

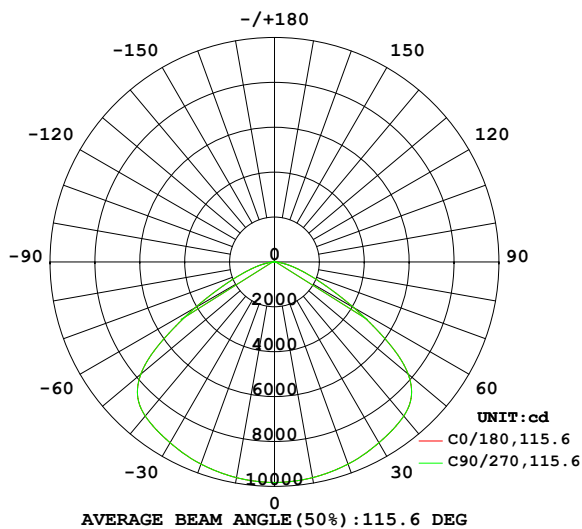
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

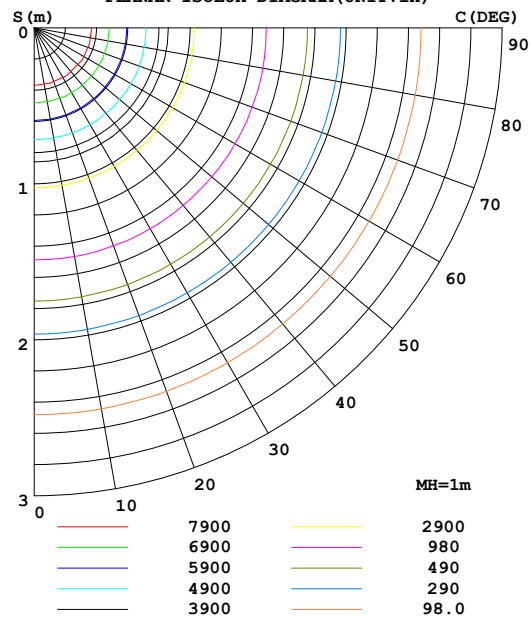
| | | |
|--|-------|------------------|
| Test:U:230.0V I:0.659A P:150.0W PF:0.990 Freq:50.01Hz | | |
| UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:29474.7x1 lm | | |
| NAME: HB74-150H-5080-H00216 | TYPE: | WEIGHT: |
| SPEC.: | DIM.: | SERIAL No.: |
| MFR.: | SUR.: | Shielding Angle: |

| DATA OF LAMP | | PHOTOMETRIC DATA Eff: 196.50 lm/W | | | |
|-------------------|---------|-----------------------------------|--------|--------------------------|-----------|
| MODEL | / | Imax (cd) | 9823 | S/MH (C0/180) | 1.43 |
| NOMINAL POWER (W) | / | LOR (%) | 100.0 | S/MH (C90/270) | 1.43 |
| RATED VOLTAGE (V) | / | TOTAL FLUX (lm) | 29475 | η UP, DN (C0-180) | 0.0, 50.0 |
| NOMINAL FLUX (lm) | 29474.7 | CIE CLASS | DIRECT | η UP, DN (C180-360) | 0.0, 50.0 |
| LAMPS INSIDE | 1 | η up (%) | 0.0 | CIBSE SHR NOM | 1.50 |
| TEST VOLTAGE (V) | / | η down (%) | 100.0 | CIBSE SHR MAX | 1.55 |

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4559]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

| γ | C0 | C45 | C90 | C135 | C180 | C225 | C270 | C315 | γ | Φ zone | Φ total | %lum, lamp |
|----------|-----------------------|-------|-------|-------|-------|-------|-------|-------|----------|-------------|--------------|------------|
| 10 | 9757 | 9757 | 9757 | 9757 | 9757 | 9757 | 9757 | 9757 | 0- 10 | 934.5 | 934.5 | 3.17,3.17 |
| 20 | 9582 | 9582 | 9582 | 9582 | 9582 | 9582 | 9582 | 9582 | 10- 20 | 2740 | 3675 | 12.5,12.5 |
| 30 | 9302 | 9302 | 9302 | 9302 | 9302 | 9302 | 9302 | 9302 | 20- 30 | 4370 | 8045 | 27.3,27.3 |
| 40 | 8960 | 8960 | 8960 | 8960 | 8960 | 8960 | 8960 | 8960 | 30- 40 | 5738 | 13783 | 46.8,46.8 |
| 50 | 7773 | 7773 | 7773 | 7773 | 7773 | 7773 | 7773 | 7773 | 40- 50 | 6589 | 20372 | 69.1,69.1 |
| 60 | 4089 | 4089 | 4089 | 4089 | 4089 | 4089 | 4089 | 4089 | 50- 60 | 5376 | 25748 | 87.4,87.4 |
| 70 | 1529 | 1529 | 1529 | 1529 | 1529 | 1529 | 1529 | 1529 | 60- 70 | 2589 | 28337 | 96.1,96.1 |
| 80 | 433.9 | 433.9 | 433.9 | 433.9 | 433.9 | 433.9 | 433.9 | 433.9 | 70- 80 | 959.3 | 29297 | 99.4,99.4 |
| 90 | 2.357 | 2.357 | 2.357 | 2.357 | 2.357 | 2.357 | 2.357 | 2.357 | 80- 90 | 177.9 | 29475 | 100,100 |
| 100 | | | | | | | | | 90-100 | | | |
| 110 | | | | | | | | | 100-110 | | | |
| 120 | | | | | | | | | 110-120 | | | |
| 130 | | | | | | | | | 120-130 | | | |
| 140 | | | | | | | | | 130-140 | | | |
| 150 | | | | | | | | | 140-150 | | | |
| 160 | | | | | | | | | 150-160 | | | |
| 170 | | | | | | | | | 160-170 | | | |
| 180 | | | | | | | | | 170-180 | | | |
| DEG | LUMINOUS INTENSITY:cd | | | | | | | | | UNIT:lm | | |

Conical surface Flux(90deg): 17043 lm

%lum = 57.8%

%lamp = 57.8%

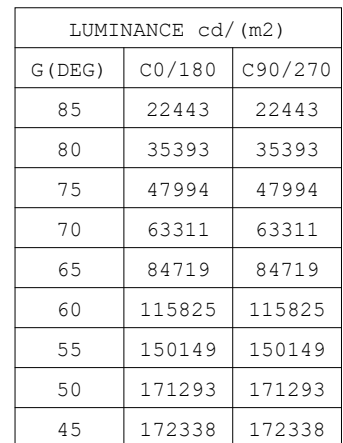
Conical surface Flux(120deg): 25748 lm

%lum = 87.4%

%lamp = 87.4%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:ZZX
Test Date:2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4559]
Remarks:



```

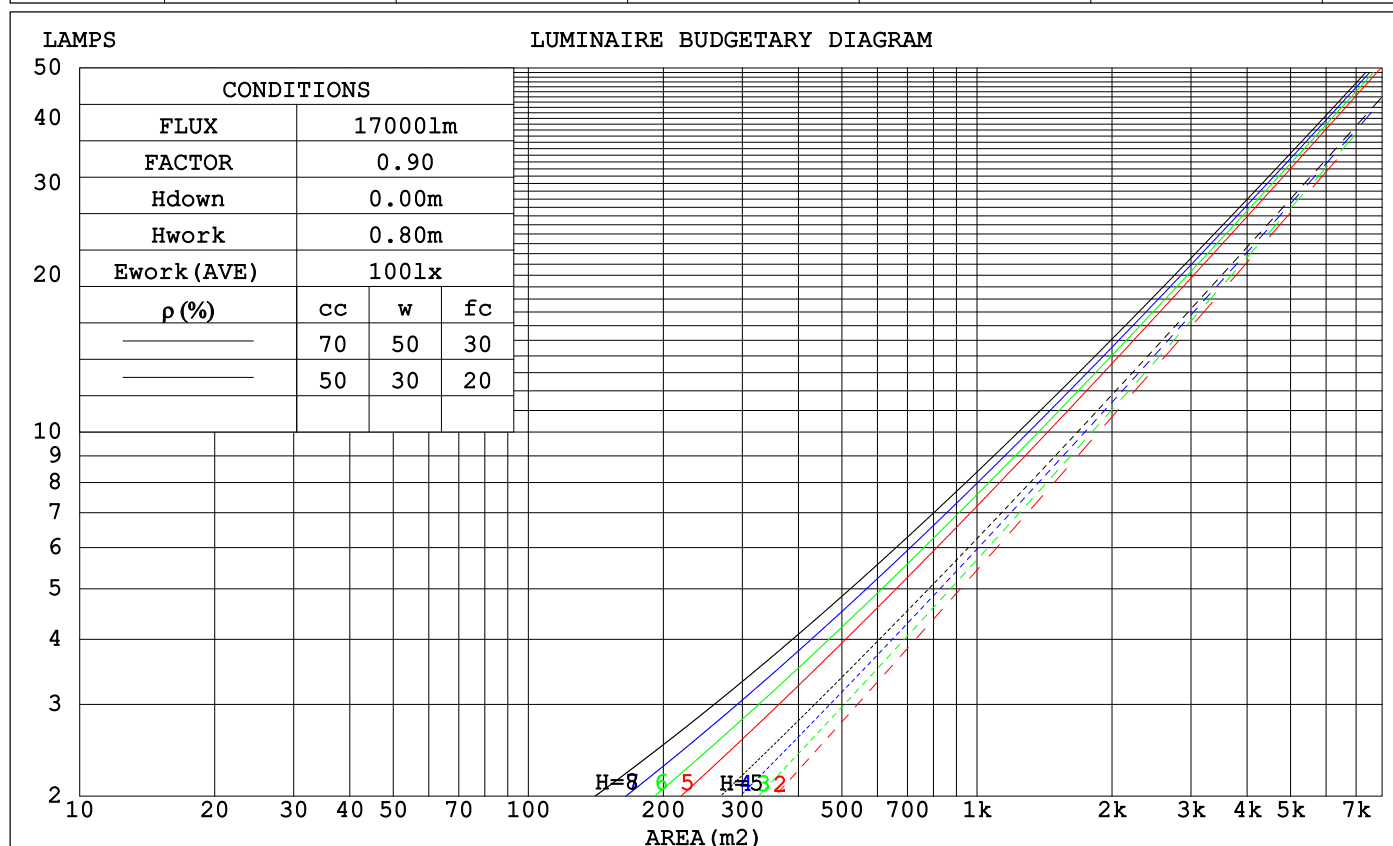
γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4559]
Remarks:

```

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

| ρ_{cc} | 80% | | | 70% | | | 50% | | | 30% | | | 10% | | | 0 |
|-------------|-----------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|------|------|------|------|
| ρ_w | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 0 |
| ρ_{fc} | 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 | 1.00 |
| 1.0 | 1.06 | 1.02 | .99 | 1.04 | 1.00 | .97 | .99 | .96 | .94 | .95 | .93 | .91 | .92 | .90 | .88 | .86 |
| 2.0 | .93 | .87 | .82 | .91 | .86 | .81 | .88 | .83 | .79 | .85 | .81 | .77 | .82 | .78 | .75 | .73 |
| 3.0 | .82 | .75 | .68 | .81 | .74 | .68 | .78 | .72 | .67 | .75 | .70 | .65 | .72 | .68 | .64 | .62 |
| 4.0 | .73 | .65 | .58 | .72 | .64 | .58 | .69 | .62 | .57 | .67 | .61 | .56 | .65 | .60 | .55 | .53 |
| 5.0 | .65 | .56 | .50 | .64 | .56 | .50 | .62 | .55 | .49 | .60 | .54 | .49 | .58 | .53 | .48 | .46 |
| 6.0 | .59 | .50 | .44 | .58 | .49 | .43 | .56 | .48 | .43 | .54 | .48 | .43 | .53 | .47 | .42 | .40 |
| 7.0 | .53 | .44 | .38 | .52 | .44 | .38 | .51 | .43 | .38 | .49 | .43 | .38 | .48 | .42 | .37 | .35 |
| 8.0 | .48 | .40 | .34 | .47 | .39 | .34 | .46 | .39 | .34 | .45 | .38 | .33 | .44 | .38 | .33 | .31 |
| 9.0 | .44 | .36 | .30 | .43 | .36 | .30 | .42 | .35 | .30 | .41 | .35 | .30 | .40 | .34 | .30 | .28 |
| 10.0 | .40 | .33 | .27 | .40 | .32 | .27 | .39 | .32 | .27 | .38 | .32 | .27 | .37 | .31 | .27 | .25 |



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3°C
 Operators:ZZX
 Test Date:2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity:65.0%
 Test Distance:26.000m [K=0.4559]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

| ρ_{cc} | 80% | | | 70% | | | 50% | | | 30% | | | 10% | | | 0 |
|-------------|-----------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|------|------|---|
| ρ_w | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 0 |
| ρ_{fc} | 20% | | | 20% | | | 20% | | | 20% | | | 20% | | | 0 |
| RCR | RCR:Room Cavity Ratio | | | | | | Wall Exitance Coefficients (WEC) | | | | | | | | | |
| 0.0 | | | | | | | | | | | | | | | | |
| 1.0 | .274 | .156 | .049 | .267 | .152 | .048 | .253 | .145 | .046 | .241 | .139 | .045 | .230 | .134 | .043 | |
| 2.0 | .266 | .146 | .045 | .260 | .143 | .044 | .248 | .138 | .043 | .238 | .133 | .042 | .228 | .129 | .041 | |
| 3.0 | .252 | .134 | .040 | .246 | .132 | .040 | .236 | .128 | .039 | .227 | .124 | .038 | .218 | .121 | .037 | |
| 4.0 | .236 | .123 | .036 | .232 | .121 | .036 | .223 | .118 | .035 | .214 | .115 | .035 | .206 | .112 | .034 | |
| 5.0 | .221 | .113 | .033 | .217 | .111 | .032 | .209 | .109 | .032 | .201 | .106 | .032 | .195 | .104 | .031 | |
| 6.0 | .207 | .104 | .030 | .203 | .103 | .030 | .196 | .101 | .029 | .189 | .098 | .029 | .183 | .096 | .029 | |
| 7.0 | .194 | .096 | .027 | .191 | .095 | .027 | .184 | .093 | .027 | .178 | .091 | .027 | .173 | .090 | .026 | |
| 8.0 | .182 | .089 | .025 | .179 | .088 | .025 | .174 | .087 | .025 | .168 | .085 | .025 | .163 | .084 | .024 | |
| 9.0 | .172 | .083 | .023 | .169 | .082 | .023 | .164 | .081 | .023 | .159 | .080 | .023 | .154 | .078 | .023 | |
| 10.0 | .162 | .078 | .022 | .159 | .077 | .021 | .155 | .076 | .021 | .150 | .075 | .021 | .146 | .074 | .021 | |

| ρ_{cc} | 80% | | | 70% | | | 50% | | | 30% | | | 10% | | | 0 |
|-------------|-----------------------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|---|
| ρ_w | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 0 |
| ρ_{fc} | 20% | | | 20% | | | 20% | | | 20% | | | 20% | | | 0 |
| RCR | RCR:Room Cavity Ratio | | | | | | Ceiling Cavity Exitance Coefficients (CCEC) | | | | | | | | | |
| 0.0 | .190 | .190 | .190 | .163 | .163 | .163 | .111 | .111 | .111 | .064 | .064 | .064 | .020 | .020 | .020 | |
| 1.0 | .178 | .156 | .137 | .152 | .134 | .118 | .104 | .092 | .082 | .060 | .053 | .048 | .019 | .017 | .015 | |
| 2.0 | .169 | .132 | .101 | .145 | .114 | .087 | .099 | .079 | .061 | .057 | .046 | .036 | .018 | .015 | .012 | |
| 3.0 | .161 | .114 | .077 | .138 | .098 | .067 | .095 | .068 | .047 | .055 | .040 | .028 | .018 | .013 | .009 | |
| 4.0 | .154 | .101 | .060 | .132 | .087 | .052 | .091 | .061 | .037 | .052 | .036 | .022 | .017 | .012 | .007 | |
| 5.0 | .147 | .090 | .049 | .126 | .078 | .042 | .087 | .055 | .030 | .050 | .032 | .018 | .016 | .010 | .006 | |
| 6.0 | .140 | .082 | .040 | .120 | .071 | .035 | .083 | .050 | .025 | .048 | .029 | .015 | .016 | .010 | .005 | |
| 7.0 | .134 | .075 | .034 | .115 | .065 | .029 | .079 | .046 | .021 | .046 | .027 | .012 | .015 | .009 | .004 | |
| 8.0 | .128 | .069 | .029 | .110 | .060 | .025 | .076 | .042 | .018 | .044 | .025 | .011 | .014 | .008 | .004 | |
| 9.0 | .122 | .064 | .025 | .105 | .056 | .022 | .073 | .039 | .016 | .042 | .023 | .009 | .014 | .008 | .003 | |
| 10.0 | .116 | .060 | .023 | .100 | .052 | .020 | .070 | .037 | .014 | .041 | .022 | .008 | .013 | .007 | .003 | |

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3°C
 Operators:ZZX
 Test Date:2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity:65.0%
 Test Distance:26.000m [K=0.4559]
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR(Unified Glare Rating) Table

| | | | | | | | | | | |
|-----------------|------------------|------|------|------|------|----------------|------|------|------|------|
| 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 | 29.3 | 30.9 | 29.6 | 31.2 | 31.5 | 29.3 | 30.9 | 29.6 | 31.2 | 31.5 |
| 3H | 29.9 | 31.3 | 30.3 | 31.7 | 32.0 | 29.9 | 31.3 | 30.3 | 31.7 | 32.0 |
| 4H | 30.1 | 31.4 | 30.5 | 31.8 | 32.1 | 30.1 | 31.4 | 30.5 | 31.8 | 32.1 |
| 6H | 30.2 | 31.4 | 30.6 | 31.8 | 32.2 | 30.2 | 31.4 | 30.6 | 31.8 | 32.2 |
| 8H | 30.2 | 31.3 | 30.6 | 31.7 | 32.1 | 30.2 | 31.3 | 30.6 | 31.7 | 32.1 |
| 12H | 30.2 | 31.3 | 30.6 | 31.7 | 32.1 | 30.2 | 31.3 | 30.6 | 31.7 | 32.1 |
| 4H 2H | 29.5 | 30.9 | 29.9 | 31.2 | 31.6 | 29.5 | 30.9 | 29.9 | 31.2 | 31.6 |
| 3H | 30.3 | 31.4 | 30.7 | 31.8 | 32.2 | 30.3 | 31.4 | 30.7 | 31.8 | 32.2 |
| 4H | 30.6 | 31.5 | 31.0 | 31.9 | 32.4 | 30.6 | 31.5 | 31.0 | 31.9 | 32.4 |
| 6H | 30.7 | 31.5 | 31.2 | 32.0 | 32.4 | 30.7 | 31.5 | 31.2 | 32.0 | 32.4 |
| 8H | 30.7 | 31.5 | 31.2 | 32.0 | 32.4 | 30.7 | 31.5 | 31.2 | 32.0 | 32.4 |
| 12H | 30.7 | 31.4 | 31.2 | 31.9 | 32.4 | 30.7 | 31.4 | 31.2 | 31.9 | 32.4 |
| 8H 4H | 30.6 | 31.4 | 31.1 | 31.8 | 32.3 | 30.6 | 31.4 | 31.1 | 31.8 | 32.3 |
| 6H | 30.8 | 31.4 | 31.3 | 31.9 | 32.4 | 30.8 | 31.4 | 31.3 | 31.9 | 32.4 |
| 8H | 30.8 | 31.4 | 31.3 | 31.9 | 32.4 | 30.8 | 31.4 | 31.3 | 31.9 | 32.4 |
| 12H | 30.8 | 31.4 | 31.3 | 31.9 | 32.4 | 30.8 | 31.4 | 31.3 | 31.9 | 32.4 |
| 12H 4H | 30.6 | 31.3 | 31.1 | 31.8 | 32.3 | 30.6 | 31.3 | 31.1 | 31.8 | 32.3 |
| 6H | 30.8 | 31.4 | 31.3 | 31.8 | 32.4 | 30.8 | 31.4 | 31.3 | 31.8 | 32.4 |
| 8H | 30.8 | 31.4 | 31.3 | 31.8 | 32.4 | 30.8 | 31.4 | 31.3 | 31.8 | 32.4 |
| CIE190: 2010 | | | | | | | | | | |
| | | | | | | | | | | |

CIE190: 2010
Area: 0.0706 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:ZZX
Test Date:2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4559]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

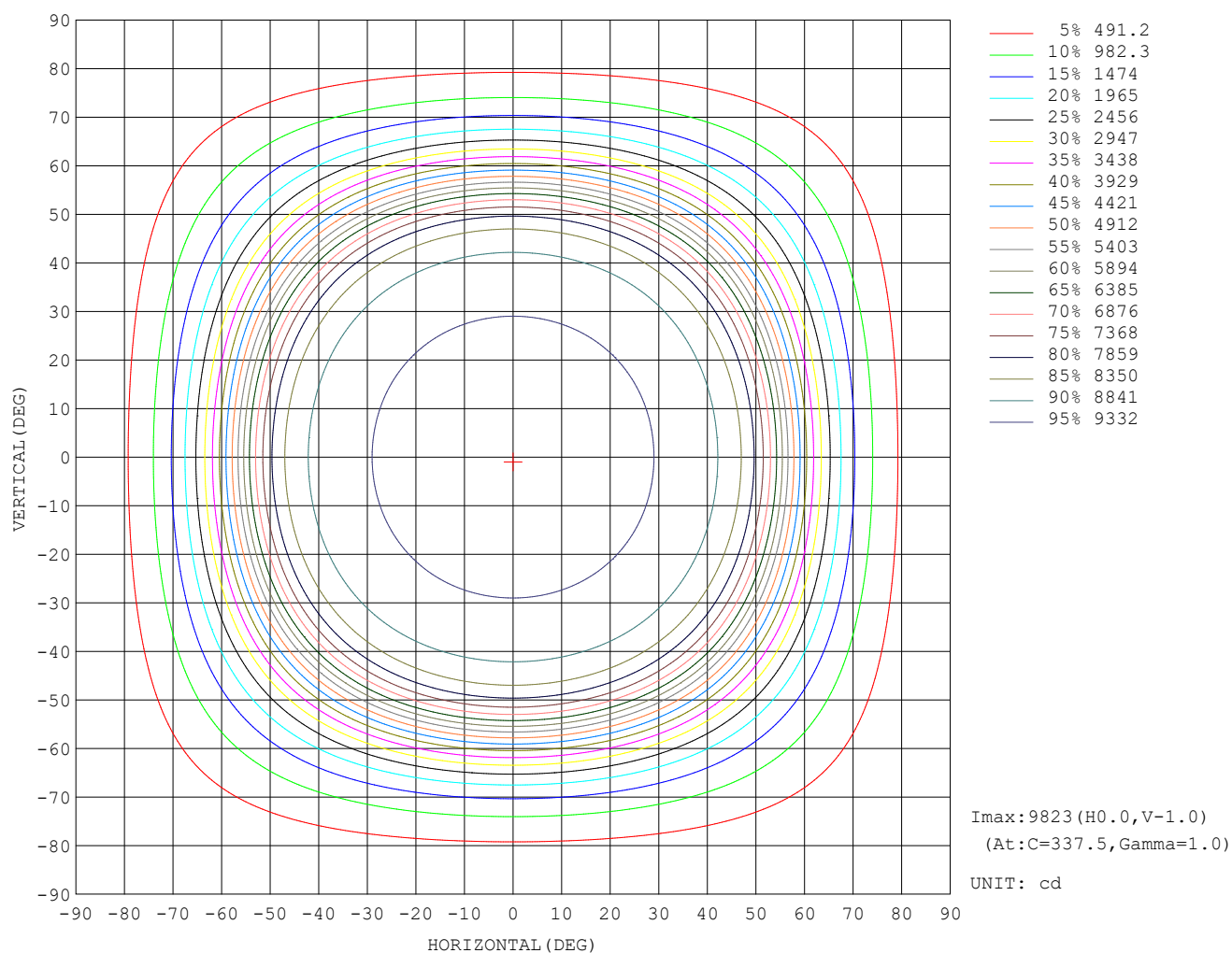
UTILIZATION FACTORS TABLE

| 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) $k(RI) \times RCR = 5$ | | | | | | | | | |
| $k = 0.60$ | 58 | 46 | 39 | 57 | 46 | 39 | 56 | 45 | 39 | 33 |
| 0.80 | 69 | 57 | 50 | 68 | 57 | 50 | 66 | 56 | 50 | 43 |
| 1.00 | 78 | 68 | 61 | 77 | 67 | 60 | 75 | 68 | 60 | 53 |
| 1.25 | 86 | 76 | 69 | 84 | 75 | 69 | 82 | 74 | 68 | 61 |
| 1.50 | 91 | 82 | 75 | 89 | 81 | 75 | 86 | 79 | 73 | 66 |
| 2.00 | 97 | 90 | 84 | 96 | 89 | 83 | 92 | 86 | 82 | 74 |
| 2.50 | 101 | 94 | 88 | 99 | 93 | 88 | 95 | 90 | 86 | 78 |
| 3.00 | 104 | 98 | 93 | 102 | 96 | 92 | 98 | 94 | 90 | 82 |
| 4.00 | 108 | 102 | 98 | 105 | 101 | 97 | 101 | 97 | 94 | 86 |
| 5.00 | 110 | 105 | 102 | 107 | 103 | 100 | 103 | 100 | 97 | 88 |
| ROOM INDEX | UF(total) | | | | | | | | | Direct |
| According to DIN EN 13032-2 2004 | | | | | | Suspended | | | SHRNOM = 1.25 | |

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators: ZZX
 Test Date: 2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4559]
 Remarks:

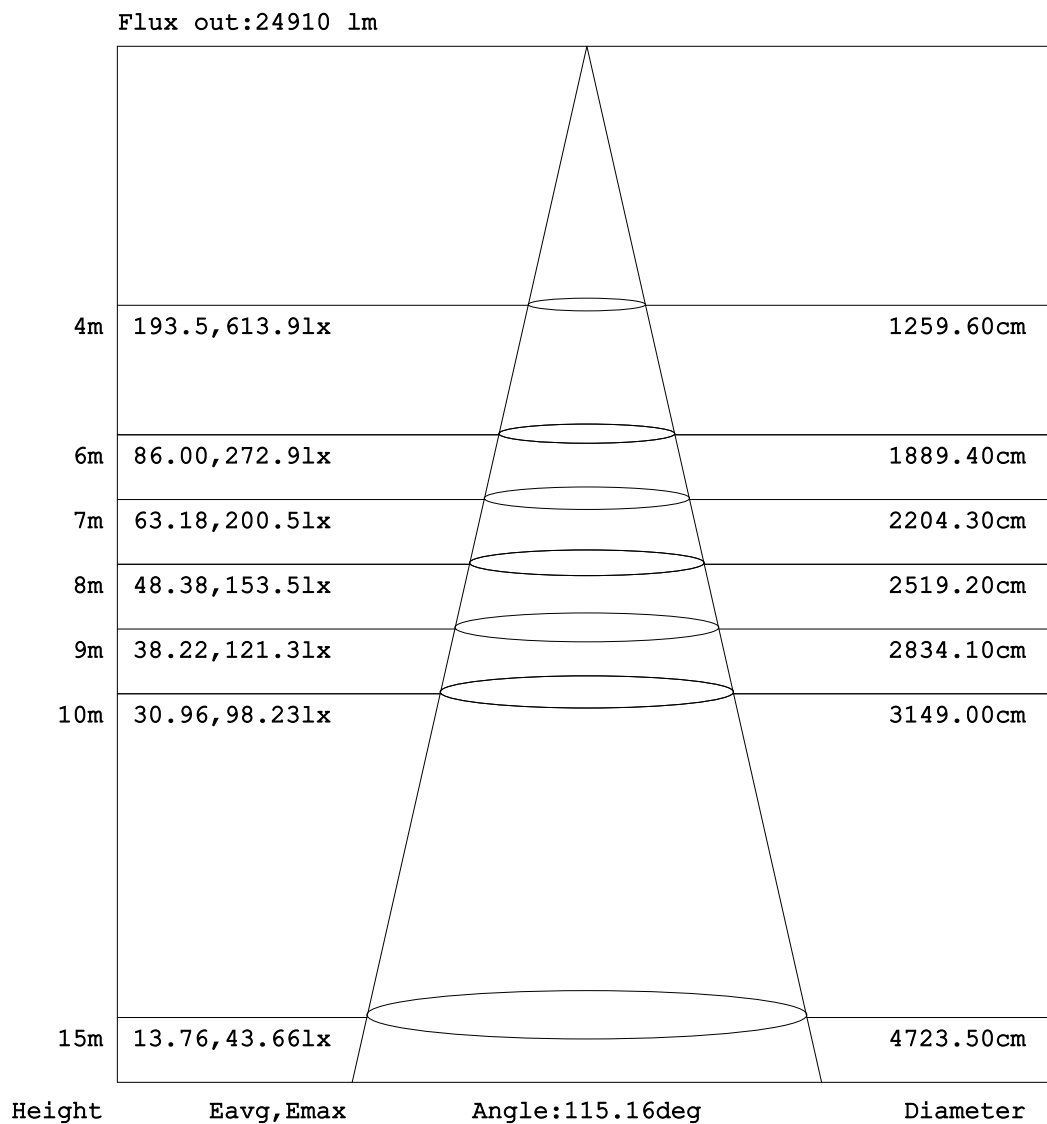
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZK
Test Date: 2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4559]
Remarks:

AAI Figure



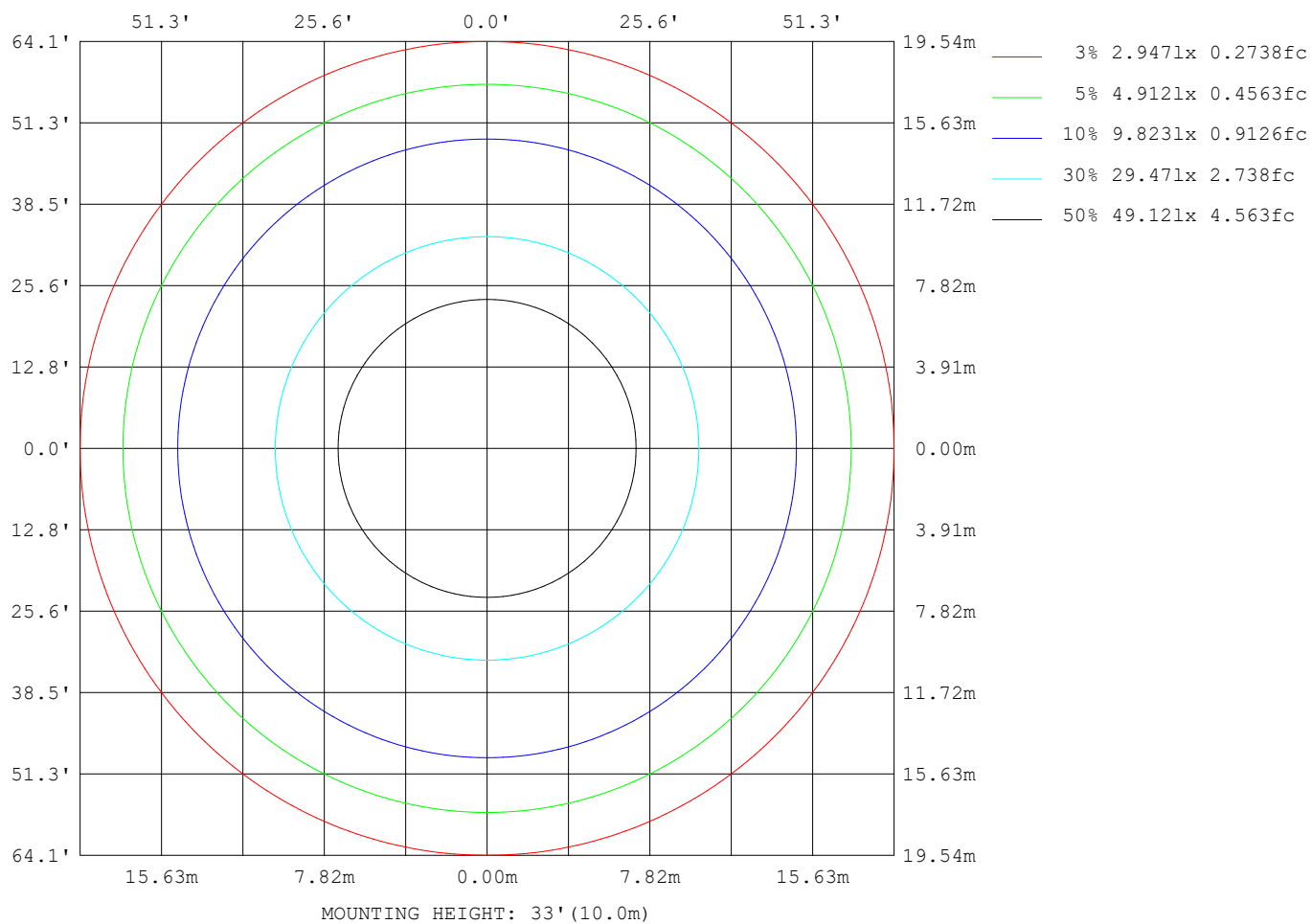
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-10-16

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4559]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

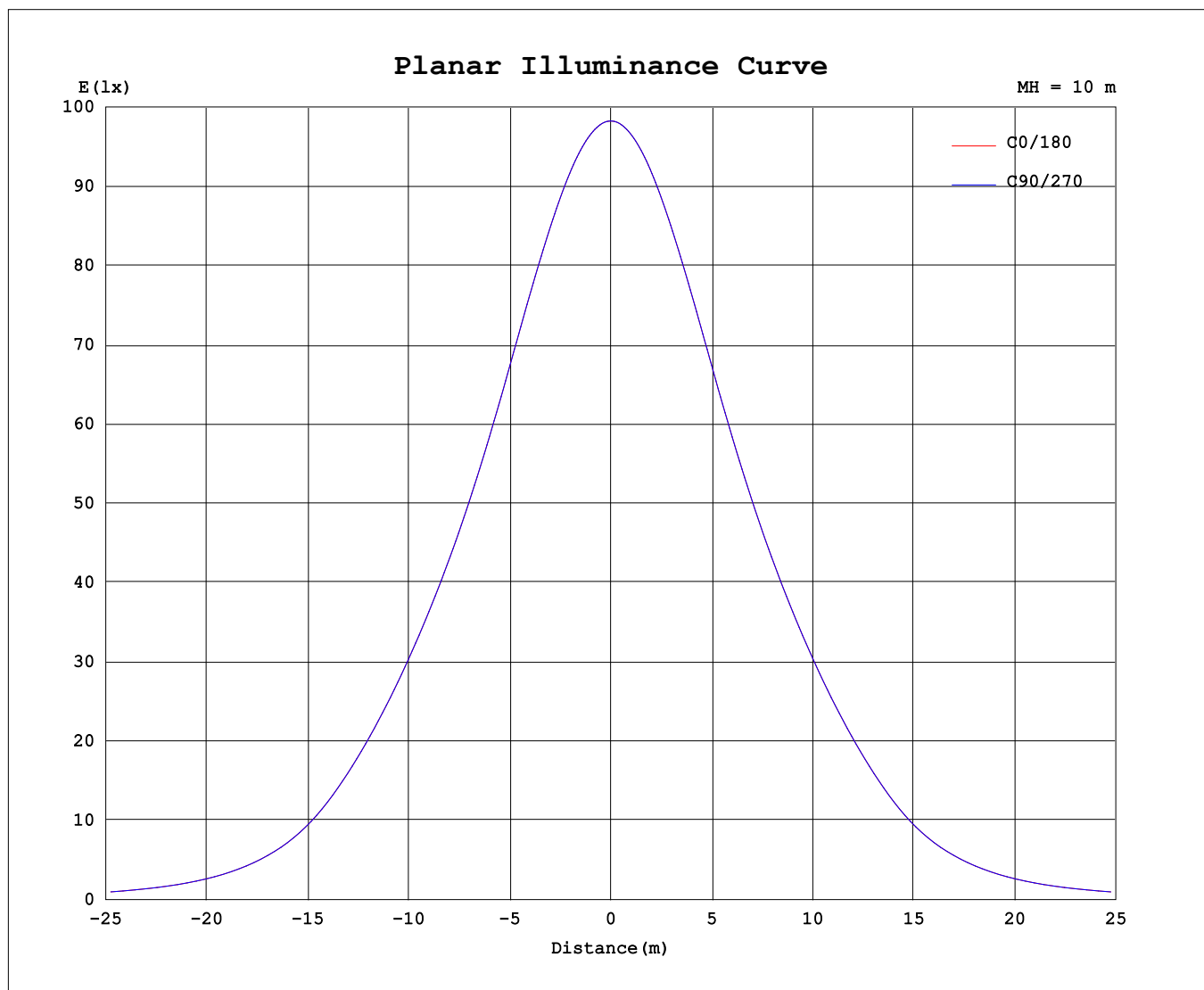
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4559]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-10-16

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4559]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

[illegible]

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-10-16

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4559]
Remarks:

```