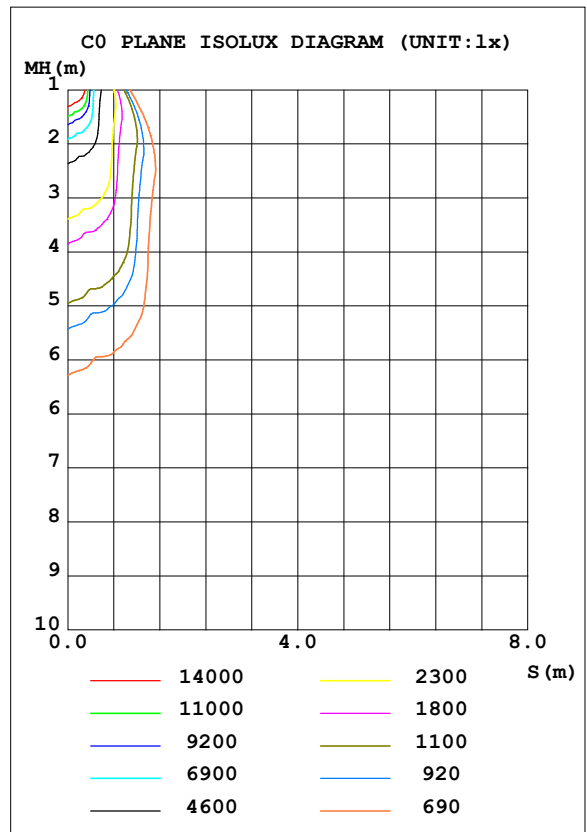
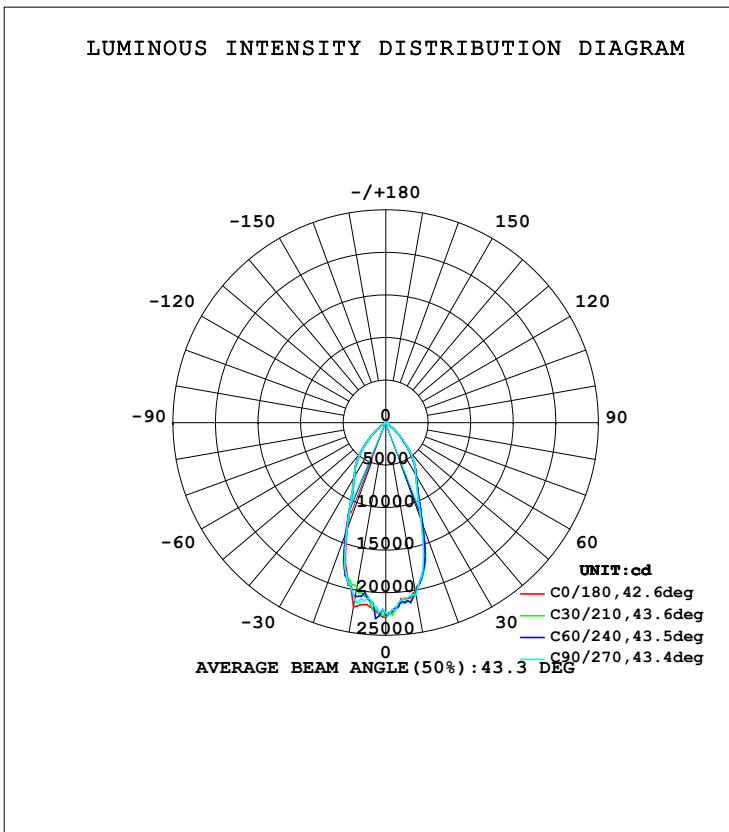


LUMINAIRE PHOTOMETRIC TEST REPORT

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |

| DATA OF LAMP      |         | PHOTOMETRIC DATA Eff: 116.17 lm/W |        |                     |           |
|-------------------|---------|-----------------------------------|--------|---------------------|-----------|
| MODEL             |         | I <sub>max</sub> (cd)             | 23061  | S/MH (C0/180)       | 0.71      |
| NOMINAL POWER (W) |         | LOR (%)                           | 100.0  | S/MH (C90/270)      | 0.73      |
| RATED VOLTAGE (V) |         | TOTAL FLUX (lm)                   | 17774  | η UP, DN (C0-180)   | 0.2, 48.9 |
| NOMINAL FLUX (lm) | 17773.8 | CIE CLASS                         | DIRECT | η UP, DN (C180-360) | 0.1, 50.7 |
| LAMPS INSIDE      | 1       | η up (%)                          | 0.4    | CIBSE SHR NOM       | 0.50      |
| TEST VOLTAGE (V)  |         | η down (%)                        | 99.6   | CIBSE SHR MAX       | 0.70      |



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: yu  
 Test Date: 2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity: 65.0%  
 Test Distance: 8.000m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

