

LUMINAIRE PHOTOMETRIC TEST REPORT

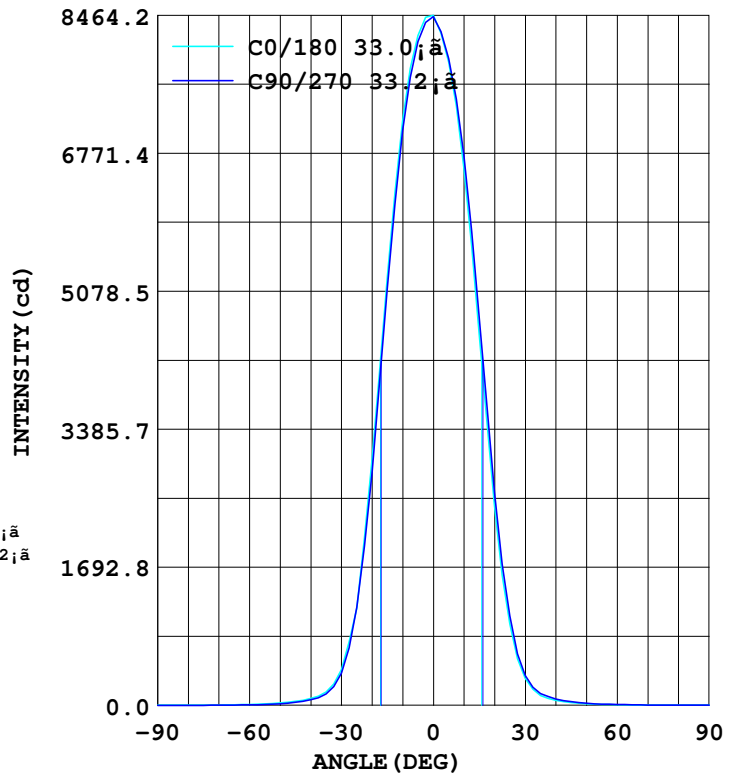
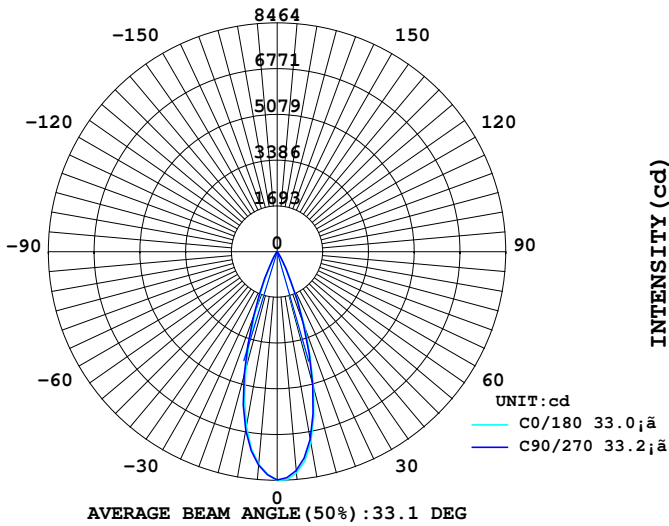
Report number: 0297-23

| | | |
|------------------------------|--------------------------|-----------------|
| MANUFACTURER: BRIGHT | | |
| Address: | | |
| NAME: AMOSTRA | TYPE: SPOT DE TRILHO 38° | WEIGHT: |
| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |

| | | | | | |
|-------------------|--------|---------------------|--------|-------------------|-------|
| DATA OF LAMP | | Imax (cd) | 8464 | S/MH (C0/180) | 0.55 |
| MODEL | LED | EFFICIENCY (%) | 100.0 | S/MH (C90/270) | 0.54 |
| NOMINAL POWER (W) | 30 | TOTAL FLUX (lm) | 2776.3 | Voltage (V) | 220.6 |
| RATED VOLTAGE (V) | 220 | EFFICIENCY (lm/W) | 93.7 | Current (A) | 0.140 |
| NOMINAL FLUX (lm) | 2776.4 | η up (%) | 0.0 | Power (W) | 29.62 |
| LAMPS QUANTITY | 1 | η down (%) | 100.0 | Power Factor (PF) | 0.954 |
| TEST VOLTAGE (V) | 220.7 | Effective Flux (lm) | 2776.4 | EEL | 0.174 |

LUMINOUS INTENSITY DISTRIBUTION

LUMINOUS INTENSITY DISTRIBUTION



Test System: HOPOO HPG1800
 Temperature: 25.3 DEG
 Operators: CRISTIANE SANTOS
 Test Date: 08-08-2023

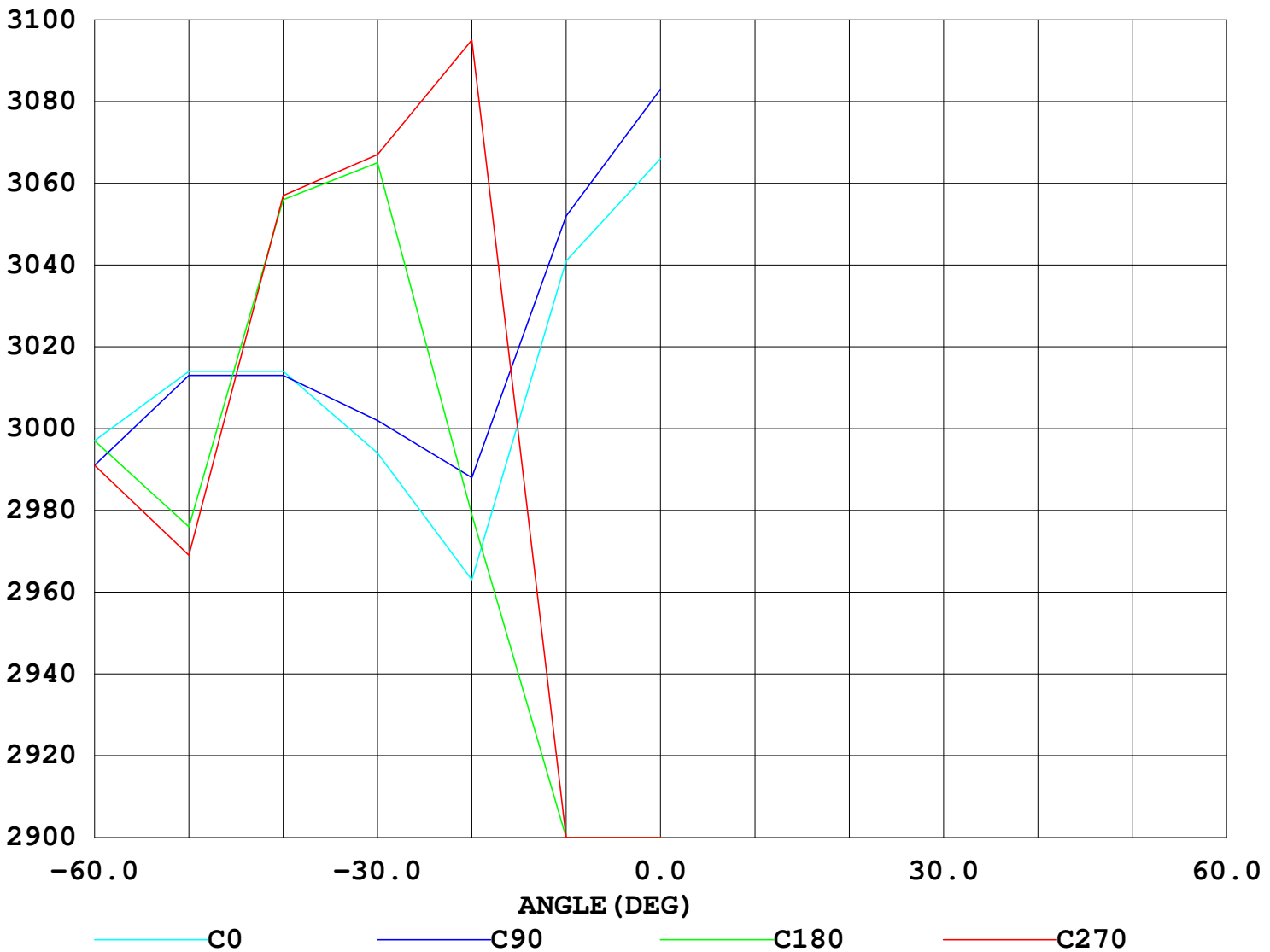
Test Set: 5.0 deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks:

Color Temperature Distrib

Report number: 0297-23

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COLOR TEMPERATURE DISTRIBUTION



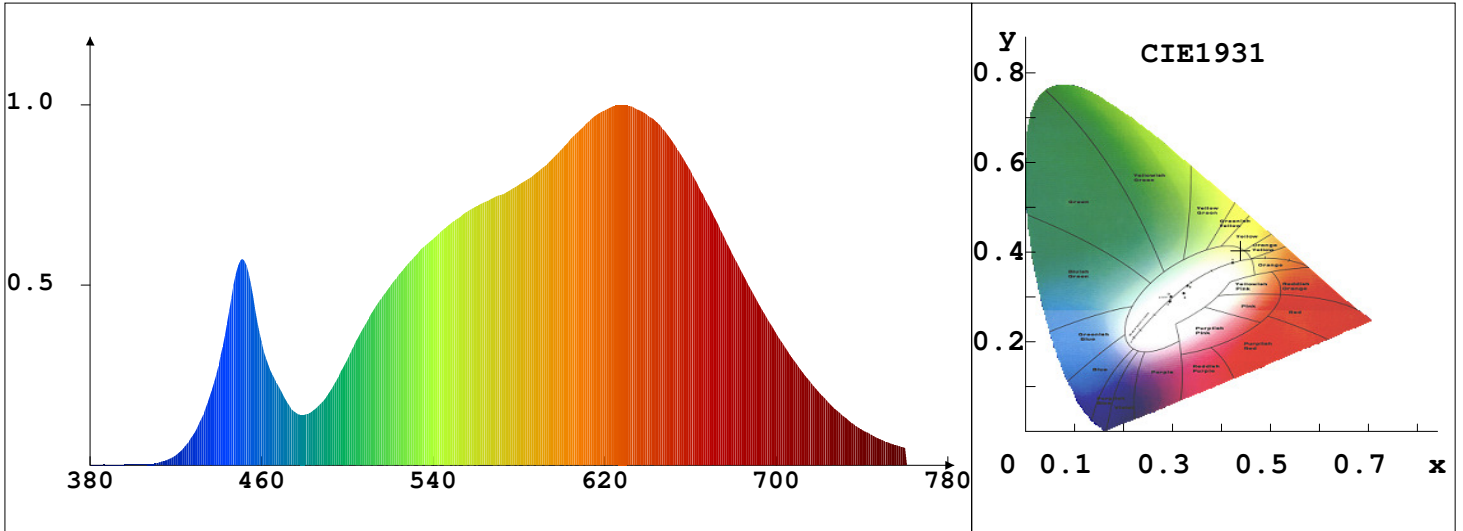
Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
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 Remarks:

Spectrum Chart

Report number: 0297-23

| | | |
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Avg Chro. Para.

CCT: 3004K Chro. Coord.: $x_a=0.4351$ $y_a=0.4008$ $u'_a=0.2508$ $v'_a=0.5198$ $|u'_a v'_a|=0.0026$

Current Angle: $C=0.0$ $G=0.0$

Chroma Parameters

Chro.Coord.: $x=0.4362$ $y=0.4023$ $u'=0.2509$ $v'=0.5206$ $duv=-0.0006$

CCT: 2997K Dominant Wave: 583.1nm Purity: 51.7% Light Intensity: 1314.6cd

Flux RGB Ratio: R=24.4%, G=73.3%, B=2.3% Peak Wave: 627.8nm Half Width: 167.0nm

Rendering Index: $R_a=90.7$

R1 =92 R2 =92 R3 =90 R4 =92 R5 =90 R6 =89 R7 =94 R8 =87

R9 =66 R10=80 R11=91 R12=73 R13=92 R14=94 R15=90

Instrument State

Scan Range: 380nm-780nm Integral Time: 110.0ms Peak Signal: 110000 Dark Signal: 56259

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Color Temperature Data List

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| Gamma\C | C0 (CT;/nu'v') | | C90 (CT;/nu'v') | | Gamma\C | C180 (CT;/nu'v') | | C270 (CT;/nu'v') | |
|---------|----------------|--------|-----------------|--------|---------|------------------|--------|------------------|--------|
| 0.0 | 2997K | 0.0008 | 2991K | 0.0016 | -0.0 | 2997K | 0.0008 | 2991K | 0.0016 |
| 10.0 | 3014K | 0.0005 | 3013K | 0.0004 | -10.0 | 2976K | 0.0017 | 2969K | 0.0026 |
| 20.0 | 3014K | 0.0004 | 3013K | 0.0005 | -20.0 | 3056K | 0.0000 | 3057K | 0.0000 |
| 30.0 | 2994K | 0.0005 | 3002K | 0.0007 | -30.0 | 3065K | 0.0000 | 3067K | 0.0000 |
| 40.0 | 2963K | 0.0018 | 2988K | 0.0009 | -40.0 | 2979K | 0.0000 | 3095K | 0.0000 |
| 50.0 | 3041K | 0.0000 | 3052K | 0.0000 | -50.0 | OK | 0.0000 | OK | 0.0000 |
| 60.0 | 3066K | 0.0000 | 3083K | 0.0000 | -60.0 | OK | 0.0000 | OK | 0.0000 |

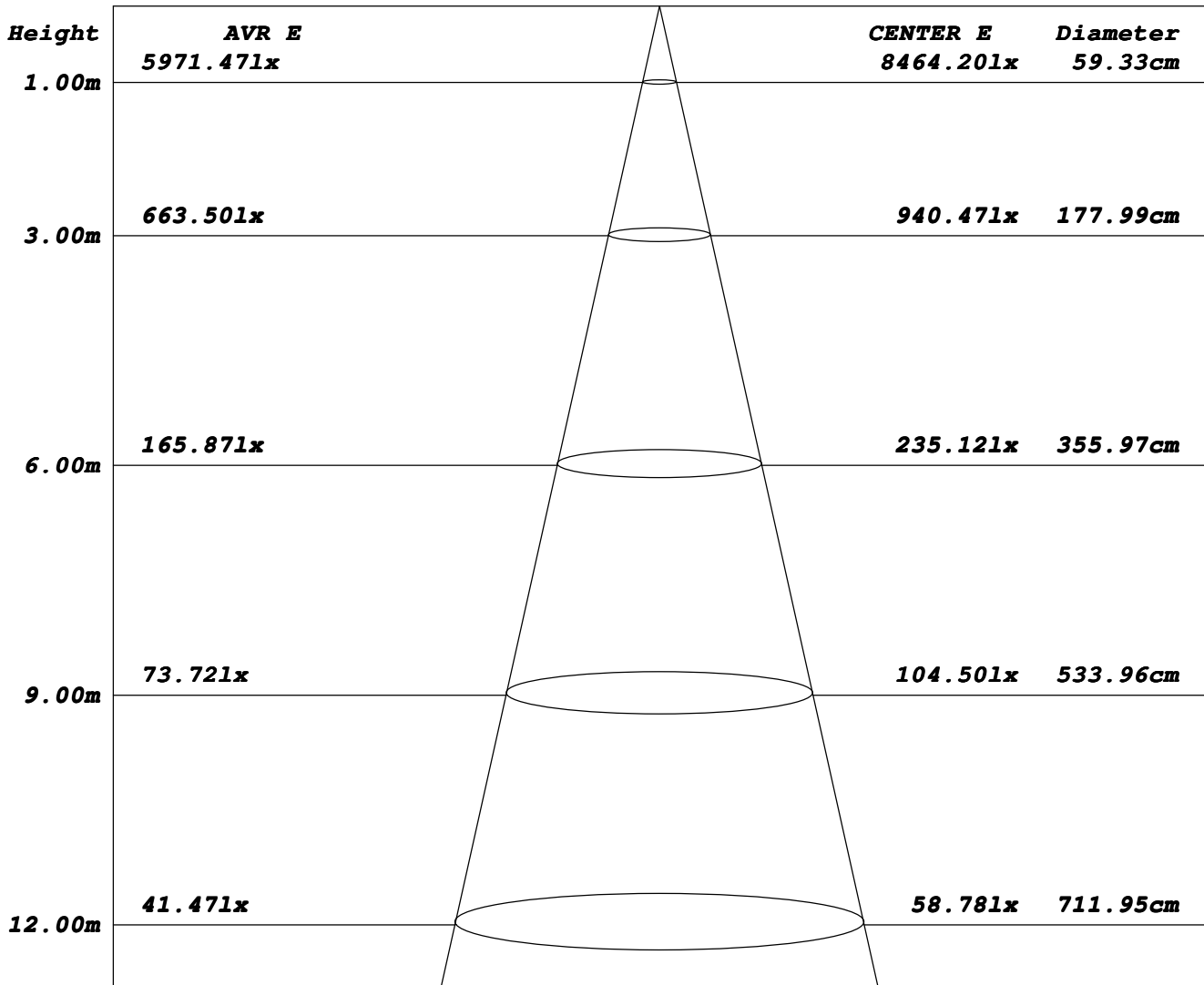
**Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023**

**Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:**

AVERAGE AND CENTER E Figure

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Angle: 33.0deg

Test System: HOPOO HPG1800
 Temperature: 25.3DEG
 Operators: CRISTIANE SANTOS
 Test Date: 08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
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 Remarks:

ZONAL FLUX DIAGRAM

Report number: 0297-23

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| γ | C0 | C90 | C180 | C270 | | | | | γ | zone | total |
|------------|------------------------------|-------|-------|-------|--|--|--|--|---------|----------------|-------|
| 5.0 | 8213 | 8139 | 7888 | 7934 | | | | | 0- 5 | 196.9 | 196.9 |
| 10.0 | 7167 | 7045 | 6574 | 6725 | | | | | 5- 10 | 534.4 | 731.3 |
| 15.0 | 5238 | 5106 | 4522 | 4727 | | | | | 10- 15 | 697.2 | 1429 |
| 20.0 | 3034 | 2868 | 2452 | 2615 | | | | | 15- 20 | 621.1 | 2050 |
| 25.0 | 1190 | 1203 | 997.2 | 1095 | | | | | 20- 25 | 390.8 | 2441 |
| 30.0 | 438.5 | 394.6 | 331.8 | 366.3 | | | | | 25- 30 | 178.2 | 2619 |
| 35.0 | 163.1 | 137.8 | 119.9 | 144.1 | | | | | 30- 35 | 71.57 | 2690 |
| 40.0 | 83.90 | 66.90 | 59.10 | 77.30 | | | | | 35- 40 | 34.06 | 2724 |
| 45.0 | 47.50 | 36.09 | 32.50 | 43.90 | | | | | 40- 45 | 20.10 | 2745 |
| 50.0 | 28.29 | 18.70 | 17.60 | 25.90 | | | | | 45- 50 | 12.40 | 2757 |
| 55.0 | 16.40 | 9.500 | 9.700 | 14.80 | | | | | 50- 55 | 7.404 | 2764 |
| 60.0 | 10.90 | 5.800 | 6.800 | 9.700 | | | | | 55- 60 | 4.737 | 2769 |
| 65.0 | 7.600 | 2.800 | 2.800 | 6.200 | | | | | 60- 65 | 3.258 | 2772 |
| 70.0 | 3.100 | 0.200 | 0.800 | 2.900 | | | | | 65- 70 | 1.522 | 2774 |
| 75.0 | 2.300 | 0 | 0.600 | 2.300 | | | | | 70- 75 | 0.784 | 2775 |
| 80.0 | 1.900 | 0 | 0.600 | 1.800 | | | | | 75- 80 | 0.632 | 2775 |
| 85.0 | 1.600 | 0 | 0.600 | 1.600 | | | | | 80- 85 | 0.547 | 2776 |
| 90.0 | 1.300 | 0 | 1.000 | 1.200 | | | | | 85- 90 | 0.496 | 2776 |
| 95.0 | | | | | | | | | 90- 95 | | |
| 100.0 | | | | | | | | | 95-100 | | |
| 105.0 | | | | | | | | | 100-105 | | |
| 110.0 | | | | | | | | | 105-110 | | |
| 115.0 | | | | | | | | | 110-115 | | |
| 120.0 | | | | | | | | | 115-120 | | |
| 125.0 | | | | | | | | | 120-125 | | |
| 130.0 | | | | | | | | | 125-130 | | |
| 135.0 | | | | | | | | | 130-135 | | |
| 140.0 | | | | | | | | | 135-140 | | |
| 145.0 | | | | | | | | | 140-145 | | |
| 150.0 | | | | | | | | | 145-150 | | |
| 155.0 | | | | | | | | | 150-155 | | |
| 160.0 | | | | | | | | | 155-160 | | |
| 165.0 | | | | | | | | | 160-165 | | |
| 170.0 | | | | | | | | | 165-170 | | |
| 175.0 | | | | | | | | | 170-175 | | |
| 180.0 | | | | | | | | | 175-180 | | |
| DEG | LUMINOUS INTENSITY:cd | | | | | | | | | UNIT:lm | |

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

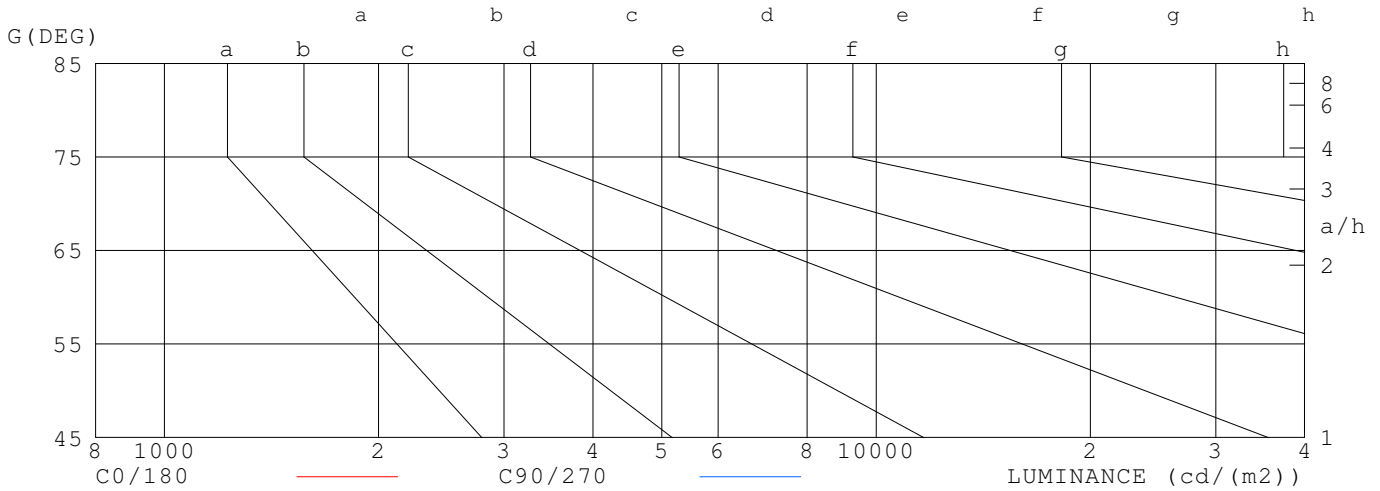
LUMINANCE LIMITATION CURVES

Report number: 0297-23

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LUMINANCE LIMITATION CURVES

| GLARE | CLASS | ILLUMINANCE (lx) | | | | | | | |
|-------|-------|------------------|------|------|-------|-------|-------|-------|-------|
| 1.15 | A | 2000 | 1000 | 500 | <=300 | | | | |
| 1.50 | B | | 2000 | 1000 | 500 | <=300 | | | |
| 1.85 | C | | | 2000 | 1000 | 500 | <=300 | | |
| 2.20 | D | | | | 2000 | 1000 | 500 | <=300 | |
| 2.55 | E | | | | | 2000 | 1000 | 500 | <=300 |



| LUMINANCE cd/m2 | | |
|-----------------|--------|---------|
| G (DEG) | C0/180 | C90/270 |
| 85 | 184 | 0 |
| 80 | 109 | 0 |
| 75 | 89 | 0 |
| 70 | 91 | 6 |
| 65 | 180 | 66 |
| 60 | 218 | 116 |
| 55 | 286 | 166 |
| 50 | 440 | 291 |
| 45 | 672 | 511 |

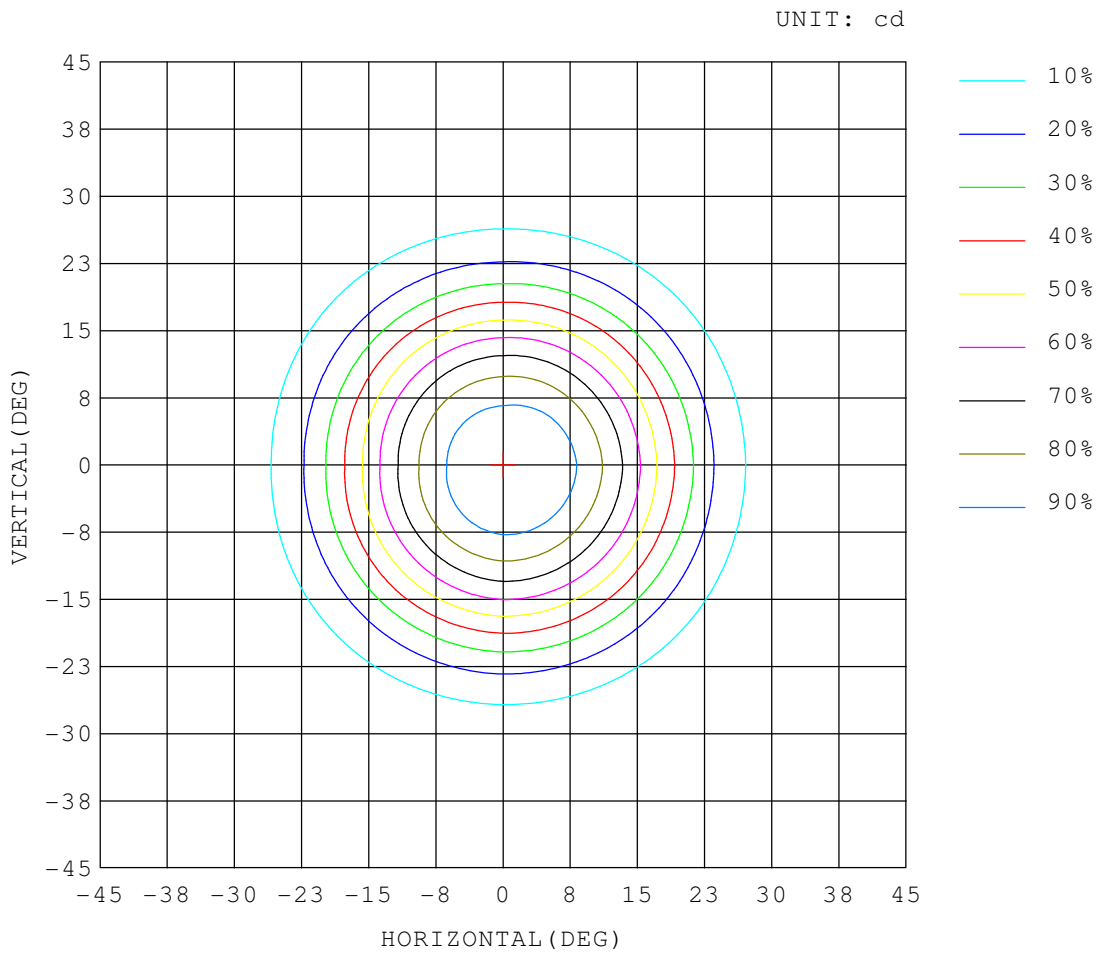
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 Operators:CRISTIANE SANTOS
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Test Set: 5.0deg/s C-Gamma (TYPE C)
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ISOCANDELA DIAGRAM

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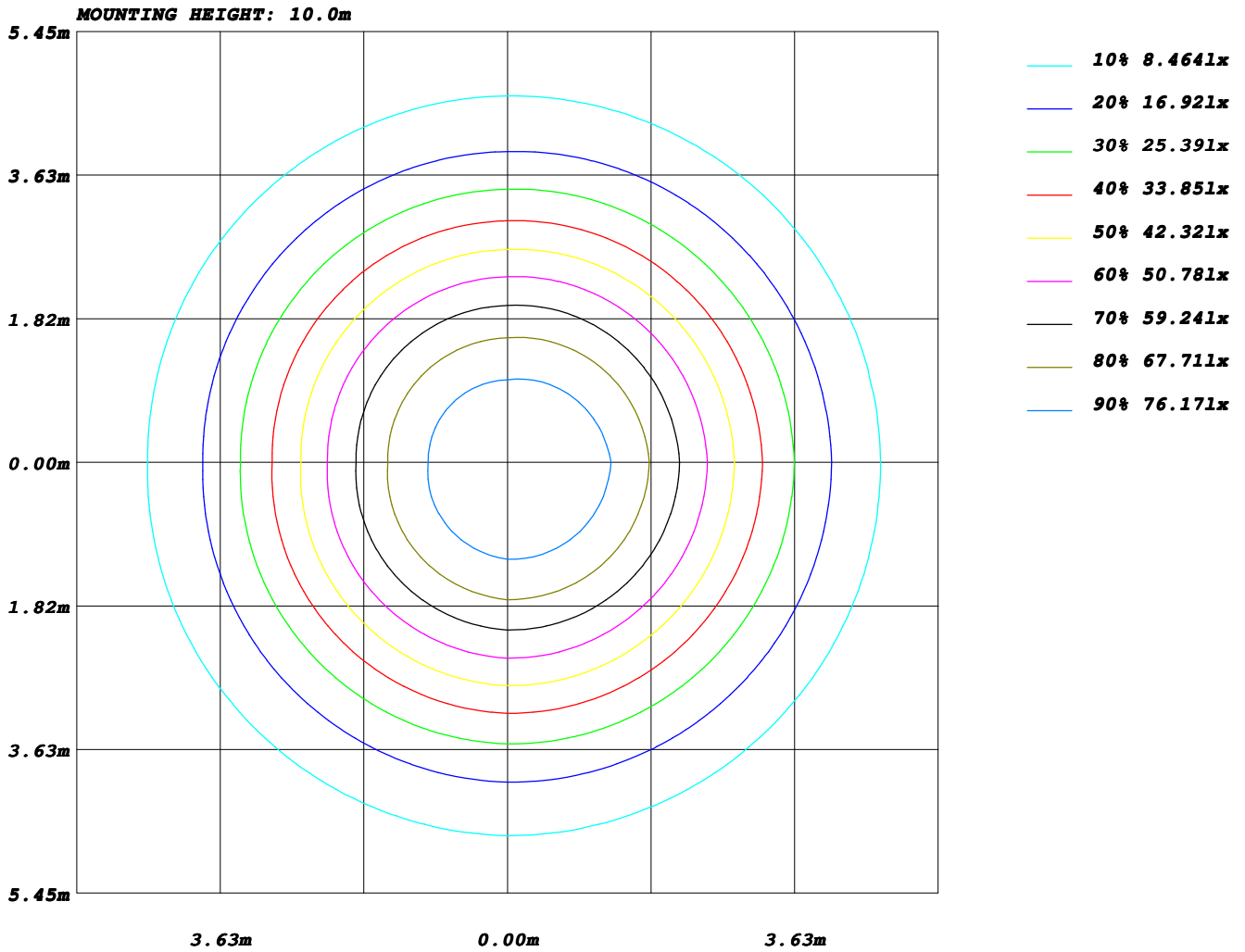
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Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:10.000 m
Remarks:

ISOLUX DIAGRAM

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| | | |
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 Operators:CRISTIANE SANTOS
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Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

AREA LUMINOUS FLUX

Report number: 0297-23

| | | |
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| Address: | | |
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| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |

| | | AREA FLUX DIAGRAM | | | | | | | | | | | | | | | | | UNIT:lm | | Φ t | Φ a |
|----------------|------|-------------------|------|------|------|------|------|------|------|------------------|------|------|------|------|------|------|------|------|---------|------|------|-----|
| VERTICAL (DEG) | 45 | 0.06 | 0.08 | 0.12 | 0.17 | 0.23 | 0.29 | 0.35 | 0.41 | 0.44 | 0.45 | 0.42 | 0.38 | 0.32 | 0.26 | 0.20 | 0.15 | 0.11 | 0.07 | 4.50 | 4.50 | |
| | 40 | 0.07 | 0.11 | 0.18 | 0.26 | 0.36 | 0.48 | 0.62 | 0.73 | 0.81 | 0.82 | 0.76 | 0.66 | 0.53 | 0.41 | 0.30 | 0.22 | 0.15 | 0.10 | 7.57 | 7.57 | |
| | 35 | 0.10 | 0.16 | 0.26 | 0.39 | 0.59 | 0.84 | 1.17 | 1.52 | 1.76 | 1.78 | 1.59 | 1.25 | 0.93 | 0.66 | 0.46 | 0.31 | 0.21 | 0.13 | 14.1 | 14.1 | |
| | 30 | 0.13 | 0.22 | 0.36 | 0.60 | 1.00 | 1.73 | 2.83 | 4.08 | 4.98 | 5.07 | 4.30 | 3.08 | 1.93 | 1.14 | 0.70 | 0.44 | 0.28 | 0.17 | 33.0 | 33.0 | |
| | 25 | 0.16 | 0.28 | 0.50 | 0.94 | 1.95 | 4.00 | 7.26 | 10.7 | 13.1 | 13.3 | 11.3 | 7.83 | 4.54 | 2.27 | 1.12 | 0.62 | 0.36 | 0.21 | 80.7 | 80.7 | |
| | 20 | 0.19 | 0.36 | 0.69 | 1.56 | 3.82 | 8.54 | 15.4 | 22.4 | 26.9 | 27.4 | 23.6 | 16.9 | 9.58 | 4.53 | 1.88 | 0.85 | 0.46 | 0.26 | 166 | 166 | |
| | 15 | 0.22 | 0.43 | 0.94 | 2.46 | 6.65 | 14.8 | 26.0 | 36.4 | 42.7 | 43.3 | 38.2 | 28.4 | 17.0 | 7.79 | 3.06 | 1.17 | 0.56 | 0.30 | 271 | 271 | |
| | | 0.24 | 0.49 | 1.18 | 3.43 | 9.57 | 21.0 | 35.4 | 48.0 | 54.9 | 55.7 | 50.3 | 38.7 | 24.3 | 11.4 | 4.35 | 1.51 | 0.65 | 0.34 | 362 | 362 | |
| | | 0.25 | 0.52 | 1.34 | 4.07 | 11.4 | 24.6 | 40.7 | 54.1 | 61.2 | 62.2 | 57.0 | 45.0 | 28.8 | 14.1 | 5.21 | 1.75 | 0.70 | 0.36 | 414 | 414 | |
| | | 0.25 | 0.52 | 1.35 | 4.09 | 11.5 | 24.8 | 41.0 | 54.5 | 61.8 | 62.8 | 57.4 | 45.3 | 29.0 | 14.2 | 5.24 | 1.75 | 0.70 | 0.35 | 417 | 417 | |
| | | 0.24 | 0.48 | 1.19 | 3.49 | 9.80 | 21.5 | 36.3 | 49.2 | 56.6 | 57.4 | 51.5 | 39.6 | 24.8 | 11.7 | 4.41 | 1.52 | 0.64 | 0.33 | 371 | 371 | |
| | -15 | 0.21 | 0.42 | 0.93 | 2.52 | 6.89 | 15.4 | 27.1 | 38.1 | 45.0 | 45.6 | 39.9 | 29.5 | 17.7 | 8.03 | 3.12 | 1.16 | 0.55 | 0.29 | 283 | 283 | |
| | -20 | 0.18 | 0.34 | 0.67 | 1.59 | 3.99 | 9.03 | 16.4 | 24.0 | 29.1 | 29.5 | 25.2 | 17.9 | 10.0 | 4.70 | 1.91 | 0.84 | 0.44 | 0.25 | 176 | 176 | |
| | -25 | 0.15 | 0.27 | 0.48 | 0.93 | 2.02 | 4.25 | 7.80 | 11.7 | 14.5 | 14.7 | 12.3 | 8.38 | 4.78 | 2.33 | 1.10 | 0.59 | 0.34 | 0.20 | 87.0 | 87.0 | |
| | -30 | 0.11 | 0.20 | 0.34 | 0.56 | 0.99 | 1.79 | 3.01 | 4.44 | 5.48 | 5.56 | 4.65 | 3.26 | 1.98 | 1.13 | 0.67 | 0.42 | 0.26 | 0.16 | 35.0 | 35.0 | |
| | -35 | 0.08 | 0.14 | 0.23 | 0.36 | 0.54 | 0.80 | 1.15 | 1.55 | 1.82 | 1.85 | 1.62 | 1.24 | 0.89 | 0.62 | 0.43 | 0.29 | 0.19 | 0.12 | 13.9 | 13.9 | |
| | -40 | 0.06 | 0.10 | 0.15 | 0.23 | 0.32 | 0.43 | 0.55 | 0.66 | 0.73 | 0.74 | 0.69 | 0.59 | 0.48 | 0.37 | 0.27 | 0.19 | 0.13 | 0.09 | 6.79 | 6.79 | |
| -45 | 0.05 | 0.06 | 0.10 | 0.14 | 0.19 | 0.25 | 0.30 | 0.35 | 0.37 | 0.38 | 0.36 | 0.33 | 0.28 | 0.23 | 0.17 | 0.13 | 0.09 | 0.06 | 3.84 | 3.84 | | |
| | | -45 | -40 | -35 | -30 | -25 | -20 | -15 | -10 | HORIZONTAL (DEG) | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | | | | |
| Φ t | 2.75 | 5.19 | 11.0 | 27.8 | 71.8 | 155 | 264 | 363 | 423 | 429 | 382 | 289 | 178 | 86.0 | 34.6 | 13.9 | 6.80 | 3.80 | 2776 | | | |
| Φ a | 2.75 | 5.19 | 11.0 | 27.8 | 71.8 | 155 | 264 | 363 | 423 | 429 | 382 | 289 | 178 | 86.0 | 34.6 | 13.9 | 6.80 | 3.80 | | 2776 | | |

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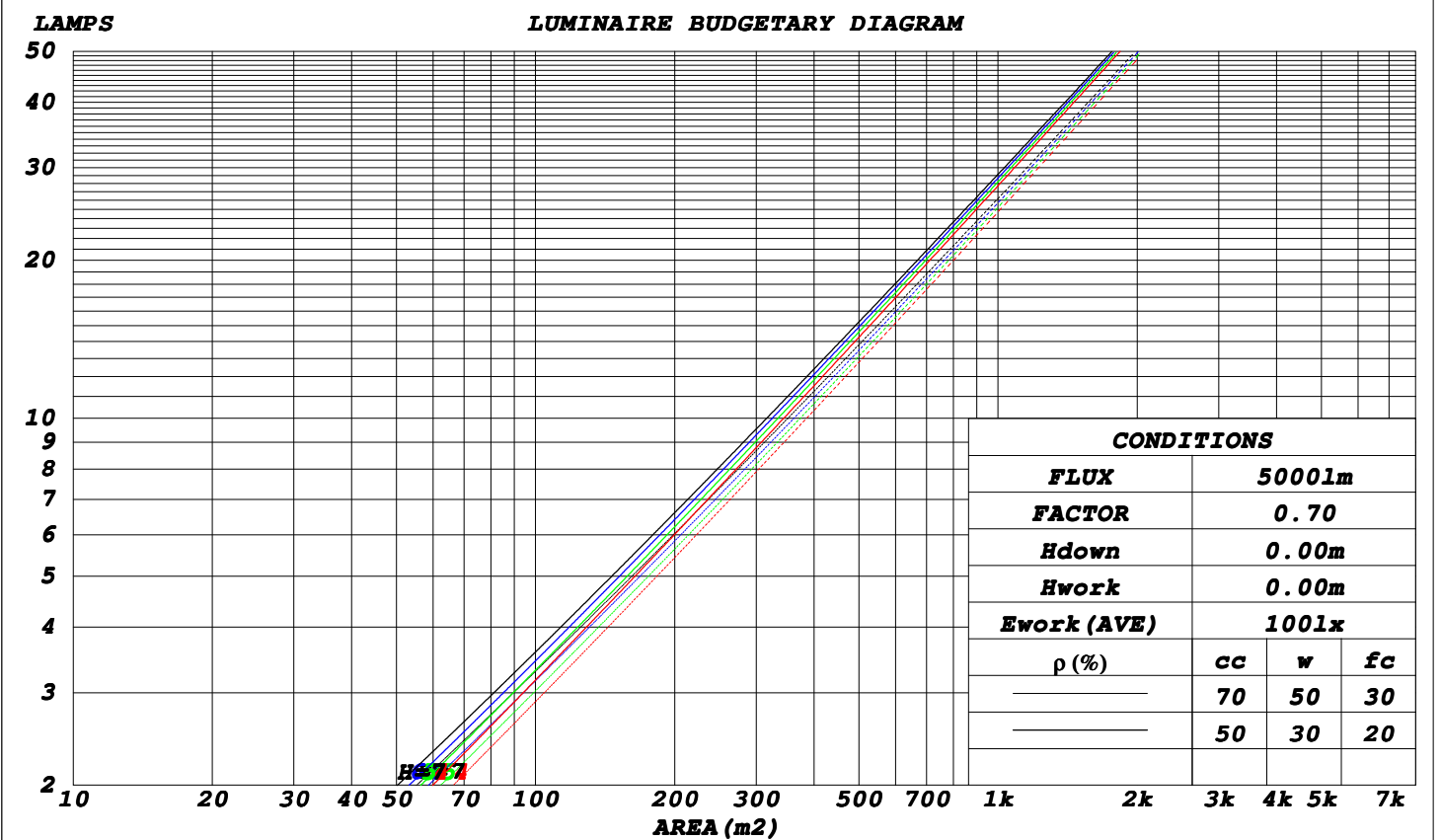
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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number: 0297-23

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|------------------------------|--|--|--|--|--------------------------|--|--|--|--|-----------------|--|--|--|--|
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| SPECIFICATION: LED 30W 3000K | | | | | DIMENSION: | | | | | SERIAL No.: --- | | | | |

| 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 | 1.12 | 1.10 | 1.09 | 1.10 | 1.09 | 1.07 | 1.06 | 1.05 | 1.04 | 1.03 | 1.02 | 1.01 | .99 | .98 | .98 | .96 |
| 2.0 | 1.07 | 1.04 | 1.01 | 1.05 | 1.02 | .99 | 1.02 | .99 | .98 | .99 | .97 | .96 | .96 | .95 | .94 | .92 |
| 3.0 | 1.02 | .98 | .95 | 1.00 | .97 | .94 | .98 | .95 | .93 | .96 | .93 | .91 | .94 | .92 | .90 | .89 |
| 4.0 | .97 | .93 | .90 | .96 | .92 | .89 | .94 | .91 | .88 | .92 | .90 | .87 | .91 | .88 | .86 | .85 |
| 5.0 | .93 | .89 | .86 | .92 | .88 | .85 | .91 | .87 | .85 | .89 | .86 | .84 | .88 | .85 | .83 | .82 |
| 6.0 | .90 | .85 | .82 | .89 | .85 | .82 | .88 | .84 | .81 | .86 | .83 | .81 | .85 | .82 | .80 | .79 |
| 7.0 | .86 | .82 | .79 | .86 | .81 | .78 | .85 | .81 | .78 | .84 | .80 | .78 | .83 | .80 | .77 | .76 |
| 8.0 | .83 | .79 | .76 | .83 | .79 | .76 | .82 | .78 | .75 | .81 | .77 | .75 | .80 | .77 | .75 | .74 |
| 9.0 | .80 | .76 | .73 | .80 | .76 | .73 | .79 | .75 | .73 | .78 | .75 | .72 | .78 | .75 | .72 | .71 |
| 10.0 | .78 | .73 | .71 | .77 | .73 | .70 | .77 | .73 | .70 | .76 | .73 | .70 | .75 | .72 | .70 | .69 |



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WEC AND CCEC

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| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |

| 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 | .145 | .082 | .026 | .138 | .079 | .025 | .126 | .072 | .023 | .114 | .066 | .021 | .104 | .060 | .019 | |
| 2.0 | .135 | .074 | .023 | .129 | .071 | .022 | .119 | .066 | .021 | .110 | .061 | .019 | .101 | .057 | .018 | |
| 3.0 | .126 | .067 | .020 | .122 | .065 | .020 | .113 | .061 | .019 | .105 | .058 | .018 | .098 | .054 | .017 | |
| 4.0 | .119 | .062 | .018 | .115 | .060 | .018 | .108 | .057 | .017 | .101 | .054 | .016 | .095 | .051 | .016 | |
| 5.0 | .112 | .057 | .017 | .109 | .056 | .016 | .103 | .054 | .016 | .097 | .051 | .015 | .092 | .049 | .015 | |
| 6.0 | .107 | .053 | .015 | .104 | .052 | .015 | .098 | .050 | .015 | .093 | .049 | .014 | .089 | .047 | .014 | |
| 7.0 | .102 | .050 | .014 | .099 | .049 | .014 | .094 | .048 | .014 | .090 | .046 | .013 | .086 | .045 | .013 | |
| 8.0 | .097 | .047 | .013 | .095 | .047 | .013 | .091 | .045 | .013 | .087 | .044 | .013 | .083 | .043 | .012 | |
| 9.0 | .093 | .045 | .013 | .091 | .044 | .012 | .087 | .043 | .012 | .084 | .042 | .012 | .081 | .041 | .012 | |
| 10.0 | .089 | .043 | .012 | .088 | .042 | .012 | .084 | .041 | .012 | .081 | .040 | .011 | .078 | .039 | .011 | |

| 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 | .169 | .158 | .147 | .145 | .135 | .127 | .099 | .093 | .088 | .057 | .054 | .051 | .018 | .017 | .017 | |
| 2.0 | .151 | .133 | .117 | .130 | .114 | .101 | .089 | .079 | .071 | .051 | .046 | .041 | .016 | .015 | .013 | |
| 3.0 | .137 | .113 | .095 | .117 | .098 | .082 | .081 | .068 | .058 | .047 | .040 | .034 | .015 | .013 | .011 | |
| 4.0 | .125 | .098 | .078 | .107 | .085 | .068 | .074 | .059 | .048 | .043 | .035 | .028 | .014 | .011 | .009 | |
| 5.0 | .115 | .086 | .065 | .098 | .074 | .056 | .068 | .052 | .040 | .039 | .030 | .024 | .013 | .010 | .008 | |
| 6.0 | .106 | .076 | .055 | .091 | .066 | .047 | .063 | .046 | .034 | .036 | .027 | .020 | .012 | .009 | .007 | |
| 7.0 | .099 | .068 | .046 | .085 | .059 | .040 | .059 | .041 | .029 | .034 | .024 | .017 | .011 | .008 | .006 | |
| 8.0 | .092 | .061 | .040 | .080 | .053 | .035 | .055 | .037 | .025 | .032 | .022 | .015 | .010 | .007 | .005 | |
| 9.0 | .087 | .056 | .035 | .075 | .048 | .030 | .052 | .034 | .022 | .030 | .020 | .013 | .010 | .007 | .004 | |
| 10.0 | .082 | .051 | .030 | .071 | .044 | .027 | .049 | .031 | .019 | .029 | .018 | .011 | .009 | .006 | .004 | |

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

Uncorrected UGR Table

Report number: 0297-23

| | | | | | | | | | | |
|------------------------------|--|--|--|--|--------------------------|--|--|-----------------|--|--|
| MANUFACTURER: BRIGHT | | | | | | | | | | |
| Address: | | | | | | | | | | |
| NAME: AMOSTRA | | | | | TYPE: SPOT DE TRILHO 38° | | | WEIGHT: | | |
| SPECIFICATION: LED 30W 3000K | | | | | DIMENSION: | | | SERIAL No.: --- | | |

| | | | | | | | | | | |
|---|-------------------------|------------|------------|------------|------------|-----------------------|-------------|-------------|-------------|------------|
| 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 | 0.7 | 1.4 | 1.0 | 1.6 | 1.8 | -0.3 | 0.4 | -0.1 | 0.6 | 0.7 |
| 3H | 0.7 | 1.4 | 1.0 | 1.6 | 1.7 | -0.4 | 0.2 | -0.2 | 0.4 | 0.6 |
| 4H | 0.7 | 1.3 | 0.9 | 1.5 | 1.7 | -0.5 | 0.1 | -0.2 | 0.3 | 0.6 |
| 6H | 0.7 | 1.2 | 0.9 | 1.5 | 1.7 | -0.6 | 0.0 | -0.3 | 0.2 | 0.5 |
| 8H | 0.7 | 1.2 | 1.0 | 1.5 | 1.7 | -0.6 | -0.0 | -0.3 | 0.2 | 0.5 |
| 12H | 0.7 | 1.2 | 1.0 | 1.5 | 1.8 | -0.7 | -0.1 | -0.4 | 0.1 | 0.4 |
| 4H 2H | 0.6 | 1.2 | 0.9 | 1.4 | 1.6 | -0.4 | 0.2 | -0.1 | 0.5 | 0.7 |
| 3H | 0.6 | 1.1 | 0.9 | 1.4 | 1.6 | -0.5 | 0.0 | -0.2 | 0.3 | 0.5 |
| 4H | 0.5 | 1.0 | 0.9 | 1.3 | 1.6 | -0.6 | -0.1 | -0.3 | 0.2 | 0.5 |
| 6H | 0.5 | 1.0 | 0.9 | 1.3 | 1.6 | -0.7 | -0.3 | -0.3 | 0.1 | 0.4 |
| 8H | 0.6 | 1.0 | 0.9 | 1.3 | 1.7 | -0.8 | -0.4 | -0.4 | -0.0 | 0.3 |
| 12H | 0.6 | 1.0 | 1.0 | 1.4 | 1.7 | -0.8 | -0.4 | -0.4 | -0.1 | 0.3 |
| 8H 4H | 0.4 | 0.8 | 0.8 | 1.2 | 1.5 | -0.8 | -0.3 | -0.4 | 0.0 | 0.4 |
| 6H | 0.4 | 0.7 | 0.8 | 1.1 | 1.6 | -0.9 | -0.5 | -0.4 | -0.1 | 0.3 |
| 8H | 0.5 | 0.8 | 0.9 | 1.2 | 1.6 | -0.9 | -0.6 | -0.5 | -0.2 | 0.2 |
| 12H | 0.6 | 0.8 | 1.0 | 1.3 | 1.7 | -1.0 | -0.7 | -0.5 | -0.3 | 0.2 |
| 12H 4H | 0.3 | 0.7 | 0.7 | 1.1 | 1.5 | -0.8 | -0.4 | -0.4 | -0.1 | 0.3 |
| 6H | 0.4 | 0.7 | 0.8 | 1.1 | 1.5 | -0.9 | -0.6 | -0.5 | -0.2 | 0.3 |
| 8H | 0.4 | 0.7 | 0.9 | 1.1 | 1.6 | -0.9 | -0.7 | -0.5 | -0.2 | 0.2 |
| Variations with the observer position at spacings: | | | | | | | | | | |
| S = 1.0H | + 2.5 / - 3.8 | | | | | + 2.6 / - 6.1 | | | | |
| 1.5H | + 3.9 / - 3.6 | | | | | + 4.0 / - 4.4 | | | | |
| 2.0H | + 4.0 / - 2.4 | | | | | + 4.2 / - 3.7 | | | | |

CIE Pub.117 Corrected 2776 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.5)

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

UTILIZATION FACTORS TABLE

Report number: 0297-23

| | | |
|------------------------------|--------------------------|-----------------|
| MANUFACTURER: BRIGHT | | |
| Address: | | |
| NAME: AMOSTRA | TYPE: SPOT DE TRILHO 38° | WEIGHT: |
| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |

| 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 | 84 | 81 | 89 | 84 | 81 | 78 |
| 0.80 | 97 | 92 | 89 | 97 | 92 | 89 | 96 | 91 | 88 | 85 |
| 1.00 | 101 | 96 | 93 | 100 | 96 | 93 | 99 | 95 | 92 | 88 |
| 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 | 107 | 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 | | | |

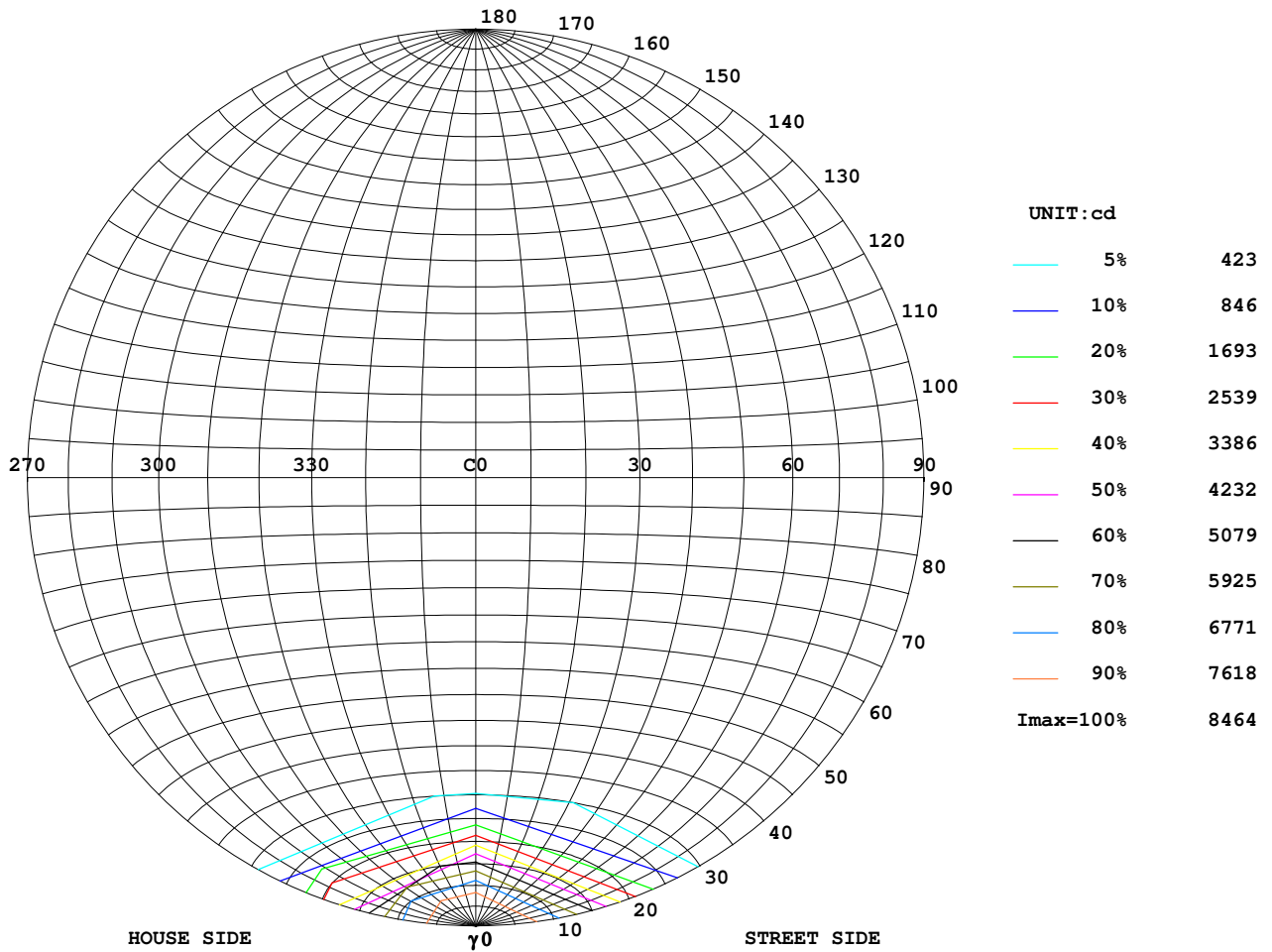
Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number: 0297-23

| | | |
|------------------------------|--------------------------|-----------------|
| MANUFACTURER: BRIGHT | | |
| Address: | | |
| NAME: AMOSTRA | TYPE: SPOT DE TRILHO 38° | WEIGHT: |
| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |



Test System: HOPOO HPG1800
 Temperature: 25.3DEG
 Operators: CRISTIANE SANTOS
 Test Date: 08-08-2023

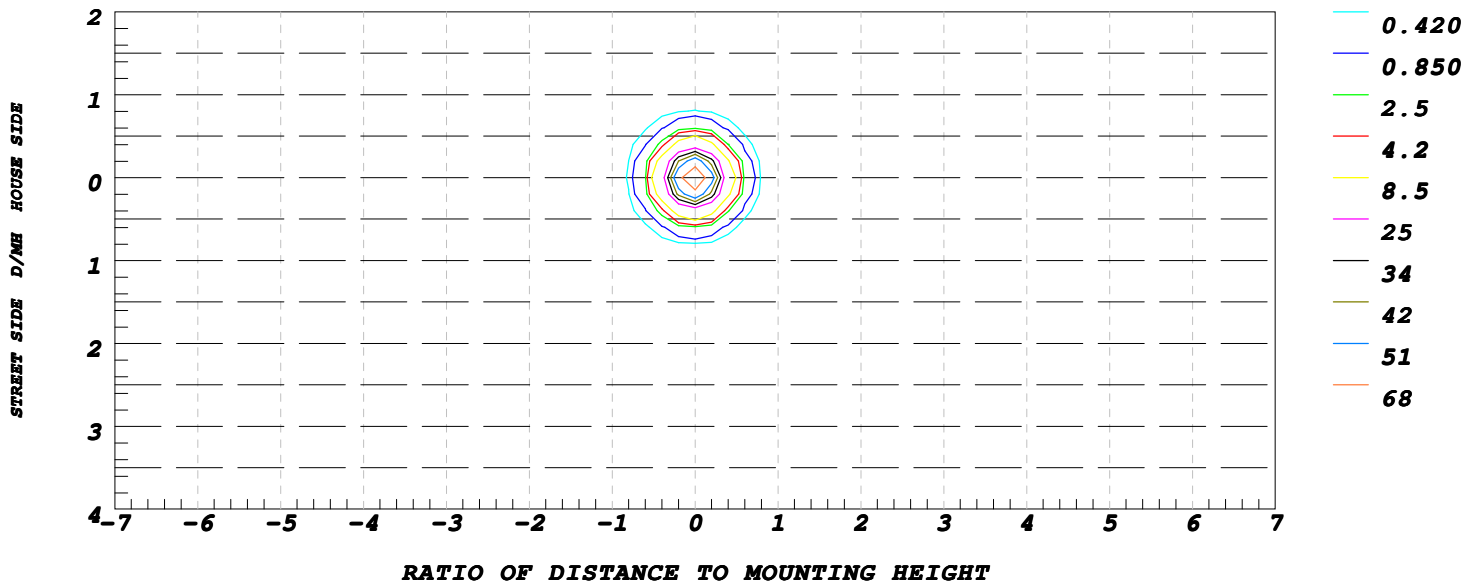
Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks:

ISOLUX DIAGRAM

Report number: 0297-23

| | | |
|------------------------------|--------------------------|-----------------|
| MANUFACTURER: BRIGHT | | |
| Address: | | |
| NAME: AMOSTRA | TYPE: SPOT DE TRILHO 38° | WEIGHT: |
| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |

ILLUMINANCE AT MH=10 m, Enadir = 84.64 lx



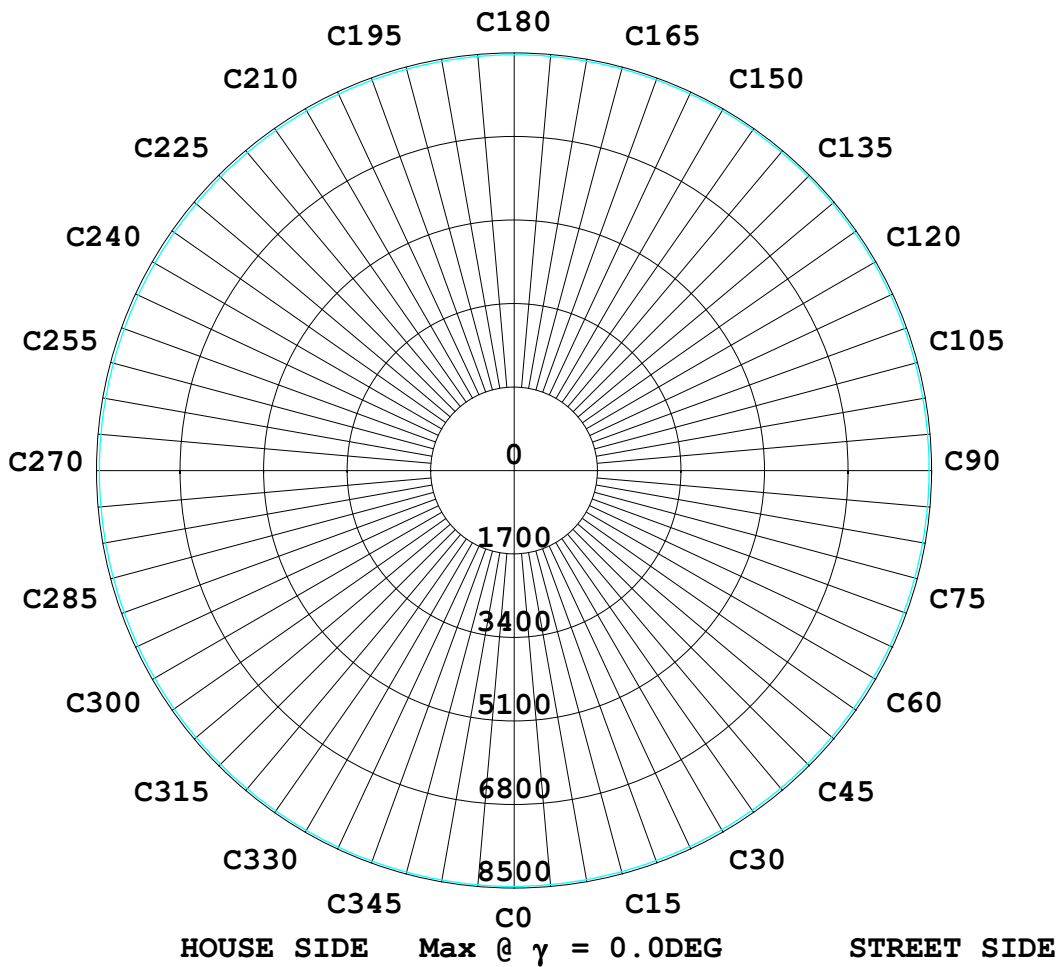
Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:CRISTIANE SANTOS
 Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:10.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number: 0297-23

| | | |
|------------------------------|--------------------------|-----------------|
| MANUFACTURER: BRIGHT | | |
| Address: | | |
| NAME: AMOSTRA | TYPE: SPOT DE TRILHO 38° | WEIGHT: |
| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |



Test System: HOPOO HPG1800
 Temperature: 25.3DEG
 Operators: CRISTIANE SANTOS
 Test Date: 08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 10.000 m
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number: 0297-23

| | | |
|------------------------------|--------------------------|-----------------|
| MANUFACTURER: BRIGHT | | |
| Address: | | |
| NAME: AMOSTRA | TYPE: SPOT DE TRILHO 38° | WEIGHT: |
| SPECIFICATION: LED 30W 3000K | DIMENSION: | SERIAL No.: --- |

UNIT: cd

| γ (DEG) | C (DEG) | | | |
|---------|---------|------|------|------|
| | 0 | 90 | 180 | 270 |
| 0.0 | 8464 | 8446 | 8464 | 8446 |
| 5.0 | 8213 | 8139 | 7888 | 7934 |
| 10.0 | 7167 | 7045 | 6574 | 6725 |
| 15.0 | 5238 | 5106 | 4522 | 4727 |
| 20.0 | 3034 | 2868 | 2452 | 2615 |
| 25.0 | 1190 | 1203 | 997 | 1095 |
| 30.0 | 439 | 395 | 332 | 366 |
| 35.0 | 163 | 138 | 120 | 144 |
| 40.0 | 83.9 | 66.9 | 59.1 | 77.3 |
| 45.0 | 47.5 | 36.0 | 32.5 | 43.9 |
| 50.0 | 28.2 | 18.7 | 17.6 | 25.9 |
| 55.0 | 16.4 | 9.50 | 9.70 | 14.8 |
| 60.0 | 10.9 | 5.80 | 6.80 | 9.70 |
| 65.0 | 7.60 | 2.80 | 2.80 | 6.20 |
| 70.0 | 3.10 | 0.20 | 0.80 | 2.90 |
| 75.0 | 2.30 | 0.00 | 0.60 | 2.30 |
| 80.0 | 1.90 | 0.00 | 0.60 | 1.80 |
| 85.0 | 1.60 | 0.00 | 0.60 | 1.60 |
| 90.0 | 1.30 | 0.00 | 1.00 | 1.20 |

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:CRISTIANE SANTOS
Test Date:08-08-2023

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:10.000 m
Remarks: