

LUMINAIRE PHOTOMETRIC TEST REPORT

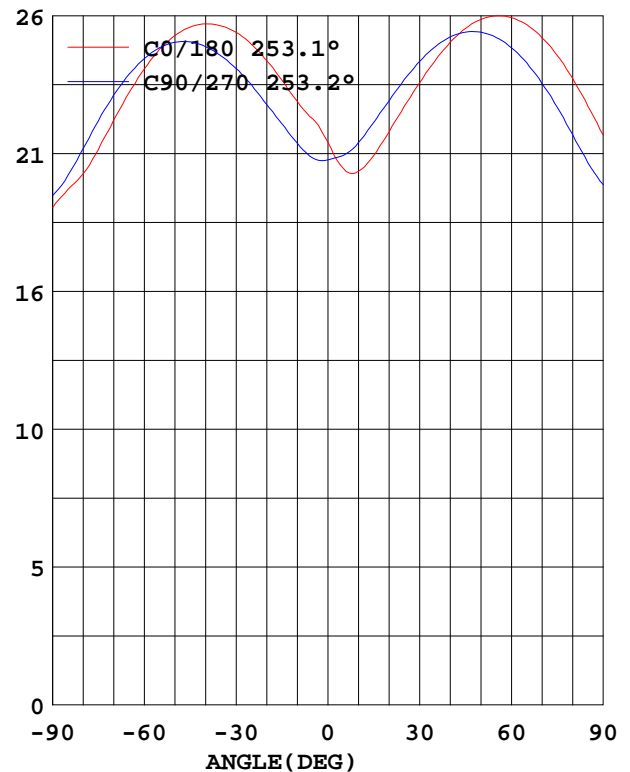
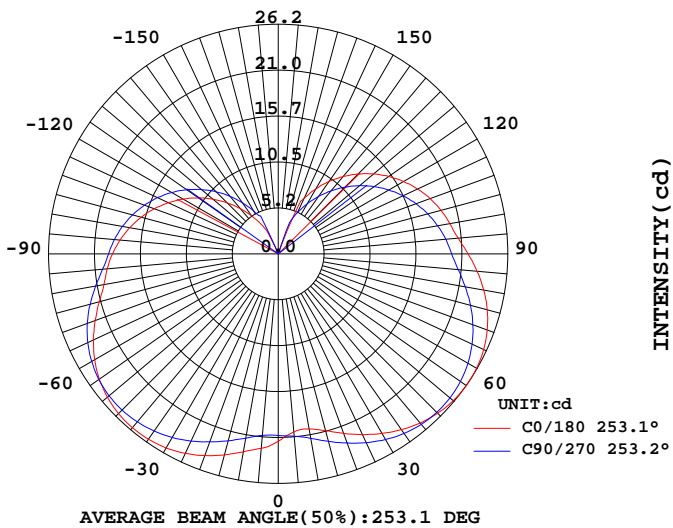
Report number:

| | | | | | |
|----------------|-----------|--|------------|--|-------------|
| MANUFACTURER: | | | | | |
| Address: | | | | | |
| NAME: | | | TYPE: | | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | | DIMENSION: | | SERIAL No.: |

| | | | | | |
|------------------|-------|--------------------|-------|------------------|-------|
| DATA OF LAMP | | Imax(cd) | 26.19 | S/MH(C0/180) | 1.79 |
| MODEL | | EFFICIENCY(%) | 100.0 | S/MH(C90/270) | 1.79 |
| NOMINAL POWER(W) | 2 | TOTAL FLUX(lm) | 230.2 | Voltage(V) | 12.01 |
| RATED VOLTAGE(V) | 12 | EFFICIENCY(lm/W) | 96.7 | Current(A) | 0.240 |
| NOMINAL FLUX(lm) | 230.2 | η up(%) | 35.5 | Power(W) | 2.380 |
| LAMPS QUANTITY | 1 | η down(%) | 64.5 | Power Factor(PF) | 0.825 |
| TEST VOLTAGE(V) | 12.0 | Effective Flux(lm) | 44.5 | EEI | 0.296 |

LUMINOUS INTENSITY DISTRIBUTION

LUMINOUS INTENSITY DISTRIBUTION



Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

Color Temperature Data List

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |

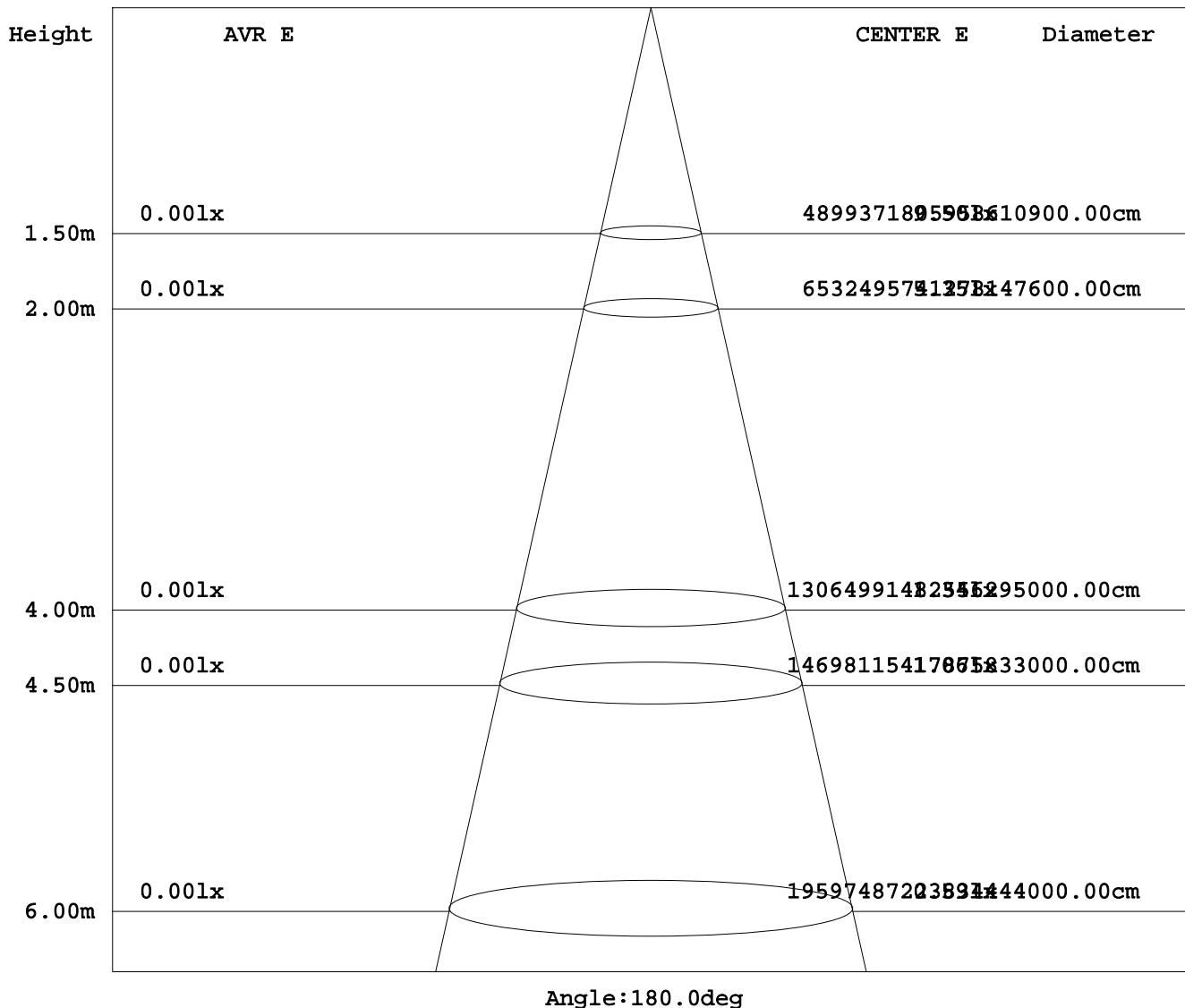
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

AVERAGE AND CENTER E Figure

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |



Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |

| γ | C0 | C90 | C180 | C270 | | | | | γ | zone | total |
|-------|-----------------------|-------|-------|-------|--|--|--|--|---------|---------|-------|
| 5.0 | 22.28 | 20.79 | 20.40 | 20.88 | | | | | 0- 5 | 0.504 | 0.504 |
| 10.0 | 22.94 | 21.36 | 20.28 | 21.37 | | | | | 5- 10 | 1.521 | 2.024 |
| 15.0 | 23.74 | 22.08 | 20.88 | 22.14 | | | | | 10- 15 | 2.593 | 4.618 |
| 20.0 | 24.49 | 22.82 | 21.78 | 22.95 | | | | | 15- 20 | 3.730 | 8.349 |
| 25.0 | 25.10 | 23.57 | 22.76 | 23.77 | | | | | 20- 25 | 4.914 | 13.26 |
| 30.0 | 25.57 | 24.19 | 23.65 | 24.46 | | | | | 25- 30 | 6.113 | 19.37 |
| 35.0 | 25.81 | 24.67 | 24.47 | 25.01 | | | | | 30- 35 | 7.289 | 26.66 |
| 40.0 | 25.89 | 25.01 | 25.19 | 25.39 | | | | | 35- 40 | 8.409 | 35.07 |
| 45.0 | 25.76 | 25.20 | 25.71 | 25.57 | | | | | 40- 45 | 9.437 | 44.51 |
| 50.0 | 25.44 | 25.19 | 26.05 | 25.57 | | | | | 45- 50 | 10.33 | 54.85 |
| 55.0 | 24.92 | 24.98 | 26.19 | 25.36 | | | | | 50- 55 | 11.08 | 65.93 |
| 60.0 | 24.17 | 24.56 | 26.12 | 24.98 | | | | | 55- 60 | 11.64 | 77.57 |
| 65.0 | 23.27 | 23.97 | 25.85 | 24.40 | | | | | 60- 65 | 12.00 | 89.57 |
| 70.0 | 22.24 | 23.19 | 25.36 | 23.61 | | | | | 65- 70 | 12.15 | 101.7 |
| 75.0 | 21.11 | 22.20 | 24.68 | 22.70 | | | | | 70- 75 | 12.10 | 113.8 |
| 80.0 | 20.19 | 21.15 | 23.81 | 21.68 | | | | | 75- 80 | 11.87 | 125.7 |
| 85.0 | 19.59 | 20.12 | 22.75 | 20.60 | | | | | 80- 85 | 11.53 | 137.2 |
| 90.0 | 18.90 | 19.36 | 21.65 | 19.77 | | | | | 85- 90 | 11.13 | 148.3 |
| 95.0 | 18.12 | 18.76 | 20.62 | 19.19 | | | | | 90- 95 | 10.70 | 159.0 |
| 100.0 | 17.22 | 18.06 | 19.87 | 18.46 | | | | | 95-100 | 10.21 | 169.3 |
| 105.0 | 16.17 | 17.20 | 19.22 | 17.65 | | | | | 100-105 | 9.632 | 178.9 |
| 110.0 | 15.05 | 16.26 | 18.45 | 16.74 | | | | | 105-110 | 8.943 | 187.8 |
| 115.0 | 13.84 | 15.21 | 17.52 | 15.72 | | | | | 110-115 | 8.156 | 196.0 |
| 120.0 | 12.50 | 14.00 | 16.51 | 14.57 | | | | | 115-120 | 7.292 | 203.3 |
| 125.0 | 11.13 | 12.76 | 15.41 | 13.39 | | | | | 120-125 | 6.381 | 209.7 |
| 130.0 | 9.723 | 11.44 | 14.21 | 12.13 | | | | | 125-130 | 5.449 | 215.1 |
| 135.0 | 8.207 | 10.00 | 12.88 | 10.76 | | | | | 130-135 | 4.518 | 219.6 |
| 140.0 | 6.756 | 8.586 | 11.53 | 9.403 | | | | | 135-140 | 3.624 | 223.3 |
| 145.0 | 5.329 | 7.148 | 10.10 | 8.017 | | | | | 140-145 | 2.792 | 226.0 |
| 150.0 | 3.896 | 5.653 | 8.545 | 6.566 | | | | | 145-150 | 2.037 | 228.1 |
| 155.0 | 1.079 | 4.786 | 7.012 | 5.211 | | | | | 150-155 | 1.387 | 229.5 |
| 160.0 | 0.236 | 0.130 | 1.137 | 3.811 | | | | | 155-160 | 0.604 | 230.1 |
| 165.0 | 0.146 | 0.075 | 0.189 | 0.255 | | | | | 160-165 | 0.078 | 230.2 |
| 170.0 | 0.102 | 0.053 | 0.108 | 0.166 | | | | | 165-170 | 0.016 | 230.2 |
| 175.0 | 0.082 | 0.045 | 0.066 | 0.109 | | | | | 170-175 | 0.006 | 230.2 |
| 180.0 | 0.063 | 0.041 | 0.059 | 0.061 | | | | | 175-180 | 0.002 | 230.2 |
| DEG | LUMINOUS INTENSITY:cd | | | | | | | | | UNIT:lm | |

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

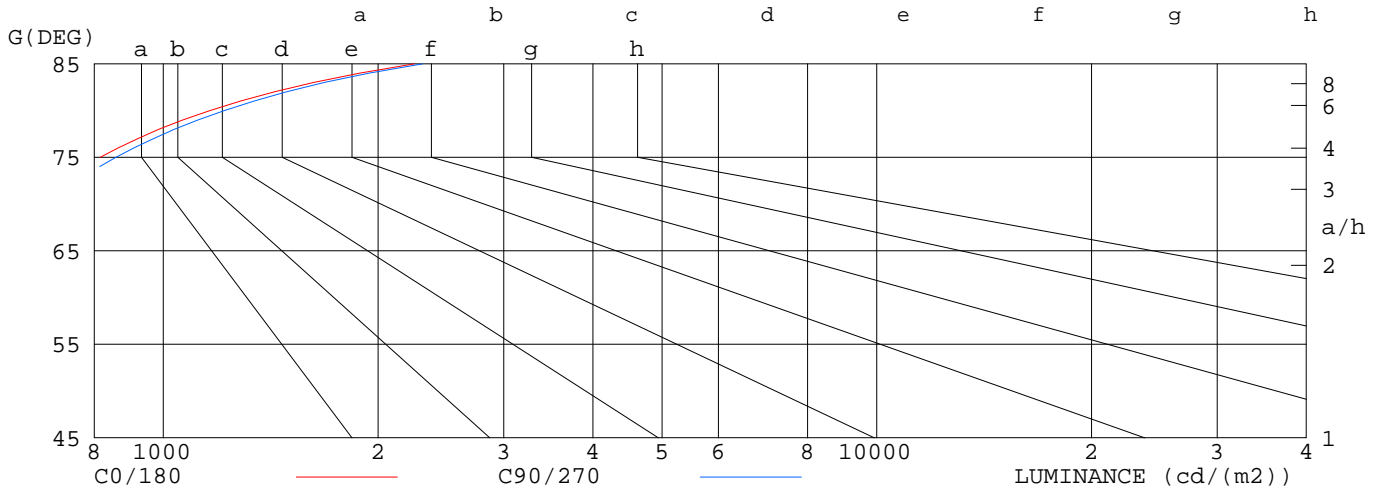
LUMINANCE LIMITATION CURVES

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |

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 | 2248 | 2310 |
| 80 | 1163 | 1218 |
| 75 | 816 | 858 |
| 70 | 650 | 678 |
| 65 | 551 | 567 |
| 60 | 483 | 491 |
| 55 | 435 | 436 |
| 50 | 396 | 392 |
| 45 | 364 | 356 |

Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

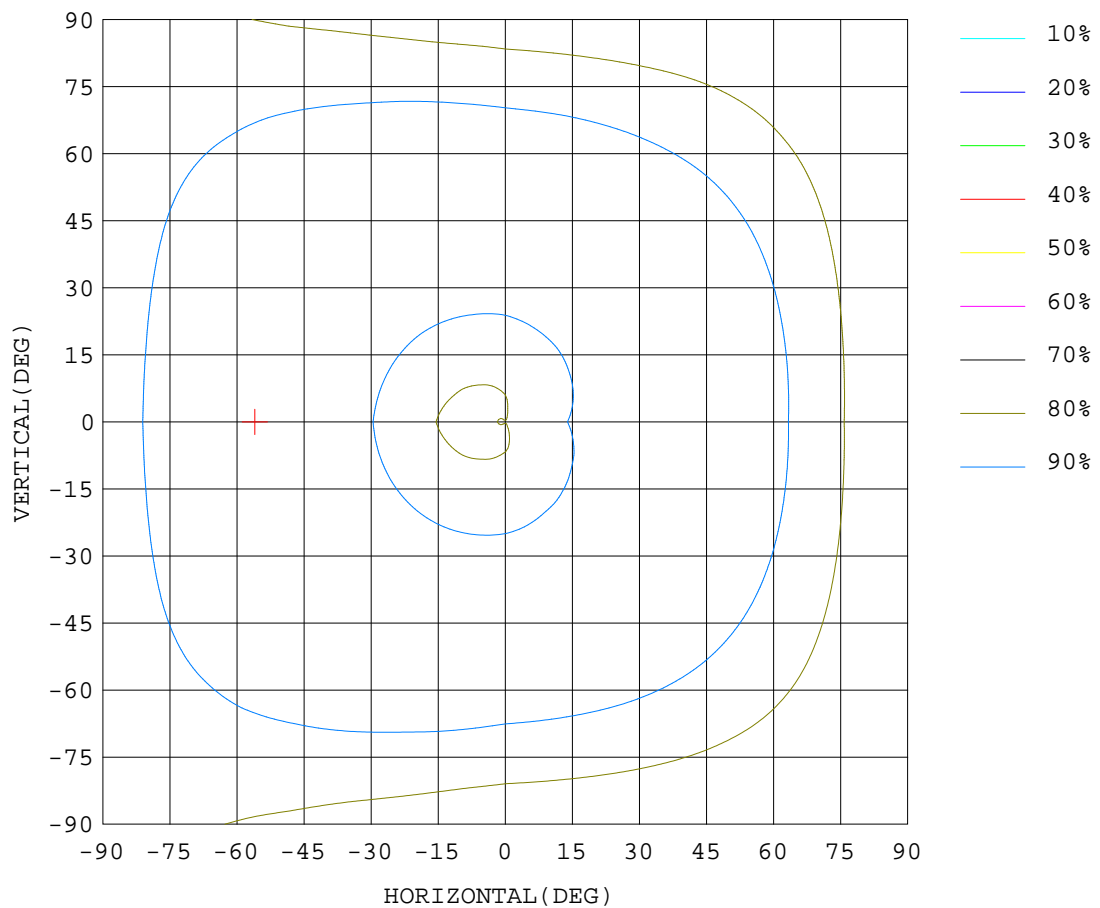
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |

UNIT: cd



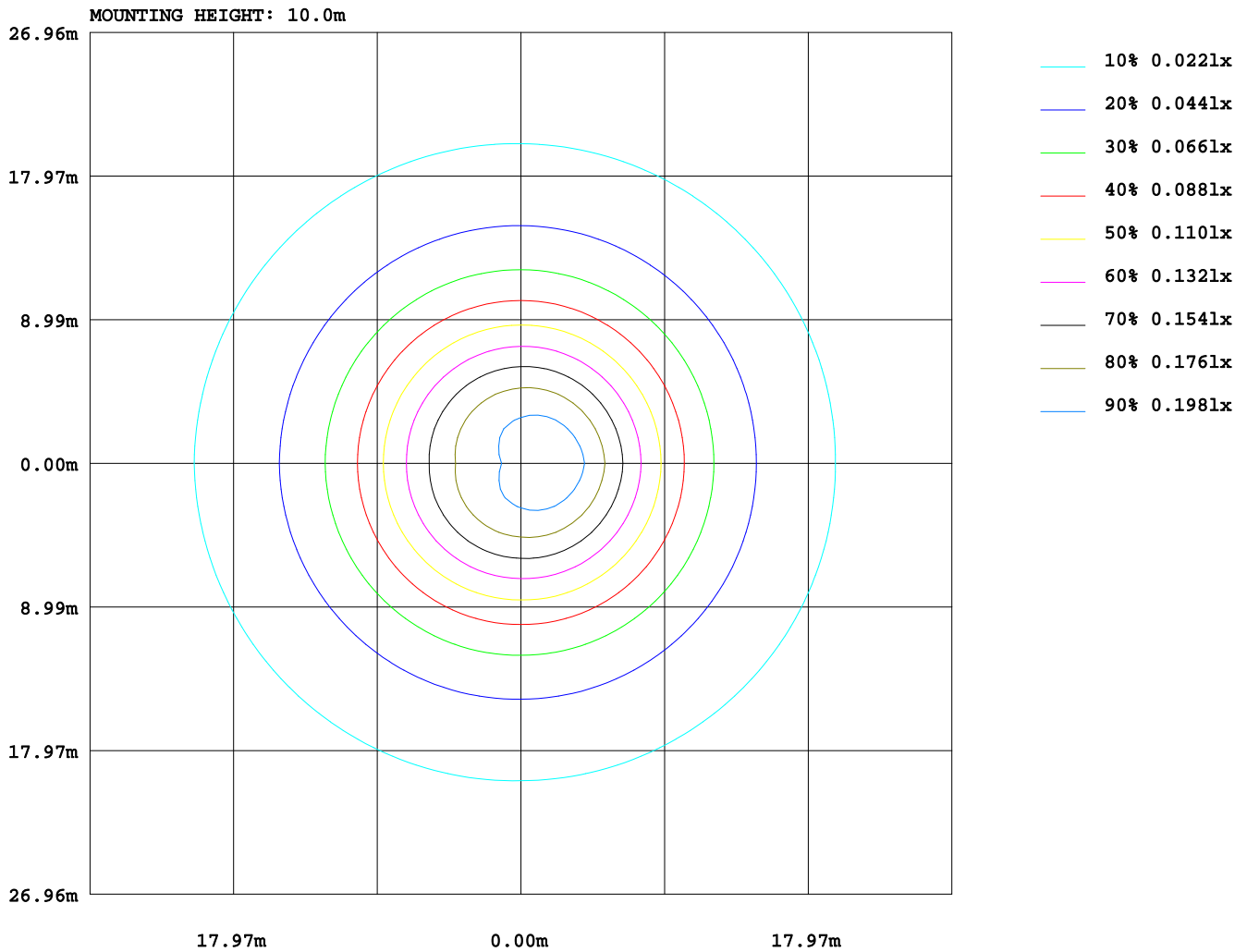
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |



Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

AREA LUMINOUS FLUX

Report number:

| | | | | | | | | | | | | | | | | | | | |
|----------------|--|--|--|--|-----------|--|--|--|--|------------|--|--|--|--|-------------|--|--|--|--|
| MANUFACTURER: | | | | | | | | | | | | | | | | | | | |
| Address: | | | | | | | | | | | | | | | | | | | |
| NAME: | | | | | | | | | | TYPE: | | | | | WEIGHT: | | | | |
| SPECIFICATION: | | | | | CCT(K): 0 | | | | | DIMENSION: | | | | | SERIAL No.: | | | | |

| VERTICAL (DEG) | AREA FLUX DIAGRAM | | | | | | | | | | | | | | | | | | UNIT:lm | | Φ t | Φ a |
|--|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------|------|-----|-----|
| | 90 | 80 | 70 | 60 | 50 | 40 | 30 | 20 | 10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | | | |
| 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 | 0.06 | 0.17 | 0.28 | 0.38 | 0.46 | 0.53 | 0.58 | 0.62 | 0.63 | 0.62 | 0.60 | 0.56 | 0.50 | 0.43 | 0.34 | 0.25 | 0.15 | 0.05 | 7.20 | 5.10 | | |
| | 0.06 | 0.17 | 0.29 | 0.40 | 0.49 | 0.57 | 0.63 | 0.67 | 0.69 | 0.68 | 0.66 | 0.61 | 0.54 | 0.45 | 0.36 | 0.26 | 0.15 | 0.05 | 7.73 | 5.54 | | |
| | 0.06 | 0.18 | 0.30 | 0.42 | 0.52 | 0.61 | 0.68 | 0.72 | 0.74 | 0.74 | 0.71 | 0.65 | 0.58 | 0.48 | 0.38 | 0.27 | 0.16 | 0.05 | 8.21 | 5.93 | | |
| | 0.06 | 0.18 | 0.31 | 0.43 | 0.54 | 0.63 | 0.70 | 0.75 | 0.77 | 0.77 | 0.74 | 0.68 | 0.61 | 0.51 | 0.39 | 0.27 | 0.16 | 0.05 | 8.55 | 6.19 | | |
| | 0.06 | 0.19 | 0.32 | 0.44 | 0.55 | 0.64 | 0.71 | 0.75 | 0.77 | 0.77 | 0.75 | 0.70 | 0.63 | 0.53 | 0.41 | 0.28 | 0.16 | 0.05 | 8.72 | 6.30 | | |
| | 0.06 | 0.19 | 0.32 | 0.45 | 0.56 | 0.64 | 0.70 | 0.74 | 0.76 | 0.76 | 0.75 | 0.71 | 0.64 | 0.54 | 0.42 | 0.29 | 0.16 | 0.05 | 8.73 | 6.26 | | |
| | 0.06 | 0.19 | 0.33 | 0.45 | 0.56 | 0.63 | 0.68 | 0.71 | 0.72 | 0.73 | 0.73 | 0.70 | 0.64 | 0.55 | 0.43 | 0.30 | 0.17 | 0.05 | 8.61 | 6.11 | | |
| | 0.06 | 0.19 | 0.33 | 0.45 | 0.55 | 0.62 | 0.65 | 0.66 | 0.67 | 0.69 | 0.70 | 0.69 | 0.64 | 0.55 | 0.43 | 0.30 | 0.17 | 0.05 | 8.42 | 5.90 | | |
| | 0.06 | 0.19 | 0.33 | 0.46 | 0.55 | 0.61 | 0.63 | 0.63 | 0.63 | 0.66 | 0.69 | 0.69 | 0.64 | 0.55 | 0.43 | 0.30 | 0.17 | 0.05 | 8.29 | 5.76 | | |
| | 0.06 | 0.19 | 0.33 | 0.46 | 0.55 | 0.61 | 0.63 | 0.63 | 0.63 | 0.66 | 0.69 | 0.69 | 0.64 | 0.55 | 0.43 | 0.30 | 0.17 | 0.05 | 8.28 | 5.75 | | |
| | 0.06 | 0.19 | 0.33 | 0.45 | 0.55 | 0.62 | 0.65 | 0.66 | 0.67 | 0.68 | 0.70 | 0.69 | 0.64 | 0.55 | 0.43 | 0.30 | 0.17 | 0.05 | 8.40 | 5.88 | | |
| | 0.06 | 0.19 | 0.33 | 0.45 | 0.56 | 0.63 | 0.68 | 0.70 | 0.71 | 0.72 | 0.72 | 0.70 | 0.64 | 0.55 | 0.43 | 0.29 | 0.17 | 0.05 | 8.56 | 6.07 | | |
| | 0.06 | 0.19 | 0.32 | 0.45 | 0.55 | 0.64 | 0.70 | 0.73 | 0.75 | 0.75 | 0.74 | 0.70 | 0.63 | 0.54 | 0.42 | 0.29 | 0.16 | 0.05 | 8.66 | 6.20 | | |
| | 0.06 | 0.19 | 0.32 | 0.44 | 0.55 | 0.64 | 0.70 | 0.74 | 0.76 | 0.76 | 0.74 | 0.70 | 0.62 | 0.52 | 0.41 | 0.28 | 0.16 | 0.05 | 8.64 | 6.23 | | |
| | 0.06 | 0.18 | 0.31 | 0.43 | 0.54 | 0.63 | 0.69 | 0.74 | 0.76 | 0.76 | 0.73 | 0.68 | 0.60 | 0.50 | 0.39 | 0.27 | 0.16 | 0.05 | 8.46 | 6.12 | | |
| | 0.06 | 0.18 | 0.30 | 0.41 | 0.51 | 0.60 | 0.67 | 0.71 | 0.73 | 0.72 | 0.70 | 0.64 | 0.57 | 0.48 | 0.37 | 0.26 | 0.16 | 0.05 | 8.11 | 5.85 | | |
| | 0.06 | 0.17 | 0.29 | 0.39 | 0.49 | 0.56 | 0.62 | 0.66 | 0.68 | 0.67 | 0.64 | 0.60 | 0.53 | 0.45 | 0.35 | 0.26 | 0.15 | 0.05 | 7.62 | 5.45 | | |
| | 0.06 | 0.17 | 0.28 | 0.37 | 0.46 | 0.52 | 0.57 | 0.60 | 0.62 | 0.61 | 0.59 | 0.55 | 0.49 | 0.42 | 0.34 | 0.25 | 0.15 | 0.05 | 7.09 | 5.01 | | |
| -90 -80 -70 -60 -50 -40 -30 -20 HORIZONTAL(DEG) 20 30 40 50 60 70 80 90 | | | | | | | | | | | | | | | | | | | | | | |
| Φ t | 1.07 | 3.32 | 5.59 | 7.72 | 9.54 | 10.9 | 11.8 | 12.4 | 12.6 | 12.7 | 12.5 | 11.9 | 10.7 | 9.14 | 7.16 | 5.01 | 2.89 | 0.93 | 230 | | | |
| Φ a | 0.00 | 0.00 | 0.00 | 0.00 | 4.97 | 10.9 | 11.8 | 12.4 | 12.6 | 12.7 | 12.5 | 11.9 | 10.7 | 4.79 | 0.00 | 0.00 | 0.00 | 0.00 | | 45 | | |

Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

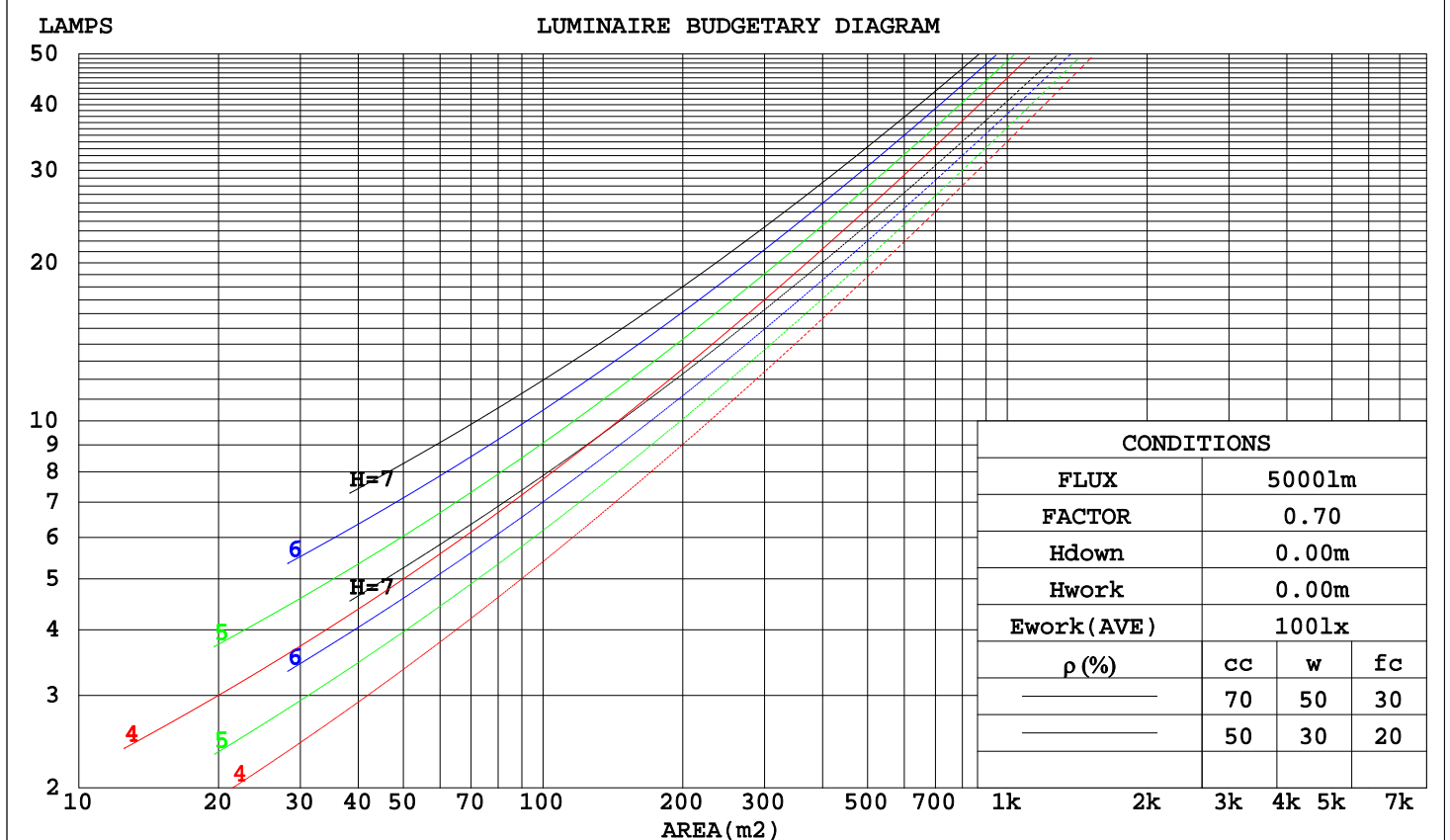
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

| | | | | | | | | | | | | | | | |
|----------------|--|--|--|-----------|--|--|--|------------|--|--|--|-------------|--|--|--|
| MANUFACTURER: | | | | | | | | | | | | | | | |
| Address: | | | | | | | | | | | | | | | |
| NAME: | | | | | | | | TYPE: | | | | WEIGHT: | | | |
| SPECIFICATION: | | | | CCT(K): 0 | | | | 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 | | | | | | | | | | | | | | | |



Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Report number:

| | | | | | | | | | | | | | | | |
|----------------|--|--|--|-----------|--|--|--|------------|--|--|--|-------------|--|--|--|
| MANUFACTURER: | | | | | | | | | | | | | | | |
| Address: | | | | | | | | | | | | | | | |
| NAME: | | | | | | | | TYPE: | | | | WEIGHT: | | | |
| SPECIFICATION: | | | | CCT(K): 0 | | | | 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 | .420 | .239 | .076 | .402 | .229 | .073 | .368 | .211 | .067 | .337 | .194 | .062 | .308 | .179 | .058 | | | | | | | | | | | | | | | |
| 2.0 | .353 | .193 | .059 | .336 | .185 | .057 | .305 | .170 | .053 | .277 | .155 | .049 | .250 | .142 | .045 | | | | | | | | | | | | | | | |
| 3.0 | .308 | .164 | .049 | .293 | .157 | .047 | .265 | .144 | .044 | .239 | .131 | .040 | .215 | .119 | .037 | | | | | | | | | | | | | | | |
| 4.0 | .274 | .143 | .042 | .261 | .136 | .040 | .235 | .125 | .037 | .211 | .113 | .034 | .189 | .103 | .031 | | | | | | | | | | | | | | | |
| 5.0 | .247 | .126 | .037 | .235 | .121 | .035 | .211 | .110 | .032 | .189 | .100 | .030 | .169 | .090 | .027 | | | | | | | | | | | | | | | |
| 6.0 | .225 | .113 | .032 | .214 | .108 | .031 | .192 | .098 | .029 | .172 | .089 | .026 | .153 | .081 | .024 | | | | | | | | | | | | | | | |
| 7.0 | .207 | .102 | .029 | .196 | .098 | .028 | .176 | .089 | .026 | .158 | .081 | .024 | .140 | .073 | .021 | | | | | | | | | | | | | | | |
| 8.0 | .191 | .093 | .026 | .181 | .089 | .025 | .163 | .081 | .023 | .145 | .074 | .021 | .129 | .066 | .019 | | | | | | | | | | | | | | | |
| 9.0 | .178 | .086 | .024 | .169 | .082 | .023 | .151 | .075 | .021 | .135 | .068 | .019 | .120 | .061 | .018 | | | | | | | | | | | | | | | |
| 10.0 | .166 | .079 | .022 | .157 | .076 | .021 | .141 | .069 | .020 | .126 | .063 | .018 | .112 | .056 | .016 | | | | | | | | | | | | | | | |

| 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 | .461 | .461 | .461 | .394 | .394 | .394 | .269 | .269 | .269 | .155 | .155 | .155 | .049 | .049 | .049 | |
| 1.0 | .461 | .428 | .399 | .394 | .368 | .343 | .270 | .253 | .237 | .155 | .146 | .138 | .050 | .047 | .045 | |
| 2.0 | .455 | .407 | .366 | .390 | .350 | .316 | .267 | .242 | .220 | .154 | .141 | .129 | .049 | .046 | .042 | |
| 3.0 | .448 | .391 | .345 | .384 | .337 | .299 | .264 | .234 | .210 | .152 | .137 | .124 | .049 | .044 | .041 | |
| 4.0 | .441 | .379 | .332 | .378 | .328 | .289 | .260 | .228 | .203 | .150 | .134 | .120 | .048 | .044 | .040 | |
| 5.0 | .433 | .370 | .323 | .372 | .320 | .281 | .256 | .224 | .199 | .148 | .131 | .118 | .048 | .043 | .039 | |
| 6.0 | .426 | .362 | .317 | .366 | .314 | .276 | .252 | .220 | .195 | .146 | .129 | .116 | .047 | .042 | .038 | |
| 7.0 | .419 | .356 | .312 | .360 | .309 | .272 | .249 | .216 | .193 | .145 | .127 | .115 | .047 | .042 | .038 | |
| 8.0 | .412 | .351 | .309 | .355 | .304 | .269 | .245 | .214 | .191 | .143 | .126 | .114 | .046 | .041 | .038 | |
| 9.0 | .406 | .346 | .306 | .349 | .300 | .267 | .242 | .211 | .189 | .141 | .125 | .113 | .046 | .041 | .037 | |
| 10.0 | .400 | .342 | .304 | .345 | .297 | .265 | .239 | .209 | .188 | .139 | .124 | .112 | .045 | .041 | .037 | |

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR Table

Report number:

| | | | | | | | | | | | |
|--|---------------|------------------|------|------|------------|---------------|----------------|-------------|------|------|--|
| MANUFACTURER: | | | | | | | | | | | |
| Address: | | | | | | | | | | | |
| NAME: | | | | | TYPE: | | | WEIGHT: | | | |
| SPECIFICATION: | | CCT(K): 0 | | | 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 | 7.9 | 9.1 | 8.6 | 9.8 | 10.7 | 7.9 | 9.1 | 8.6 | 9.9 | 10.8 | |
| 3H | 10.7 | 11.8 | 11.4 | 12.6 | 13.5 | 10.8 | 12.0 | 11.6 | 12.7 | 13.7 | |
| 4H | 12.3 | 13.3 | 13.0 | 14.1 | 15.1 | 12.5 | 13.5 | 13.2 | 14.3 | 15.3 | |
| 6H | 14.0 | 15.0 | 14.8 | 15.8 | 16.8 | 14.2 | 15.2 | 15.0 | 16.0 | 17.0 | |
| 8H | 15.0 | 16.0 | 15.8 | 16.8 | 17.8 | 15.2 | 16.2 | 16.0 | 17.0 | 18.0 | |
| 12H | 16.1 | 17.1 | 16.9 | 17.9 | 18.9 | 16.4 | 17.3 | 17.2 | 18.1 | 19.1 | |
| 4H 2H | 8.8 | 9.8 | 9.5 | 10.6 | 11.6 | 8.8 | 9.9 | 9.6 | 10.7 | 11.6 | |
| 3H | 11.8 | 12.7 | 12.6 | 13.5 | 14.5 | 11.9 | 12.8 | 12.7 | 13.6 | 14.6 | |
| 4H | 13.5 | 14.3 | 14.3 | 15.2 | 16.2 | 13.6 | 14.5 | 14.5 | 15.3 | 16.4 | |
| 6H | 15.4 | 16.2 | 16.2 | 17.0 | 18.1 | 15.6 | 16.4 | 16.4 | 17.2 | 18.3 | |
| 8H | 16.5 | 17.2 | 17.3 | 18.1 | 19.1 | 16.7 | 17.4 | 17.5 | 18.3 | 19.3 | |
| 12H | 17.7 | 18.4 | 18.6 | 19.3 | 20.4 | 17.9 | 18.6 | 18.8 | 19.5 | 20.6 | |
| 8H 4H | 14.1 | 14.9 | 15.0 | 15.7 | 16.8 | 14.3 | 15.0 | 15.1 | 15.9 | 16.9 | |
| 6H | 16.3 | 16.9 | 17.2 | 17.8 | 18.9 | 16.5 | 17.1 | 17.4 | 18.0 | 19.1 | |
| 8H | 17.6 | 18.1 | 18.5 | 19.0 | 20.2 | 17.8 | 18.3 | 18.7 | 19.2 | 20.3 | |
| 12H | 19.1 | 19.6 | 20.0 | 20.5 | 21.6 | 19.2 | 19.7 | 20.1 | 20.6 | 21.8 | |
| 12H 4H | 14.3 | 15.0 | 15.2 | 15.9 | 17.0 | 14.4 | 15.1 | 15.3 | 16.0 | 17.1 | |
| 6H | 16.6 | 17.2 | 17.5 | 18.1 | 19.2 | 16.8 | 17.3 | 17.7 | 18.2 | 19.3 | |
| 8H | 18.0 | 18.5 | 18.9 | 19.4 | 20.6 | 18.2 | 18.6 | 19.1 | 19.6 | 20.7 | |
| Variations with the observer position at spacings: | | | | | | | | | | | |
| S = 1.0H | + 0.1 / - 0.1 | | | | | + 0.1 / - 0.1 | | | | | |
| 1.5H | + 0.2 / - 0.3 | | | | | + 0.2 / - 0.3 | | | | | |
| 2.0H | + 0.3 / - 0.4 | | | | | + 0.3 / - 0.4 | | | | | |

CIE Pub.117 Corrected 230.2 lm Total Lamp Luminous Flux.(8log(F/F0) = -5.1)

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

UTILIZATION FACTORS TABLE

Report number:

| | | | | | | | | | | |
|----------------|--|--|-----------|--|------------|--|--|-------------|--|--|
| MANUFACTURER: | | | | | | | | | | |
| Address: | | | | | | | | | | |
| NAME: | | | | | TYPE: | | | WEIGHT: | | |
| SPECIFICATION: | | | CCT(K): 0 | | 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) x RCR = 5 | | | | | | | | | |
| k = 0.60 | 39 | 26 | 19 | 38 | 26 | 19 | 35 | 24 | 18 | 11 |
| 0.80 | 48 | 34 | 26 | 46 | 33 | 25 | 42 | 31 | 24 | 15 |
| 1.00 | 55 | 41 | 32 | 53 | 40 | 31 | 48 | 39 | 29 | 19 |
| 1.25 | 62 | 48 | 39 | 59 | 46 | 37 | 53 | 42 | 35 | 23 |
| 1.50 | 68 | 54 | 44 | 64 | 52 | 43 | 57 | 47 | 39 | 26 |
| 2.00 | 75 | 63 | 53 | 71 | 60 | 51 | 63 | 54 | 47 | 31 |
| 2.50 | 80 | 69 | 59 | 76 | 65 | 57 | 67 | 58 | 52 | 35 |
| 3.00 | 84 | 74 | 65 | 79 | 70 | 62 | 70 | 62 | 56 | 38 |
| 4.00 | 90 | 80 | 73 | 84 | 76 | 69 | 74 | 68 | 62 | 42 |
| 5.00 | 93 | 85 | 78 | 87 | 80 | 74 | 77 | 71 | 66 | 45 |
| ROOM INDEX | UF(total) | | | | | | | | | Direct |
| According to DIN EN 13032-2 2004 | | | | | | | | | | |
| Suspended | | | | | | | | | | |
| SHRNOM = 1.25 | | | | | | | | | | |

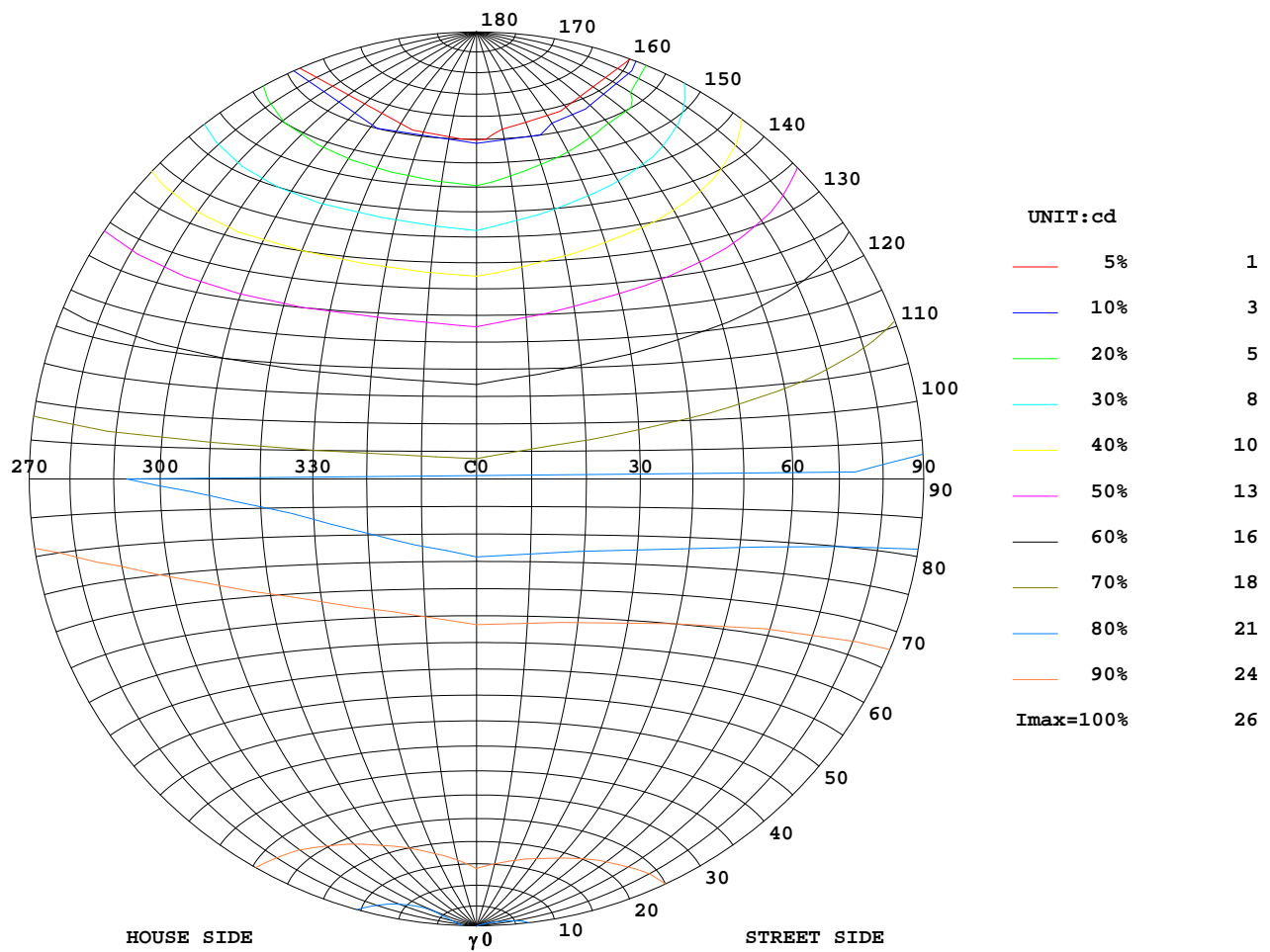
Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |



Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

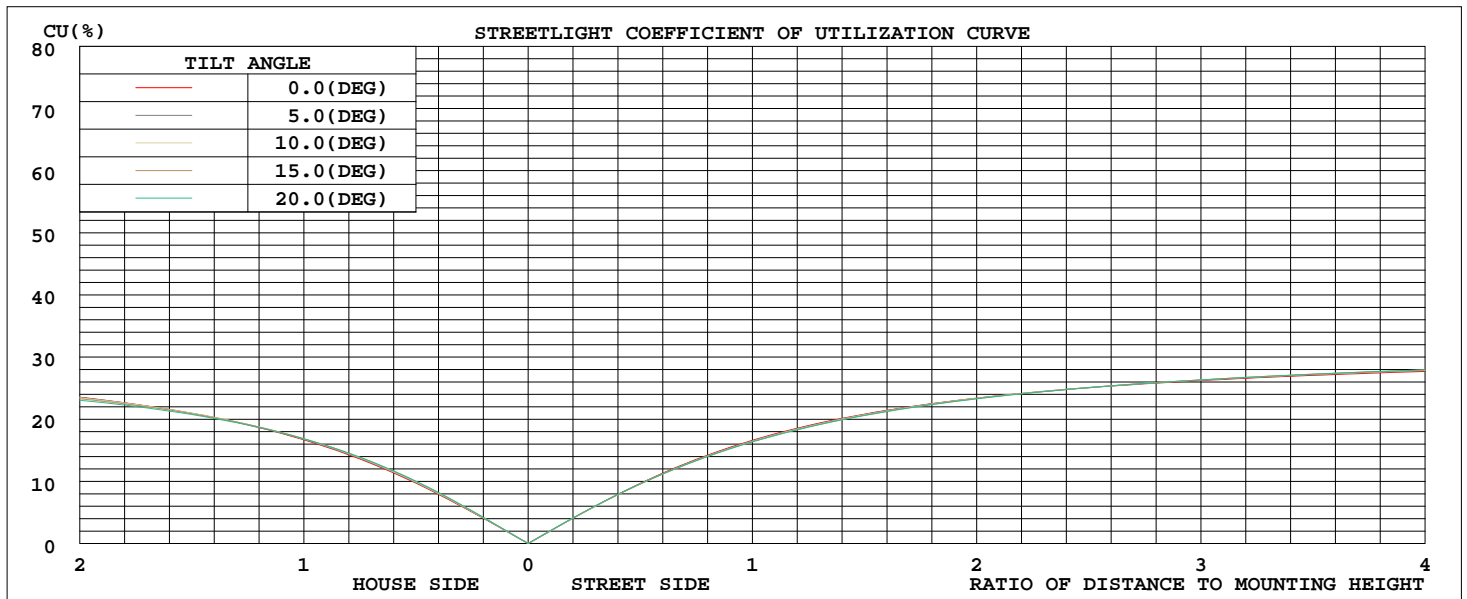
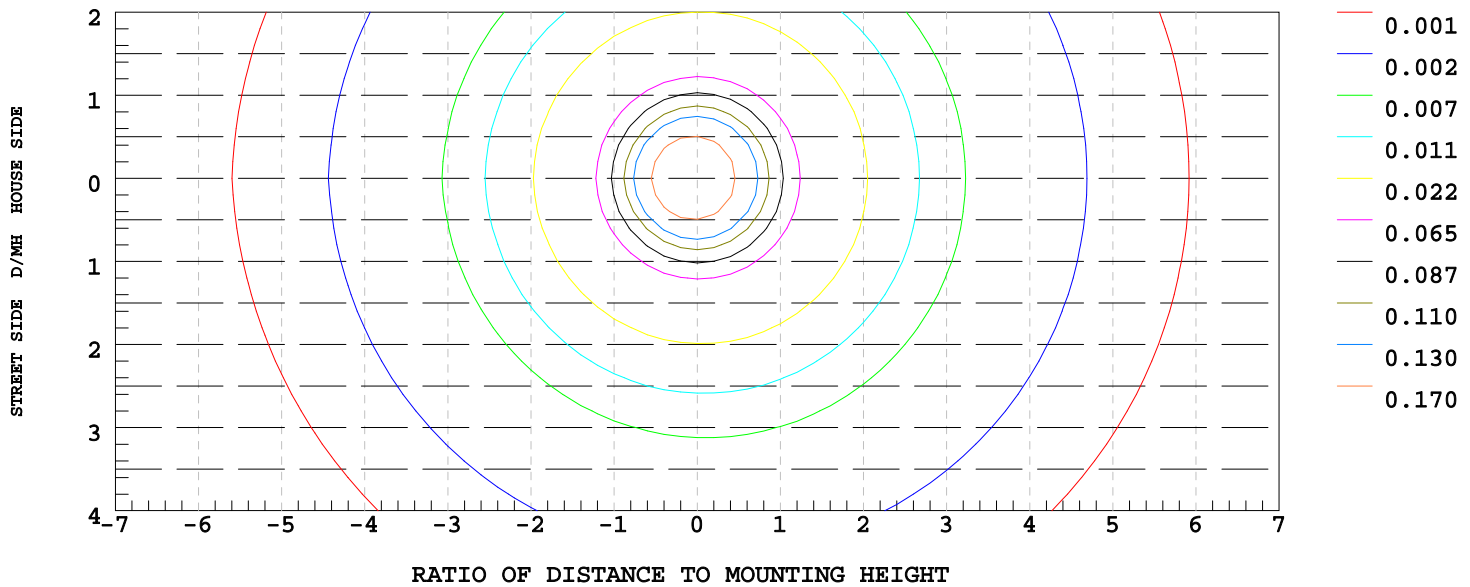
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |

ILLUMINANCE AT MH=10 m,Enadir = 0.21 lx



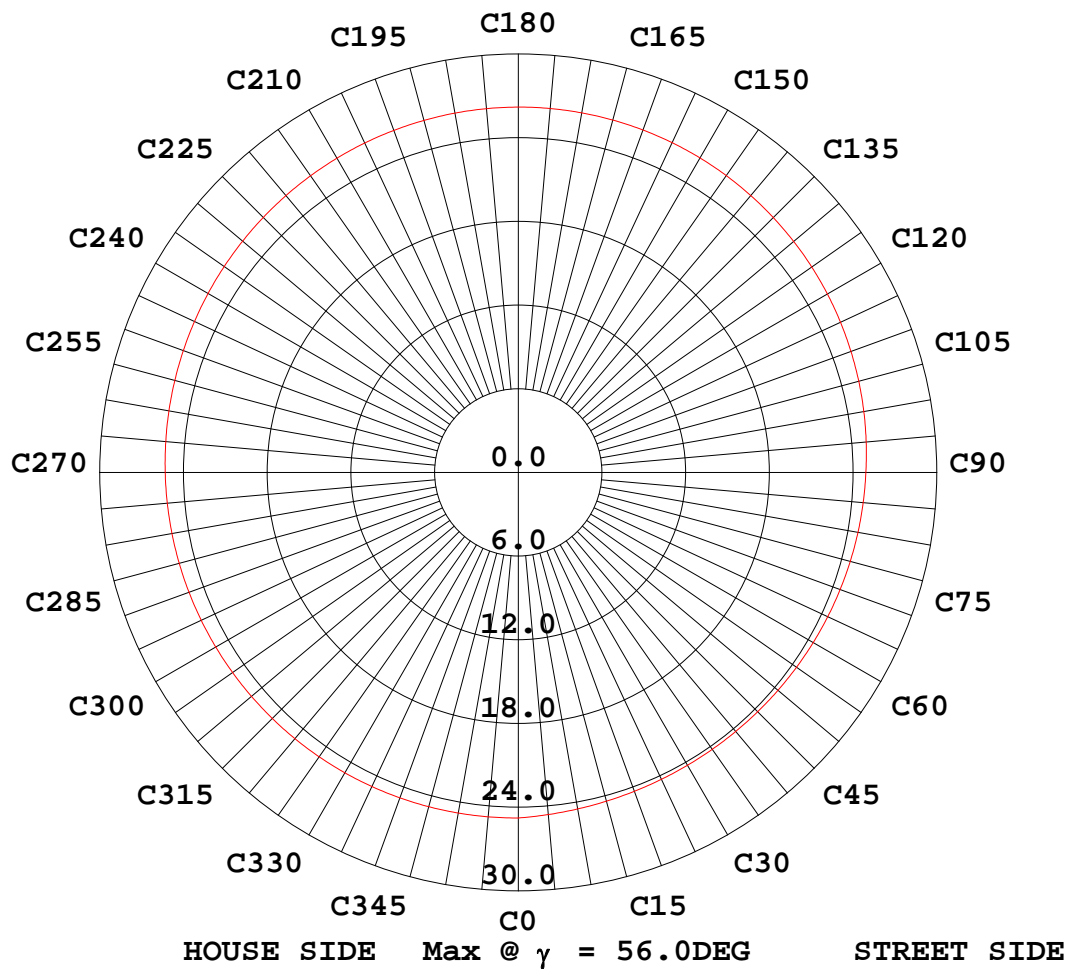
Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |



Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

| | | | |
|----------------|-----------|------------|-------------|
| MANUFACTURER: | | | |
| Address: | | | |
| NAME: | | TYPE: | WEIGHT: |
| SPECIFICATION: | CCT(K): 0 | DIMENSION: | SERIAL No.: |

UNIT: cd

| C (DEG) γ (DEG) | 0 | 90 | 180 | 270 |
|--------------------|------|------|------|------|
| 0.0 | 21.3 | 20.7 | 21.3 | 20.7 |
| 5.0 | 22.2 | 20.7 | 20.4 | 20.8 |
| 10.0 | 22.9 | 21.3 | 20.2 | 21.3 |
| 15.0 | 23.7 | 22.0 | 20.8 | 22.1 |
| 20.0 | 24.4 | 22.8 | 21.7 | 22.9 |
| 25.0 | 25.1 | 23.5 | 22.7 | 23.7 |
| 30.0 | 25.5 | 24.1 | 23.6 | 24.4 |
| 35.0 | 25.8 | 24.6 | 24.4 | 25.0 |
| 40.0 | 25.8 | 25.0 | 25.1 | 25.3 |
| 45.0 | 25.7 | 25.2 | 25.7 | 25.5 |
| 50.0 | 25.4 | 25.1 | 26.0 | 25.5 |
| 55.0 | 24.9 | 24.9 | 26.1 | 25.3 |
| 60.0 | 24.1 | 24.5 | 26.1 | 24.9 |
| 65.0 | 23.2 | 23.9 | 25.8 | 24.4 |
| 70.0 | 22.2 | 23.1 | 25.3 | 23.6 |
| 75.0 | 21.1 | 22.2 | 24.6 | 22.7 |
| 80.0 | 20.1 | 21.1 | 23.8 | 21.6 |
| 85.0 | 19.5 | 20.1 | 22.7 | 20.6 |
| 90.0 | 18.9 | 19.3 | 21.6 | 19.7 |
| 95.0 | 18.1 | 18.7 | 20.6 | 19.1 |
| 100.0 | 17.2 | 18.0 | 19.8 | 18.4 |
| 105.0 | 16.1 | 17.2 | 19.2 | 17.6 |
| 110.0 | 15.0 | 16.2 | 18.4 | 16.7 |
| 115.0 | 13.8 | 15.2 | 17.5 | 15.7 |
| 120.0 | 12.5 | 14.0 | 16.5 | 14.5 |
| 125.0 | 11.1 | 12.7 | 15.4 | 13.3 |
| 130.0 | 9.72 | 11.4 | 14.2 | 12.1 |
| 135.0 | 8.20 | 10.0 | 12.8 | 10.7 |
| 140.0 | 6.75 | 8.58 | 11.5 | 9.40 |
| 145.0 | 5.32 | 7.14 | 10.1 | 8.01 |
| 150.0 | 3.89 | 5.65 | 8.54 | 6.56 |
| 155.0 | 1.07 | 4.78 | 7.01 | 5.21 |
| 160.0 | 0.24 | 0.13 | 1.13 | 3.81 |
| 165.0 | 0.15 | 0.08 | 0.19 | 0.25 |
| 170.0 | 0.10 | 0.05 | 0.11 | 0.17 |
| 175.0 | 0.08 | 0.05 | 0.07 | 0.11 |
| 180.0 | 0.06 | 0.04 | 0.06 | 0.06 |

Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks: