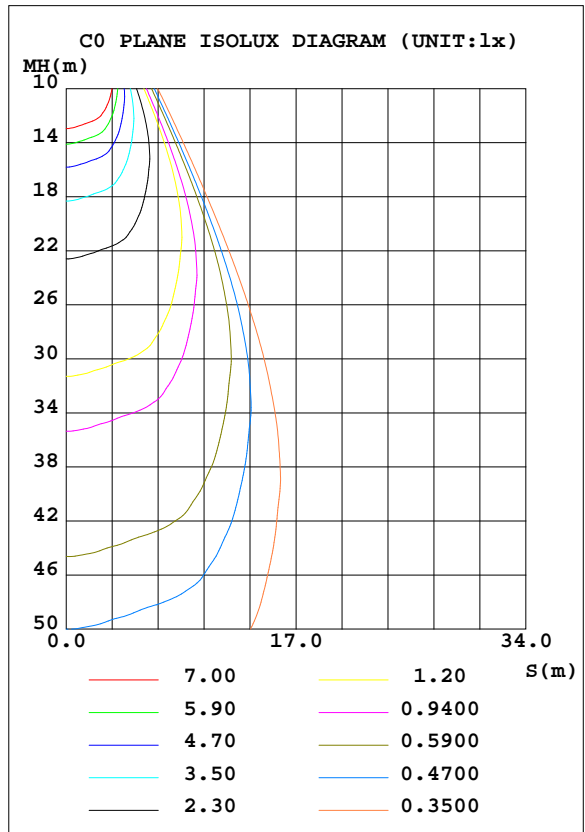
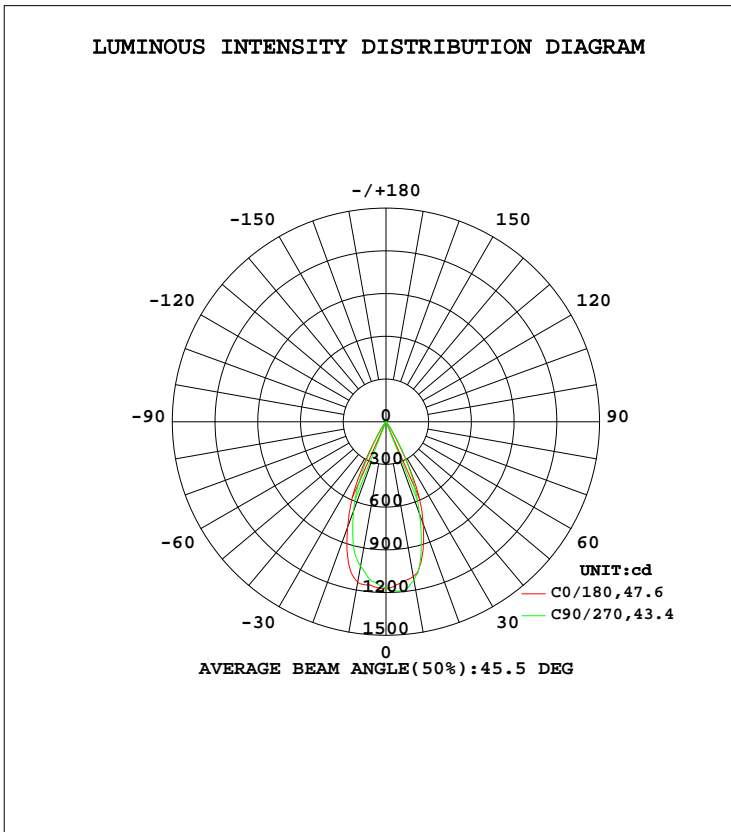


LUMINAIRE PHOTOMETRIC TEST REPORT

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |

| DATA OF LAMP     |             | PHOTOMETRIC DATA Eff: 58.05 lm/W |        |                    |          |
|------------------|-------------|----------------------------------|--------|--------------------|----------|
| MODEL            | HR-DLL5N-10 | I <sub>max</sub> (cd)            | 1198   | S/MH(C0/180)       | 0.71     |
| NOMINAL POWER(W) | 10          | LOR(%)                           | 100.0  | S/MH(C90/270)      | 0.67     |
| RATED VOLTAGE(V) | 230         | TOTAL FLUX(lm)                   | 612.90 | η UP, DN(C0-180)   | 0.1,50.7 |
| NOMINAL FLUX(lm) | 612.9       | CIE CLASS                        | DIRECT | η UP, DN(C180-360) | 0.1,49.2 |
| LAMPS INSIDE     | 1           | η up(%)                          | 0.1    | CIBSE SHR NOM      | 0.50     |
| TEST VOLTAGE(V)  | 230         | η down(%)                        | 99.9   | CIBSE SHR MAX      | 0.70     |



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

| $\gamma$ | C0                    | C45    | C90    | C135   | C180   | C225   | C270   | C315   | $\gamma$ | $\Phi$ zone | $\Phi$ total | %lum,lamp |
|----------|-----------------------|--------|--------|--------|--------|--------|--------|--------|----------|-------------|--------------|-----------|
| 10       | 1105                  | 1156   | 1128   | 1149   | 1145   | 1088   | 1030   | 1070   | 0- 10    | 109.0       | 109.0        | 17.8,17.8 |
| 20       | 763.1                 | 714.9  | 690.0  | 702.4  | 789.0  | 704.8  | 669.2  | 691.5  | 10- 20   | 261.3       | 370.3        | 60.4,60.4 |
| 30       | 176.9                 | 164.2  | 195.8  | 167.5  | 184.9  | 152.6  | 151.7  | 153.1  | 20- 30   | 196.9       | 567.2        | 92.5,92.5 |
| 40       | 10.75                 | 12.21  | 10.52  | 12.33  | 11.09  | 14.13  | 11.83  | 13.62  | 30- 40   | 35.06       | 602.3        | 98.3,98.3 |
| 50       | 4.067                 | 4.565  | 5.399  | 5.234  | 4.856  | 5.125  | 5.037  | 4.781  | 40- 50   | 5.630       | 607.9        | 99.2,99.2 |
| 60       | 2.251                 | 2.207  | 3.097  | 2.108  | 1.809  | 1.830  | 3.164  | 2.015  | 50- 60   | 3.073       | 611.0        | 99.7,99.7 |
| 70       | 0                     | 0.2208 | 0.5037 | 0.0023 | 0      | 0      | 0.0720 | 0      | 60- 70   | 1.005       | 612.0        | 99.9,99.9 |
| 80       | 0                     | 0      | 0.4317 | 0      | 0      | 0      | 0.1433 | 0      | 70- 80   | 0.0610      | 612.1        | 99.9,99.9 |
| 90       | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 80- 90   | 0.0440      | 612.1        | 99.9,99.9 |
| 100      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 90-100   | 0           | 612.1        | 99.9,99.9 |
| 110      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 100-110  | 0           | 612.1        | 99.9,99.9 |
| 120      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 110-120  | 0           | 612.1        | 99.9,99.9 |
| 130      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 120-130  | 0           | 612.1        | 99.9,99.9 |
| 140      | 0                     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 130-140  | 0           | 612.1        | 99.9,99.9 |
| 150      | 0                     | 0      | 0      | 0      | 0.3668 | 0.3687 | 0.2878 | 0.2908 | 140-150  | 0.0302      | 612.1        | 99.9,99.9 |
| 160      | 0.7244                | 0.8775 | 0.7858 | 0.7220 | 1.017  | 1.175  | 1.152  | 1.018  | 150-160  | 0.2258      | 612.4        | 99.9,99.9 |
| 170      | 1.378                 | 1.469  | 1.582  | 1.452  | 1.741  | 1.765  | 1.730  | 1.812  | 160-170  | 0.3730      | 612.7        | 100,100   |
| 180      | 2.176                 | 1.836  | 2.231  | 1.740  | 1.959  | 1.910  | 2.231  | 1.957  | 170-180  | 0.1712      | 612.9        | 100,100   |
| DEG      | LUMINOUS INTENSITY:cd |        |        |        |        |        |        |        |          | UNIT:lm     |              |           |

Conical surface Flux(90deg): 605.6 lm

%lum = 98.8%  
%lamp = 98.8%

Conical surface Flux(120deg): 610.99 lm

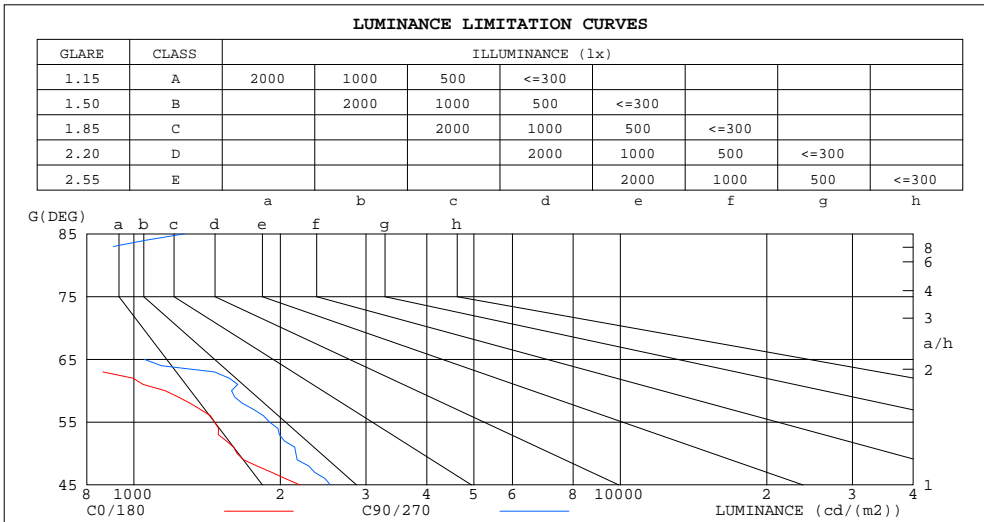
%lum = 99.7%  
%lamp = 99.7%

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:24.5DEG  
Operators:William  
Test Date:2018-07-16

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity:65.7%  
Test Distance:26.000m [K=1.3825]  
Remarks:

LUMINANCE LIMITATION CURVES

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |



| LUMINANCE cd/(m2) |        |         |
|-------------------|--------|---------|
| G(DEG)            | C0/180 | C90/270 |
| 85                | 0      | 1269    |
| 80                | 0      | 637     |
| 75                | 0      | 427     |
| 70                | 0      | 377     |
| 65                | 621    | 1051    |
| 60                | 1159   | 1588    |
| 55                | 1465   | 1899    |
| 50                | 1629   | 2152    |
| 45                | 2194   | 2535    |

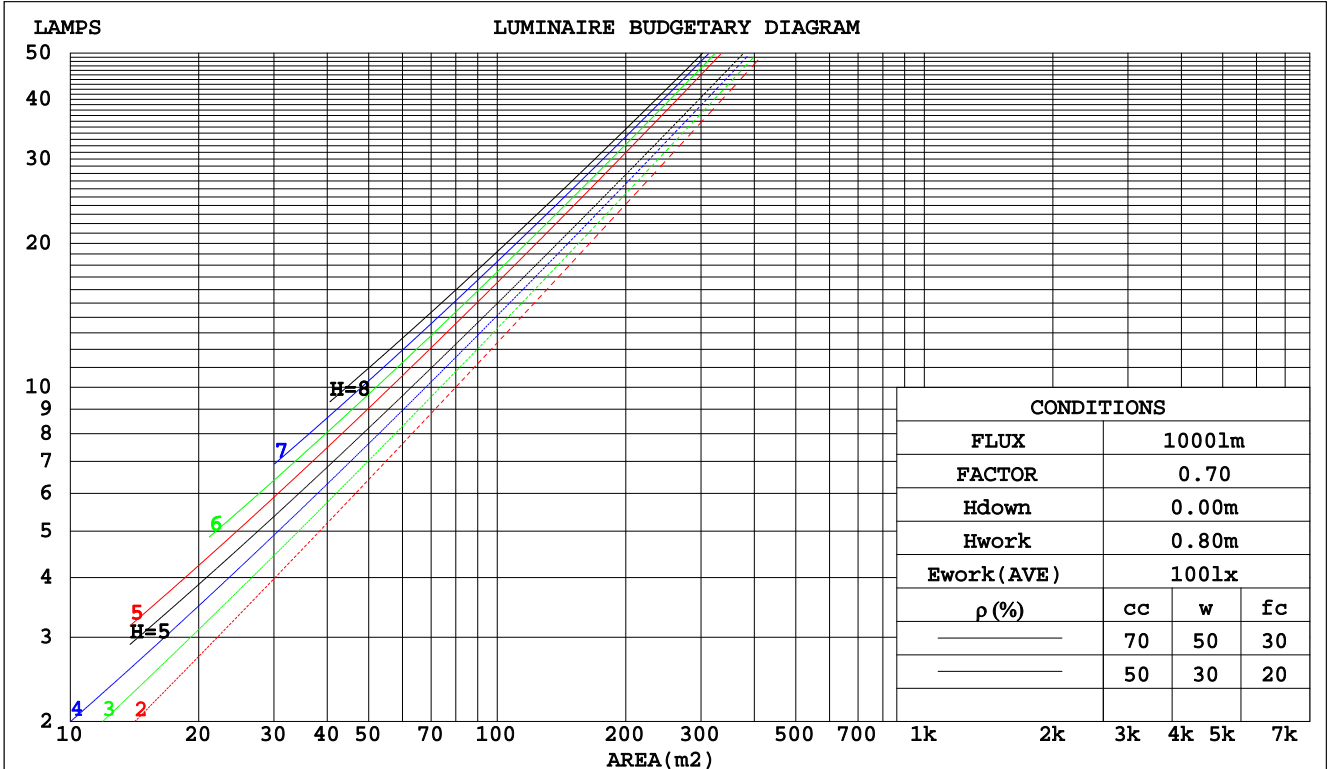
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |

| pcc  | 80%                   |      |      | 70%  |      |      | 50%                             |      |      | 30%  |      |      | 10%  |      |      | 0   |
|------|-----------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|------|------|-----|
|      | 50%                   | 30%  | 10%  | 50%  | 30%  | 10%  | 50%                             | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0   |
| pw   |                       |      |      |      |      |      |                                 |      |      |      |      |      |      |      |      | 0   |
| pfc  | 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  | 1.12                  | 1.10 | 1.08 | 1.10 | 1.08 | 1.06 | 1.06                            | 1.04 | 1.03 | 1.02 | 1.01 | .00  | .99  | .98  | .97  | .95 |
| 2.0  | 1.06                  | 1.02 | .99  | 1.04 | 1.01 | .98  | 1.01                            | .98  | .96  | .98  | .96  | .94  | .95  | .94  | .92  | .91 |
| 3.0  | 1.00                  | .96  | .93  | .99  | .95  | .92  | .96                             | .93  | .90  | .94  | .91  | .89  | .92  | .89  | .88  | .86 |
| 4.0  | .95                   | .90  | .87  | .94  | .90  | .86  | .92                             | .88  | .85  | .90  | .87  | .84  | .88  | .86  | .83  | .82 |
| 5.0  | .90                   | .86  | .82  | .90  | .85  | .82  | .88                             | .84  | .81  | .86  | .83  | .80  | .85  | .82  | .80  | .78 |
| 6.0  | .86                   | .81  | .78  | .86  | .81  | .78  | .84                             | .80  | .77  | .83  | .79  | .77  | .82  | .78  | .76  | .75 |
| 7.0  | .82                   | .78  | .74  | .82  | .77  | .74  | .81                             | .76  | .73  | .80  | .76  | .73  | .79  | .75  | .73  | .72 |
| 8.0  | .79                   | .74  | .71  | .78  | .74  | .70  | .77                             | .73  | .70  | .76  | .73  | .70  | .76  | .72  | .70  | .68 |
| 9.0  | .76                   | .71  | .67  | .75  | .71  | .67  | .74                             | .70  | .67  | .74  | .70  | .67  | .73  | .69  | .67  | .66 |
| 10.0 | .73                   | .68  | .65  | .72  | .68  | .65  | .71                             | .67  | .64  | .71  | .67  | .64  | .70  | .67  | .64  | .63 |



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

WEC AND CCEC

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |

| 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  | .154                  | .088 | .028 | .148 | .084 | .027 | .135                            | .077 | .025 | .124 | .071 | .023 | .113 | .065 | .021 |   |
| 2.0  | .145                  | .080 | .024 | .140 | .077 | .024 | .129                            | .072 | .022 | .120 | .067 | .021 | .111 | .063 | .020 |   |
| 3.0  | .137                  | .073 | .022 | .132 | .071 | .021 | .123                            | .067 | .020 | .115 | .063 | .019 | .108 | .060 | .018 |   |
| 4.0  | .130                  | .067 | .020 | .126 | .066 | .019 | .118                            | .063 | .019 | .111 | .060 | .018 | .105 | .057 | .017 |   |
| 5.0  | .123                  | .063 | .018 | .120 | .061 | .018 | .113                            | .059 | .017 | .107 | .057 | .017 | .102 | .054 | .016 |   |
| 6.0  | .117                  | .059 | .017 | .114 | .058 | .017 | .109                            | .056 | .016 | .103 | .054 | .016 | .099 | .052 | .015 |   |
| 7.0  | .112                  | .055 | .016 | .110 | .055 | .016 | .105                            | .053 | .015 | .100 | .051 | .015 | .096 | .050 | .015 |   |
| 8.0  | .107                  | .053 | .015 | .105 | .052 | .015 | .101                            | .050 | .014 | .097 | .049 | .014 | .093 | .048 | .014 |   |
| 9.0  | .103                  | .050 | .014 | .101 | .049 | .014 | .097                            | .048 | .014 | .094 | .047 | .013 | .090 | .046 | .013 |   |
| 10.0 | .099                  | .048 | .013 | .097 | .047 | .013 | .094                            | .046 | .013 | .091 | .045 | .013 | .087 | .044 | .013 |   |

| 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  | .191                  | .191 | .191 | .164 | .164 | .164 | .112                                       | .112 | .112 | .064 | .064 | .064 | .021 | .021 | .021 |   |
| 1.0  | .171                  | .159 | .148 | .146 | .136 | .127 | .100                                       | .094 | .088 | .057 | .054 | .051 | .018 | .017 | .017 |   |
| 2.0  | .154                  | .134 | .117 | .132 | .115 | .101 | .090                                       | .080 | .070 | .052 | .046 | .041 | .017 | .015 | .013 |   |
| 3.0  | .140                  | .114 | .094 | .120 | .099 | .082 | .082                                       | .069 | .057 | .048 | .040 | .034 | .015 | .013 | .011 |   |
| 4.0  | .128                  | .099 | .077 | .110 | .086 | .067 | .076                                       | .060 | .047 | .044 | .035 | .028 | .014 | .011 | .009 |   |
| 5.0  | .119                  | .087 | .064 | .102 | .076 | .056 | .070                                       | .053 | .039 | .041 | .031 | .023 | .013 | .010 | .008 |   |
| 6.0  | .111                  | .078 | .054 | .095 | .067 | .047 | .066                                       | .047 | .033 | .038 | .028 | .020 | .012 | .009 | .007 |   |
| 7.0  | .104                  | .070 | .046 | .089 | .061 | .040 | .062                                       | .042 | .028 | .036 | .025 | .017 | .012 | .008 | .006 |   |
| 8.0  | .098                  | .063 | .040 | .084 | .055 | .035 | .058                                       | .039 | .025 | .034 | .023 | .015 | .011 | .007 | .005 |   |
| 9.0  | .093                  | .058 | .035 | .080 | .050 | .030 | .055                                       | .035 | .021 | .032 | .021 | .013 | .010 | .007 | .004 |   |
| 10.0 | .088                  | .053 | .030 | .076 | .046 | .027 | .053                                       | .033 | .019 | .031 | .019 | .011 | .010 | .006 | .004 |   |

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

UGR(Unified Glare Rating) Table

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |

|  |                  |     |     |     |     |                |     |     |     |     |
|--|------------------|-----|-----|-----|-----|----------------|-----|-----|-----|-----|
| 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                                      | 8.6              | 9.4 | 8.8 | 9.5 | 9.7 | 8.8            | 9.6 | 9.1 | 9.8 | 9.9 |
| 3H   | 8.4              | 9.2 | 8.7 | 9.4 | 9.6 | 8.7            | 9.4 | 9.0 | 9.6 | 9.8 |
| 4H   | 8.4              | 9.0 | 8.6 | 9.3 | 9.5 | 8.7            | 9.3 | 8.9 | 9.6 | 9.8 |
| 6H   | 8.3              | 8.9 | 8.6 | 9.2 | 9.4 | 8.6            | 9.2 | 8.9 | 9.5 | 9.7 |
| 8H   | 8.2              | 8.8 | 8.5 | 9.1 | 9.4 | 8.6            | 9.2 | 8.9 | 9.5 | 9.7 |
| 12H  | 8.2              | 8.8 | 8.5 | 9.0 | 9.3 | 8.6            | 9.2 | 8.9 | 9.4 | 9.7 |
| 4H 2H  | 8.4              | 9.1 | 8.7 | 9.3 | 9.5 | 8.7            | 9.3 | 8.9 | 9.6 | 9.8 |
| 3H   | 8.3              | 8.8 | 8.6 | 9.1 | 9.4 | 8.5            | 9.1 | 8.8 | 9.4 | 9.7 |
| 4H   | 8.2              | 8.7 | 8.5 | 9.0 | 9.3 | 8.5            | 9.0 | 8.8 | 9.3 | 9.6 |
| 6H   | 8.1              | 8.5 | 8.4 | 8.9 | 9.2 | 8.4            | 8.9 | 8.8 | 9.2 | 9.5 |
| 8H   | 8.0              | 8.4 | 8.4 | 8.8 | 9.2 | 8.4            | 8.8 | 8.8 | 9.2 | 9.5 |
| 12H  | 8.0              | 8.4 | 8.4 | 8.7 | 9.1 | 8.4            | 8.8 | 8.8 | 9.2 | 9.6 |
| 8H 4H  | 8.0              | 8.4 | 8.4 | 8.8 | 9.2 | 8.3            | 8.7 | 8.7 | 9.1 | 9.5 |
| 6H   | 7.9              | 8.3 | 8.3 | 8.7 | 9.1 | 8.2            | 8.6 | 8.7 | 9.0 | 9.4 |
| 8H   | 7.8              | 8.2 | 8.3 | 8.6 | 9.0 | 8.2            | 8.5 | 8.7 | 9.0 | 9.4 |
| 12H  | 7.8              | 8.1 | 8.2 | 8.5 | 9.0 | 8.3            | 8.5 | 8.7 | 9.0 | 9.5 |
| 12H 4H   | 8.0              | 8.4 | 8.4 | 8.7 | 9.1 | 8.2            | 8.7 | 8.7 | 9.0 | 9.4 |
| 6H   | 7.8              | 8.2 | 8.3 | 8.6 | 9.0 | 8.2            | 8.5 | 8.6 | 8.9 | 9.4 |
| 8H   | 7.8              | 8.1 | 8.2 | 8.5 | 9.0 | 8.2            | 8.4 | 8.6 | 8.9 | 9.4 |
| Variations with the observer position at spacings: |                  |     |     |     |     |                |     |     |     |     |
| S = 1.0H   | + 3.4 / - 3.9    |     |     |     |     | + 2.0 / - 2.1  |     |     |     |     |
| 1.5H   | + 5.4 / - 2.5    |     |     |     |     | + 3.2 / - 1.8  |     |     |     |     |
| 2.0H   | + 2.0 / - 2.8    |     |     |     |     | + 1.7 / - 2.0  |     |     |     |     |

CIE Pub.117, 612.9 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -1.7)

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

UTILIZATION FACTORS TABLE

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |

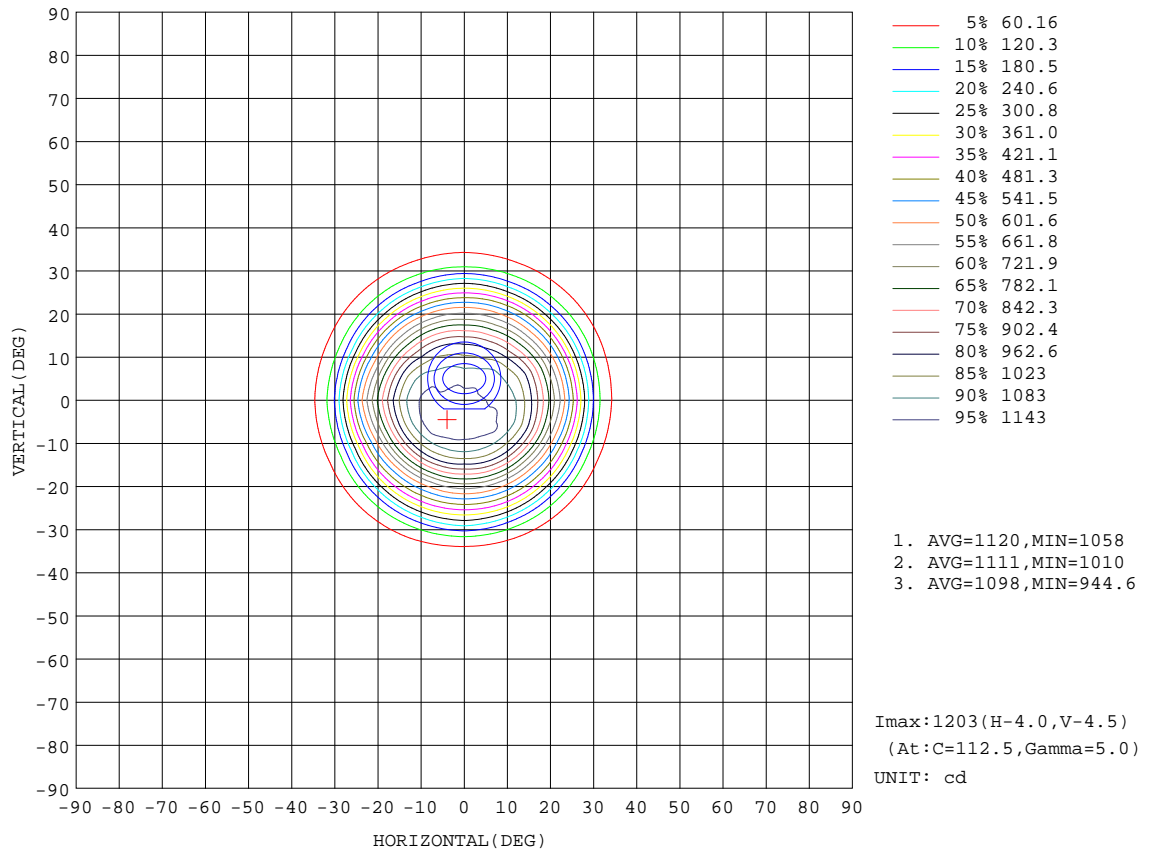
| REFLECTANCE                      |   |     |           |     |     |     |               |     |     |        |
|----------------------------------|---|-----|-----------|-----|-----|-----|---------------|-----|-----|--------|
| Ceiling                          | 0.8   | 0.8 | 0.8       | 0.7 | 0.7 | 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                         | 90  | 85  | 81        | 90  | 85  | 81  | 89            | 84  | 81  | 78     |
| 0.80                             | 97  | 92  | 89        | 97  | 92  | 89  | 96            | 91  | 88  | 85     |
| 1.00                             | 101   | 96  | 93        | 101 | 96  | 93  | 99            | 96  | 92  | 89     |
| 1.25                             | 105   | 100 | 97        | 104 | 100 | 97  | 102           | 98  | 96  | 92     |
| 1.50                             | 107   | 103 | 100       | 106 | 102 | 100 | 104           | 101 | 98  | 94     |
| 2.00                             | 110   | 106 | 103       | 108 | 105 | 102 | 106           | 103 | 101 | 96     |
| 2.50                             | 111   | 108 | 105       | 110 | 106 | 104 | 106           | 104 | 102 | 96     |
| 3.00                             | 113   | 109 | 107       | 111 | 108 | 106 | 107           | 105 | 104 | 97     |
| 4.00                             | 114   | 112 | 110       | 112 | 110 | 108 | 109           | 107 | 106 | 99     |
| 5.00                             | 116   | 114 | 112       | 113 | 112 | 110 | 110           | 108 | 107 | 100    |
| 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:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

ISOCANDELA DIAGRAM

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |



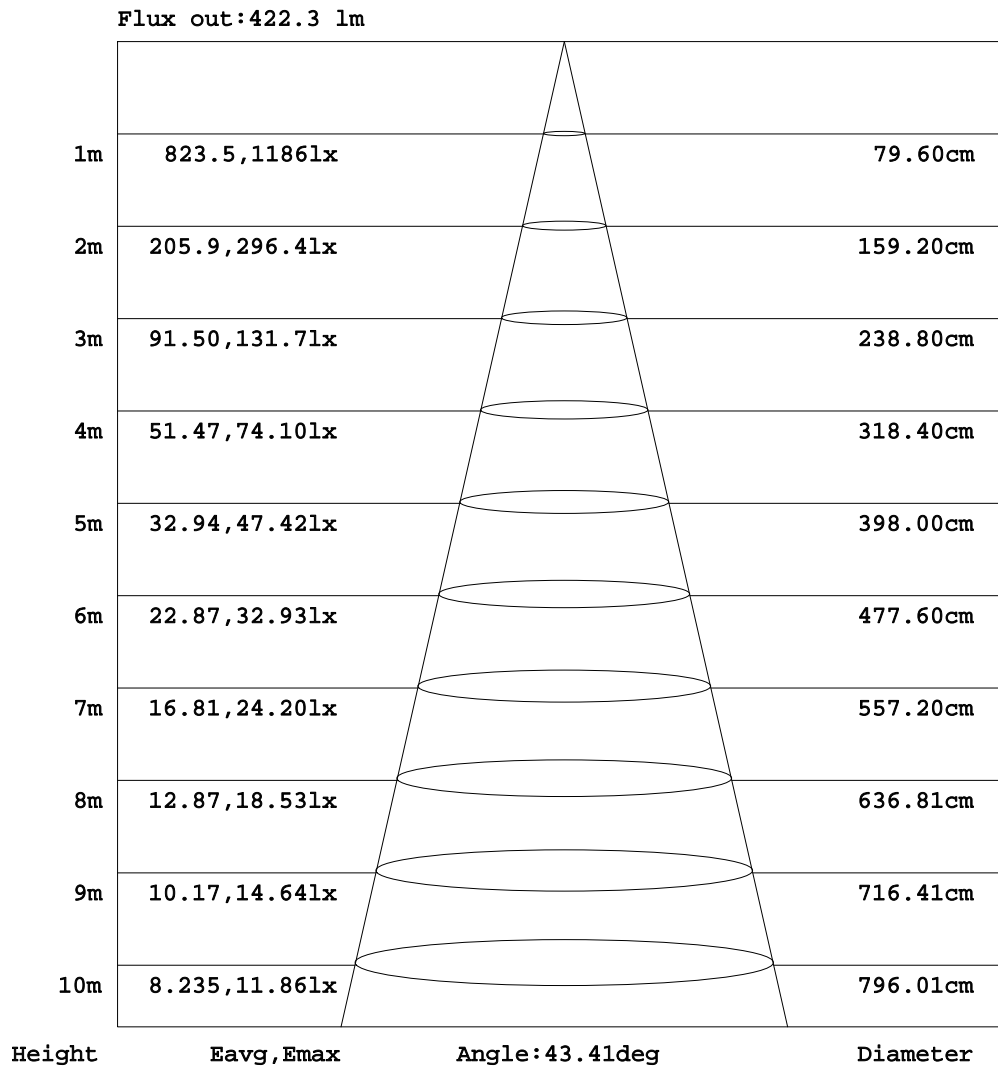
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:



AAI Figure

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |



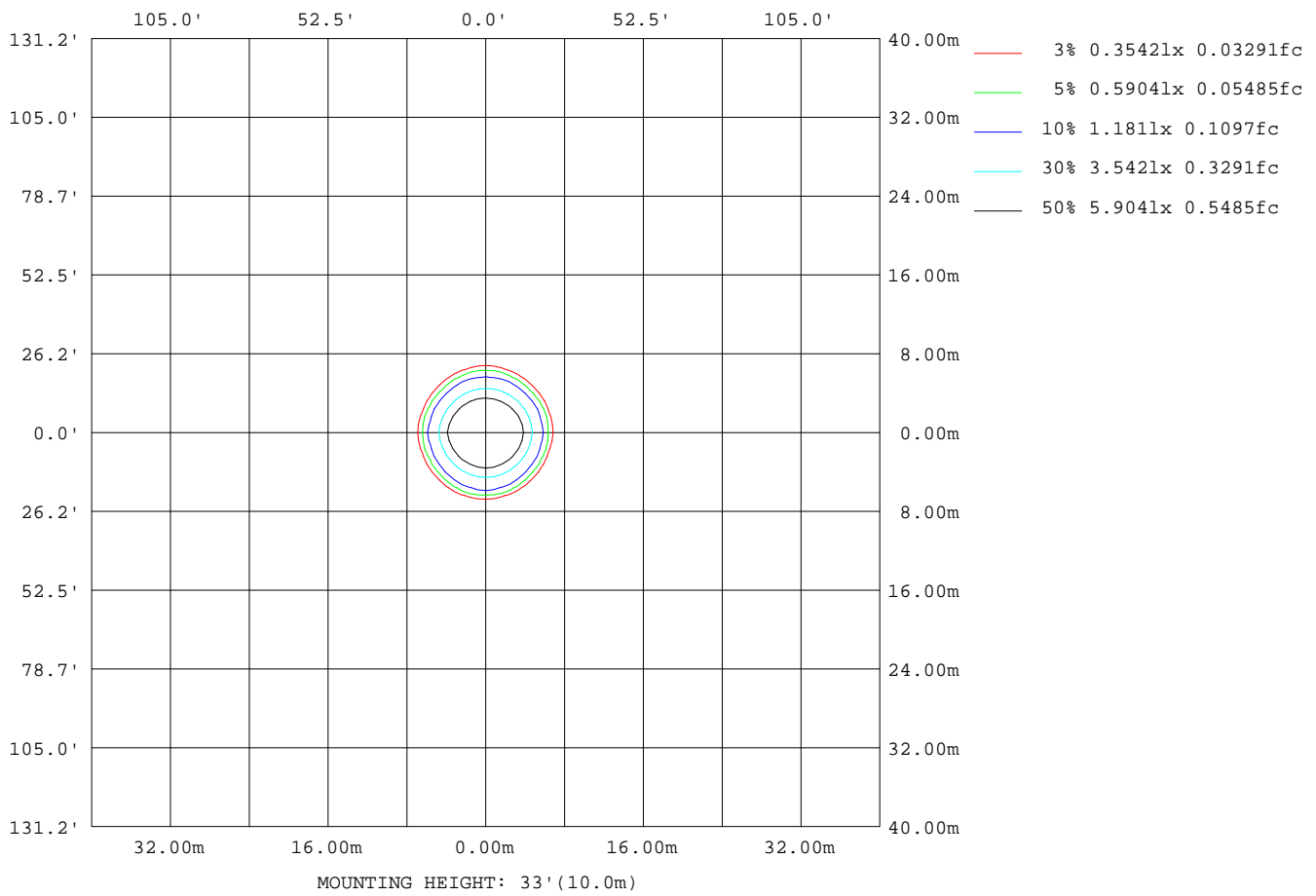
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

ISOLUX DIAGRAM

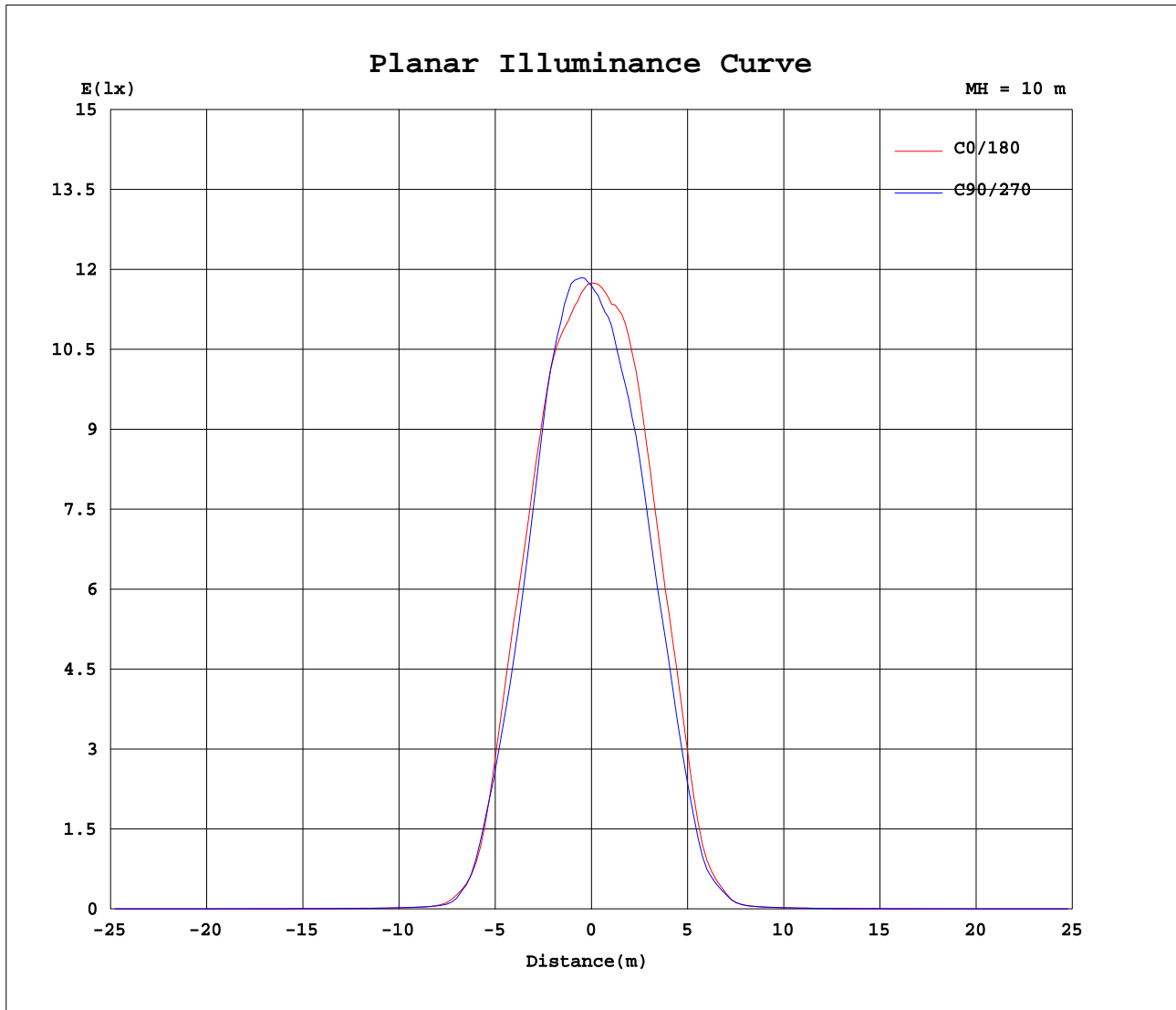
|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 24.5DEG  
Operators: William  
Test Date: 2018-07-16

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
Humidity: 65.7%  
Test Distance: 26.000m [K=1.3825]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

|  |          |                     |
|--|----------|---------------------|
| Test:U:229.97V I:0.0479A P:10.558W PF:0.9585 Freq:50.00Hz Lamp Flux:612.9x1 lm |          |                     |
| NAME: LED DOWNLIGHT  | TYPE:LED | WEIGHT:N/A          |
| SPEC.:N/A  | DIM.:    | SERIAL No.:N/A      |
| MFR.: Shenzhen Hairun Optoelectronics Co., Ltd                                 | SUR.:    | Shielding Angle:N/A |

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                  | 1170 | 1170 | 1170 | 1170 | 1170 | 1170  | 1170 | 1170  | 1170 | 1170  | 1170 | 1170  | 1170 | 1170  | 1170 | 1170  |  |  |  |
| 5                  | 1140 | 1152 | 1176 | 1179 | 1194 | 1198  | 1181 | 1175  | 1157 | 1147  | 1142 | 1127  | 1124 | 1129  | 1117 | 1131  |  |  |  |
| 10                 | 1105 | 1136 | 1156 | 1118 | 1128 | 1133  | 1149 | 1159  | 1145 | 1131  | 1088 | 1048  | 1030 | 1039  | 1070 | 1096  |  |  |  |
| 15                 | 980  | 1009 | 998  | 965  | 954  | 974   | 981  | 1016  | 1022 | 991   | 939  | 903   | 891  | 899   | 911  | 982   |  |  |  |
| 20                 | 763  | 740  | 715  | 688  | 690  | 687   | 702  | 744   | 789  | 738   | 705  | 670   | 669  | 675   | 692  | 749   |  |  |  |
| 25                 | 497  | 462  | 447  | 441  | 442  | 442   | 440  | 462   | 518  | 461   | 431  | 413   | 414  | 423   | 432  | 470   |  |  |  |
| 30                 | 177  | 163  | 164  | 175  | 196  | 182   | 168  | 164   | 185  | 161   | 153  | 146   | 152  | 148   | 153  | 168   |  |  |  |
| 35                 | 48.0 | 40.0 | 40.3 | 41.8 | 37.4 | 46.3  | 46.7 | 47.1  | 53.4 | 47.2  | 46.5 | 46.5  | 49.1 | 46.7  | 45.8 | 47.6  |  |  |  |
| 40                 | 10.7 | 11.2 | 12.2 | 10.9 | 10.5 | 11.1  | 12.3 | 10.8  | 11.1 | 12.5  | 14.1 | 12.3  | 11.8 | 12.9  | 13.6 | 12.7  |  |  |  |
| 45                 | 6.03 | 6.16 | 6.92 | 6.64 | 6.99 | 7.04  | 7.33 | 6.29  | 6.80 | 7.16  | 8.22 | 7.12  | 7.12 | 7.08  | 7.53 | 6.68  |  |  |  |
| 50                 | 4.07 | 3.95 | 4.57 | 4.76 | 5.40 | 5.23  | 5.23 | 4.81  | 4.86 | 4.81  | 5.13 | 4.68  | 5.04 | 4.56  | 4.78 | 4.44  |  |  |  |
| 55                 | 3.26 | 3.00 | 3.23 | 3.61 | 4.25 | 3.99  | 3.63 | 3.43  | 3.48 | 3.21  | 3.44 | 3.53  | 3.74 | 3.47  | 3.40 | 2.84  |  |  |  |
| 60                 | 2.25 | 2.19 | 2.21 | 2.45 | 3.10 | 2.68  | 2.11 | 1.97  | 1.81 | 1.60  | 1.83 | 2.30  | 3.16 | 2.53  | 2.02 | 1.31  |  |  |  |
| 65                 | 1.02 | 1.10 | 1.32 | 1.45 | 1.73 | 1.53  | 1.09 | 0.73  | 0.14 | 0.29  | 0.73 | 1.29  | 1.87 | 1.45  | 0.65 | 0.22  |  |  |  |
| 70                 | 0.00 | 0.00 | 0.22 | 0.15 | 0.50 | 0.29  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.07 | 0.00  | 0.00 | 0.00  |  |  |  |
| 75                 | 0.00 | 0.00 | 0.00 | 0.14 | 0.43 | 0.29  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.07 | 0.00  | 0.00 | 0.00  |  |  |  |
| 80                 | 0.00 | 0.00 | 0.00 | 0.14 | 0.43 | 0.22  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.14 | 0.00  | 0.00 | 0.00  |  |  |  |
| 85                 | 0.00 | 0.00 | 0.00 | 0.14 | 0.43 | 0.22  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  | 0.00 | 0.00  |  |  |  |
| 90                 | 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  |  |  |  |
| 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 | 0.00  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 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  |  |  |  |
| 145                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  | 0.15 | 0.07  | 0.07 | 0.07  | 0.00 | 0.07  | 0.00 | 0.08  |  |  |  |
| 150                | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00 | 0.07  | 0.37 | 0.44  | 0.37 | 0.36  | 0.29 | 0.29  | 0.29 | 0.37  |  |  |  |
| 155                | 0.36 | 0.36 | 0.15 | 0.21 | 0.21 | 0.22  | 0.22 | 0.22  | 0.73 | 0.80  | 0.74 | 0.72  | 0.65 | 0.80  | 0.73 | 0.80  |  |  |  |
| 160                | 0.72 | 0.94 | 0.88 | 0.79 | 0.79 | 0.65  | 0.72 | 0.73  | 1.02 | 1.17  | 1.18 | 1.01  | 1.15 | 1.02  | 1.02 | 1.10  |  |  |  |
| 165                | 1.38 | 1.17 | 1.25 | 1.37 | 1.22 | 1.16  | 1.30 | 1.38  | 1.38 | 1.46  | 1.47 | 1.37  | 1.44 | 1.45  | 1.38 | 1.53  |  |  |  |
| 170                | 1.38 | 1.39 | 1.47 | 1.58 | 1.58 | 1.45  | 1.45 | 1.38  | 1.74 | 1.75  | 1.76 | 1.80  | 1.73 | 1.74  | 1.81 | 1.75  |  |  |  |
| 175                | 1.74 | 1.75 | 1.76 | 2.16 | 2.16 | 1.74  | 1.74 | 1.75  | 1.96 | 2.05  | 1.91 | 1.87  | 2.02 | 2.10  | 1.96 | 1.75  |  |  |  |
| 180                | 2.18 | 1.90 | 1.84 | 2.23 | 2.23 | 2.17  | 1.74 | 1.97  | 1.96 | 2.05  | 1.91 | 1.87  | 2.23 | 2.25  | 1.96 | 1.75  |  |  |  |

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:24.5DEG  
 Operators:William  
 Test Date:2018-07-16

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.0.366  
 Humidity:65.7%  
 Test Distance:26.000m [K=1.3825]  
 Remarks: