30.32 | 191.0 | 30- 40   | 207.9       | 1985         | 93.6,93.6  |
| 50       | 19.32                 | 19.50  | 17.00  | 12.26  | 17.30 | 13.96 | 5.571 | 23.97 | 40- 50   | 51.32       | 2037         | 96.1,96.1  |
| 60       | 4.865                 | 4.498  | 4.132  | 3.737  | 4.403 | 3.872 | 2.354 | 5.756 | 50- 60   | 6.373       | 2043         | 96.4,96.4  |
| 70       | 2.495                 | 1.750  | 1.480  | 1.416  | 3.160 | 3.527 | 2.384 | 4.666 | 60- 70   | 3.267       | 2046         | 96.5,96.5  |
| 80       | 1.489                 | 0.9420 | 0.7975 | 0.7525 | 3.936 | 4.399 | 3.668 | 5.231 | 70- 80   | 2.797       | 2049         | 96.6,96.6  |
| 90       | 0.6441                | 0.6339 | 0.6420 | 0.7113 | 4.558 | 4.560 | 4.506 | 4.456 | 80- 90   | 2.817       | 2052         | 96.8,96.8  |
| 100      | 1.368                 | 1.283  | 1.283  | 1.479  | 5.048 | 5.021 | 4.973 | 4.922 | 90-100   | 3.118       | 2055         | 96.9,96.9  |
| 110      | 3.119                 | 2.934  | 2.927  | 3.328  | 6.125 | 6.148 | 6.052 | 5.884 | 100-110  | 3.965       | 2059         | 97.1,97.1  |
| 120      | 6.613                 | 6.315  | 6.345  | 6.956  | 8.869 | 8.926 | 8.754 | 8.485 | 110-120  | 5.912       | 2065         | 97.4,97.4  |
| 130      | 11.90                 | 11.54  | 11.57  | 12.32  | 12.16 | 12.27 | 12.05 | 11.72 | 120-130  | 8.601       | 2074         | 97.8,97.8  |
| 140      | 17.57                 | 17.38  | 17.36  | 18.14  | 16.97 | 17.27 | 16.91 | 16.39 | 130-140  | 11.18       | 2085         | 98.3,98.3  |
| 150      | 22.71                 | 23.07  | 22.82  | 23.66  | 22.80 | 23.54 | 22.76 | 22.58 | 140-150  | 12.60       | 2098         | 98.9,98.9  |
| 160      | 27.95                 | 28.41  | 28.18  | 28.44  | 27.82 | 28.01 | 27.43 | 27.22 | 150-160  | 11.80       | 2109         | 99.5,99.5  |
| 170      | 31.01                 | 30.77  | 30.92  | 29.74  | 29.98 | 28.73 | 28.57 | 28.23 | 160-170  | 8.253       | 2118         | 99.9,99.9  |
| 180      | 30.60                 | 29.51  | 29.00  | 28.34  | 30.71 | 29.52 | 29.08 | 28.34 | 170-180  | 2.706       | 2120         | 100,100    |
| DEG      | LUMINOUS INTENSITY:cd |        |        |        |       |       |       |       |          | UNIT: lm    |              |            |

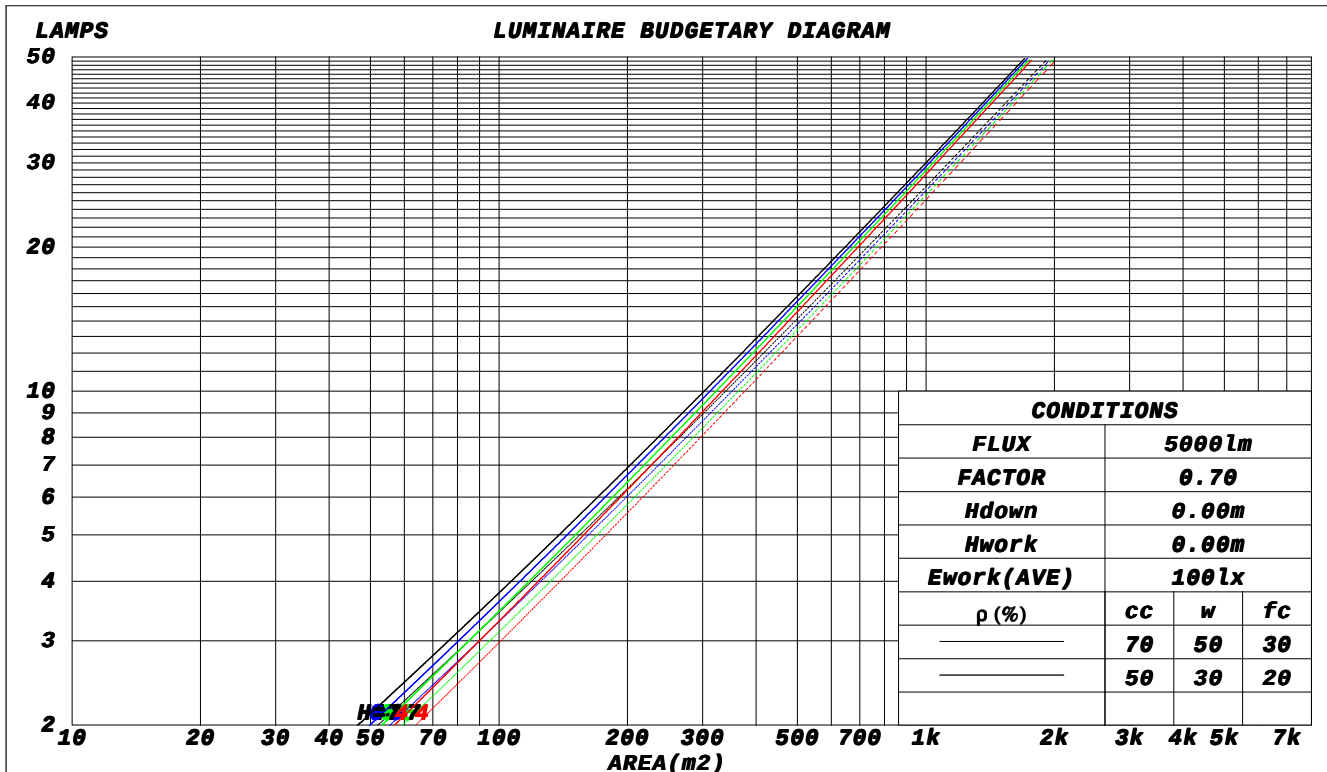
**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature:25.3DEG**  
**Operators:DAMIN**  
**Test Date:2016-11-19**

**$\gamma$  Range: 0 - 180DEG**  
 **$\gamma$  Interval: 1.0DEG**  
**Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.267**  
**Humidity:65.0%**  
**Test Distance:8.000m [K=0.7063]**  
**Remarks:**

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

|                                                                   |          |  |
|-------------------------------------------------------------------|----------|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |          |  |
| NAME: PS-TL-20W-4000K                                             | TYPE:LED |  |
| MFR.:                                                             |          |  |
|                                                                   |          |  |

| $\rho_{CC}$ | 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 |      |      |      |      |      | Coefficients of Utilization(CU) |      |      |      |      |      |     |     |     |     |
| 0.0         | 1.18                  | 1.18 | 1.18 | 1.15 | 1.15 | 1.15 | 1.09                            | 1.09 | 1.09 | 1.04 | 1.04 | 1.04 | .99 | .99 | .99 | .97 |
| 1.0         | 1.11                  | 1.09 | 1.07 | 1.09 | 1.07 | 1.05 | 1.04                            | 1.03 | 1.01 | .99  | .99  | .98  | .96 | .95 | .94 | .92 |
| 2.0         | 1.05                  | 1.02 | .99  | 1.03 | 1.00 | .97  | .99                             | .97  | .95  | .96  | .94  | .92  | .93 | .91 | .90 | .88 |
| 3.0         | .99                   | .95  | .92  | .98  | .94  | .91  | .95                             | .92  | .89  | .92  | .90  | .88  | .90 | .88 | .86 | .84 |
| 4.0         | .95                   | .90  | .87  | .93  | .89  | .86  | .91                             | .88  | .85  | .89  | .86  | .84  | .87 | .84 | .82 | .81 |
| 5.0         | .90                   | .86  | .82  | .89  | .85  | .82  | .87                             | .84  | .81  | .85  | .82  | .80  | .84 | .81 | .79 | .78 |
| 6.0         | .87                   | .82  | .78  | .86  | .81  | .78  | .84                             | .80  | .77  | .82  | .79  | .76  | .81 | .78 | .76 | .74 |
| 7.0         | .83                   | .78  | .75  | .82  | .78  | .75  | .81                             | .77  | .74  | .79  | .76  | .73  | .78 | .75 | .73 | .72 |
| 8.0         | .80                   | .75  | .72  | .79  | .75  | .72  | .78                             | .74  | .71  | .77  | .73  | .71  | .76 | .72 | .70 | .69 |
| 9.0         | .77                   | .72  | .69  | .76  | .72  | .69  | .75                             | .71  | .68  | .74  | .71  | .68  | .73 | .70 | .68 | .67 |
| 10.0        | .74                   | .70  | .66  | .74  | .69  | .66  | .73                             | .69  | .66  | .72  | .68  | .66  | .71 | .68 | .65 | .64 |



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2016-11-19

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267  
 Humidity: 65.0%  
 Test Distance: 8.000m [K=0.7063]  
 Remarks:

**WEC AND CCEC**

|                                                                   |  |  |  |  |  |          |  |  |  |  |  |
|-------------------------------------------------------------------|--|--|--|--|--|----------|--|--|--|--|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |  |  |  |  |  |          |  |  |  |  |  |
| NAME: PS-TL-20W-4000K                                             |  |  |  |  |  | TYPE:LED |  |  |  |  |  |
| MFR.:                                                             |  |  |  |  |  |          |  |  |  |  |  |
|                                                                   |  |  |  |  |  |          |  |  |  |  |  |

| $\rho_{CC}$ | 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         | .154                  | .088 | .028 | .147 | .084 | .027 | .132                            | .076 | .024 | .119 | .069 | .022 | .107 | .062 | .020 |   |  |
| 2.0         | .144                  | .079 | .024 | .138 | .076 | .023 | .126                            | .070 | .022 | .115 | .064 | .020 | .104 | .059 | .019 |   |  |
| 3.0         | .135                  | .072 | .022 | .130 | .069 | .021 | .119                            | .065 | .020 | .110 | .060 | .018 | .101 | .056 | .017 |   |  |
| 4.0         | .127                  | .066 | .019 | .123 | .064 | .019 | .114                            | .060 | .018 | .105 | .057 | .017 | .098 | .053 | .016 |   |  |
| 5.0         | .120                  | .061 | .018 | .116 | .060 | .017 | .109                            | .056 | .017 | .101 | .053 | .016 | .095 | .051 | .015 |   |  |
| 6.0         | .114                  | .057 | .016 | .111 | .056 | .016 | .104                            | .053 | .015 | .097 | .051 | .015 | .091 | .048 | .014 |   |  |
| 7.0         | .109                  | .054 | .015 | .105 | .053 | .015 | .099                            | .050 | .014 | .094 | .048 | .014 | .088 | .046 | .013 |   |  |
| 8.0         | .104                  | .051 | .014 | .101 | .050 | .014 | .095                            | .048 | .014 | .090 | .046 | .013 | .085 | .044 | .013 |   |  |
| 9.0         | .099                  | .048 | .013 | .096 | .047 | .013 | .092                            | .045 | .013 | .087 | .044 | .012 | .083 | .042 | .012 |   |  |
| 10.0        | .095                  | .045 | .013 | .093 | .045 | .012 | .088                            | .043 | .012 | .084 | .042 | .012 | .080 | .040 | .012 |   |  |

| $\rho_{CC}$ | 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 |      |      |      |      |      | Ceiling Cavity Exitance Coefficients(CCEC) |      |      |      |      |      |      |      |      |   |
| 0.0         | .215                  | .215 | .215 | .184 | .184 | .184 | .125                                       | .125 | .125 | .072 | .072 | .072 | .023 | .023 | .023 |   |
| 1.0         | .194                  | .182 | .171 | .166 | .156 | .148 | .114                                       | .108 | .102 | .065 | .062 | .059 | .021 | .020 | .019 |   |
| 2.0         | .177                  | .158 | .141 | .152 | .136 | .122 | .104                                       | .094 | .085 | .060 | .055 | .050 | .019 | .018 | .016 |   |
| 3.0         | .164                  | .138 | .118 | .140 | .119 | .103 | .096                                       | .083 | .072 | .056 | .048 | .042 | .018 | .016 | .014 |   |
| 4.0         | .152                  | .123 | .102 | .130 | .107 | .088 | .090                                       | .074 | .062 | .052 | .044 | .037 | .017 | .014 | .012 |   |
| 5.0         | .142                  | .111 | .089 | .122 | .096 | .077 | .084                                       | .067 | .055 | .049 | .040 | .032 | .016 | .013 | .011 |   |
| 6.0         | .134                  | .102 | .079 | .115 | .088 | .069 | .079                                       | .062 | .049 | .046 | .036 | .029 | .015 | .012 | .010 |   |
| 7.0         | .127                  | .094 | .071 | .109 | .081 | .062 | .075                                       | .057 | .044 | .044 | .034 | .026 | .014 | .011 | .009 |   |
| 8.0         | .121                  | .087 | .065 | .104 | .076 | .056 | .072                                       | .053 | .040 | .042 | .031 | .024 | .014 | .010 | .008 |   |
| 9.0         | .115                  | .082 | .060 | .099 | .071 | .052 | .069                                       | .050 | .037 | .040 | .030 | .022 | .013 | .010 | .007 |   |
| 10.0        | .110                  | .077 | .055 | .095 | .067 | .048 | .066                                       | .047 | .034 | .038 | .028 | .020 | .012 | .009 | .007 |   |

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature:25.3DEG**  
**Operators:DAMIN**  
**Test Date:2016-11-19**

**$\gamma$  Range: 0 - 180DEG**  
 **$\gamma$  Interval: 1.0DEG**  
**Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity:65.0%**  
**Test Distance:8.000m [K=0.7063]**  
**Remarks:**

### Uncorrected UGR Table

|                                                                   |                         |             |             |             |             |                       |             |             |             |             |
|-------------------------------------------------------------------|-------------------------|-------------|-------------|-------------|-------------|-----------------------|-------------|-------------|-------------|-------------|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |                         |             |             |             |             |                       |             |             |             |             |
| NAME: PS-TL-20W-4000K                                             |                         |             |             |             | TYPE: LED   |                       |             |             |             |             |
| MFR.:                                                             |                         |             |             |             |             |                       |             |             |             |             |
|                                                                   |                         |             |             |             |             |                       |             |             |             |             |
| <b>ceiling/cavity</b>                                             | <b>0.7</b>              | <b>0.7</b>  | <b>0.5</b>  | <b>0.5</b>  | <b>0.3</b>  | <b>0.7</b>            | <b>0.7</b>  | <b>0.5</b>  | <b>0.5</b>  | <b>0.3</b>  |
| <b>walls</b>                                                      | <b>0.5</b>              | <b>0.3</b>  | <b>0.5</b>  | <b>0.3</b>  | <b>0.3</b>  | <b>0.5</b>            | <b>0.3</b>  | <b>0.5</b>  | <b>0.3</b>  | <b>0.3</b>  |
| <b>working plane</b>                                              | <b>0.2</b>              | <b>0.2</b>  | <b>0.2</b>  | <b>0.2</b>  | <b>0.2</b>  | <b>0.2</b>            | <b>0.2</b>  | <b>0.2</b>  | <b>0.2</b>  | <b>0.2</b>  |
| <b>Room dimensions</b>                                            | <b>Viewed crosswise</b> |             |             |             |             | <b>Viewed endwise</b> |             |             |             |             |
| <b>x = 2H y = 2H</b>                                              | <b>17.0</b>             | <b>17.7</b> | <b>17.2</b> | <b>17.9</b> | <b>18.1</b> | <b>16.5</b>           | <b>17.3</b> | <b>16.8</b> | <b>17.5</b> | <b>17.7</b> |
| <b>3H</b>                                                         | <b>16.8</b>             | <b>17.5</b> | <b>17.1</b> | <b>17.7</b> | <b>18.0</b> | <b>16.4</b>           | <b>17.0</b> | <b>16.6</b> | <b>17.3</b> | <b>17.5</b> |
| <b>4H</b>                                                         | <b>16.7</b>             | <b>17.4</b> | <b>17.0</b> | <b>17.6</b> | <b>17.9</b> | <b>16.3</b>           | <b>16.9</b> | <b>16.6</b> | <b>17.2</b> | <b>17.4</b> |
| <b>6H</b>                                                         | <b>16.6</b>             | <b>17.3</b> | <b>17.0</b> | <b>17.5</b> | <b>17.8</b> | <b>16.2</b>           | <b>16.8</b> | <b>16.5</b> | <b>17.1</b> | <b>17.4</b> |
| <b>8H</b>                                                         | <b>16.6</b>             | <b>17.2</b> | <b>17.0</b> | <b>17.5</b> | <b>17.8</b> | <b>16.1</b>           | <b>16.7</b> | <b>16.5</b> | <b>17.0</b> | <b>17.3</b> |
| <b>12H</b>                                                        | <b>16.6</b>             | <b>17.1</b> | <b>16.9</b> | <b>17.4</b> | <b>17.8</b> | <b>16.1</b>           | <b>16.6</b> | <b>16.4</b> | <b>17.0</b> | <b>17.3</b> |
| <b>4H 2H</b>                                                      | <b>16.7</b>             | <b>17.4</b> | <b>17.0</b> | <b>17.6</b> | <b>17.9</b> | <b>16.3</b>           | <b>16.9</b> | <b>16.6</b> | <b>17.2</b> | <b>17.4</b> |
| <b>3H</b>                                                         | <b>16.5</b>             | <b>17.1</b> | <b>16.9</b> | <b>17.4</b> | <b>17.7</b> | <b>16.1</b>           | <b>16.6</b> | <b>16.4</b> | <b>17.0</b> | <b>17.3</b> |
| <b>4H</b>                                                         | <b>16.4</b>             | <b>17.0</b> | <b>16.8</b> | <b>17.3</b> | <b>17.7</b> | <b>16.0</b>           | <b>16.5</b> | <b>16.4</b> | <b>16.8</b> | <b>17.2</b> |
| <b>6H</b>                                                         | <b>16.4</b>             | <b>16.8</b> | <b>16.8</b> | <b>17.2</b> | <b>17.6</b> | <b>15.9</b>           | <b>16.3</b> | <b>16.3</b> | <b>16.7</b> | <b>17.1</b> |
| <b>8H</b>                                                         | <b>16.3</b>             | <b>16.7</b> | <b>16.7</b> | <b>17.1</b> | <b>17.6</b> | <b>15.8</b>           | <b>16.3</b> | <b>16.3</b> | <b>16.7</b> | <b>17.1</b> |
| <b>12H</b>                                                        | <b>16.3</b>             | <b>16.6</b> | <b>16.7</b> | <b>17.1</b> | <b>17.5</b> | <b>15.8</b>           | <b>16.2</b> | <b>16.2</b> | <b>16.6</b> | <b>17.0</b> |
| <b>8H 4H</b>                                                      | <b>16.3</b>             | <b>16.7</b> | <b>16.7</b> | <b>17.1</b> | <b>17.5</b> | <b>15.8</b>           | <b>16.2</b> | <b>16.3</b> | <b>16.6</b> | <b>17.1</b> |
| <b>6H</b>                                                         | <b>16.2</b>             | <b>16.5</b> | <b>16.7</b> | <b>17.0</b> | <b>17.5</b> | <b>15.7</b>           | <b>16.1</b> | <b>16.2</b> | <b>16.5</b> | <b>17.0</b> |
| <b>8H</b>                                                         | <b>16.1</b>             | <b>16.4</b> | <b>16.6</b> | <b>16.9</b> | <b>17.4</b> | <b>15.7</b>           | <b>16.0</b> | <b>16.2</b> | <b>16.4</b> | <b>16.9</b> |
| <b>12H</b>                                                        | <b>16.1</b>             | <b>16.4</b> | <b>16.6</b> | <b>16.9</b> | <b>17.4</b> | <b>15.6</b>           | <b>15.9</b> | <b>16.1</b> | <b>16.4</b> | <b>16.9</b> |
| <b>12H 4H</b>                                                     | <b>16.2</b>             | <b>16.6</b> | <b>16.7</b> | <b>17.0</b> | <b>17.5</b> | <b>15.8</b>           | <b>16.2</b> | <b>16.2</b> | <b>16.6</b> | <b>17.0</b> |
| <b>6H</b>                                                         | <b>16.1</b>             | <b>16.4</b> | <b>16.6</b> | <b>16.9</b> | <b>17.4</b> | <b>15.7</b>           | <b>16.0</b> | <b>16.2</b> | <b>16.4</b> | <b>16.9</b> |
| <b>8H</b>                                                         | <b>16.1</b>             | <b>16.3</b> | <b>16.6</b> | <b>16.8</b> | <b>17.4</b> | <b>15.6</b>           | <b>15.9</b> | <b>16.1</b> | <b>16.4</b> | <b>16.9</b> |
| <b>Variations with the observer position at spacings:</b>         |                         |             |             |             |             |                       |             |             |             |             |
| <b>S = 1.0H</b>                                                   | <b>+ 3.3 / -11.4</b>    |             |             |             |             | <b>+ 3.3 / -12.5</b>  |             |             |             |             |
| <b>1.5H</b>                                                       | <b>+ 5.7 / -10.9</b>    |             |             |             |             | <b>+ 5.6 / -11.6</b>  |             |             |             |             |
| <b>2.0H</b>                                                       | <b>+ 6.9 / - 5.1</b>    |             |             |             |             | <b>+ 7.1 / - 5.9</b>  |             |             |             |             |

CIE Pub.117 Corrected 2120 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.6)

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2016-11-19**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**

### UTILIZATION FACTORS TABLE

|                                                                   |           |  |
|-------------------------------------------------------------------|-----------|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |           |  |
| NAME: PS-TL-20W-4000K                                             | TYPE: LED |  |
| MFR.:                                                             |           |  |
|                                                                   |           |  |

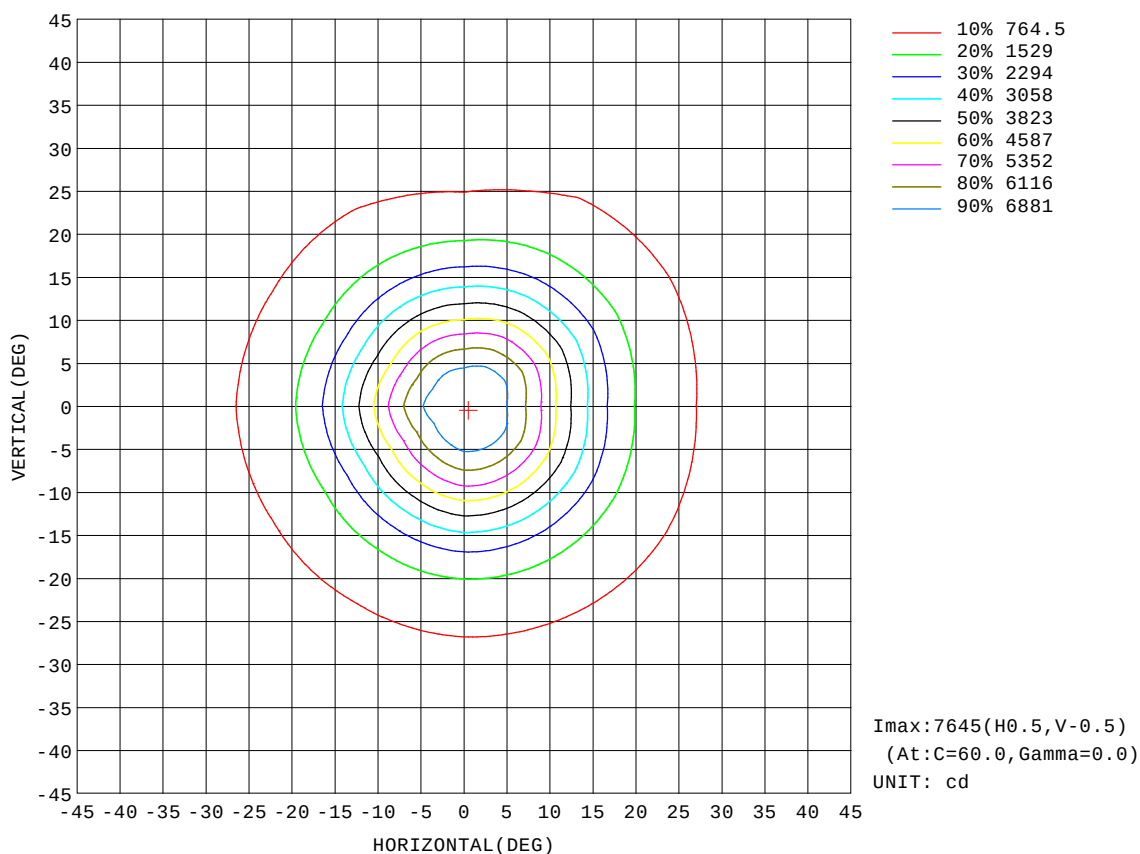
| REFLECTANCE                      |                                                     |     |           |     |     |     |     |               |     |        |
|----------------------------------|-----------------------------------------------------|-----|-----------|-----|-----|-----|-----|---------------|-----|--------|
| 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) $k(RI) \times RCR = 5$ |     |           |     |     |     |     |               |     |        |
| $k = 0.60$                       | 88                                                  | 82  | 78        | 87  | 81  | 78  | 86  | 81            | 78  | 74     |
| 0.80                             | 95                                                  | 89  | 86        | 94  | 89  | 85  | 93  | 88            | 85  | 81     |
| 1.00                             | 99                                                  | 94  | 90        | 98  | 93  | 90  | 96  | 92            | 89  | 85     |
| 1.25                             | 103                                                 | 98  | 94        | 102 | 97  | 94  | 99  | 96            | 93  | 88     |
| 1.50                             | 105                                                 | 101 | 98        | 104 | 100 | 97  | 101 | 98            | 95  | 91     |
| 2.00                             | 108                                                 | 104 | 101       | 106 | 103 | 100 | 103 | 100           | 98  | 92     |
| 2.50                             | 110                                                 | 106 | 103       | 108 | 104 | 102 | 104 | 102           | 99  | 93     |
| 3.00                             | 111                                                 | 108 | 105       | 109 | 106 | 104 | 105 | 103           | 101 | 94     |
| 4.00                             | 113                                                 | 110 | 108       | 111 | 108 | 106 | 107 | 105           | 103 | 95     |
| 5.00                             | 114                                                 | 112 | 110       | 112 | 110 | 108 | 107 | 106           | 105 | 96     |
| ROOM INDEX                       | UF(total)                                           |     |           |     |     |     |     |               |     | Direct |
| According to DIN EN 13032-2 2004 |                                                     |     | Suspended |     |     |     |     | SHRNOM = 1.25 |     |        |

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2016-11-19**

**$\gamma$  Range: 0 - 180DEG**  
 **$\gamma$  Interval: 1.0DEG**  
**Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**

## ISOCANDELA DIAGRAM

|                                                                   |           |  |
|-------------------------------------------------------------------|-----------|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |           |  |
| NAME: PS-TL-20W-4000K                                             | TYPE: LED |  |
| MFR.:                                                             |           |  |
|                                                                   |           |  |

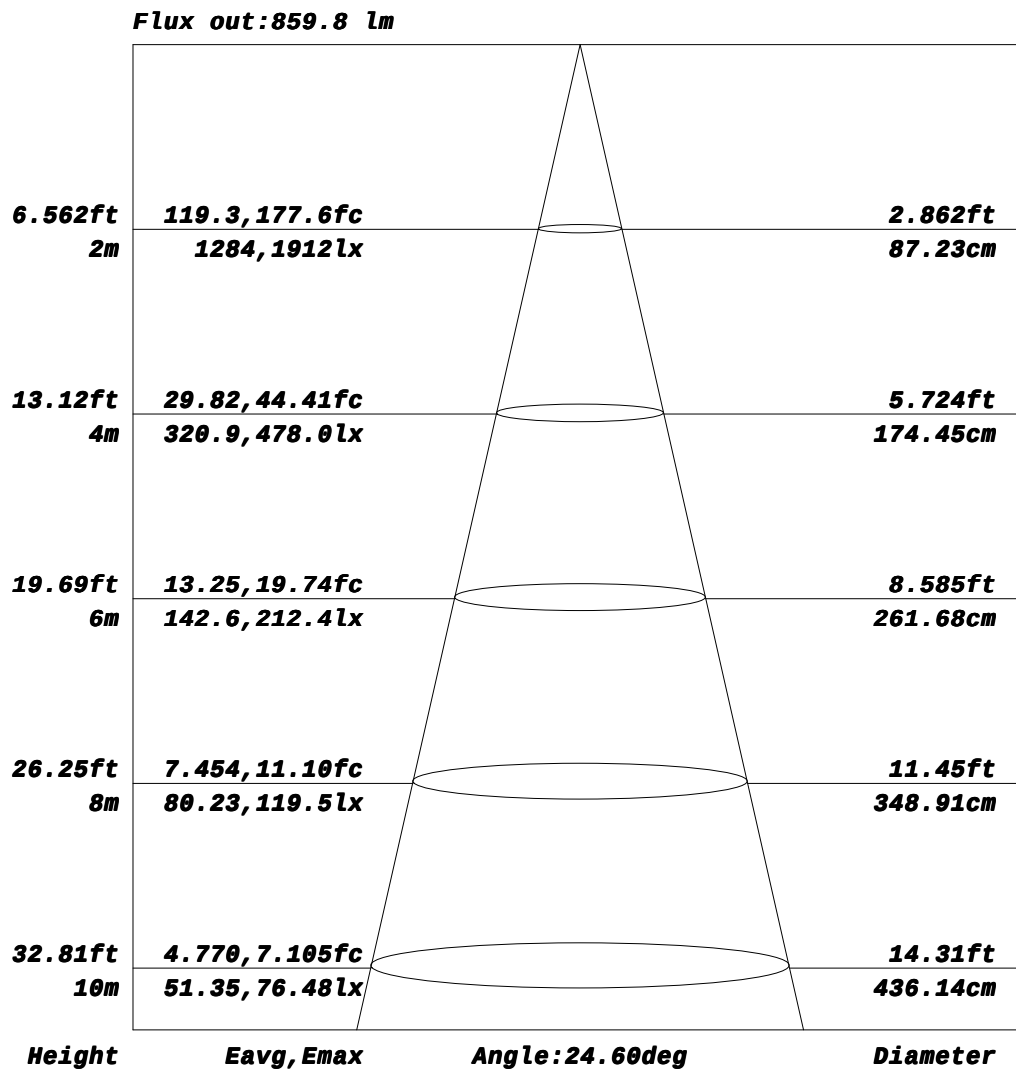


**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature:25.3DEG**  
**Operators:DAMIN**  
**Test Date:2016-11-19**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System:EVERFINE G0-2000B\_V1 SYSTEM V2.0.267**  
**Humidity:65.0%**  
**Test Distance:8.000m [K=0.7063]**  
**Remarks:**

**AAI Figure**

|                                                                   |           |  |
|-------------------------------------------------------------------|-----------|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |           |  |
| NAME: PS-TL-20W-4000K                                             | TYPE: LED |  |
| MFR.:                                                             |           |  |
|                                                                   |           |  |



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

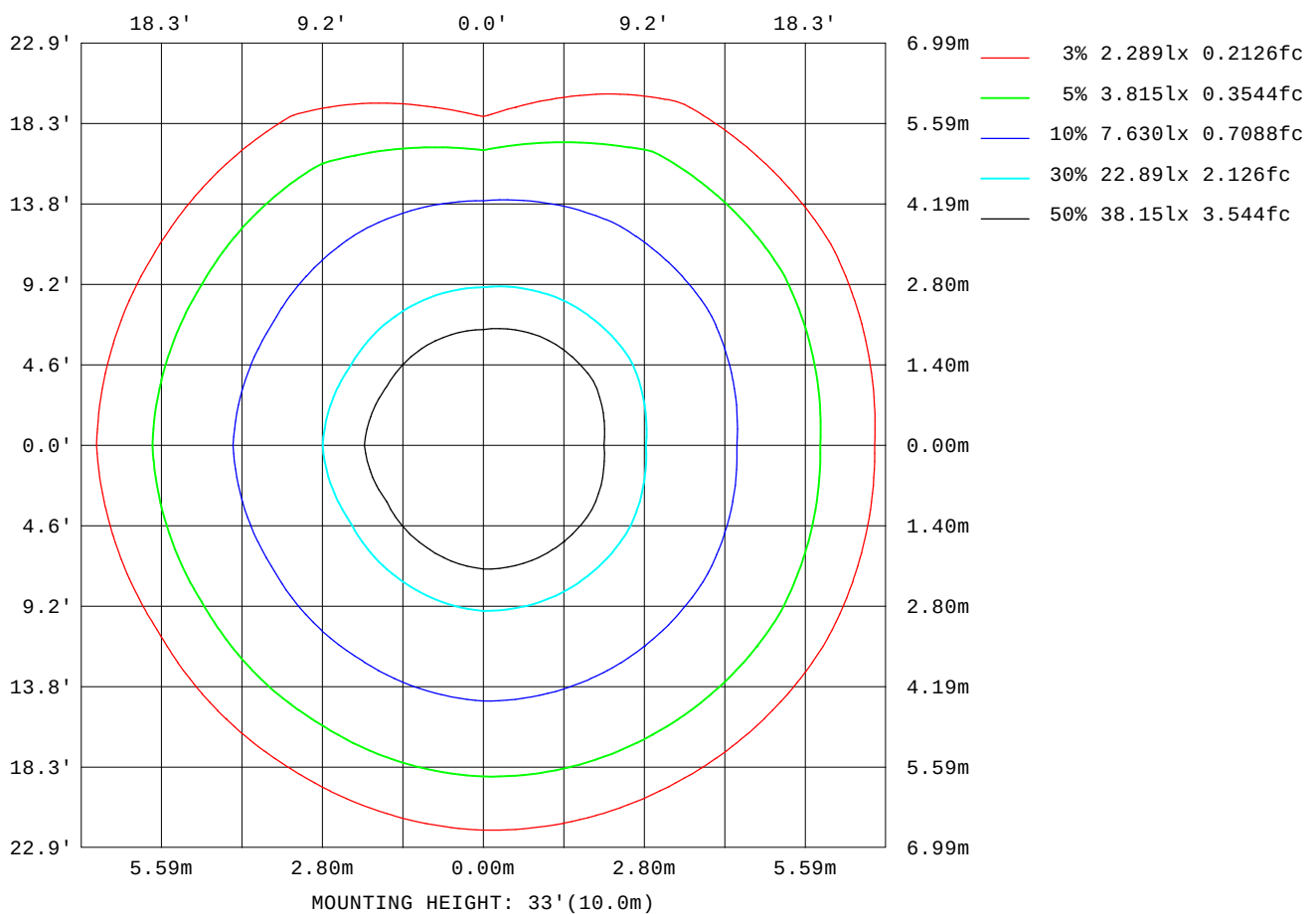
**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2016-11-19**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**



### ISOLUX DIAGRAM

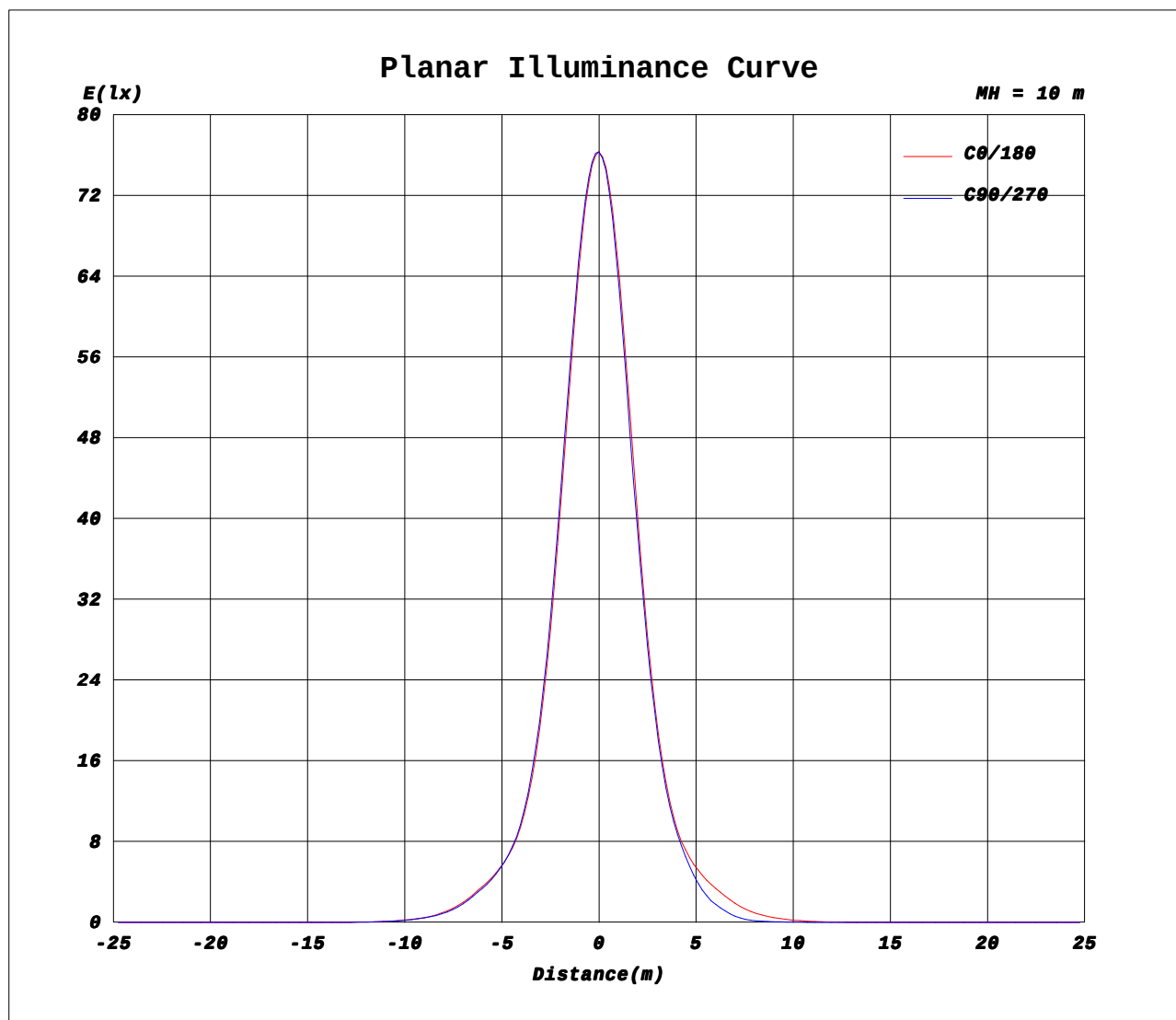
|                                                                   |           |  |
|-------------------------------------------------------------------|-----------|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |           |  |
| NAME: PS-TL-20W-4000K                                             | TYPE: LED |  |
| MFR.:                                                             |           |  |
|                                                                   |           |  |



**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2016-11-19**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2016-11-19

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.267  
Humidity: 65.0%  
Test Distance: 8.000m [K=0.7063]  
Remarks:

**LUMINOUS DISTRIBUTION INTENSITY DATA**

|                                                                   |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|--|--|--|--|--|--|--|--|-----------|--|--|--|--|--|--|--|--|
| Test:U:221.7V I:0.0960A P:20.50W PF:0.9620 Lamp Flux:2120.35x1 lm |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |
| NAME: PS-TL-20W-4000K                                             |  |  |  |  |  |  |  |  | TYPE: LED |  |  |  |  |  |  |  |  |
| MFR.:                                                             |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |
|                                                                   |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |

Table--1

UNIT: cd

| γ (DEG) | C (DEG) |      |      |      |      |      |      |      |      |      |      |      |  |  |  |  |  |  |
|---------|---------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|--|--|--|
|         | 0       | 30   | 60   | 90   | 120  | 150  | 180  | 210  | 240  | 270  | 300  | 330  |  |  |  |  |  |  |
| 0       | 7630    | 7636 | 7648 | 7632 | 7611 | 7588 | 7630 | 7636 | 7648 | 7632 | 7611 | 7588 |  |  |  |  |  |  |
| 5       | 6874    | 7044 | 7023 | 6962 | 6723 | 6571 | 6811 | 6607 | 6681 | 6704 | 6956 | 7059 |  |  |  |  |  |  |
| 10      | 4881    | 5153 | 5106 | 5042 | 4698 | 4487 | 4807 | 4501 | 4592 | 4600 | 4994 | 5159 |  |  |  |  |  |  |
| 15      | 2827    | 3025 | 2997 | 2936 | 2680 | 2516 | 2771 | 2557 | 2616 | 2658 | 2932 | 3095 |  |  |  |  |  |  |
| 20      | 1497    | 1593 | 1590 | 1547 | 1412 | 1320 | 1444 | 1342 | 1381 | 1389 | 1563 | 1659 |  |  |  |  |  |  |
| 25      | 893     | 940  | 917  | 900  | 831  | 810  | 864  | 814  | 828  | 751  | 935  | 970  |  |  |  |  |  |  |
| 30      | 610     | 628  | 602  | 582  | 544  | 538  | 581  | 549  | 552  | 330  | 621  | 653  |  |  |  |  |  |  |
| 35      | 364     | 379  | 354  | 335  | 305  | 296  | 346  | 325  | 326  | 116  | 383  | 410  |  |  |  |  |  |  |
| 40      | 168     | 176  | 163  | 155  | 138  | 133  | 163  | 151  | 150  | 30.3 | 183  | 199  |  |  |  |  |  |  |
| 45      | 68.0    | 71.5 | 65.7 | 62.0 | 53.4 | 50.0 | 64.1 | 58.5 | 58.4 | 11.6 | 75.8 | 83.6 |  |  |  |  |  |  |
| 50      | 19.3    | 20.2 | 18.8 | 17.0 | 13.2 | 11.3 | 17.3 | 13.8 | 14.1 | 5.57 | 22.4 | 25.6 |  |  |  |  |  |  |
| 55      | 6.95    | 7.05 | 6.50 | 6.09 | 5.63 | 5.16 | 5.65 | 5.08 | 4.38 | 3.81 | 7.08 | 8.25 |  |  |  |  |  |  |
| 60      | 4.86    | 4.69 | 4.31 | 4.13 | 3.86 | 3.62 | 4.40 | 4.17 | 3.58 | 2.35 | 5.48 | 6.03 |  |  |  |  |  |  |
| 65      | 3.48    | 3.05 | 2.64 | 2.49 | 2.34 | 2.28 | 3.48 | 3.61 | 3.35 | 2.03 | 4.74 | 4.95 |  |  |  |  |  |  |
| 70      | 2.49    | 1.92 | 1.58 | 1.48 | 1.41 | 1.42 | 3.16 | 3.44 | 3.61 | 2.38 | 4.65 | 4.68 |  |  |  |  |  |  |
| 75      | 1.89    | 1.31 | 1.07 | 1.00 | 0.96 | 0.97 | 3.41 | 3.75 | 4.21 | 2.96 | 4.65 | 4.85 |  |  |  |  |  |  |
| 80      | 1.49    | 1.02 | 0.86 | 0.80 | 0.76 | 0.74 | 3.94 | 4.20 | 4.59 | 3.67 | 5.17 | 5.29 |  |  |  |  |  |  |
| 85      | 0.86    | 0.69 | 0.63 | 0.58 | 0.60 | 0.59 | 4.26 | 4.35 | 4.40 | 4.11 | 4.63 | 4.95 |  |  |  |  |  |  |
| 90      | 0.64    | 0.64 | 0.63 | 0.64 | 0.69 | 0.73 | 4.56 | 4.57 | 4.55 | 4.51 | 4.47 | 4.44 |  |  |  |  |  |  |
| 95      | 0.92    | 0.89 | 0.87 | 0.88 | 0.97 | 1.05 | 4.82 | 4.81 | 4.79 | 4.75 | 4.73 | 4.69 |  |  |  |  |  |  |
| 100     | 1.37    | 1.30 | 1.27 | 1.28 | 1.42 | 1.54 | 5.05 | 5.03 | 5.01 | 4.97 | 4.93 | 4.91 |  |  |  |  |  |  |
| 105     | 2.07    | 1.95 | 1.92 | 1.92 | 2.14 | 2.30 | 5.41 | 5.42 | 5.37 | 5.33 | 5.25 | 5.22 |  |  |  |  |  |  |
| 110     | 3.12    | 2.96 | 2.91 | 2.93 | 3.22 | 3.44 | 6.13 | 6.19 | 6.11 | 6.05 | 5.92 | 5.85 |  |  |  |  |  |  |
| 115     | 4.59    | 4.41 | 4.34 | 4.40 | 4.72 | 5.04 | 7.34 | 7.44 | 7.34 | 7.25 | 7.05 | 6.97 |  |  |  |  |  |  |
| 120     | 6.61    | 6.35 | 6.28 | 6.35 | 6.79 | 7.12 | 8.87 | 8.98 | 8.87 | 8.75 | 8.54 | 8.43 |  |  |  |  |  |  |
| 125     | 9.09    | 8.78 | 8.71 | 8.76 | 9.28 | 9.66 | 10.5 | 10.6 | 10.5 | 10.3 | 10.1 | 10.0 |  |  |  |  |  |  |
| 130     | 11.9    | 11.6 | 11.5 | 11.6 | 12.1 | 12.5 | 12.2 | 12.3 | 12.2 | 12.1 | 11.8 | 11.6 |  |  |  |  |  |  |
| 135     | 14.8    | 14.5 | 14.4 | 14.5 | 15.0 | 15.5 | 14.3 | 14.5 | 14.3 | 14.2 | 13.8 | 13.6 |  |  |  |  |  |  |
| 140     | 17.6    | 17.4 | 17.3 | 17.4 | 17.9 | 18.3 | 17.0 | 17.3 | 17.2 | 16.9 | 16.6 | 16.2 |  |  |  |  |  |  |
| 145     | 20.2    | 20.2 | 20.2 | 20.1 | 20.8 | 21.1 | 19.9 | 20.5 | 20.4 | 19.9 | 19.7 | 19.3 |  |  |  |  |  |  |
| 150     | 22.7    | 23.0 | 23.1 | 22.8 | 23.5 | 23.8 | 22.8 | 23.6 | 23.5 | 22.8 | 22.8 | 22.3 |  |  |  |  |  |  |
| 155     | 25.3    | 25.8 | 26.0 | 25.5 | 26.1 | 26.4 | 25.5 | 26.2 | 26.0 | 25.3 | 25.5 | 25.0 |  |  |  |  |  |  |
| 160     | 27.9    | 28.3 | 28.5 | 28.2 | 28.3 | 28.5 | 27.8 | 28.1 | 27.9 | 27.4 | 27.4 | 27.0 |  |  |  |  |  |  |
| 165     | 30.0    | 30.3 | 30.2 | 30.2 | 29.8 | 29.8 | 29.5 | 29.1 | 28.8 | 28.7 | 28.4 | 28.3 |  |  |  |  |  |  |
| 170     | 31.0    | 30.8 | 30.7 | 30.9 | 29.9 | 29.6 | 30.0 | 29.0 | 28.5 | 28.6 | 28.2 | 28.3 |  |  |  |  |  |  |
| 175     | 30.9    | 30.3 | 30.1 | 30.1 | 29.0 | 28.7 | 29.9 | 28.7 | 28.1 | 28.0 | 27.5 | 27.7 |  |  |  |  |  |  |
| 180     | 30.7    | 29.8 | 29.3 | 29.1 | 28.3 | 28.4 | 30.7 | 29.8 | 29.3 | 29.1 | 28.3 | 28.4 |  |  |  |  |  |  |

**C Range: 0 - 360DEG**  
**C Interval: 30.0DEG**  
**Test Speed: HIGH**  
**Temperature: 25.3DEG**  
**Operators: DAMIN**  
**Test Date: 2016-11-19**

**γ Range: 0 - 180DEG**  
**γ Interval: 1.0DEG**  
**Test System: EVERFINE G0-2000B\_V1 SYSTEM V2.0.267**  
**Humidity: 65.0%**  
**Test Distance: 8.000m [K=0.7063]**  
**Remarks:**