

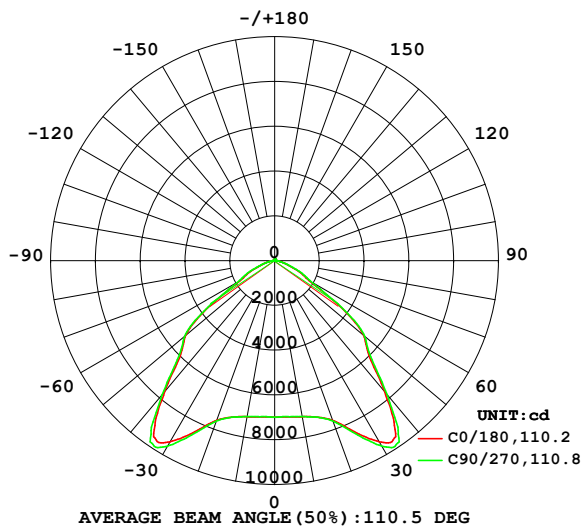
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

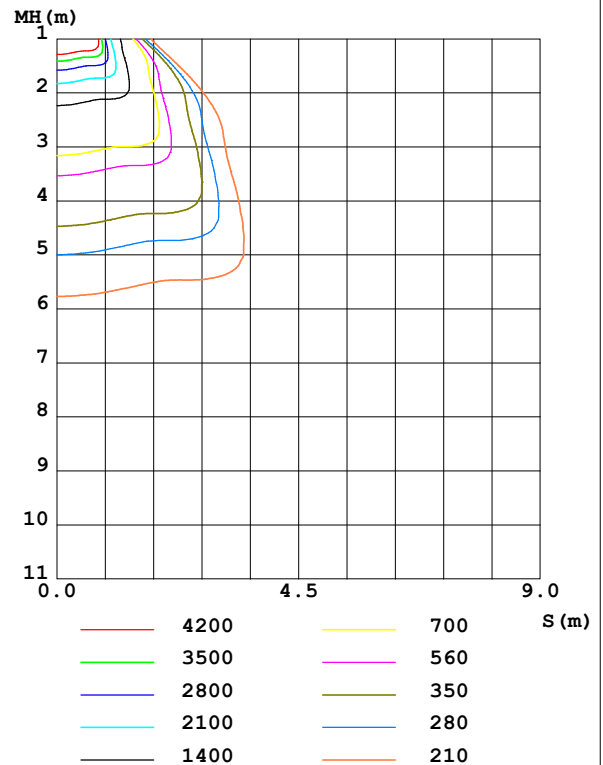
| | | |
|---|-------|------------------|
| Test:U:230.0V I:0.535A P:119.9W PF:0.975 Freq:50.00Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:22584.3x1 lm | | |
| NAME: HB68-120H-5070-H00194+H00C01A | TYPE: | WEIGHT: |
| SPEC.: | DIM.: | SERIAL No.: |
| MFR.: | SUR.: | Shielding Angle: |

| DATA OF LAMP | | PHOTOMETRIC DATA Eff: 188.35 lm/W | | | |
|------------------|---------|-----------------------------------|--------|-------------------|----------|
| MODEL | / | I _{max} (cd) | 9980 | S/MH(C0/180) | 1.53 |
| NOMINAL POWER(W) | / | LOR(%) | 100.0 | S/MH(C90/270) | 1.54 |
| RATED VOLTAGE(V) | / | TOTAL FLUX(lm) | 22584 | η UP,DN(C0-180) | 0.6,49.4 |
| NOMINAL FLUX(lm) | 22584.3 | CIE CLASS | DIRECT | η UP,DN(C180-360) | 0.6,49.4 |
| LAMPS INSIDE | 1 | η up (%) | 1.2 | CIBSE SHR NOM | 1.50 |
| TEST VOLTAGE(V) | / | η down (%) | 98.8 | CIBSE SHR MAX | 1.55 |

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-07-13

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4556]
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 | 7080 | 7084 | 7075 | 7084 | 7080 | 7084 | 7075 | 7084 | 0- 10 | 671.2 | 671.2 | 2.97,2.97 |
| 20 | 7595 | 7598 | 7627 | 7598 | 7595 | 7598 | 7627 | 7598 | 10- 20 | 2069 | 2740 | 12.1,12.1 |
| 30 | 9344 | 9465 | 9558 | 9465 | 9344 | 9465 | 9558 | 9465 | 20- 30 | 3960 | 6700 | 29.7,29.7 |
| 40 | 7660 | 7731 | 7836 | 7731 | 7660 | 7731 | 7836 | 7731 | 30- 40 | 5761 | 12460 | 55.2,55.2 |
| 50 | 5189 | 5269 | 5249 | 5269 | 5189 | 5269 | 5249 | 5269 | 40- 50 | 4789 | 17250 | 76.4,76.4 |
| 60 | 1772 | 1824 | 1870 | 1824 | 1772 | 1824 | 1870 | 1824 | 50- 60 | 3174 | 20423 | 90.4,90.4 |
| 70 | 743.2 | 743.1 | 788.6 | 743.1 | 743.2 | 743.1 | 788.6 | 743.1 | 60- 70 | 1279 | 21703 | 96.1,96.1 |
| 80 | 225.2 | 212.0 | 223.4 | 212.0 | 225.2 | 212.0 | 223.4 | 212.0 | 70- 80 | 483.0 | 22186 | 98.2,98.2 |
| 90 | 46.60 | 49.00 | 50.41 | 49.00 | 46.60 | 49.00 | 50.41 | 49.00 | 80- 90 | 124.8 | 22311 | 98.8,98.8 |
| 100 | 29.01 | 30.64 | 29.76 | 30.64 | 29.01 | 30.64 | 29.76 | 30.64 | 90-100 | 36.87 | 22347 | 99,99 |
| 110 | 31.37 | 31.08 | 30.56 | 31.08 | 31.37 | 31.08 | 30.56 | 31.08 | 100-110 | 30.66 | 22378 | 99.1,99.1 |
| 120 | 45.81 | 48.49 | 46.68 | 48.49 | 45.81 | 48.49 | 46.68 | 48.49 | 110-120 | 38.31 | 22416 | 99.3,99.3 |
| 130 | 47.67 | 49.13 | 49.52 | 49.13 | 47.67 | 49.13 | 49.52 | 49.13 | 120-130 | 44.06 | 22461 | 99.5,99.5 |
| 140 | 57.20 | 59.63 | 59.68 | 59.63 | 57.20 | 59.63 | 59.68 | 59.63 | 130-140 | 41.17 | 22502 | 99.6,99.6 |
| 150 | 55.79 | 56.65 | 56.37 | 56.65 | 55.79 | 56.65 | 56.37 | 56.65 | 140-150 | 36.70 | 22538 | 99.8,99.8 |
| 160 | 50.54 | 50.48 | 50.15 | 50.48 | 50.54 | 50.48 | 50.15 | 50.48 | 150-160 | 24.62 | 22563 | 99.9,99.9 |
| 170 | 58.66 | 58.31 | 58.41 | 58.31 | 58.66 | 58.31 | 58.41 | 58.31 | 160-170 | 15.36 | 22578 | 100,100 |
| 180 | 65.86 | 65.92 | 65.97 | 65.92 | 65.86 | 65.92 | 65.97 | 65.92 | 170-180 | 5.942 | 22584 | 100,100 |
| DEG | LUMINOUS INTENSITY:cd | | | | | | | | | UNIT:lm | | |

Conical surface Flux(90deg): 14975 lm

%lum = 66.3%
%lamp = 66.3%

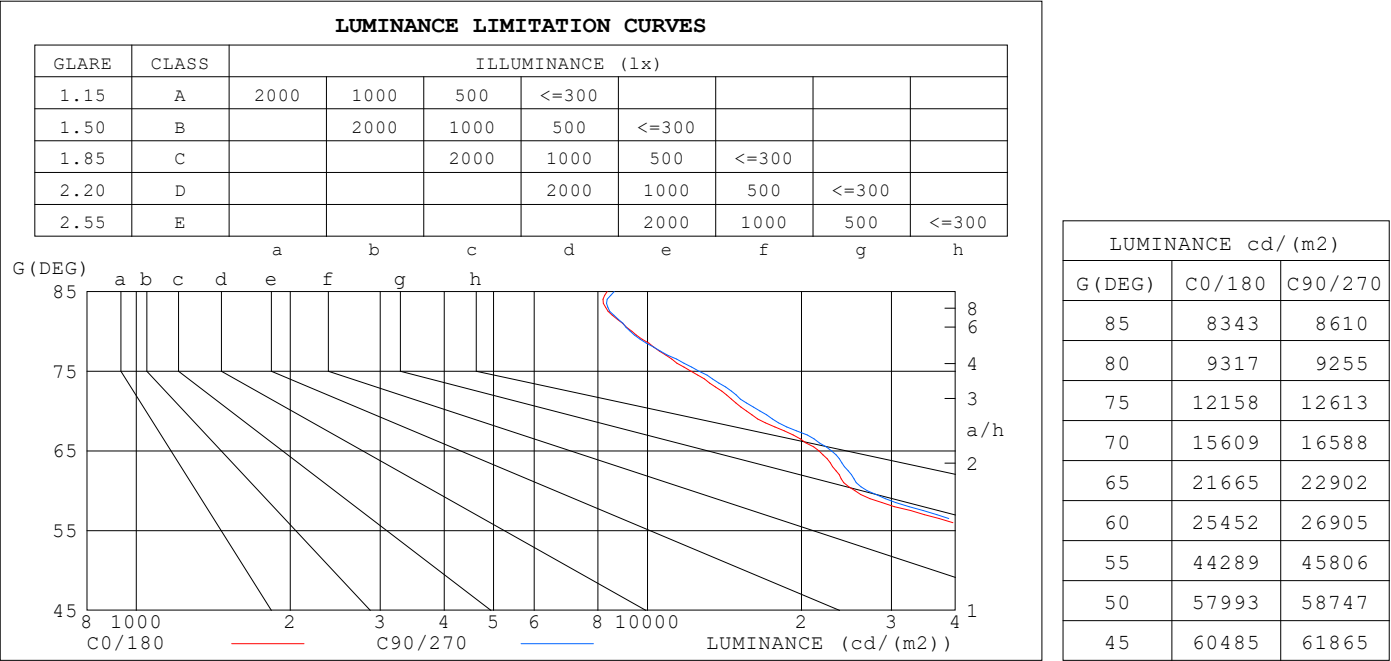
Conical surface Flux(120deg): 20423 lm

%lum = 90.4%
%lamp = 90.4%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:ZZX
Test Date:2023-07-13

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 γ Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
Remarks:

LUMINANCE LIMITATION CURVES



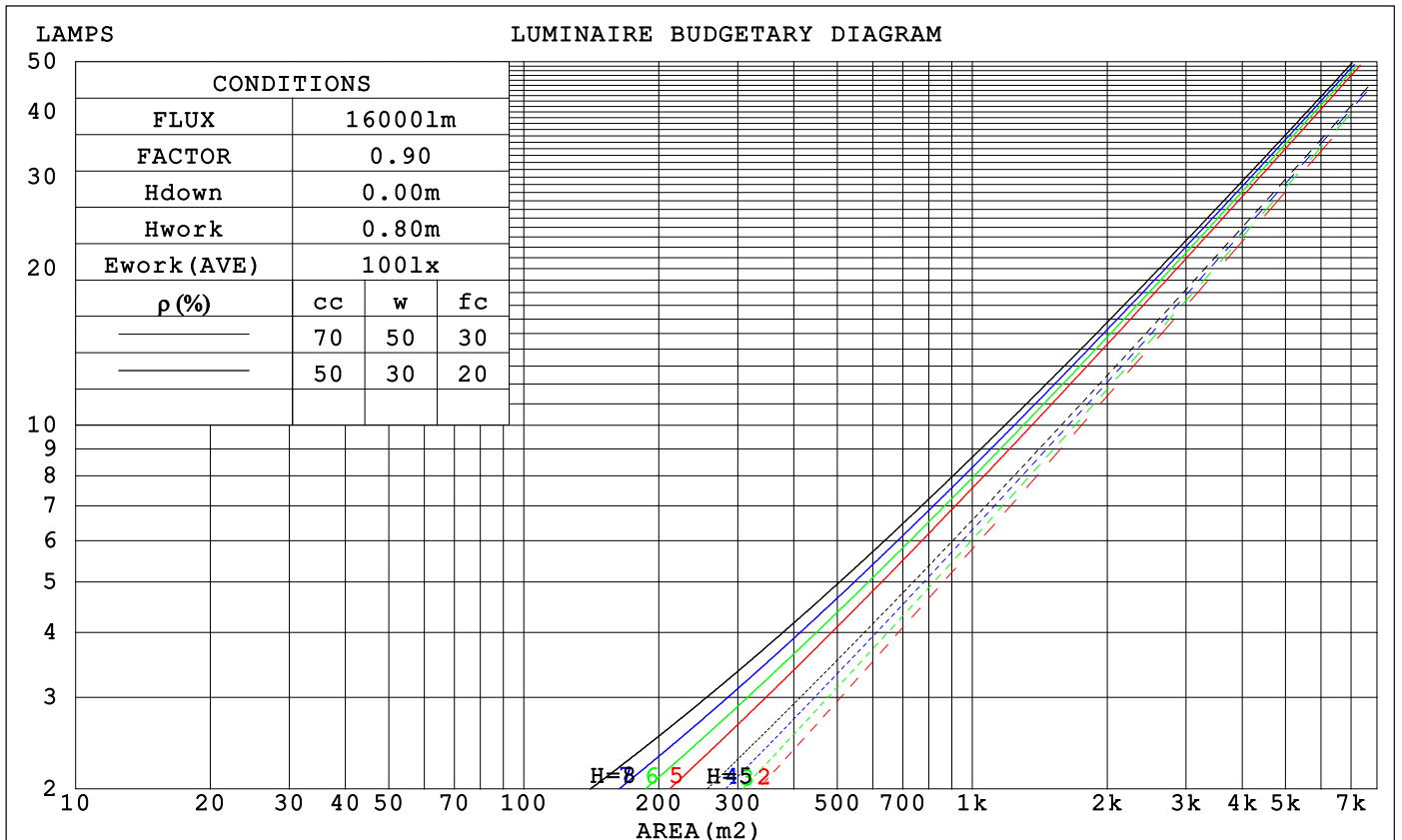
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-13

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
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 | 1.10 | 1.10 | 1.10 | 1.05 | 1.05 | 1.05 | 1.01 | 1.01 | 1.01 | .99 |
| 1.0 | 1.06 | 1.03 | .00 | 1.04 | 1.01 | .98 | .00 | .97 | .95 | .96 | .94 | .92 | .92 | .90 | .89 | .87 |
| 2.0 | .95 | .89 | .84 | .93 | .87 | .83 | .89 | .85 | .81 | .86 | .82 | .79 | .83 | .80 | .77 | .75 |
| 3.0 | .84 | .77 | .71 | .83 | .76 | .71 | .80 | .74 | .69 | .77 | .72 | .68 | .74 | .70 | .67 | .65 |
| 4.0 | .75 | .68 | .61 | .74 | .67 | .61 | .72 | .65 | .60 | .69 | .64 | .59 | .67 | .62 | .58 | .56 |
| 5.0 | .68 | .60 | .53 | .67 | .59 | .53 | .64 | .58 | .52 | .62 | .56 | .52 | .60 | .55 | .51 | .49 |
| 6.0 | .61 | .53 | .47 | .60 | .52 | .47 | .58 | .51 | .46 | .57 | .50 | .46 | .55 | .49 | .45 | .43 |
| 7.0 | .55 | .47 | .41 | .55 | .47 | .41 | .53 | .46 | .41 | .51 | .45 | .40 | .50 | .44 | .40 | .38 |
| 8.0 | .51 | .42 | .37 | .50 | .42 | .37 | .48 | .41 | .36 | .47 | .41 | .36 | .46 | .40 | .36 | .34 |
| 9.0 | .46 | .38 | .33 | .46 | .38 | .33 | .44 | .38 | .33 | .43 | .37 | .32 | .42 | .36 | .32 | .30 |
| 10.0 | .43 | .35 | .30 | .42 | .35 | .30 | .41 | .34 | .30 | .40 | .34 | .29 | .39 | .33 | .29 | .27 |



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-13

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
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 | .255 | .145 | .046 | .248 | .141 | .045 | .234 | .134 | .043 | .222 | .128 | .041 | .210 | .122 | .039 | |
| 2.0 | .248 | .136 | .042 | .242 | .133 | .041 | .230 | .128 | .040 | .219 | .123 | .038 | .209 | .118 | .037 | |
| 3.0 | .236 | .126 | .038 | .230 | .123 | .037 | .220 | .119 | .036 | .210 | .115 | .035 | .201 | .111 | .034 | |
| 4.0 | .223 | .116 | .034 | .218 | .114 | .034 | .209 | .111 | .033 | .200 | .107 | .032 | .192 | .104 | .032 | |
| 5.0 | .210 | .107 | .031 | .205 | .105 | .031 | .197 | .103 | .030 | .189 | .100 | .030 | .182 | .097 | .029 | |
| 6.0 | .198 | .099 | .028 | .194 | .098 | .028 | .186 | .095 | .028 | .179 | .093 | .027 | .173 | .091 | .027 | |
| 7.0 | .186 | .092 | .026 | .183 | .091 | .026 | .176 | .089 | .026 | .170 | .087 | .025 | .164 | .085 | .025 | |
| 8.0 | .176 | .086 | .024 | .173 | .085 | .024 | .167 | .083 | .024 | .161 | .081 | .024 | .155 | .080 | .023 | |
| 9.0 | .166 | .080 | .022 | .163 | .080 | .022 | .158 | .078 | .022 | .153 | .076 | .022 | .148 | .075 | .022 | |
| 10.0 | .157 | .075 | .021 | .155 | .075 | .021 | .150 | .073 | .021 | .145 | .072 | .020 | .141 | .071 | .020 | |

| 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 | .200 | .200 | .200 | .171 | .171 | .171 | .116 | .116 | .116 | .067 | .067 | .067 | .021 | .021 | .021 | |
| 1.0 | .186 | .166 | .148 | .159 | .142 | .127 | .109 | .098 | .088 | .063 | .057 | .051 | .020 | .018 | .017 | |
| 2.0 | .176 | .141 | .113 | .151 | .122 | .097 | .103 | .084 | .068 | .059 | .049 | .040 | .019 | .016 | .013 | |
| 3.0 | .167 | .123 | .089 | .143 | .107 | .077 | .099 | .074 | .054 | .057 | .043 | .032 | .018 | .014 | .010 | |
| 4.0 | .160 | .110 | .072 | .137 | .095 | .062 | .094 | .066 | .044 | .055 | .039 | .026 | .018 | .013 | .009 | |
| 5.0 | .153 | .099 | .060 | .131 | .086 | .052 | .090 | .060 | .037 | .052 | .035 | .022 | .017 | .011 | .007 | |
| 6.0 | .146 | .091 | .051 | .126 | .079 | .044 | .087 | .055 | .031 | .050 | .032 | .019 | .016 | .011 | .006 | |
| 7.0 | .140 | .084 | .044 | .121 | .073 | .039 | .083 | .051 | .027 | .048 | .030 | .016 | .016 | .010 | .005 | |
| 8.0 | .134 | .078 | .040 | .116 | .068 | .034 | .080 | .048 | .024 | .047 | .028 | .015 | .015 | .009 | .005 | |
| 9.0 | .129 | .073 | .036 | .111 | .064 | .031 | .077 | .045 | .022 | .045 | .026 | .013 | .015 | .009 | .004 | |
| 10.0 | .124 | .069 | .033 | .107 | .060 | .029 | .074 | .042 | .020 | .043 | .025 | .012 | .014 | .008 | .004 | |

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators: ZZK
 Test Date: 2023-07-13

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4556]
 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 | 23.0 | 24.5 | 23.4 | 24.8 | 25.2 | 23.2 | 24.7 | 23.6 | 25.0 | 25.4 |
| 3H | 23.7 | 25.0 | 24.1 | 25.4 | 25.7 | 23.9 | 25.2 | 24.3 | 25.5 | 25.9 |
| 4H | 23.9 | 25.1 | 24.3 | 25.5 | 25.9 | 24.0 | 25.2 | 24.5 | 25.6 | 26.0 |
| 6H | 24.0 | 25.1 | 24.4 | 25.5 | 25.9 | 24.1 | 25.2 | 24.5 | 25.6 | 26.0 |
| 8H | 24.0 | 25.0 | 24.4 | 25.5 | 25.9 | 24.1 | 25.2 | 24.6 | 25.6 | 26.0 |
| 12H | 24.0 | 25.0 | 24.4 | 25.4 | 25.9 | 24.1 | 25.1 | 24.6 | 25.5 | 26.0 |
| 4H 2H | 23.3 | 24.5 | 23.7 | 24.8 | 25.3 | 23.4 | 24.6 | 23.9 | 25.0 | 25.4 |
| 3H | 24.1 | 25.1 | 24.5 | 25.5 | 25.9 | 24.2 | 25.2 | 24.7 | 25.6 | 26.1 |
| 4H | 24.4 | 25.2 | 24.8 | 25.7 | 26.1 | 24.4 | 25.3 | 24.9 | 25.8 | 26.2 |
| 6H | 24.5 | 25.3 | 25.0 | 25.7 | 26.2 | 24.6 | 25.3 | 25.1 | 25.8 | 26.3 |
| 8H | 24.5 | 25.2 | 25.0 | 25.7 | 26.2 | 24.6 | 25.3 | 25.1 | 25.8 | 26.3 |
| 12H | 24.6 | 25.2 | 25.1 | 25.7 | 26.2 | 24.6 | 25.2 | 25.1 | 25.8 | 26.3 |
| 8H 4H | 24.4 | 25.1 | 24.9 | 25.6 | 26.1 | 24.5 | 25.2 | 25.0 | 25.6 | 26.1 |
| 6H | 24.6 | 25.2 | 25.1 | 25.7 | 26.2 | 24.6 | 25.2 | 25.2 | 25.7 | 26.2 |
| 8H | 24.6 | 25.1 | 25.2 | 25.7 | 26.2 | 24.7 | 25.2 | 25.2 | 25.7 | 26.3 |
| 12H | 24.7 | 25.1 | 25.2 | 25.7 | 26.3 | 24.7 | 25.2 | 25.3 | 25.7 | 26.3 |
| 12H 4H | 24.4 | 25.0 | 24.9 | 25.5 | 26.0 | 24.4 | 25.1 | 25.0 | 25.6 | 26.1 |
| 6H | 24.6 | 25.1 | 25.1 | 25.6 | 26.1 | 24.6 | 25.1 | 25.2 | 25.6 | 26.2 |
| 8H | 24.6 | 25.1 | 25.2 | 25.6 | 26.2 | 24.7 | 25.2 | 25.2 | 25.7 | 26.3 |
| CIE190: 2010 | | | | | | | | | | |
| | | | | | | | | | | |

CIE190: 2010
Area: 0.1392 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:ZZX
Test Date:2023-07-13

γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity:65.0%
Test Distance:26.000m [K=0.4556]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

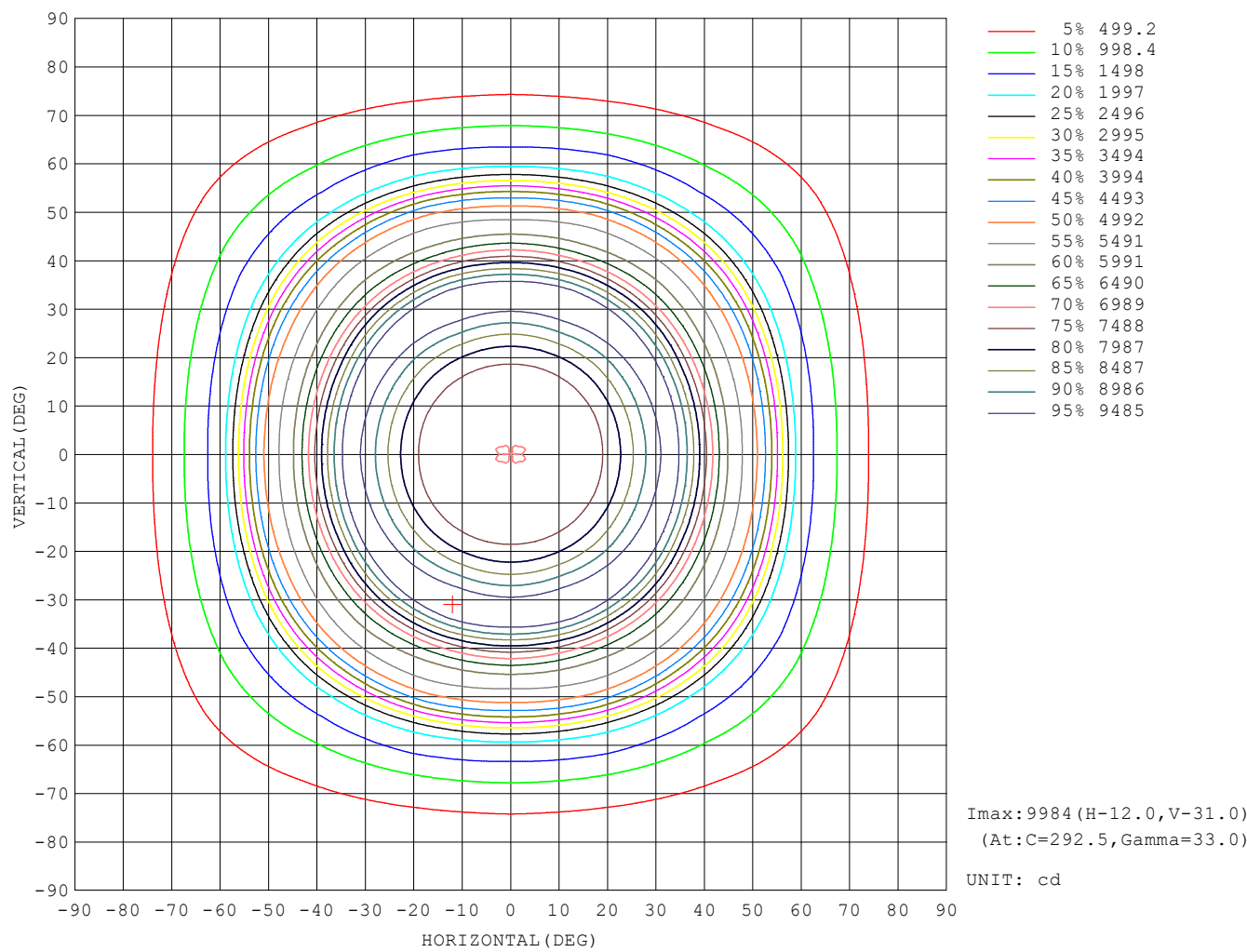
UTILIZATION FACTORS TABLE

| 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) $k(RI) \times RCR = 5$ | | | | | | | | | |
| $k = 0.60$ | 63 | 52 | 46 | 62 | 52 | 46 | 61 | 52 | 46 | 40 |
| 0.80 | 74 | 63 | 57 | 73 | 63 | 57 | 71 | 62 | 56 | 50 |
| 1.00 | 82 | 73 | 66 | 81 | 72 | 66 | 79 | 73 | 65 | 59 |
| 1.25 | 89 | 80 | 74 | 88 | 79 | 74 | 85 | 78 | 73 | 66 |
| 1.50 | 94 | 85 | 80 | 92 | 85 | 79 | 89 | 83 | 78 | 71 |
| 2.00 | 100 | 93 | 87 | 98 | 91 | 87 | 94 | 89 | 85 | 78 |
| 2.50 | 103 | 96 | 91 | 101 | 95 | 90 | 97 | 92 | 88 | 81 |
| 3.00 | 105 | 100 | 95 | 103 | 98 | 94 | 99 | 95 | 92 | 84 |
| 4.00 | 109 | 104 | 100 | 106 | 102 | 99 | 102 | 99 | 96 | 87 |
| 5.00 | 110 | 106 | 103 | 108 | 104 | 101 | 103 | 101 | 98 | 89 |
| 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: 2023-07-13

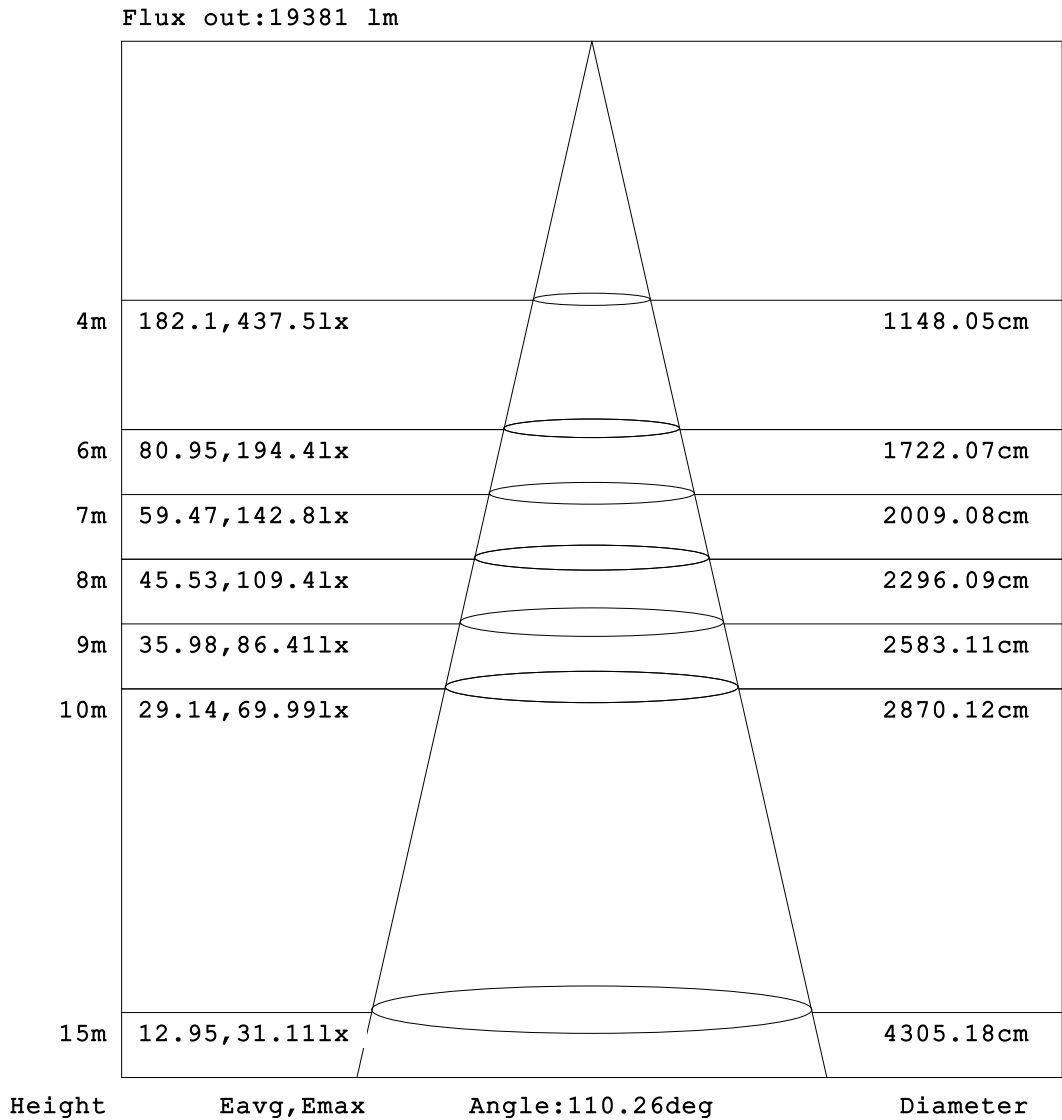
γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4556]
 Remarks:

ISOCANDELA DIAGRAM



| | |
|-----------------------|--|
| C Range: 0 - 360DEG | γ Range: 0 - 180DEG |
| C Interval: 22.5DEG | γ Interval: 0.5DEG |
| Test Speed: HIGH | Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465 |
| Temperature: 25.3°C | Humidity: 65.0% |
| Operators: ZZX | Test Distance: 26.000m [K=0.4556] |
| Test Date: 2023-07-13 | Remarks: |

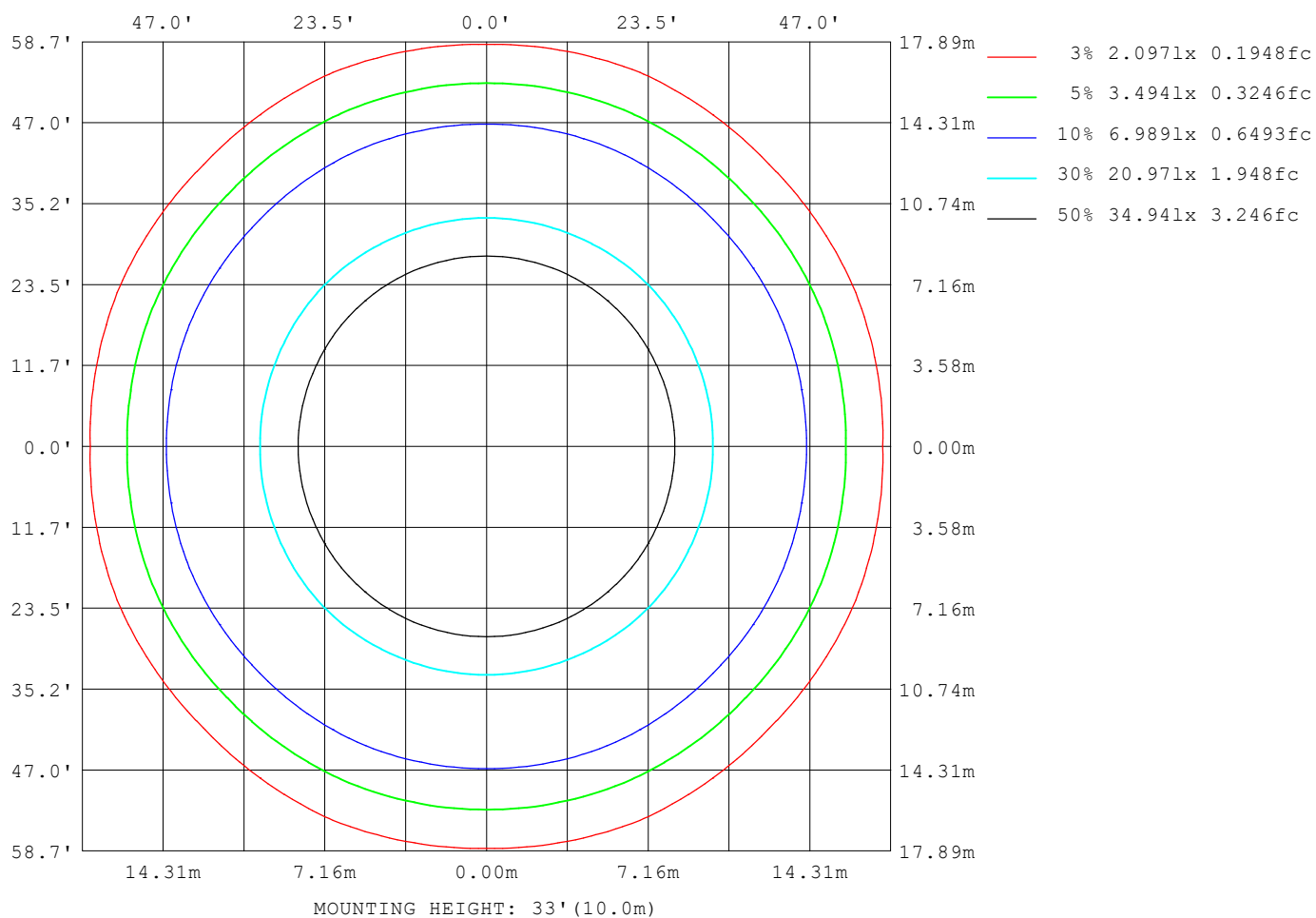
AAI Figure



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

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

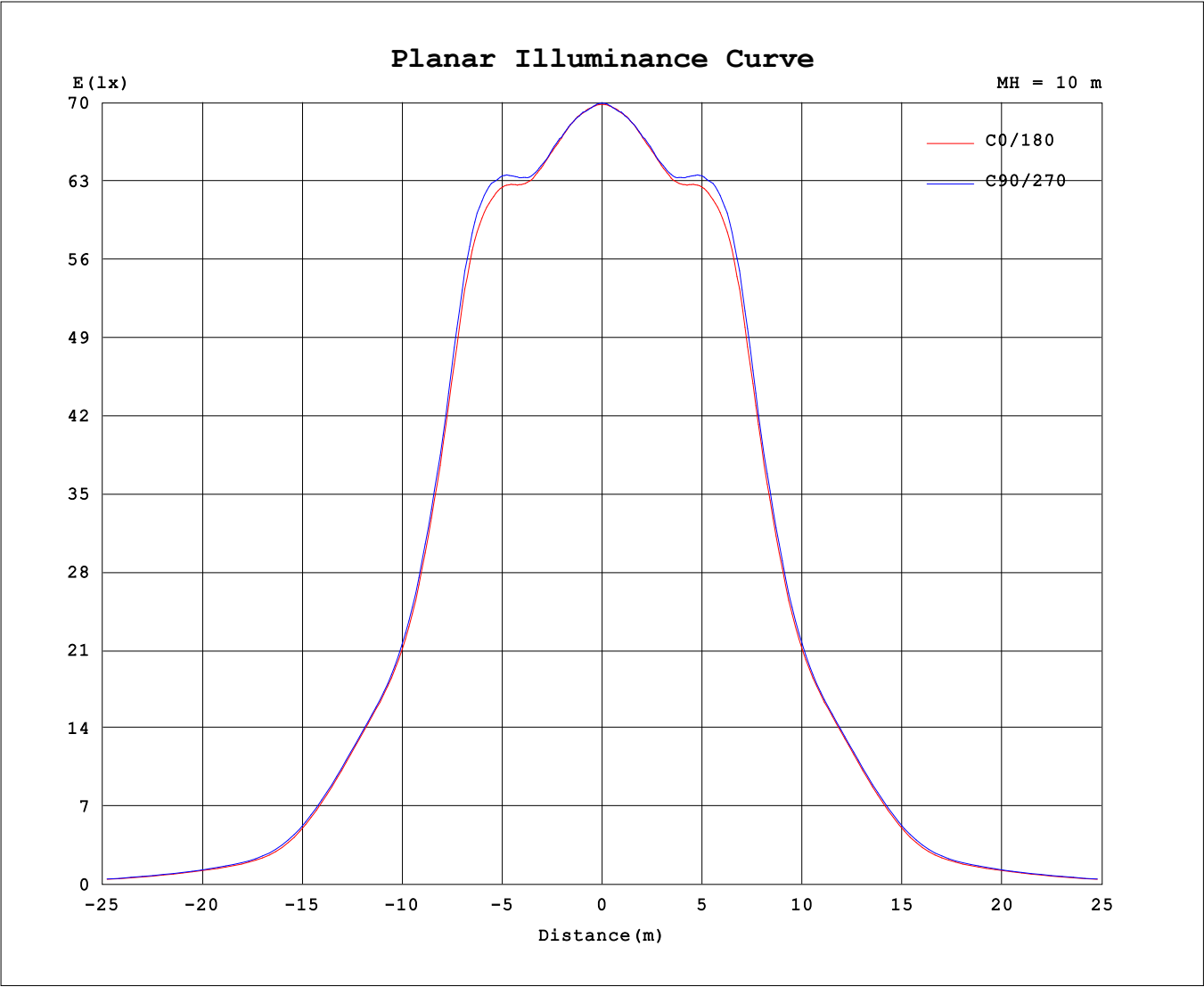
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: ZZX
Test Date: 2023-07-13

γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.465
Humidity: 65.0%
Test Distance: 26.000m [K=0.4556]
Remarks:

Planar Illuminance Curve



| | |
|----------------------|---|
| C Range: 0 - 360DEG | γ Range: 0 - 180DEG |
| C Interval: 22.5DEG | γ Interval: 0.5DEG |
| Test Speed: HIGH | Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.465 |
| Temperature:25.3℃ | Humidity:65.0% |
| Operators:ZZX | Test Distance:26.000m [K=0.4556] |
| Test Date:2023-07-13 | Remarks: |