

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: CORELITE

Report Number: P958986

Luminaire Tested: CB2-B-085U-085D-835-1D-UNV-STD-W-4

Issue Date: 2/12/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P958986  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-119-1, G2-2312-242-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/12/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: CB2-B-085U-085D-835-1D-UNV-STD-W-4  
Description: CORELITE BASIC SLOT LED LUMINAIRE, BATWING UPLIGHT  
2-INCH APERTURE  
DOWNLIGHT 850 LUMENS PER FOOT  
UPLIGHT 850 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

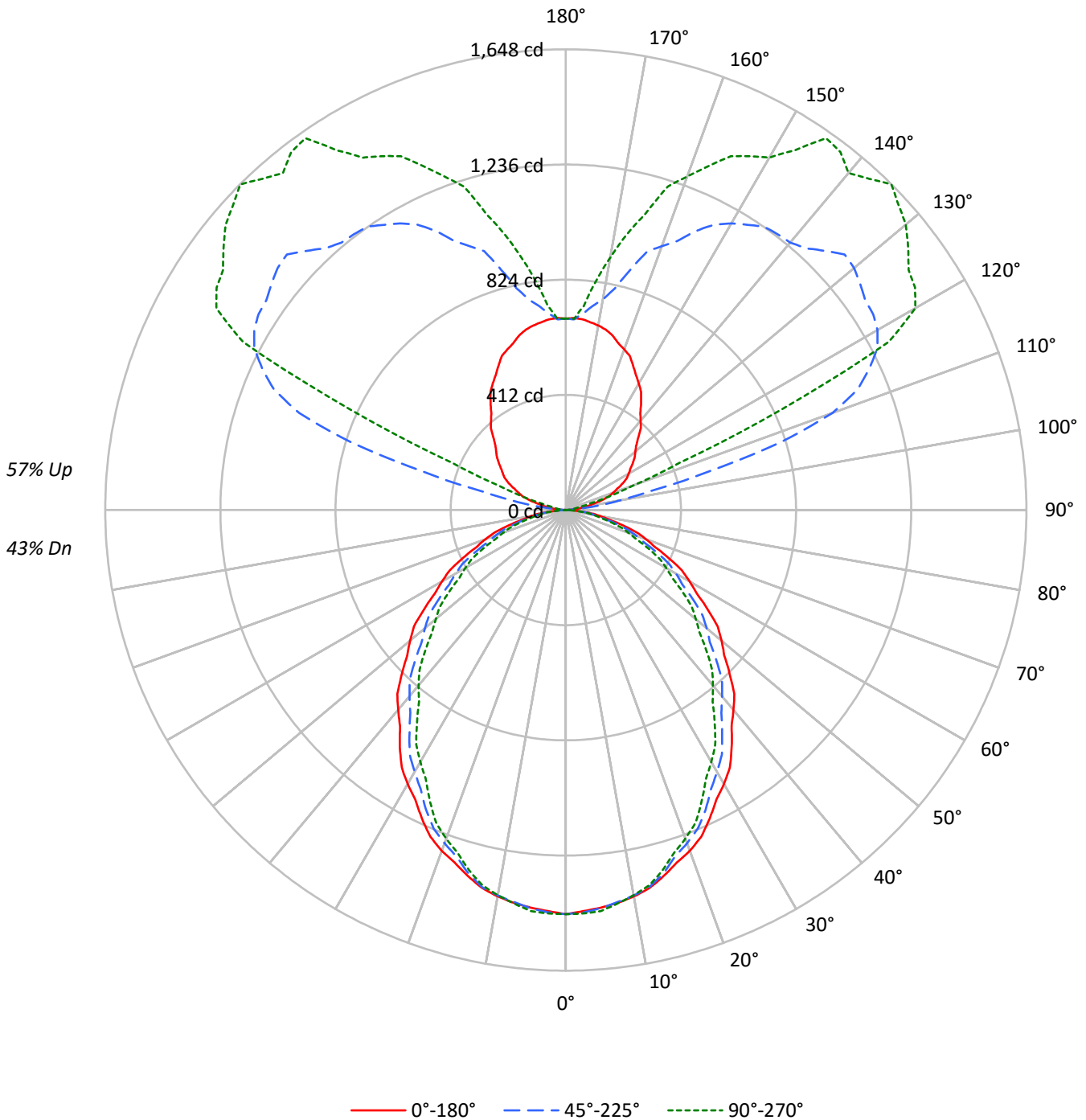
Lumens per Lamp: N/A  
Luminaire Lumens: 7872.0 lumens  
Efficiency: N/A  
Efficacy: 147.7 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.15' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 53.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P958986

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF  | 20  |     |     |     | 20 |    |    |    | 20 |    |    |    | 20 |    |    |    | 20 |    |    |    |    |
| RC  | 80  |     |     |     | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    | 0  |    |
| RW  | 70  | 50  | 30  | 10  | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 79 | 79 | 79 | 64 | 64 | 64 | 50 | 50 | 50 | 43 |    |    | 43 |
| 1   | 96  | 92  | 88  | 85  | 88 | 84 | 81 | 78 | 70 | 67 | 65 | 56 | 55 | 53 | 44 | 43 | 42 | 36 |    |    | 36 |
| 2   | 88  | 81  | 75  | 70  | 80 | 74 | 69 | 64 | 61 | 58 | 54 | 50 | 47 | 45 | 39 | 37 | 36 | 31 |    |    | 31 |
| 3   | 80  | 71  | 64  | 58  | 73 | 65 | 59 | 54 | 54 | 50 | 46 | 44 | 41 | 38 | 35 | 32 | 31 | 26 |    |    | 26 |
| 4   | 73  | 63  | 55  | 49  | 67 | 58 | 51 | 46 | 48 | 43 | 39 | 39 | 36 | 33 | 31 | 29 | 26 | 23 |    |    | 23 |
| 5   | 67  | 56  | 48  | 42  | 61 | 52 | 45 | 39 | 43 | 38 | 34 | 35 | 31 | 28 | 28 | 25 | 23 | 20 |    |    | 20 |
| 6   | 62  | 50  | 42  | 37  | 57 | 46 | 39 | 34 | 39 | 34 | 30 | 32 | 28 | 25 | 25 | 23 | 20 | 17 |    |    | 17 |
| 7   | 57  | 45  | 38  | 32  | 52 | 42 | 35 | 30 | 35 | 30 | 26 | 29 | 25 | 22 | 23 | 20 | 18 | 16 |    |    | 16 |
| 8   | 53  | 41  | 34  | 28  | 49 | 38 | 31 | 27 | 32 | 27 | 23 | 27 | 23 | 20 | 21 | 19 | 16 | 14 |    |    | 14 |
| 9   | 50  | 38  | 30  | 25  | 45 | 35 | 28 | 24 | 30 | 24 | 21 | 25 | 21 | 18 | 20 | 17 | 15 | 13 |    |    | 13 |
| 10  | 46  | 34  | 27  | 23  | 42 | 32 | 26 | 21 | 27 | 22 | 19 | 23 | 19 | 16 | 18 | 16 | 13 | 12 |    |    | 12 |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 25180 | 25180 | 25180 |
| 5°  | 24967 | 25005 | 25180 |
| 10° | 24824 | 24766 | 24746 |
| 15° | 24431 | 24273 | 24072 |
| 20° | 24047 | 23514 | 23186 |
| 25° | 23402 | 22741 | 22103 |
| 30° | 22752 | 21751 | 20926 |
| 35° | 22007 | 20735 | 19747 |
| 40° | 21218 | 19783 | 18626 |
| 45° | 20422 | 18787 | 17533 |
| 50° | 19707 | 17816 | 16467 |
| 55° | 18824 | 16808 | 15462 |
| 60° | 17814 | 15850 | 14460 |
| 65° | 16745 | 14783 | 13460 |
| 70° | 15558 | 13587 | 12176 |
| 75° | 14152 | 12288 | 11023 |
| 80° | 12658 | 10772 | 9990  |
| 85° | 9732  | 8853  | 7294  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 20422 cd/sqm



TEST NUMBER: P958986  
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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 136.0  | 1.7       |
| 10°-20°   | 379.0  | 4.8       |
| 20°-30°   | 544.9  | 6.9       |
| 30°-40°   | 612.5  | 7.8       |
| 40°-50°   | 591.6  | 7.5       |
| 50°-60°   | 499.9  | 6.4       |
| 60°-70°   | 359.1  | 4.6       |
| 70°-80°   | 196.2  | 2.5       |
| 80°-90°   | 52.1   | 0.7       |
| 90°-100°  | 51.3   | 0.7       |
| 100°-110° | 317.8  | 4.0       |
| 110°-120° | 801.5  | 10.2      |
| 120°-130° | 963.5  | 12.2      |
| 130°-140° | 873.6  | 11.1      |
| 140°-150° | 696.6  | 8.8       |
| 150°-160° | 475.2  | 6.0       |
| 160°-170° | 251.3  | 3.2       |
| 170°-180° | 69.9   | 0.9       |
| 0°-30°    | 1059.8 | 13.5      |
| 0°-40°    | 1672.3 | 21.2      |
| 0°-60°    | 2763.8 | 35.1      |
| 0°-90°    | 3371.2 | 42.8      |
| 90°-120°  | 1170.7 | 14.9      |
| 90°-150°  | 3704.4 | 47.1      |
| 90°-180°  | 4501.0 | 57.2      |
| 0°-180°   | 7872.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1446 | 1446  | 1446 | 1446  | 1446 |      |
| 5°   | 1428 | 1448  | 1430 | 1430  | 1440 | 136  |
| 15°  | 1355 | 1367  | 1346 | 1333  | 1335 | 382  |
| 25°  | 1218 | 1219  | 1183 | 1157  | 1150 | 561  |
| 35°  | 1035 | 1023  | 975  | 937   | 929  | 647  |
| 45°  | 829  | 812   | 763  | 723   | 712  | 641  |
| 55°  | 620  | 597   | 554  | 519   | 509  | 554  |
| 65°  | 406  | 391   | 359  | 333   | 327  | 403  |
| 75°  | 210  | 197   | 183  | 168   | 164  | 225  |
| 85°  | 49   | 46    | 44   | 39    | 36   | 58   |
| 90°  | 0    | 0     | 0    | 0     | 0    | 3    |
| 95°  | 27   | 67    | 21   | 15    | 15   | 34   |
| 105° | 130  | 364   | 526  | 132   | 89   | 136  |
| 115° | 224  | 496   | 1199 | 1116  | 850  | 220  |
| 125° | 292  | 601   | 1308 | 1488  | 1497 | 262  |
| 135° | 366  | 666   | 1311 | 1535  | 1648 | 285  |
| 145° | 469  | 700   | 1237 | 1491  | 1624 | 293  |
| 155° | 570  | 714   | 1101 | 1327  | 1396 | 262  |
| 165° | 647  | 707   | 889  | 1046  | 1095 | 181  |
| 175° | 685  | 694   | 706  | 718   | 732  | 65   |
| 180° | 685  | 685   | 685  | 685   | 685  |      |

TEST NUMBER: P958986

CATALOG NUMBER: CB2-B-085U-085D-835-1D-UNV-STD-W-4

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1445.7 | 1445.7 | 1445.7 | 1445.7 | 1445.7 |
| 2.5°   | 1436.0 | 1453.3 | 1440.4 | 1442.2 | 1444.8 |
| 5°     | 1428.0 | 1447.5 | 1430.2 | 1430.4 | 1440.2 |
| 7.5°   | 1417.8 | 1436.2 | 1414.5 | 1410.5 | 1419.6 |
| 10°    | 1403.6 | 1422.0 | 1400.3 | 1392.7 | 1399.2 |
| 12.5°  | 1385.0 | 1402.6 | 1381.7 | 1369.7 | 1375.3 |
| 15°    | 1354.9 | 1366.8 | 1346.1 | 1332.8 | 1335.0 |
| 17.5°  | 1322.2 | 1329.5 | 1299.6 | 1288.5 | 1286.3 |
| 20°    | 1297.4 | 1303.9 | 1268.6 | 1253.0 | 1250.9 |
| 22.5°  | 1265.5 | 1271.1 | 1234.0 | 1214.9 | 1211.9 |
| 25°    | 1217.7 | 1218.7 | 1183.3 | 1156.6 | 1150.1 |
| 27.5°  | 1167.6 | 1164.2 | 1124.9 | 1093.3 | 1084.8 |
| 30°    | 1131.3 | 1127.0 | 1081.5 | 1048.1 | 1040.5 |
| 32.5°  | 1092.3 | 1084.6 | 1039.0 | 1003.0 | 995.4  |
| 35°    | 1035.0 | 1023.1 | 975.2  | 937.4  | 928.7  |
| 37.5°  | 973.9  | 960.5  | 913.5  | 872.3  | 862.5  |
| 40°    | 933.2  | 918.0  | 870.1  | 828.9  | 819.2  |
| 42.5°  | 892.4  | 875.5  | 826.7  | 785.5  | 774.9  |
| 45°    | 829.1  | 811.8  | 762.7  | 722.6  | 711.8  |
| 47.5°  | 768.9  | 746.8  | 699.2  | 659.3  | 648.5  |
| 50°    | 727.3  | 703.5  | 657.5  | 618.5  | 607.7  |
| 52.5°  | 684.8  | 660.1  | 615.9  | 578.7  | 567.9  |
| 55°    | 619.9  | 597.2  | 553.5  | 518.9  | 509.2  |
| 57.5°  | 555.7  | 533.8  | 493.9  | 460.9  | 451.4  |
| 60°    | 511.4  | 493.0  | 455.0  | 423.8  | 415.1  |
| 62.5°  | 468.9  | 452.2  | 416.0  | 387.5  | 378.8  |
| 65°    | 406.3  | 391.1  | 358.7  | 333.0  | 326.6  |
| 67.5°  | 345.4  | 330.2  | 304.0  | 281.0  | 273.6  |
| 70°    | 305.5  | 290.4  | 266.8  | 245.6  | 239.1  |
| 72.5°  | 267.4  | 251.4  | 232.2  | 212.9  | 208.1  |
| 75°    | 210.3  | 197.3  | 182.6  | 168.2  | 163.8  |
| 77.5°  | 159.8  | 147.3  | 136.6  | 126.4  | 125.3  |
| 80°    | 126.2  | 115.4  | 107.4  | 100.7  | 99.6   |
| 82.5°  | 94.3   | 86.1   | 80.8   | 75.9   | 75.7   |
| 85°    | 48.7   | 45.5   | 44.3   | 38.7   | 36.5   |
| 87.5°  | 14.2   | 14.2   | 12.4   | 10.6   | 10.6   |
| 90°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 7.1    | 11.7   | 4.7    | 4.7    | 4.7    |
| 95°    | 26.6   | 67.0   | 20.7   | 14.8   | 14.8   |
| 97.5°  | 55.5   | 160.6  | 111.6  | 30.0   | 26.0   |
| 100°   | 76.8   | 232.7  | 191.9  | 44.1   | 35.4   |
| 102.5° | 98.0   | 295.5  | 302.9  | 69.9   | 54.3   |
| 105°   | 129.9  | 363.7  | 525.5  | 131.9  | 88.6   |
| 107.5° | 161.2  | 408.3  | 805.4  | 272.1  | 164.2  |
| 110°   | 180.1  | 434.1  | 1015.6 | 424.2  | 253.9  |



TEST NUMBER: P958986

CATALOG NUMBER: CB2-B-085U-085D-835-1D-UNV-STD-W-4

**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°    | 67.5°  | 90°    |
|--------|-------|-------|--------|--------|--------|
| 112.5° | 199.0 | 460.0 | 1131.4 | 680.1  | 438.1  |
| 115°   | 224.4 | 495.8 | 1198.7 | 1115.9 | 850.3  |
| 117.5° | 245.6 | 528.6 | 1256.6 | 1380.0 | 1302.0 |
| 120°   | 259.8 | 554.3 | 1287.3 | 1417.8 | 1443.8 |
| 122.5° | 274.0 | 573.1 | 1303.8 | 1432.5 | 1481.5 |
| 125°   | 292.3 | 601.2 | 1307.9 | 1488.2 | 1496.9 |
| 127.5° | 310.6 | 622.4 | 1327.4 | 1539.5 | 1543.5 |
| 130°   | 324.8 | 636.5 | 1346.3 | 1556.7 | 1588.4 |
| 132.5° | 341.3 | 648.5 | 1353.4 | 1566.5 | 1614.4 |
| 135°   | 366.1 | 666.3 | 1310.9 | 1534.9 | 1647.5 |
| 137.5° | 397.4 | 679.2 | 1270.1 | 1534.0 | 1606.7 |
| 140°   | 416.3 | 681.9 | 1248.9 | 1567.9 | 1573.7 |
| 142.5° | 437.6 | 689.3 | 1244.2 | 1564.2 | 1613.8 |
| 145°   | 469.4 | 700.4 | 1237.1 | 1491.1 | 1623.9 |
| 147.5° | 501.3 | 707.4 | 1209.9 | 1410.4 | 1526.4 |
| 150°   | 522.6 | 710.2 | 1183.9 | 1383.4 | 1455.6 |
| 152.5° | 543.8 | 713.0 | 1150.9 | 1366.6 | 1427.2 |
| 155°   | 569.8 | 714.2 | 1101.3 | 1327.2 | 1396.5 |
| 157.5° | 597.0 | 710.7 | 1041.6 | 1255.3 | 1331.0 |
| 160°   | 611.2 | 706.4 | 1003.8 | 1203.2 | 1269.6 |
| 162.5° | 625.3 | 704.4 | 970.8  | 1134.9 | 1212.9 |
| 165°   | 646.6 | 707.2 | 888.7  | 1046.3 | 1095.4 |
| 167.5° | 660.8 | 704.6 | 811.9  | 941.0  | 1010.3 |
| 170°   | 670.2 | 704.8 | 764.7  | 860.5  | 918.2  |
| 172.5° | 677.3 | 693.5 | 736.3  | 786.8  | 826.1  |
| 175°   | 685.0 | 693.6 | 705.6  | 717.8  | 732.2  |
| 177.5° | 687.3 | 692.0 | 682.6  | 680.4  | 685.0  |
| 180°   | 685.0 | 685.0 | 685.0  | 685.0  | 685.0  |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

CORELITE

Report Number: SP1-2312-242-2

Test Date: 01/31/2024

Luminaire Tested: CB2-055U055D-835-1D-UNV-STD-D-W-4

Data in this report applies to families of products including CB2-055U055D-835-1D-UNV-STD-D-W-4.



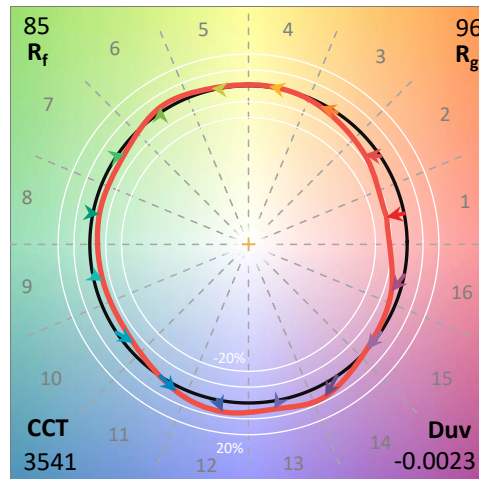
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2312-242-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 01/31/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: CORELITE  
 Catalog Number: **CB2-055U055D-835-1D-UNV-STD-D-W-4**  
 Description: CORELITE BASIC 2-INCH SUSPENDED LED LUMINAIRE. 550 LUMENS PER FOOT UPLIGHT, 550 LUMENS PER FOOT DOWNLIGHT

UPLIGHT, 550 LUMENS PER FOOT DOWNLIGHT

**Spectral Parameters**

|                           |         |           |      |      |      |
|---------------------------|---------|-----------|------|------|------|
| CCT (K):                  | 3541    | CRI (Ra): | 84.5 | R9:  | 14.2 |
| CIE u':                   | 0.2358  | R1:       | 83.5 | R10: | 80.9 |
| CIE v':                   | 0.5074  | R2:       | 91.9 | R11: | 82.9 |
| Duv:                      | -0.0023 | R3:       | 96.1 | R12: | 68.8 |
| CIE x:                    | 0.4006  | R4:       | 83.0 | R13: | 85.7 |
| CIE y:                    | 0.3831  | R5:       | 83.8 | R14: | 98.5 |
| CIE z:                    | 0.2162  | R6:       | 88.9 |      |      |
| Peak Wavelength (nm):     | 600     | R7:       | 84.5 |      |      |
| Dominant Wavelength (nm): | 581     | R8:       | 64.1 |      |      |
| Purity:                   | 35.5    |           |      |      |      |
| Rf:                       | 85.1    |           |      |      |      |
| Rg:                       | 96.5    |           |      |      |      |



**Test Conditions**

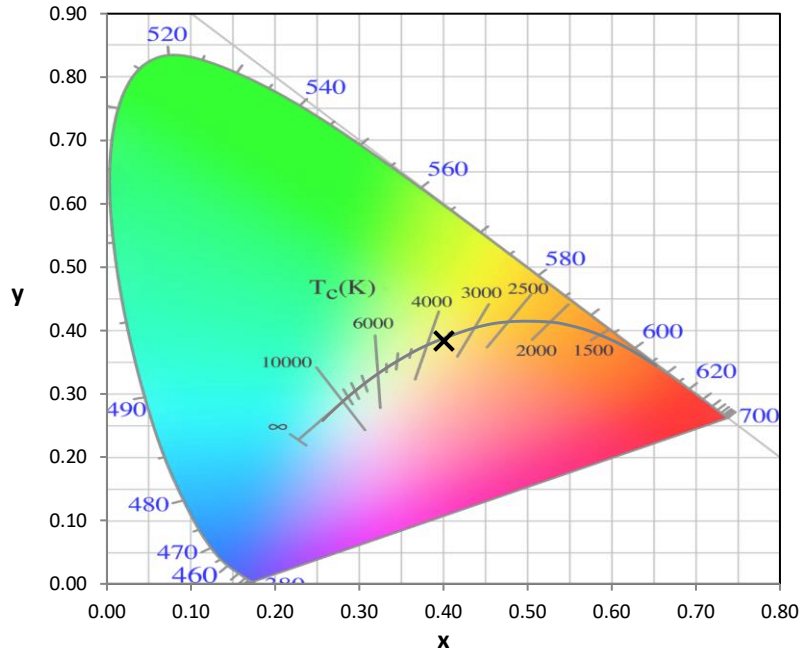
Stabilization Time: 53M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.8/25%  
 Sphere Temperature (°C): 25.2

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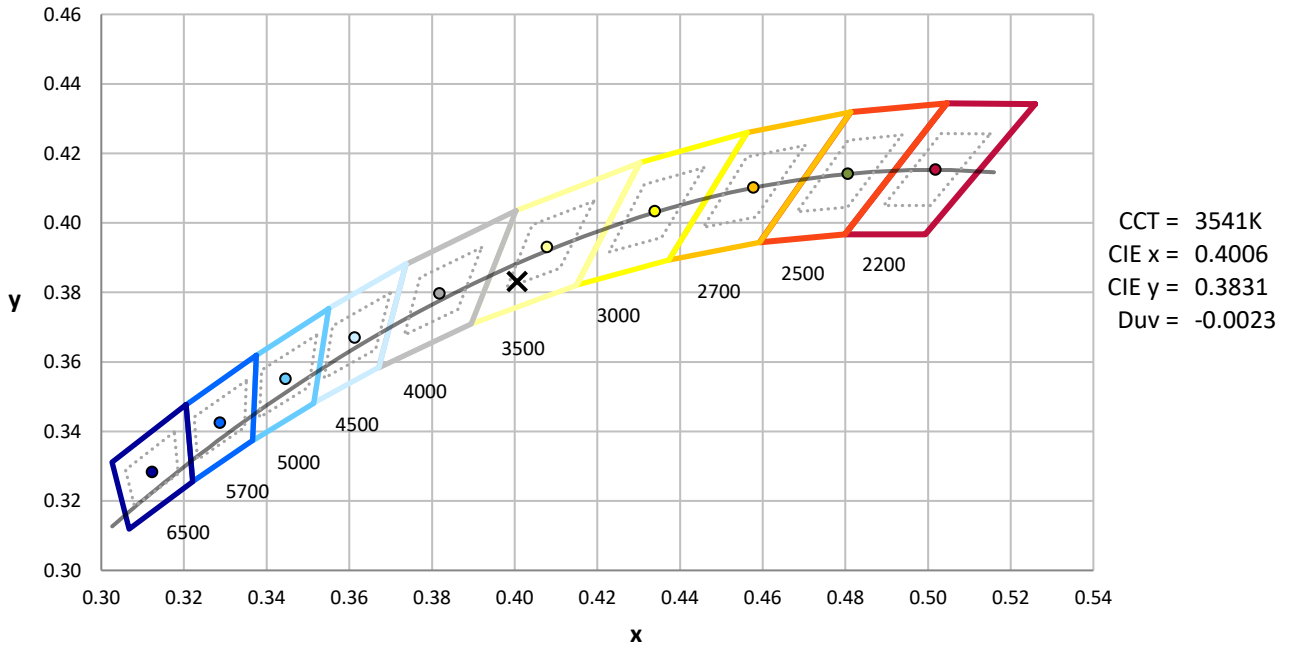
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 8/9/2023         | 2/9/2024             |
| Power Meter                    | XITRON 2801 IN0071    | 10/23/2023       | 10/23/2024           |
| AC Power Source                | CHROMA 61603 IN0063   | 10/24/2023       | 10/24/2024           |
| DC Power Source                | AGILENT E3634A IN0208 | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | ONSET IN0085          | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | ONSET IN0046          | 10/24/2023       | 10/24/2024           |

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CIE 1931 Chromaticity Diagram



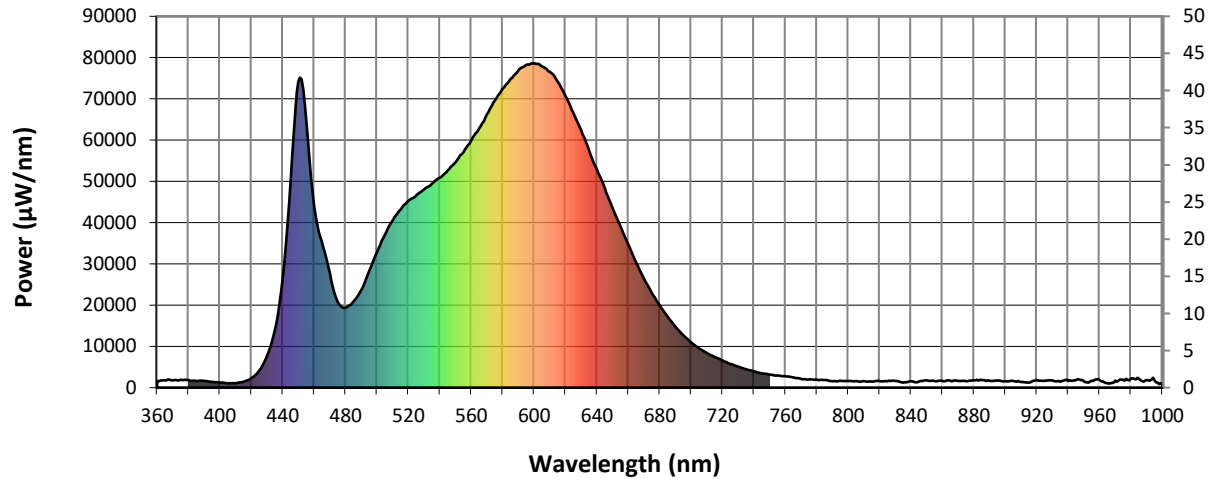
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 4-step quadrangle

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**Photopic Flux vs. Wavelength**

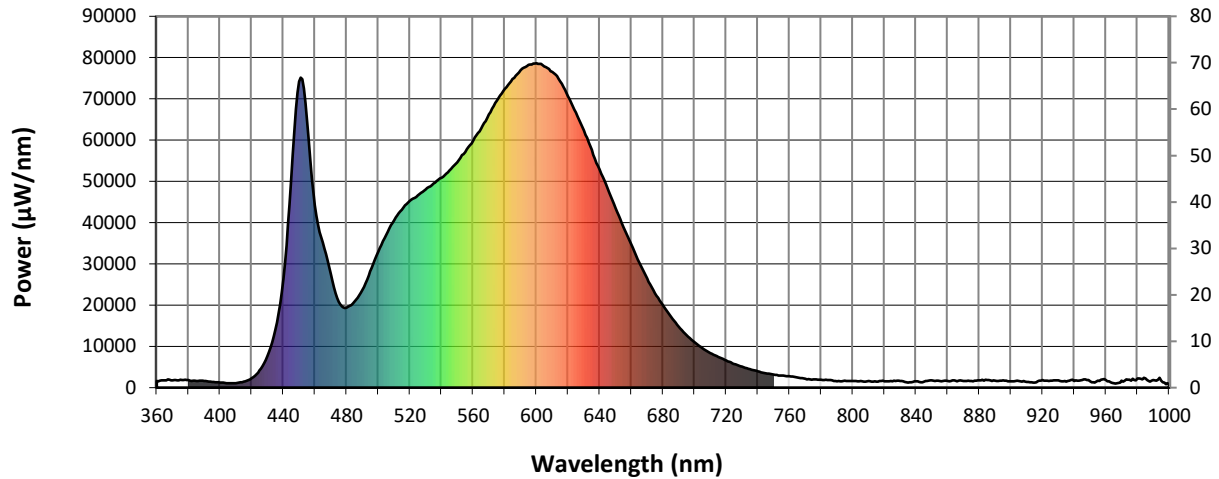


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| $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 1645                                 | NR                             | 490               | 23726                                | NR                             | 620               | 70637                                | NR                             | 750               | 3143                                 | NR                             | 880               | 1783                                 | NR                             |
| 365               | 1769                                 | NR                             | 495               | 28236                                | NR                             | 625               | 66683                                | NR                             | 755               | 2968                                 | NR                             | 885               | 1846                                 | NR                             |
| 370               | 1796                                 | NR                             | 500               | 32891                                | NR                             | 630               | 62306                                | NR                             | 760               | 2799                                 | NR                             | 890               | 1659                                 | NR                             |
| 375               | 1923                                 | NR                             | 505               | 37017                                | NR                             | 635               | 57573                                | NR                             | 765               | 2493                                 | NR                             | 895               | 1765                                 | NR                             |
| 380               | 1816                                 | NR                             | 510               | 40532                                | NR                             | 640               | 52890                                | NR                             | 770               | 2130                                 | NR                             | 900               | 1525                                 | NR                             |
| 385               | 1596                                 | NR                             | 515               | 43140                                | NR                             | 645               | 48288                                | NR                             | 775               | 1963                                 | NR                             | 905               | 1585                                 | NR                             |
| 390               | 1580                                 | NR                             | 520               | 45310                                | NR                             | 650               | 43479                                | NR                             | 780               | 1886                                 | NR                             | 910               | 1403                                 | NR                             |
| 395               | 1404                                 | NR                             | 525               | 46566                                | NR                             | 655               | 39030                                | NR                             | 785               | 1831                                 | NR                             | 915               | 1255                                 | NR                             |
| 400               | 1245                                 | NR                             | 530               | 48099                                | NR                             | 660               | 34729                                | NR                             | 790               | 1545                                 | NR                             | 920               | 1844                                 | NR                             |
| 405               | 1083                                 | NR                             | 535               | 49474                                | NR                             | 665               | 30306                                | NR                             | 795               | 1676                                 | NR                             | 925               | 1717                                 | NR                             |
| 410               | 1100                                 | NR                             | 540               | 50868                                | NR                             | 670               | 26465                                | NR                             | 800               | 1586                                 | NR                             | 930               | 1746                                 | NR                             |
| 415               | 1430                                 | NR                             | 545               | 52653                                | NR                             | 675               | 22867                                | NR                             | 805               | 1593                                 | NR                             | 935               | 1436                                 | NR                             |
| 420               | 2293                                 | NR                             | 550               | 54593                                | NR                             | 680               | 19991                                | NR                             | 810               | 1575                                 | NR                             | 940               | 1583                                 | NR                             |
| 425               | 4167                                 | NR                             | 555               | 57064                                | NR                             | 685               | 17213                                | NR                             | 815               | 1446                                 | NR                             | 945               | 1860                                 | NR                             |
| 430               | 7662                                 | NR                             | 560               | 59875                                | NR                             | 690               | 14805                                | NR                             | 820               | 1519                                 | NR                             | 950               | 1557                                 | NR                             |
| 435               | 14089                                | NR                             | 565               | 62808                                | NR                             | 695               | 12688                                | NR                             | 825               | 1569                                 | NR                             | 955               | 1670                                 | NR                             |
| 440               | 26386                                | NR                             | 570               | 66224                                | NR                             | 700               | 11001                                | NR                             | 830               | 1618                                 | NR                             | 960               | 1817                                 | NR                             |
| 445               | 50278                                | NR                             | 575               | 69591                                | NR                             | 705               | 9548                                 | NR                             | 835               | 1246                                 | NR                             | 965               | 1057                                 | NR                             |
| 450               | 74209                                | NR                             | 580               | 72437                                | NR                             | 710               | 8387                                 | NR                             | 840               | 1509                                 | NR                             | 970               | 1726                                 | NR                             |
| 455               | 64500                                | NR                             | 585               | 74793                                | NR                             | 715               | 7467                                 | NR                             | 845               | 1421                                 | NR                             | 975               | 1960                                 | NR                             |
| 460               | 44183                                | NR                             | 590               | 76888                                | NR                             | 720               | 6550                                 | NR                             | 850               | 1772                                 | NR                             | 980               | 2200                                 | NR                             |
| 465               | 35192                                | NR                             | 595               | 78212                                | NR                             | 725               | 5751                                 | NR                             | 855               | 1646                                 | NR                             | 985               | 2203                                 | NR                             |
| 470               | 27592                                | NR                             | 600               | 78635                                | NR                             | 730               | 5084                                 | NR                             | 860               | 1637                                 | NR                             | 990               | 1821                                 | NR                             |
| 475               | 20744                                | NR                             | 605               | 77867                                | NR                             | 735               | 4475                                 | NR                             | 865               | 1653                                 | NR                             | 995               | 1715                                 | NR                             |
| 480               | 19391                                | NR                             | 610               | 76535                                | NR                             | 740               | 3942                                 | NR                             | 870               | 1631                                 | NR                             | 1000              | 698                                  | NR                             |
| 485               | 20859                                | NR                             | 615               | 74180                                | NR                             | 745               | 3461                                 | NR                             | 875               | 1598                                 | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2312-242-2

Scotopic Flux vs. Wavelength



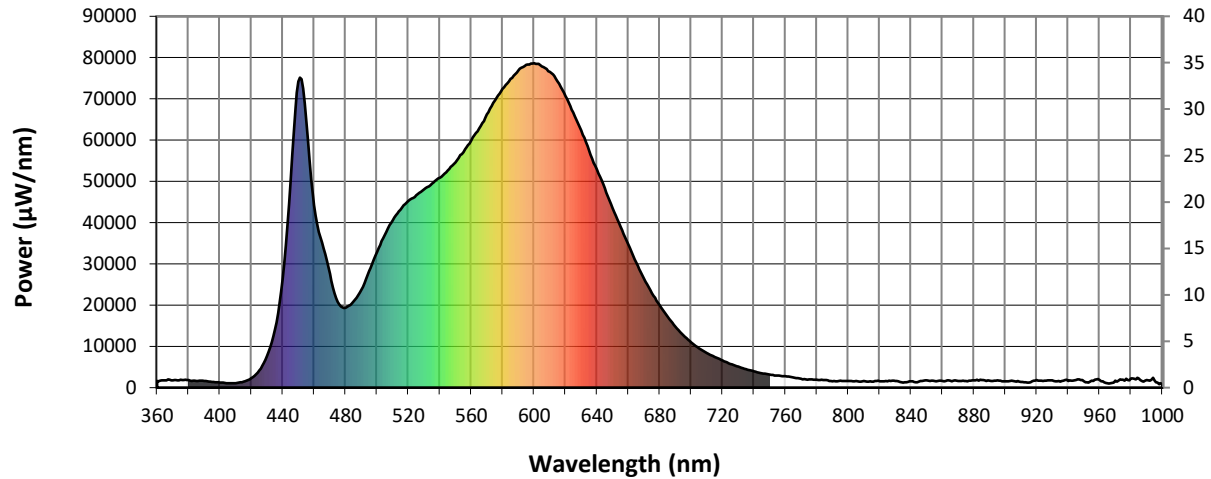
Scotopic Lumens: 6627.8

S/P: 1.58

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 1645                                 | NR                             | 490               | 23726                                | NR                             | 620               | 70637                                | NR                             | 750               | 3143                                 | NR                             | 880               | 1783                                 | NR                             |
| 365               | 1769                                 | NR                             | 495               | 28236                                | NR                             | 625               | 66683                                | NR                             | 755               | 2968                                 | NR                             | 885               | 1846                                 | NR                             |
| 370               | 1796                                 | NR                             | 500               | 32891                                | NR                             | 630               | 62306                                | NR                             | 760               | 2799                                 | NR                             | 890               | 1659                                 | NR                             |
| 375               | 1923                                 | NR                             | 505               | 37017                                | NR                             | 635               | 57573                                | NR                             | 765               | 2493                                 | NR                             | 895               | 1765                                 | NR                             |
| 380               | 1816                                 | NR                             | 510               | 40532                                | NR                             | 640               | 52890                                | NR                             | 770               | 2130                                 | NR                             | 900               | 1525                                 | NR                             |
| 385               | 1596                                 | NR                             | 515               | 43140                                | NR                             | 645               | 48288                                | NR                             | 775               | 1963                                 | NR                             | 905               | 1585                                 | NR                             |
| 390               | 1580                                 | NR                             | 520               | 45310                                | NR                             | 650               | 43479                                | NR                             | 780               | 1886                                 | NR                             | 910               | 1403                                 | NR                             |
| 395               | 1404                                 | NR                             | 525               | 46566                                | NR                             | 655               | 39030                                | NR                             | 785               | 1831                                 | NR                             | 915               | 1255                                 | NR                             |
| 400               | 1245                                 | NR                             | 530               | 48099                                | NR                             | 660               | 34729                                | NR                             | 790               | 1545                                 | NR                             | 920               | 1844                                 | NR                             |
| 405               | 1083                                 | NR                             | 535               | 49474                                | NR                             | 665               | 30306                                | NR                             | 795               | 1676                                 | NR                             | 925               | 1717                                 | NR                             |
| 410               | 1100                                 | NR                             | 540               | 50868                                | NR                             | 670               | 26465                                | NR                             | 800               | 1586                                 | NR                             | 930               | 1746                                 | NR                             |
| 415               | 1430                                 | NR                             | 545               | 52653                                | NR                             | 675               | 22867                                | NR                             | 805               | 1593                                 | NR                             | 935               | 1436                                 | NR                             |
| 420               | 2293                                 | NR                             | 550               | 54593                                | NR                             | 680               | 19991                                | NR                             | 810               | 1575                                 | NR                             | 940               | 1583                                 | NR                             |
| 425               | 4167                                 | NR                             | 555               | 57064                                | NR                             | 685               | 17213                                | NR                             | 815               | 1446                                 | NR                             | 945               | 1860                                 | NR                             |
| 430               | 7662                                 | NR                             | 560               | 59875                                | NR                             | 690               | 14805                                | NR                             | 820               | 1519                                 | NR                             | 950               | 1557                                 | NR                             |
| 435               | 14089                                | NR                             | 565               | 62808                                | NR                             | 695               | 12688                                | NR                             | 825               | 1569                                 | NR                             | 955               | 1670                                 | NR                             |
| 440               | 26386                                | NR                             | 570               | 66224                                | NR                             | 700               | 11001                                | NR                             | 830               | 1618                                 | NR                             | 960               | 1817                                 | NR                             |
| 445               | 50278                                | NR                             | 575               | 69591                                | NR                             | 705               | 9548                                 | NR                             | 835               | 1246                                 | NR                             | 965               | 1057                                 | NR                             |
| 450               | 74209                                | NR                             | 580               | 72437                                | NR                             | 710               | 8387                                 | NR                             | 840               | 1509                                 | NR                             | 970               | 1726                                 | NR                             |
| 455               | 64500                                | NR                             | 585               | 74793                                | NR                             | 715               | 7467                                 | NR                             | 845               | 1421                                 | NR                             | 975               | 1960                                 | NR                             |
| 460               | 44183                                | NR                             | 590               | 76888                                | NR                             | 720               | 6550                                 | NR                             | 850               | 1772                                 | NR                             | 980               | 2200                                 | NR                             |
| 465               | 35192                                | NR                             | 595               | 78212                                | NR                             | 725               | 5751                                 | NR                             | 855               | 1646                                 | NR                             | 985               | 2203                                 | NR                             |
| 470               | 27592                                | NR                             | 600               | 78635                                | NR                             | 730               | 5084                                 | NR                             | 860               | 1637                                 | NR                             | 990               | 1821                                 | NR                             |
| 475               | 20744                                | NR                             | 605               | 77867                                | NR                             | 735               | 4475                                 | NR                             | 865               | 1653                                 | NR                             | 995               | 1715                                 | NR                             |
| 480               | 19391                                | NR                             | 610               | 76535                                | NR                             | 740               | 3942                                 | NR                             | 870               | 1631                                 | NR                             | 1000              | 698                                  | NR                             |
| 485               | 20859                                | NR                             | 615               | 74180                                | NR                             | 745               | 3461                                 | NR                             | 875               | 1598                                 | NR                             |                   |                                      |                                |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 2648.1 M/P: 0.63**

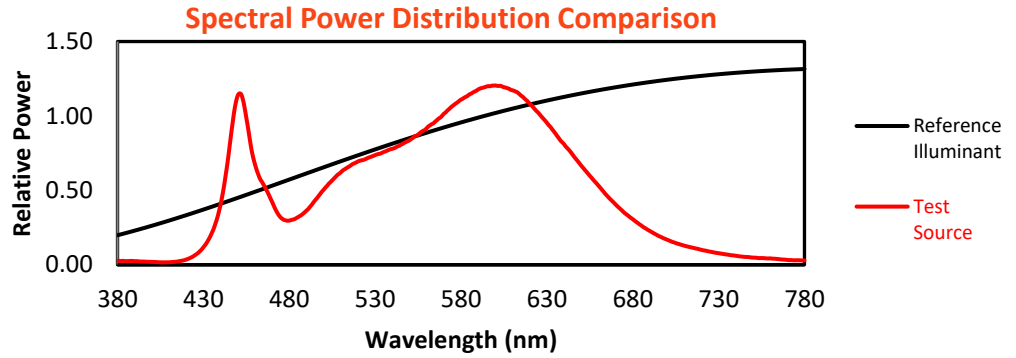
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 1645          | NR            | 490    | 23726         | NR            | 620    | 70637         | NR            | 750    | 3143          | NR            | 880    | 1783          | NR            |
| 365    | 1769          | NR            | 495    | 28236         | NR            | 625    | 66683         | NR            | 755    | 2968          | NR            | 885    | 1846          | NR            |
| 370    | 1796          | NR            | 500    | 32891         | NR            | 630    | 62306         | NR            | 760    | 2799          | NR            | 890    | 1659          | NR            |
| 375    | 1923          | NR            | 505    | 37017         | NR            | 635    | 57573         | NR            | 765    | 2493          | NR            | 895    | 1765          | NR            |
| 380    | 1816          | NR            | 510    | 40532         | NR            | 640    | 52890         | NR            | 770    | 2130          | NR            | 900    | 1525          | NR            |
| 385    | 1596          | NR            | 515    | 43140         | NR            | 645    | 48288         | NR            | 775    | 1963          | NR            | 905    | 1585          | NR            |
| 390    | 1580          | NR            | 520    | 45310         | NR            | 650    | 43479         | NR            | 780    | 1886          | NR            | 910    | 1403          | NR            |
| 395    | 1404          | NR            | 525    | 46566         | NR            | 655    | 39030         | NR            | 785    | 1831          | NR            | 915    | 1255          | NR            |
| 400    | 1245          | NR            | 530    | 48099         | NR            | 660    | 34729         | NR            | 790    | 1545          | NR            | 920    | 1844          | NR            |
| 405    | 1083          | NR            | 535    | 49474         | NR            | 665    | 30306         | NR            | 795    | 1676          | NR            | 925    | 1717          | NR            |
| 410    | 1100          | NR            | 540    | 50868         | NR            | 670    | 26465         | NR            | 800    | 1586          | NR            | 930    | 1746          | NR            |
| 415    | 1430          | NR            | 545    | 52653         | NR            | 675    | 22867         | NR            | 805    | 1593          | NR            | 935    | 1436          | NR            |
| 420    | 2293          | NR            | 550    | 54593         | NR            | 680    | 19991         | NR            | 810    | 1575          | NR            | 940    | 1583          | NR            |
| 425    | 4167          | NR            | 555    | 57064         | NR            | 685    | 17213         | NR            | 815    | 1446          | NR            | 945    | 1860          | NR            |
| 430    | 7662          | NR            | 560    | 59875         | NR            | 690    | 14805         | NR            | 820    | 1519          | NR            | 950    | 1557          | NR            |
| 435    | 14089         | NR            | 565    | 62808         | NR            | 695    | 12688         | NR            | 825    | 1569          | NR            | 955    | 1670          | NR            |
| 440    | 26386         | NR            | 570    | 66224         | NR            | 700    | 11001         | NR            | 830    | 1618          | NR            | 960    | 1817          | NR            |
| 445    | 50278         | NR            | 575    | 69591         | NR            | 705    | 9548          | NR            | 835    | 1246          | NR            | 965    | 1057          | NR            |
| 450    | 74209         | NR            | 580    | 72437         | NR            | 710    | 8387          | NR            | 840    | 1509          | NR            | 970    | 1726          | NR            |
| 455    | 64500         | NR            | 585    | 74793         | NR            | 715    | 7467          | NR            | 845    | 1421          | NR            | 975    | 1960          | NR            |
| 460    | 44183         | NR            | 590    | 76888         | NR            | 720    | 6550          | NR            | 850    | 1772          | NR            | 980    | 2200          | NR            |
| 465    | 35192         | NR            | 595    | 78212         | NR            | 725    | 5751          | NR            | 855    | 1646          | NR            | 985    | 2203          | NR            |
| 470    | 27592         | NR            | 600    | 78635         | NR            | 730    | 5084          | NR            | 860    | 1637          | NR            | 990    | 1821          | NR            |
| 475    | 20744         | NR            | 605    | 77867         | NR            | 735    | 4475          | NR            | 865    | 1653          | NR            | 995    | 1715          | NR            |
| 480    | 19391         | NR            | 610    | 76535         | NR            | 740    | 3942          | NR            | 870    | 1631          | NR            | 1000   | 698           | NR            |
| 485    | 20859         | NR            | 615    | 74180         | NR            | 745    | 3461          | NR            | 875    | 1598          | NR            |        |               |               |

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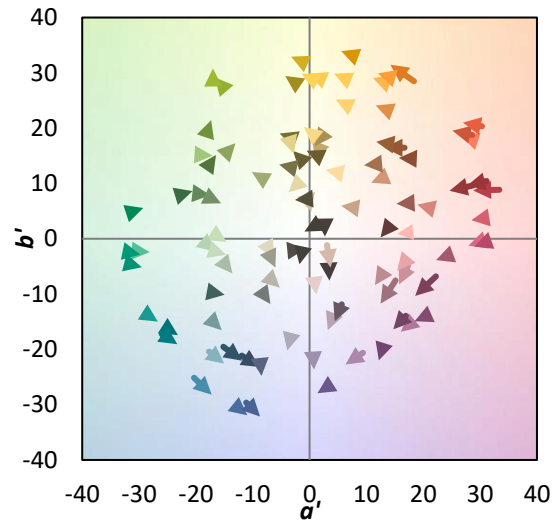
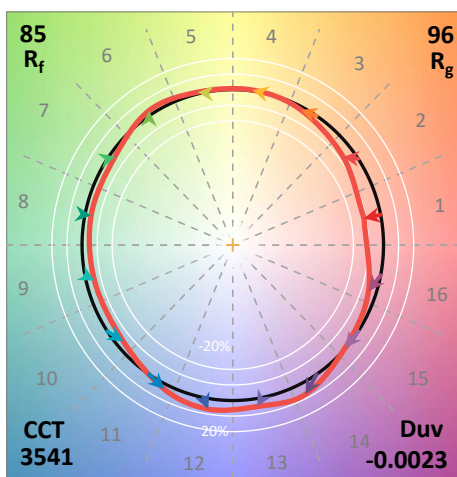
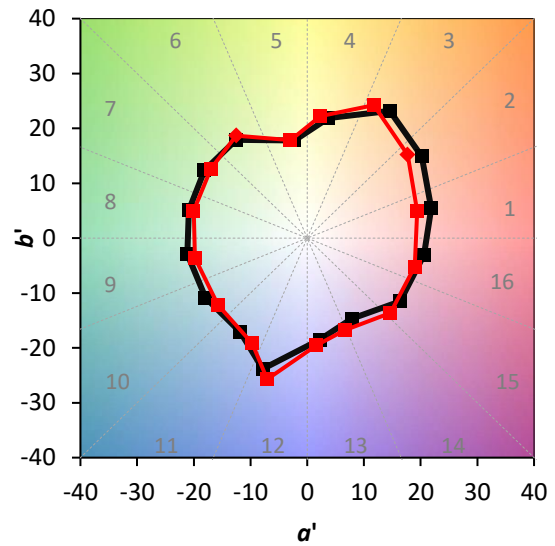
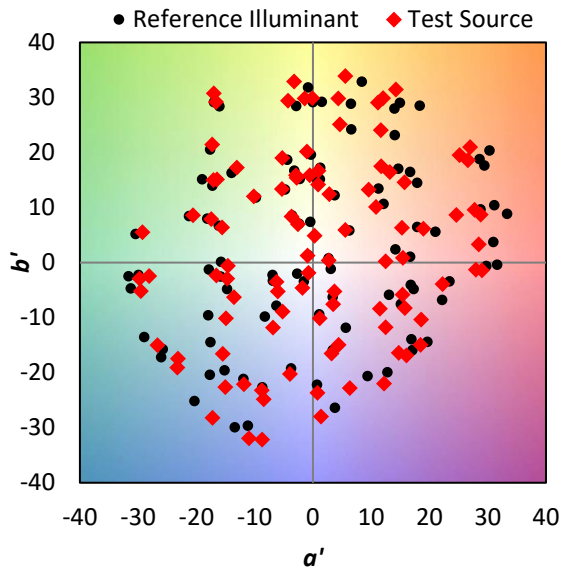
TM-30-18

**Summary**

$R_f = 85.1$   
 $R_g = 96.5$   
 $CIE R_a = 84.5$   
 $R_9 = 14.2$



**Color Vector Graphics**

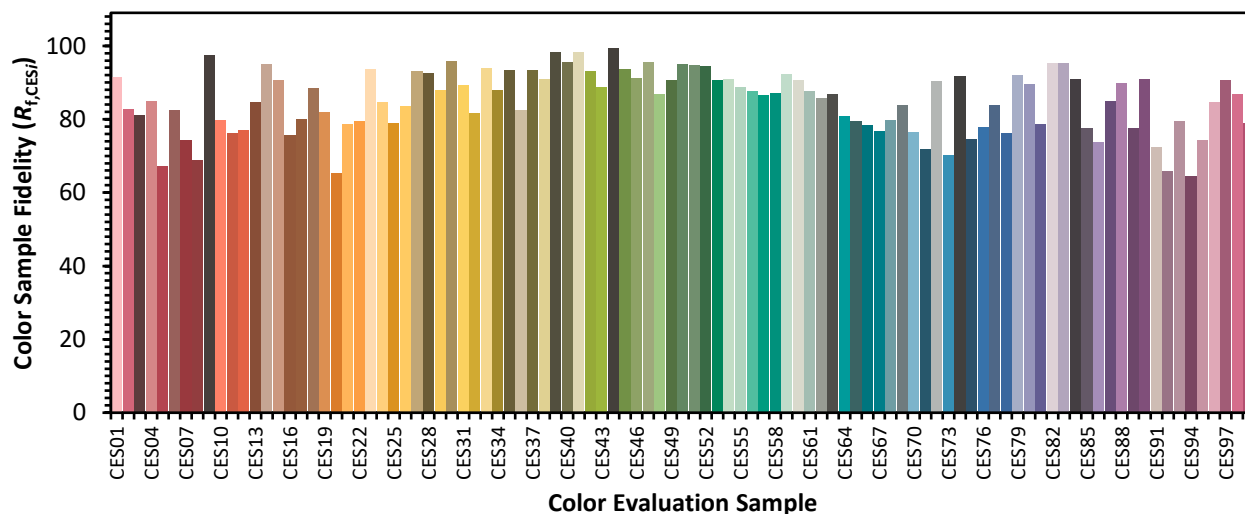


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 83 | CES51 = 95 | CES76 = 78 |
| CES02 = 62 | CES27 = 93 | CES52 = 95 | CES77 = 84 |
| CES03 = 31 | CES28 = 92 | CES53 = 91 | CES78 = 76 |
| CES04 = 70 | CES29 = 88 | CES54 = 91 | CES79 = 92 |
| CES05 = 49 | CES30 = 96 | CES55 = 89 | CES80 = 90 |
| CES06 = 51 | CES31 = 89 | CES56 = 88 | CES81 = 79 |
| CES07 = 41 | CES32 = 82 | CES57 = 87 | CES82 = 95 |
| CES08 = 40 | CES33 = 94 | CES58 = 87 | CES83 = 95 |
| CES09 = 29 | CES34 = 88 | CES59 = 92 | CES84 = 91 |
| CES10 = 75 | CES35 = 93 | CES60 = 91 | CES85 = 78 |
| CES11 = 58 | CES36 = 82 | CES61 = 88 | CES86 = 74 |
| CES12 = 64 | CES37 = 93 | CES62 = 86 | CES87 = 85 |
| CES13 = 43 | CES38 = 91 | CES63 = 87 | CES88 = 90 |
| CES14 = 74 | CES39 = 98 | CES64 = 81 | CES89 = 78 |
| CES15 = 71 | CES40 = 96 | CES65 = 79 | CES90 = 91 |
| CES16 = 47 | CES41 = 98 | CES66 = 78 | CES91 = 72 |
| CES17 = 50 | CES42 = 93 | CES67 = 77 | CES92 = 66 |
| CES18 = 56 | CES43 = 89 | CES68 = 80 | CES93 = 80 |
| CES19 = 72 | CES44 = 99 | CES69 = 84 | CES94 = 64 |
| CES20 = 66 | CES45 = 94 | CES70 = 77 | CES95 = 74 |
| CES21 = 86 | CES46 = 91 | CES71 = 72 | CES96 = 85 |
| CES22 = 78 | CES47 = 95 | CES72 = 90 | CES97 = 91 |
| CES23 = 92 | CES48 = 87 | CES73 = 70 | CES98 = 87 |
| CES24 = 90 | CES49 = 91 | CES74 = 92 | CES99 = 79 |
| CES25 = 72 | CES50 = 95 | CES75 = 75 |            |

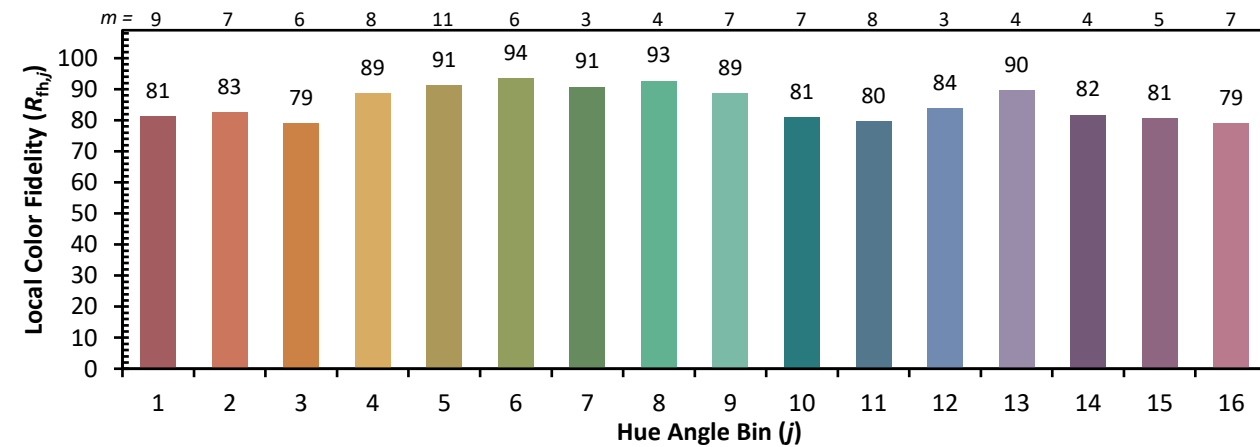
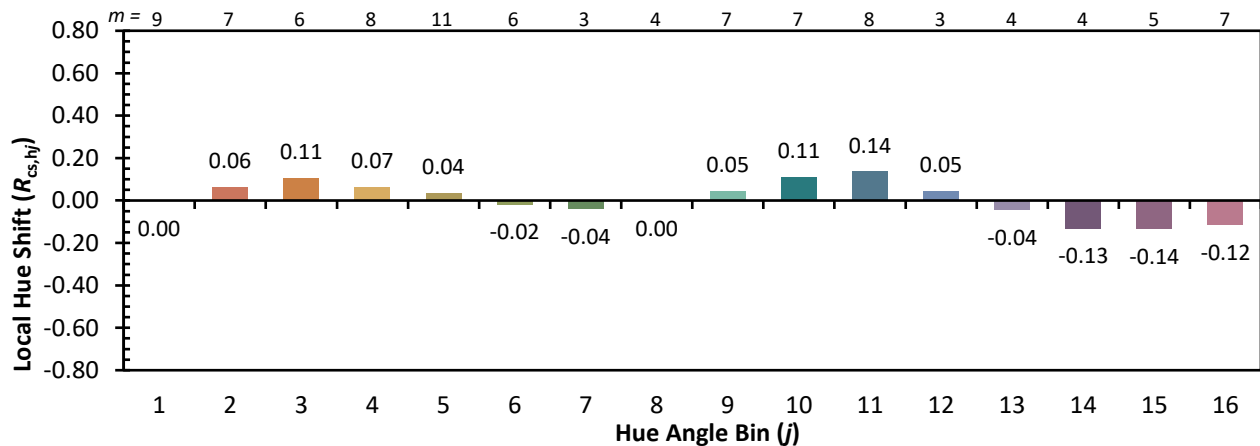
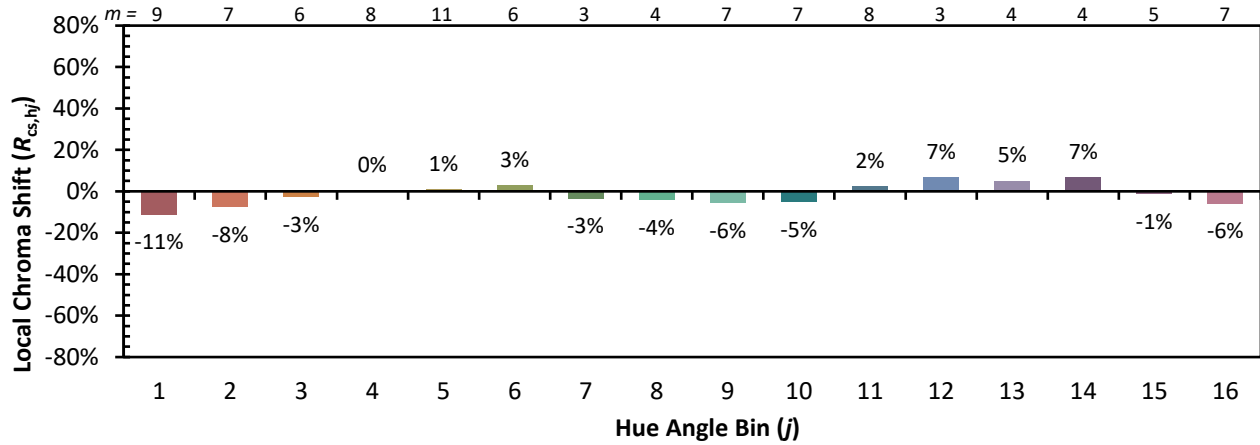




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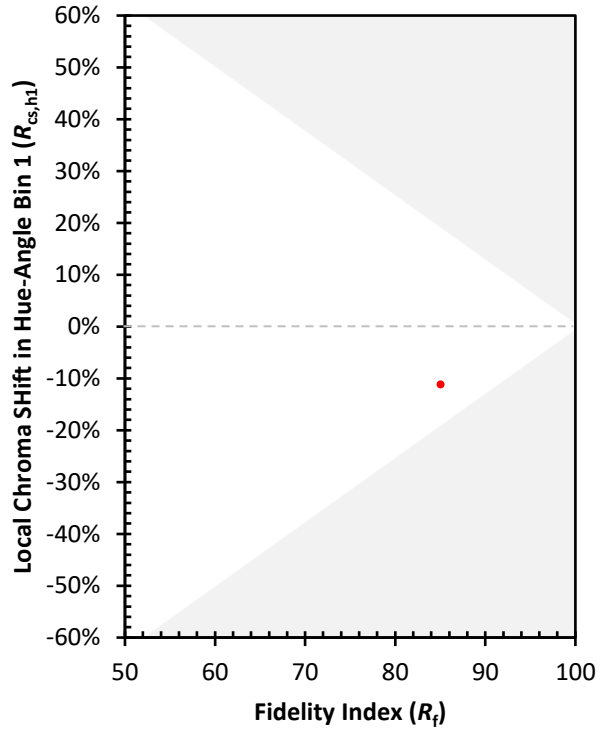
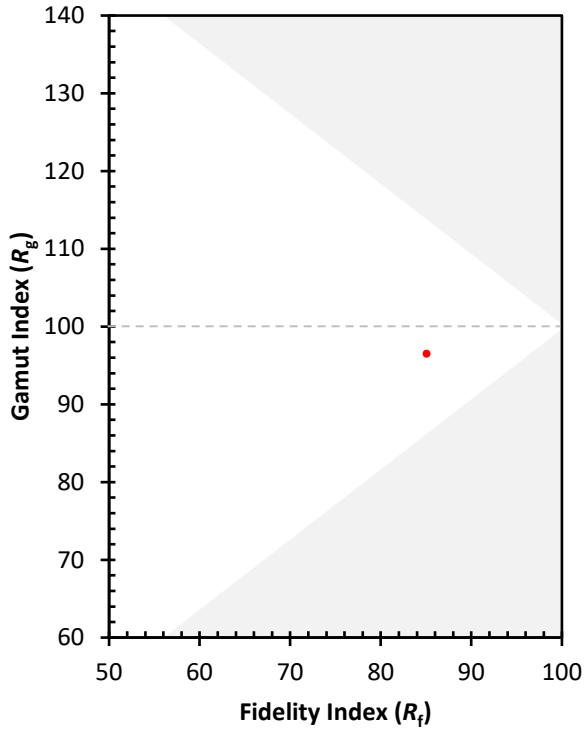
Color Rendition by Hue-Angle Bin



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TM-30-18

Measure Comparisons





TEST NUMBER: P958986  
 CATALOG NUMBER: CB2-B-085U-085D-835-1D-UNV-STD-W-4

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference 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 | 17.51            | 18.30 | 18.52 | 19.32 | 20.69 | 16.41          | 17.20 | 17.42 | 18.22 | 19.59 |
|                 | 3H   | 19.15            | 19.85 | 20.17 | 20.89 | 22.28 | 17.93          | 18.64 | 18.96 | 19.67 | 21.06 |
|                 | 4H   | 19.77            | 20.44 | 20.81 | 21.48 | 22.88 | 18.50          | 19.17 | 19.54 | 20.21 | 21.60 |
|                 | 6H   | 20.17            | 20.79 | 21.22 | 21.83 | 23.24 | 18.87          | 19.48 | 19.92 | 20.53 | 21.94 |
|                 | 8H   | 20.32            | 20.90 | 21.37 | 21.96 | 23.37 | 19.00          | 19.59 | 20.06 | 20.65 | 22.06 |
|                 | 12H  | 20.39            | 20.95 | 21.45 | 22.00 | 23.43 | 19.06          | 19.62 | 20.13 | 20.67 | 22.10 |
| 4H              | 2H   | 17.91            | 18.58 | 18.95 | 19.61 | 21.01 | 17.03          | 17.70 | 18.08 | 18.74 | 20.14 |
|                 | 3H   | 19.77            | 20.33 | 20.82 | 21.39 | 22.81 | 18.76          | 19.32 | 19.82 | 20.39 | 21.80 |
|                 | 4H   | 20.51            | 21.02 | 21.57 | 22.08 | 23.51 | 19.43          | 19.94 | 20.49 | 21.00 | 22.43 |
|                 | 6H   | 21.03            | 21.47 | 22.10 | 22.55 | 23.98 | 19.90          | 20.34 | 20.97 | 21.42 | 22.85 |
|                 | 8H   | 21.23            | 21.64 | 22.30 | 22.71 | 24.16 | 20.09          | 20.50 | 21.16 | 21.57 | 23.02 |
|                 | 12H  | 21.33            | 21.71 | 22.42 | 22.79 | 24.24 | 20.18          | 20.55 | 21.26 | 21.63 | 23.08 |
| 8H              | 4H   | 20.66            | 21.07 | 21.73 | 22.15 | 23.59 | 19.70          | 20.11 | 20.77 | 21.18 | 22.63 |
|                 | 6H   | 21.30            | 21.64 | 22.40 | 22.76 | 24.20 | 20.30          | 20.64 | 21.40 | 21.75 | 23.20 |
|                 | 8H   | 21.59            | 21.89 | 22.69 | 22.99 | 24.45 | 20.58          | 20.87 | 21.68 | 21.97 | 23.43 |
|                 | 12H  | 21.76            | 22.03 | 22.87 | 23.12 | 24.62 | 20.72          | 20.98 | 21.83 | 22.08 | 23.58 |
| 12H             | 4H   | 20.64            | 21.01 | 21.73 | 22.10 | 23.55 | 19.70          | 20.07 | 20.79 | 21.16 | 22.61 |
|                 | 6H   | 21.33            | 21.63 | 22.43 | 22.73 | 24.19 | 20.36          | 20.66 | 21.46 | 21.76 | 23.22 |
|                 | 8H   | 21.64            | 21.91 | 22.75 | 23.00 | 24.50 | 20.67          | 20.93 | 21.77 | 22.02 | 23.52 |