| $\gamma$ | C0                       | C45   | C90   | C135  | C180  | C225  | C270  | C315  | $\gamma$ | $\Phi$ zone | $\Phi$ total | %lum, lamp |
|----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|----------|-------------|--------------|------------|
| 10       | 2012                     | 1991  | 2056  | 2082  | 2196  | 2013  | 2119  | 2091  | 0- 10    | 2013        | 2013         | 11.3,11.3  |
| 20       | 1221                     | 1294  | 1215  | 1211  | 1322  | 1358  | 1351  | 1226  | 10- 20   | 4767        | 6780         | 38.1,38.1  |
| 30       | 709.4                    | 720.5 | 703.7 | 707.3 | 736.3 | 741.5 | 750.3 | 721.0 | 20- 30   | 4270        | 11050        | 62.2,62.2  |
| 40       | 438.9                    | 419.2 | 439.5 | 444.2 | 460.2 | 465.9 | 468.4 | 460.8 | 30- 40   | 3700        | 14750        | 83,83      |
| 50       | 144.1                    | 128.6 | 143.6 | 156.6 | 159.4 | 166.5 | 165.1 | 165.8 | 40- 50   | 2240        | 16990        | 95.6,95.6  |
| 60       | 15.66                    | 16.20 | 16.17 | 15.65 | 11.32 | 12.09 | 12.31 | 10.96 | 50- 60   | 464.9       | 17455        | 98.2,98.2  |
| 70       | 11.58                    | 11.79 | 11.76 | 11.54 | 6.361 | 6.573 | 6.653 | 6.156 | 60- 70   | 110.9       | 17566        | 98.8,98.8  |
| 80       | 8.783                    | 8.859 | 8.812 | 8.735 | 3.759 | 3.613 | 3.908 | 3.724 | 70- 80   | 79.50       | 17645        | 99.3,99.3  |
| 90       | 7.595                    | 7.515 | 7.480 | 7.534 | 3.497 | 3.271 | 3.545 | 3.510 | 80- 90   | 62.58       | 17708        | 99.6,99.6  |
| 100      | 7.694                    | 7.668 | 7.649 | 7.654 | 4.846 | 4.549 | 4.759 | 4.691 | 90-100   | 62.84       | 17771        | 100,100    |
| 110      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 100-110  | 3.325       | 17774        | 100,100    |
| 120      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 110-120  | 0           | 17774        | 100,100    |
| 130      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 120-130  | 0           | 17774        | 100,100    |
| 140      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 130-140  | 0           | 17774        | 100,100    |
| 150      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 140-150  | 0           | 17774        | 100,100    |
| 160      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 150-160  | 0           | 17774        | 100,100    |
| 170      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 160-170  | 0           | 17774        | 100,100    |
| 180      | 0                        | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 170-180  | 0           | 17774        | 100,100    |
| DEG      | LUMINOUS INTENSITY:×10cd |       |       |       |       |       |       |       |          | UNIT:lm     |              |            |

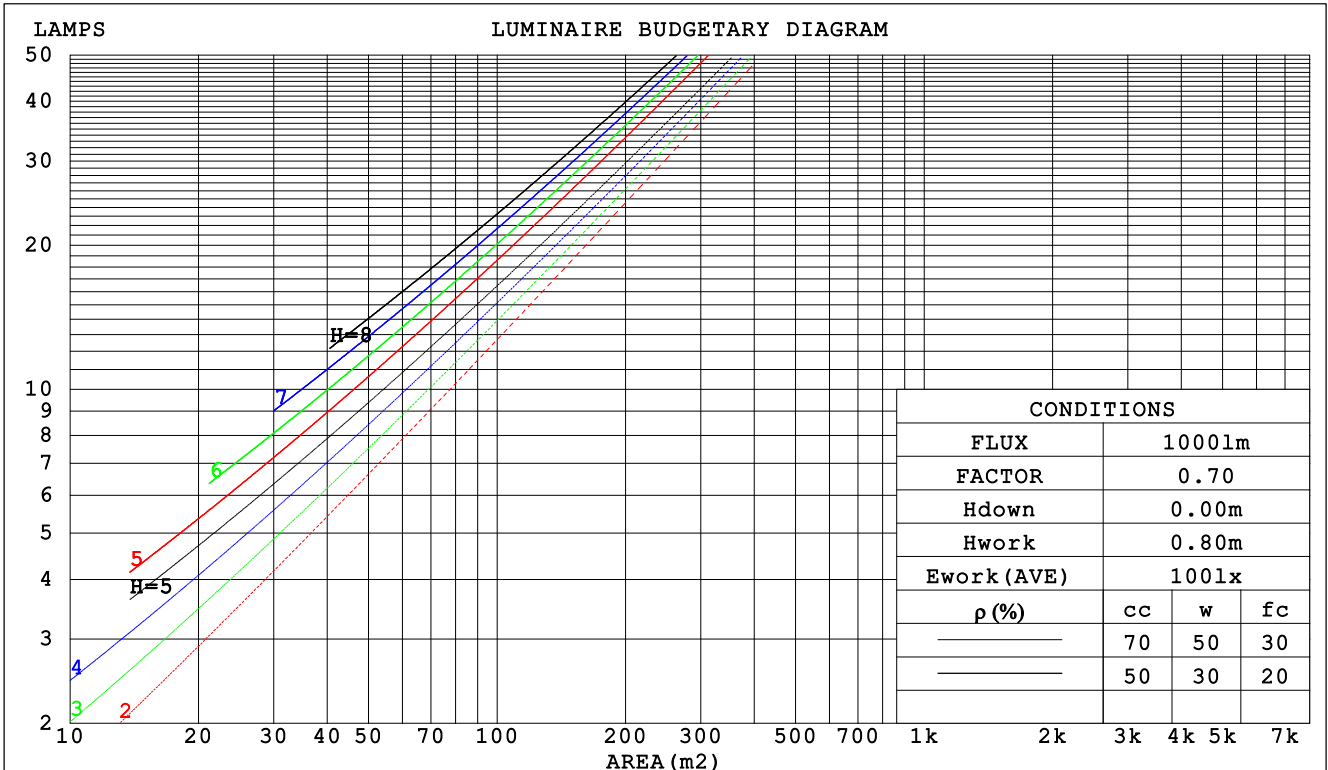
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 $\gamma$  Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |

| ρcc  | 80%                   |      |      | 70%  |      |      | 50%                             |      |      | 30%  |      |      | 10%  |      |      | 0   |
|------|-----------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|------|------|-----|
| ρw   | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                             | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0   |
| ρfc  | 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  | 1.10                  | 1.07 | 1.05 | 1.08 | 1.05 | 1.03 | 1.04                            | 1.02 | .00  | .00  | .98  | .97  | .96  | .95  | .94  | .92 |
| 2.0  | 1.02                  | .97  | .94  | .00  | .96  | .93  | .97                             | .93  | .91  | .94  | .91  | .89  | .91  | .89  | .87  | .85 |
| 3.0  | .94                   | .89  | .85  | .93  | .88  | .84  | .90                             | .86  | .83  | .88  | .84  | .81  | .85  | .82  | .80  | .78 |
| 4.0  | .88                   | .82  | .77  | .86  | .81  | .77  | .84                             | .80  | .76  | .82  | .78  | .75  | .80  | .77  | .74  | .72 |
| 5.0  | .82                   | .75  | .71  | .81  | .75  | .71  | .79                             | .74  | .70  | .77  | .73  | .69  | .75  | .72  | .69  | .67 |
| 6.0  | .76                   | .70  | .65  | .75  | .70  | .65  | .74                             | .69  | .65  | .72  | .68  | .64  | .71  | .67  | .64  | .62 |
| 7.0  | .71                   | .65  | .61  | .71  | .65  | .61  | .69                             | .64  | .60  | .68  | .63  | .60  | .67  | .63  | .60  | .58 |
| 8.0  | .67                   | .61  | .57  | .67  | .61  | .56  | .65                             | .60  | .56  | .64  | .59  | .56  | .63  | .59  | .56  | .54 |
| 9.0  | .63                   | .57  | .53  | .63  | .57  | .53  | .62                             | .56  | .53  | .61  | .56  | .52  | .60  | .56  | .52  | .51 |
| 10.0 | .60                   | .54  | .50  | .59  | .54  | .50  | .58                             | .53  | .50  | .58  | .53  | .49  | .57  | .52  | .49  | .48 |



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

WEC AND CCEC

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |

| ρcc  | 80%                   |      |      | 70%  |      |      | 50%                              |      |      | 30%  |      |      | 10%  |      |      | 0 |
|------|-----------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|------|------|---|
| ρw   | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                              | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0 |
| ρfc  | 20%                   |      |      | 20%  |      |      | 20%                              |      |      | 20%  |      |      | 20%  |      |      | 0 |
| RCR  | RCR:Room Cavity Ratio |      |      |      |      |      | Wall Exitance Coefficients (WEC) |      |      |      |      |      |      |      |      |   |
| 0.0  |                       |      |      |      |      |      |                                  |      |      |      |      |      |      |      |      |   |
| 1.0  | .191                  | .109 | .034 | .184 | .105 | .033 | .171                             | .098 | .031 | .160 | .092 | .030 | .149 | .086 | .028 |   |
| 2.0  | .183                  | .100 | .031 | .177 | .097 | .030 | .166                             | .092 | .029 | .156 | .088 | .027 | .147 | .083 | .026 |   |
| 3.0  | .174                  | .093 | .028 | .169 | .090 | .027 | .159                             | .086 | .026 | .151 | .083 | .025 | .143 | .079 | .024 |   |
| 4.0  | .165                  | .086 | .025 | .161 | .084 | .025 | .153                             | .081 | .024 | .145 | .078 | .024 | .138 | .075 | .023 |   |
| 5.0  | .157                  | .080 | .023 | .153 | .079 | .023 | .146                             | .076 | .022 | .140 | .074 | .022 | .133 | .071 | .021 |   |
| 6.0  | .149                  | .075 | .021 | .146 | .074 | .021 | .140                             | .072 | .021 | .134 | .070 | .020 | .128 | .068 | .020 |   |
| 7.0  | .142                  | .070 | .020 | .139 | .069 | .020 | .134                             | .068 | .019 | .129 | .066 | .019 | .124 | .064 | .019 |   |
| 8.0  | .136                  | .066 | .019 | .133 | .066 | .019 | .128                             | .064 | .018 | .124 | .063 | .018 | .119 | .061 | .018 |   |
| 9.0  | .130                  | .063 | .018 | .127 | .062 | .017 | .123                             | .061 | .017 | .119 | .059 | .017 | .115 | .058 | .017 |   |
| 10.0 | .124                  | .059 | .017 | .122 | .059 | .016 | .118                             | .058 | .016 | .114 | .057 | .016 | .110 | .056 | .016 |   |

| ρcc  | 80%                   |      |      | 70%  |      |      | 50%   |      |      | 30%  |      |      | 10%  |      |      | 0 |
|------|-----------------------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|---|
| ρw   | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0 |
| ρfc  | 20%                   |      |      | 20%  |      |      | 20%   |      |      | 20%  |      |      | 20%  |      |      | 0 |
| RCR  | RCR:Room Cavity Ratio |      |      |      |      |      | Ceiling Cavity Exitance Coefficients (CCEC) |      |      |      |      |      |      |      |      |   |
| 0.0  | .193                  | .193 | .193 | .165 | .165 | .165 | .113  | .113 | .113 | .065 | .065 | .065 | .021 | .021 | .021 |   |
| 1.0  | .175                  | .160 | .147 | .150 | .137 | .126 | .102  | .094 | .087 | .059 | .055 | .051 | .019 | .018 | .016 |   |
| 2.0  | .161                  | .135 | .114 | .138 | .116 | .099 | .094  | .081 | .069 | .054 | .047 | .040 | .017 | .015 | .013 |   |
| 3.0  | .149                  | .117 | .091 | .128 | .101 | .079 | .088  | .070 | .055 | .051 | .041 | .033 | .016 | .013 | .011 |   |
| 4.0  | .139                  | .102 | .074 | .119 | .088 | .064 | .082  | .061 | .045 | .047 | .036 | .027 | .015 | .012 | .009 |   |
| 5.0  | .131                  | .091 | .061 | .112 | .078 | .053 | .077  | .055 | .037 | .045 | .032 | .022 | .014 | .010 | .007 |   |
| 6.0  | .123                  | .081 | .051 | .106 | .071 | .045 | .073  | .049 | .032 | .042 | .029 | .019 | .014 | .009 | .006 |   |
| 7.0  | .117                  | .074 | .044 | .101 | .064 | .038 | .070  | .045 | .027 | .040 | .026 | .016 | .013 | .009 | .005 |   |
| 8.0  | .111                  | .068 | .038 | .096 | .059 | .033 | .066  | .041 | .023 | .039 | .024 | .014 | .012 | .008 | .005 |   |
| 9.0  | .106                  | .063 | .033 | .091 | .054 | .029 | .063  | .038 | .021 | .037 | .023 | .012 | .012 | .007 | .004 |   |
| 10.0 | .102                  | .058 | .030 | .088 | .051 | .026 | .061  | .036 | .018 | .035 | .021 | .011 | .011 | .007 | .004 |   |

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

## UGR(Unified Glare Rating) Table

| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |                  |      |      |      |       |                |      |                   |      |      |
|---|------------------|------|------|------|-------|----------------|------|-------------------|------|------|
| NAME: HL-150W-50°   |                  |      |      |      | TYPE: |                |      | WEIGHT:           |      |      |
| SPEC.:  |                  |      |      |      | DIM.: |                |      | SERIAL No.:       |      |      |
| MFR.:   |                  |      |      |      | SUR.: |                |      | PROTECTION 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   | 23.1             | 24.1 | 23.3 | 24.3 | 24.5  | 23.1           | 24.1 | 23.3              | 24.3 | 24.5 |
| 3H  | 23.0             | 23.9 | 23.3 | 24.1 | 24.3  | 23.0           | 23.9 | 23.3              | 24.1 | 24.4 |
| 4H  | 23.0             | 23.8 | 23.2 | 24.1 | 24.3  | 23.0           | 23.8 | 23.3              | 24.1 | 24.3 |
| 6H  | 23.0             | 23.8 | 23.3 | 24.0 | 24.3  | 23.0           | 23.8 | 23.3              | 24.0 | 24.3 |
| 8H  | 23.0             | 23.8 | 23.3 | 24.0 | 24.3  | 23.0           | 23.8 | 23.3              | 24.0 | 24.3 |
| 12H   | 23.0             | 23.8 | 23.4 | 24.1 | 24.3  | 23.0           | 23.8 | 23.4              | 24.1 | 24.4 |
| 4H 2H   | 22.9             | 23.8 | 23.2 | 24.0 | 24.2  | 22.9           | 23.8 | 23.2              | 24.0 | 24.2 |
| 3H  | 22.8             | 23.5 | 23.1 | 23.8 | 24.1  | 22.8           | 23.5 | 23.1              | 23.8 | 24.1 |
| 4H  | 22.8             | 23.5 | 23.1 | 23.8 | 24.1  | 22.8           | 23.5 | 23.1              | 23.8 | 24.1 |
| 6H  | 22.8             | 23.4 | 23.2 | 23.8 | 24.1  | 22.8           | 23.5 | 23.2              | 23.8 | 24.1 |
| 8H  | 22.9             | 23.5 | 23.3 | 23.8 | 24.2  | 22.9           | 23.5 | 23.3              | 23.8 | 24.2 |
| 12H   | 23.0             | 23.5 | 23.4 | 23.9 | 24.3  | 23.0           | 23.5 | 23.5              | 23.9 | 24.3 |
| 8H 4H   | 22.7             | 23.3 | 23.1 | 23.6 | 24.0  | 22.7           | 23.3 | 23.1              | 23.6 | 24.0 |
| 6H  | 22.8             | 23.3 | 23.3 | 23.7 | 24.1  | 22.8           | 23.3 | 23.3              | 23.7 | 24.1 |
| 8H  | 23.0             | 23.4 | 23.4 | 23.8 | 24.2  | 23.0           | 23.4 | 23.4              | 23.8 | 24.2 |
| 12H   | 23.2             | 23.5 | 23.7 | 24.0 | 24.5  | 23.2           | 23.5 | 23.7              | 24.0 | 24.5 |
| 12H 4H  | 22.7             | 23.2 | 23.1 | 23.6 | 24.0  | 22.7           | 23.2 | 23.1              | 23.6 | 24.0 |
| 6H  | 22.8             | 23.2 | 23.3 | 23.6 | 24.1  | 22.8           | 23.2 | 23.3              | 23.7 | 24.1 |
| 8H  | 23.0             | 23.3 | 23.5 | 23.8 | 24.3  | 23.0           | 23.3 | 23.5              | 23.8 | 24.3 |
| Variations with the observer position at spacings:                |                  |      |      |      |       |                |      |                   |      |      |
| S = 1.0H  | + 2.2 / - 5.3    |      |      |      |       | + 2.2 / - 5.2  |      |                   |      |      |
| 1.5H  | + 3.0 / - 6.4    |      |      |      |       | + 2.9 / - 6.4  |      |                   |      |      |
| 2.0H  | + 5.5 / - 3.9    |      |      |      |       | + 5.4 / - 3.9  |      |                   |      |      |

CIE Pub.117 Corrected 17774 lm Total Lamp Luminous Flux. (8log(F/F0) = 10.0)

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:yu  
Test Date:2016-10-10

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
Humidity:65.0%  
Test Distance:8.000m [K=1.0000]  
Remarks:

## UTILIZATION FACTORS TABLE

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION 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                         | 81   | 73  | 69        | 80  | 73  | 69  | 79            | 73  | 69  | 64     |
| 0.80                             | 89   | 82  | 78        | 88  | 82  | 78  | 87            | 81  | 77  | 73     |
| 1.00                             | 95   | 88  | 84        | 94  | 88  | 84  | 92            | 88  | 83  | 79     |
| 1.25                             | 100  | 94  | 90        | 99  | 93  | 89  | 97            | 92  | 88  | 84     |
| 1.50                             | 103  | 97  | 93        | 102 | 97  | 93  | 99            | 95  | 92  | 87     |
| 2.00                             | 106  | 102 | 98        | 105 | 101 | 97  | 102           | 99  | 96  | 90     |
| 2.50                             | 108  | 104 | 101       | 107 | 103 | 100 | 103           | 100 | 98  | 91     |
| 3.00                             | 110  | 106 | 103       | 108 | 105 | 102 | 105           | 102 | 100 | 93     |
| 4.00                             | 112  | 109 | 107       | 110 | 107 | 105 | 107           | 104 | 102 | 95     |
| 5.00                             | 114  | 111 | 109       | 112 | 109 | 107 | 107           | 106 | 104 | 96     |
| ROOM INDEX                       | UF(total)  |     |           |     |     |     |               |     |     | Direct |
| According to DIN EN 13032-2 2004 |  |     | Suspended |     |     |     | SHRNOM = 1.25 |     |     |        |

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

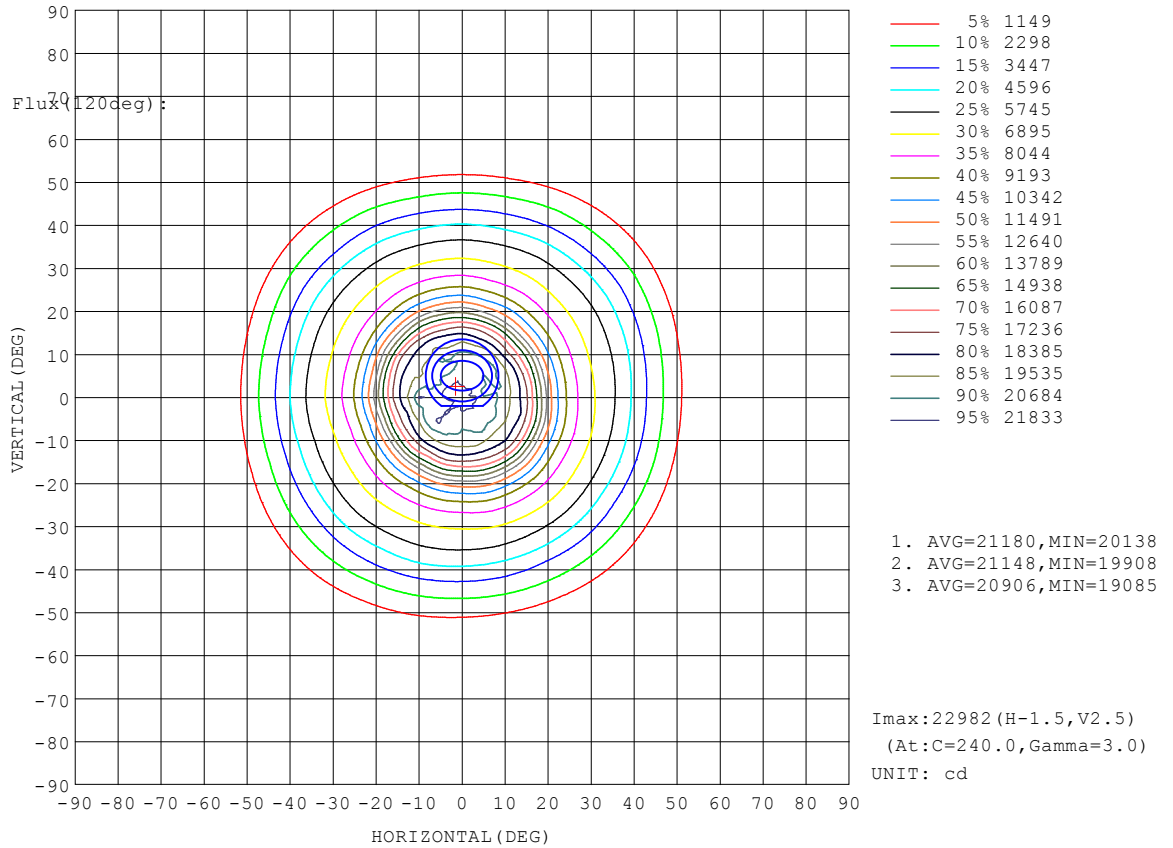
|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |

Conical surface Flux(90deg):

16106 lm  
 %lum = 90.6%  
 %lamp = 90.6%

Conical surface Flux(20deg):

17455 lm  
 %lum = 98.2%  
 %lamp = 98.2%

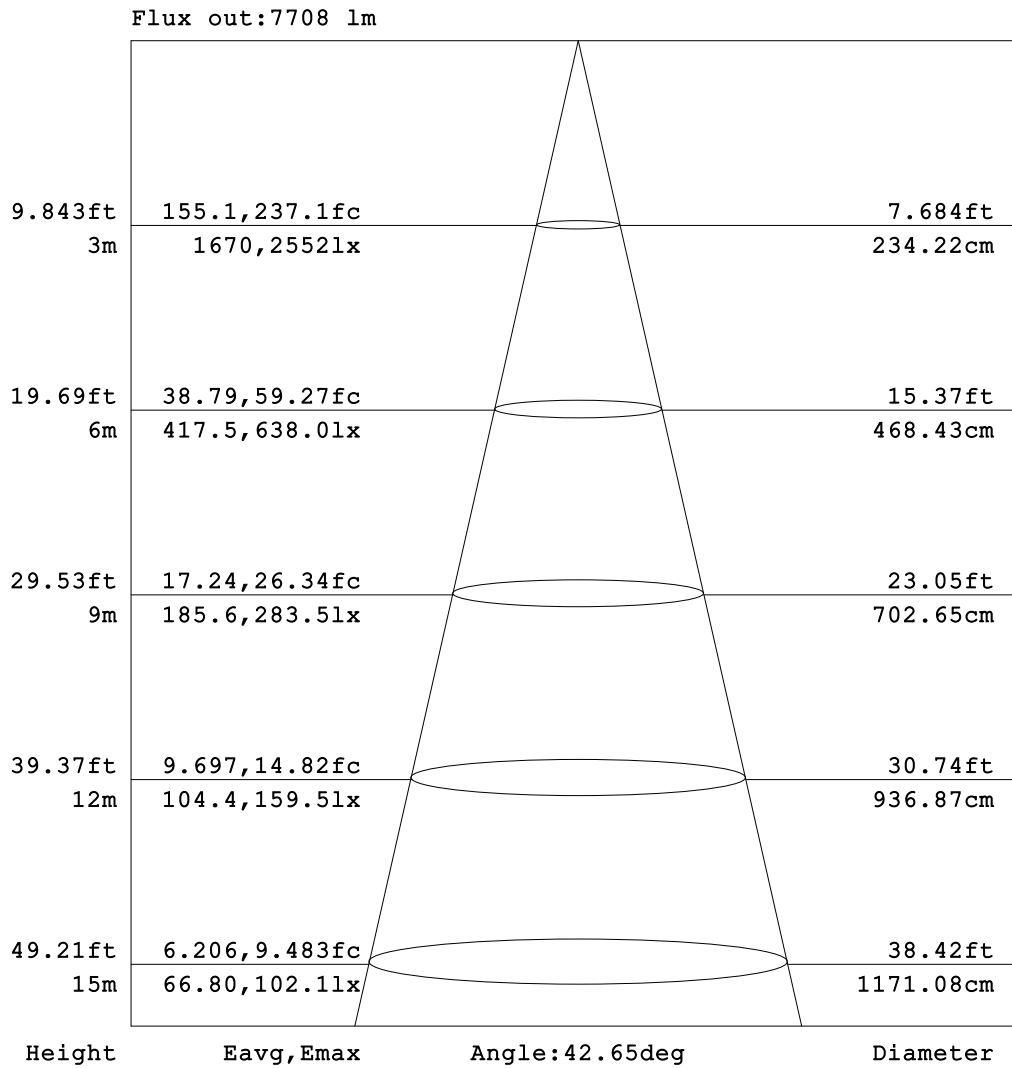


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

AAI Figure

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |



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

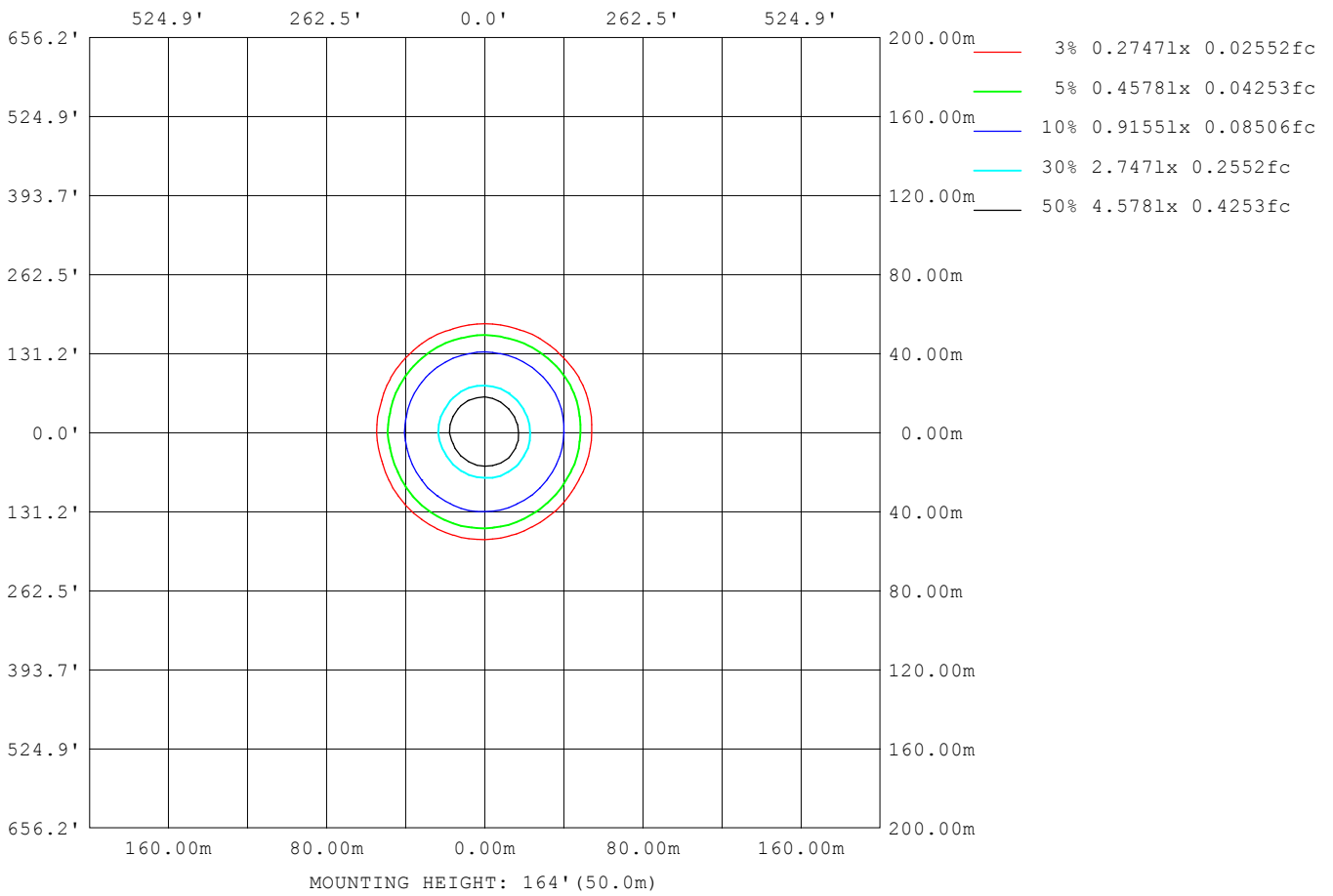
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: yu  
 Test Date: 2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity: 65.0%  
 Test Distance: 8.000m [K=1.0000]  
 Remarks:



ISOLUX DIAGRAM

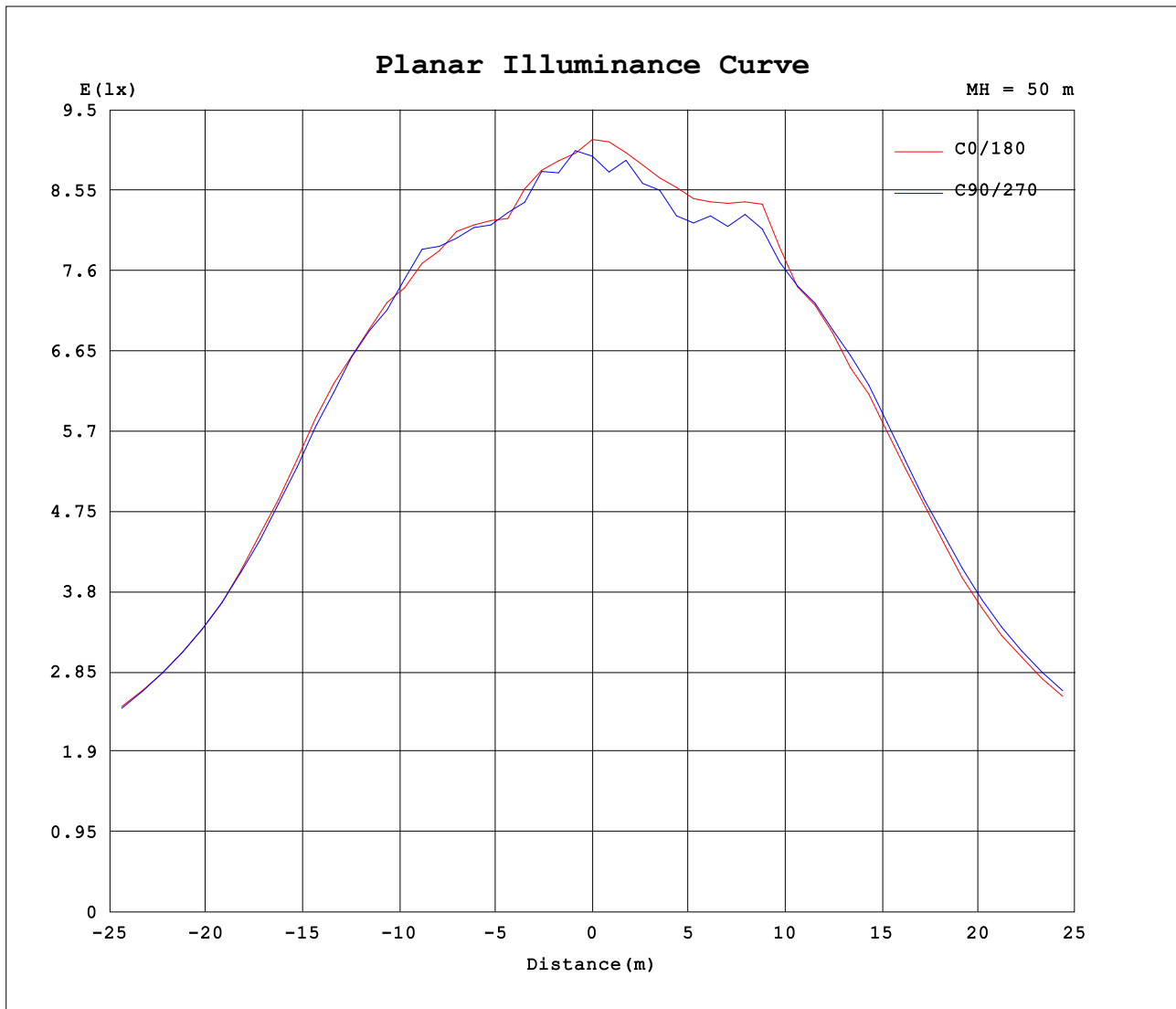
|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operator: yu  
Test Date: 2016-10-10

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
Humidity: 65.0%  
Test Distance: 8.000m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |

Table--1

UNIT: ×10cd

| C (DEG)<br>γ (DEG) | 0    | 15   | 30   | 45   | 60   | 75   | 90   | 105  | 120  | 135  | 150  | 165  | 180  | 195  | 210  | 225  | 240  | 255  | 270  |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0                  | 2289 | 2276 | 2273 | 2260 | 2259 | 2242 | 2240 | 2214 | 2217 | 2202 | 2196 | 2200 | 2289 | 2276 | 2273 | 2260 | 2259 | 2242 | 2240 |
| 5                  | 2078 | 2132 | 2129 | 2130 | 2101 | 2112 | 2096 | 2119 | 2104 | 2211 | 2115 | 2138 | 2171 | 2157 | 2127 | 2139 | 2101 | 2200 | 2087 |
| 10                 | 2012 | 1979 | 2016 | 1991 | 2037 | 2025 | 2056 | 2072 | 2047 | 2082 | 2081 | 2042 | 2196 | 2023 | 1966 | 2013 | 2079 | 2044 | 2119 |
| 15                 | 1738 | 1762 | 1765 | 1794 | 1754 | 1723 | 1709 | 1725 | 1694 | 1709 | 1724 | 1734 | 1789 | 1826 | 1824 | 1841 | 1858 | 1830 | 1829 |
| 20                 | 1221 | 1257 | 1271 | 1294 | 1266 | 1250 | 1215 | 1212 | 1193 | 1211 | 1211 | 1235 | 1322 | 1323 | 1361 | 1358 | 1395 | 1361 | 1351 |
| 25                 | 883  | 896  | 902  | 918  | 905  | 901  | 880  | 882  | 876  | 885  | 879  | 884  | 931  | 925  | 931  | 944  | 964  | 962  | 956  |
| 30                 | 709  | 717  | 716  | 721  | 714  | 713  | 704  | 705  | 702  | 707  | 701  | 708  | 736  | 734  | 739  | 741  | 753  | 753  | 750  |
| 35                 | 591  | 589  | 581  | 586  | 582  | 587  | 585  | 592  | 587  | 591  | 584  | 586  | 611  | 609  | 619  | 621  | 624  | 619  | 623  |
| 40                 | 439  | 432  | 413  | 419  | 417  | 429  | 440  | 446  | 439  | 444  | 439  | 440  | 460  | 459  | 467  | 466  | 469  | 464  | 468  |
| 45                 | 279  | 273  | 258  | 260  | 263  | 273  | 278  | 285  | 282  | 287  | 277  | 279  | 294  | 295  | 302  | 300  | 305  | 300  | 302  |
| 50                 | 144  | 136  | 128  | 129  | 129  | 137  | 144  | 157  | 151  | 157  | 149  | 146  | 159  | 159  | 166  | 166  | 169  | 163  | 165  |
| 55                 | 28.2 | 28.9 | 19.7 | 26.2 | 19.9 | 31.1 | 29.3 | 34.0 | 31.8 | 34.8 | 30.2 | 33.3 | 33.9 | 33.9 | 40.0 | 39.8 | 41.2 | 37.9 | 41.7 |
| 60                 | 15.7 | 15.9 | 15.9 | 16.2 | 16.3 | 16.4 | 16.2 | 16.0 | 15.7 | 15.7 | 15.4 | 15.6 | 11.3 | 11.4 | 11.8 | 12.1 | 12.4 | 12.4 | 12.3 |
| 65                 | 13.4 | 13.5 | 13.5 | 13.7 | 13.8 | 13.8 | 13.7 | 13.6 | 13.4 | 13.4 | 13.2 | 13.3 | 8.47 | 8.48 | 8.78 | 8.87 | 9.21 | 9.18 | 9.11 |
| 70                 | 11.6 | 11.7 | 11.7 | 11.8 | 11.8 | 11.9 | 11.8 | 11.7 | 11.6 | 11.5 | 11.4 | 11.5 | 6.36 | 6.24 | 6.79 | 6.57 | 6.73 | 6.82 | 6.65 |
| 75                 | 10.1 | 10.1 | 10.1 | 10.2 | 10.2 | 10.2 | 10.2 | 10.1 | 10.0 | 10.0 | 9.94 | 9.99 | 4.79 | 4.69 | 5.14 | 4.75 | 5.00 | 5.01 | 4.93 |
| 80                 | 8.78 | 8.81 | 8.78 | 8.86 | 8.82 | 8.87 | 8.81 | 8.82 | 8.74 | 8.74 | 8.73 | 8.77 | 3.76 | 3.70 | 4.01 | 3.61 | 3.85 | 3.79 | 3.91 |
| 85                 | 7.97 | 7.98 | 7.93 | 7.98 | 7.93 | 7.95 | 7.92 | 7.95 | 7.91 | 7.92 | 7.96 | 8.04 | 3.35 | 3.28 | 3.56 | 3.17 | 3.33 | 3.30 | 3.49 |
| 90                 | 7.60 | 7.59 | 7.50 | 7.51 | 7.49 | 7.49 | 7.48 | 7.51 | 7.50 | 7.53 | 7.62 | 7.70 | 3.50 | 3.43 | 3.68 | 3.27 | 3.50 | 3.43 | 3.55 |
| 95                 | 7.49 | 7.49 | 7.44 | 7.44 | 7.44 | 7.44 | 7.43 | 7.46 | 7.46 | 7.43 | 7.43 | 7.40 | 4.15 | 3.95 | 4.09 | 3.97 | 4.04 | 3.98 | 4.03 |
| 100                | 7.69 | 7.69 | 7.66 | 7.67 | 7.64 | 7.68 | 7.65 | 7.66 | 7.67 | 7.65 | 7.61 | 7.60 | 4.85 | 4.67 | 4.74 | 4.55 | 4.71 | 4.65 | 4.76 |
| 105                | 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 | 0.00 | 0.00 | 0.00 |
| 110                | 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 | 0.00 | 0.00 | 0.00 |
| 115                | 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 | 0.00 | 0.00 | 0.00 |
| 120                | 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 | 0.00 | 0.00 | 0.00 |
| 125                | 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 | 0.00 | 0.00 | 0.00 |
| 130                | 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 | 0.00 | 0.00 | 0.00 |
| 135                | 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 | 0.00 | 0.00 | 0.00 |
| 140                | 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 | 0.00 | 0.00 | 0.00 |
| 145                | 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 | 0.00 | 0.00 | 0.00 |
| 150                | 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 | 0.00 | 0.00 | 0.00 |
| 155                | 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 | 0.00 | 0.00 | 0.00 |
| 160                | 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 | 0.00 | 0.00 | 0.00 |
| 165                | 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 | 0.00 | 0.00 | 0.00 |
| 170                | 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 | 0.00 | 0.00 | 0.00 |
| 175                | 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 | 0.00 | 0.00 | 0.00 |
| 180                | 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 | 0.00 | 0.00 | 0.00 |

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

|   |       |                   |
|---|-------|-------------------|
| Test:U:220.2V I:0.7130A P:153.0W PF:0.9740 Lamp Flux:17773.8x1 lm |       |                   |
| NAME: HL-150W-50°   | TYPE: | WEIGHT:           |
| SPEC.:  | DIM.: | SERIAL No.:       |
| MFR.:   | SUR.: | PROTECTION ANGLE: |

Table--2

UNIT: x10cd

| C (DEG)<br>γ (DEG) | 285  | 300  | 315  | 330  | 345  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------|------|------|------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 0                  | 2214 | 2217 | 2202 | 2196 | 2200 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5                  | 2125 | 2141 | 2106 | 2098 | 2024 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10                 | 2096 | 2089 | 2091 | 2051 | 2055 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15                 | 1791 | 1771 | 1715 | 1724 | 1728 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20                 | 1301 | 1263 | 1226 | 1226 | 1216 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25                 | 932  | 922  | 900  | 891  | 886  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30                 | 738  | 736  | 721  | 716  | 707  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 35                 | 614  | 621  | 614  | 613  | 604  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40                 | 460  | 464  | 461  | 465  | 455  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 45                 | 296  | 301  | 302  | 308  | 294  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50                 | 162  | 169  | 166  | 169  | 161  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55                 | 37.3 | 42.1 | 39.3 | 43.5 | 37.3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 60                 | 11.8 | 11.5 | 11.0 | 10.9 | 10.8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 65                 | 8.86 | 8.55 | 8.22 | 8.22 | 8.06 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 70                 | 6.54 | 6.39 | 6.16 | 6.04 | 6.17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 75                 | 4.89 | 4.64 | 4.69 | 4.44 | 4.83 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 80                 | 3.80 | 3.57 | 3.72 | 3.51 | 3.80 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 85                 | 3.40 | 3.32 | 3.33 | 3.01 | 3.41 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 90                 | 3.27 | 3.40 | 3.51 | 3.32 | 3.68 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95                 | 3.82 | 3.80 | 4.01 | 3.86 | 4.10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 100                | 4.69 | 4.41 | 4.69 | 4.70 | 4.71 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 105                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 110                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 115                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 120                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 125                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 130                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 135                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 140                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 145                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 150                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 155                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 160                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 165                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 170                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 175                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 180                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:yu  
 Test Date:2016-10-10

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.287  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks: