Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P1197892

Luminaire Tested: GPC-SB1B-750-U-T4W-HSS

Issue Date: 10/30/2025

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1197892 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-289-2) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/15/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GPC-SB1B-750-U-T4W-HSS |
| Description: | GALLEON PEDESTRIAN LUMINAIRE |
| | (1) 70 CRI, 5000K, 450mA LIGHTSQUARE WITH 26 LEDS AND TYPE IV WIDE OPTICS WITH HOUSE SIDE SHIELD |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4613 lumens |
| Efficiency: | N/A |
| Efficacy: | 115.9 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 39.8 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.33 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.996 |
| Total Harmonic Distortion (THDi): | 5.305 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

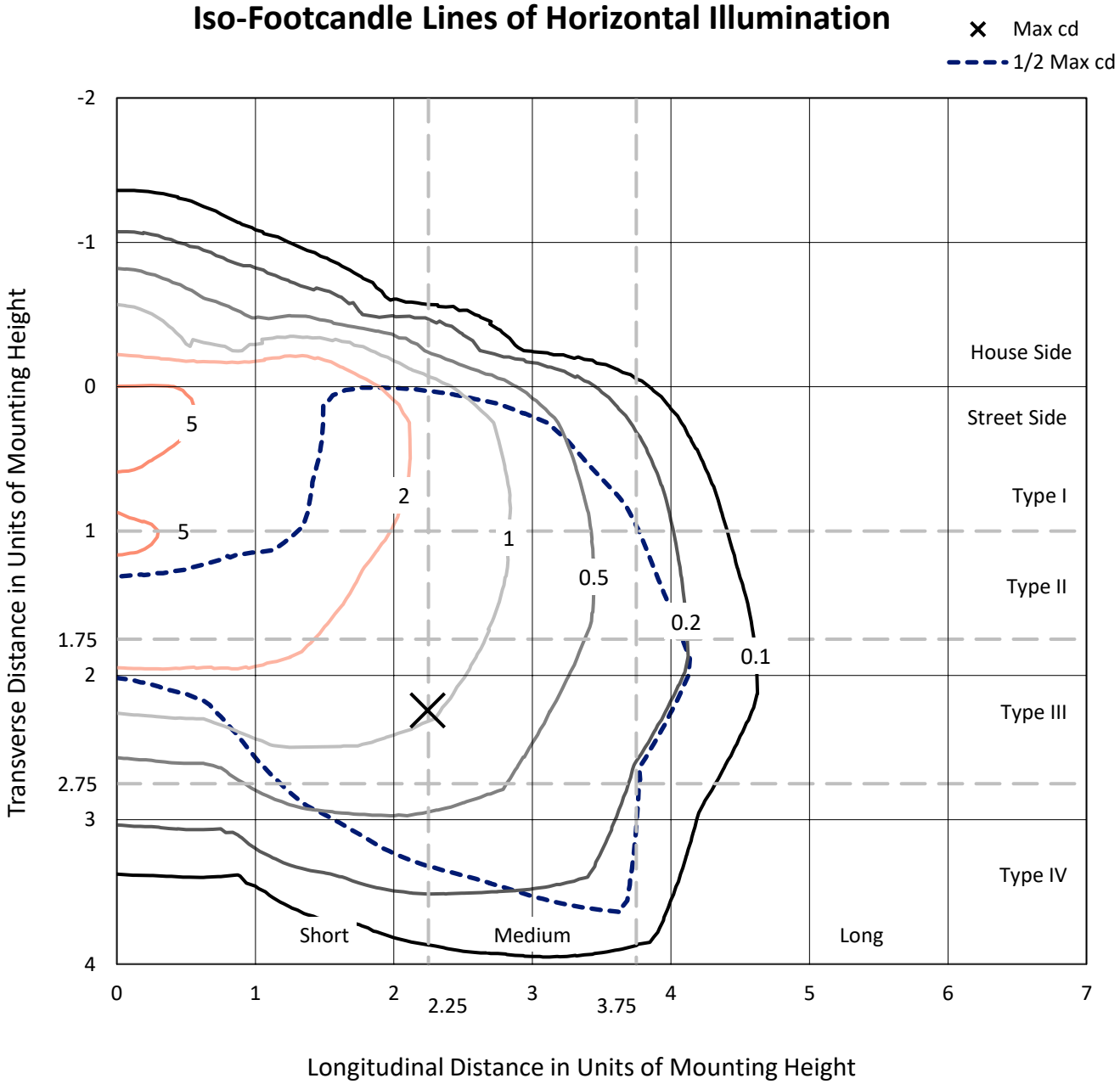


Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1197892
CATALOG NUMBER: GPC-SB1B-750-U-T4W-HSS

## Iso-Footcandle Lines of Horizontal Illumination



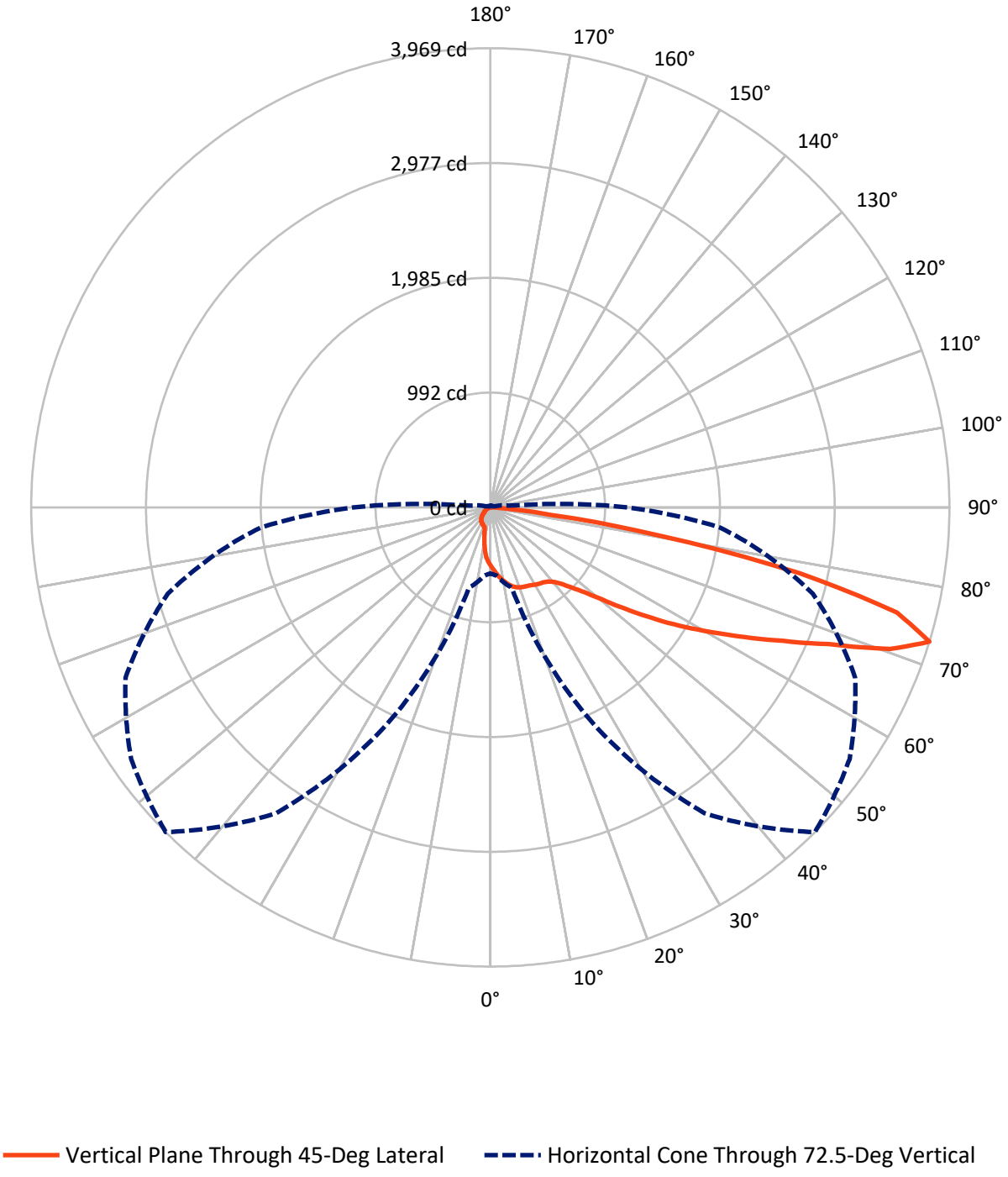

Based on 10 foot mounting height. Maximum calculated value = 6.9 fc
Type IV - Short - N/A

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1197892
CATALOG NUMBER: GPC-SB1B-750-U-T4W-HSS

## Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

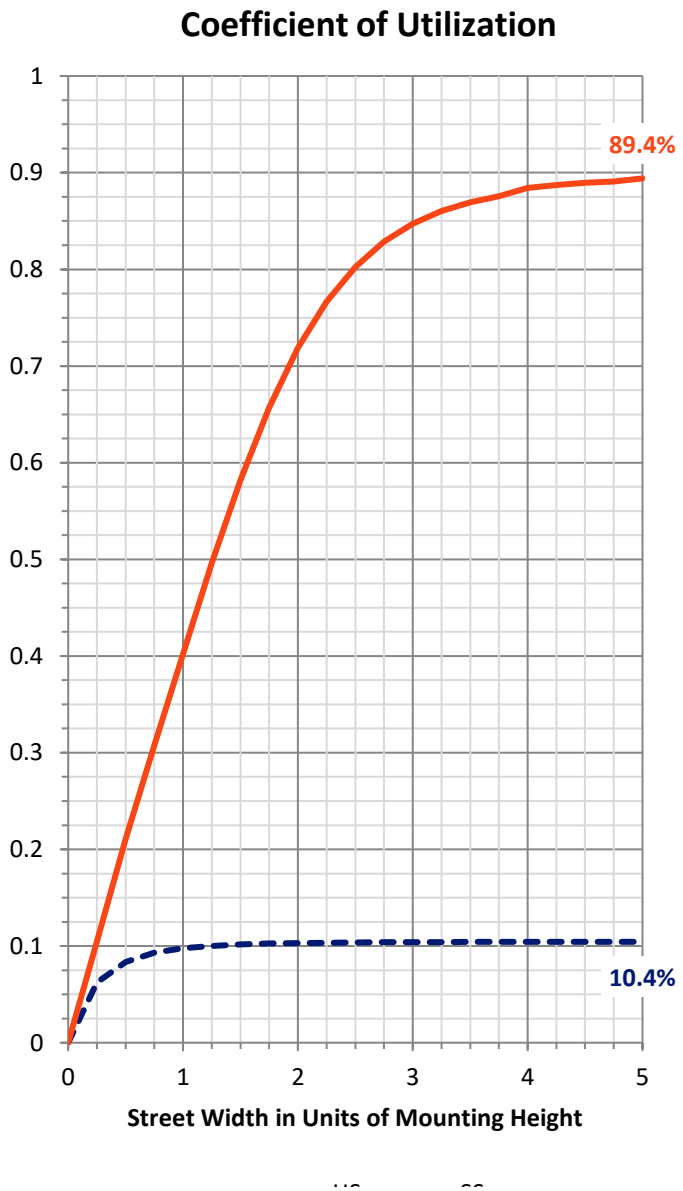
REPORT NUMBER: P1197892
CATALOG NUMBER: GPC-SB1B-750-U-T4W-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 484.7 | 0.0 | 484.7 |
| | % Fixture | 10.5 | 0.0 | 10.5 |
| **Street Side** | Lumens | 4128.3 | 0.0 | 4128.3 |
| | % Fixture | 89.5 | 0.0 | 89.5 |
| **Total** | Lumens | 4613.0 | 0.0 | 4613.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 47.6 | 1.0 |
| 10°-20° | 139.2 | 3.0 |
| 20°-30° | 228.5 | 5.0 |
| 30°-40° | 324.1 | 7.0 |
| 40°-50° | 535.7 | 11.6 |
| 50°-60° | 962.3 | 20.9 |
| 60°-70° | 1336.2 | 29.0 |
| 70°-80° | 969.3 | 21.0 |
| 80°-90° | 70.1 | 1.5 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 4613.0 | 100.0 |
| 0°-180° | 4613.0 | 100.0 |



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

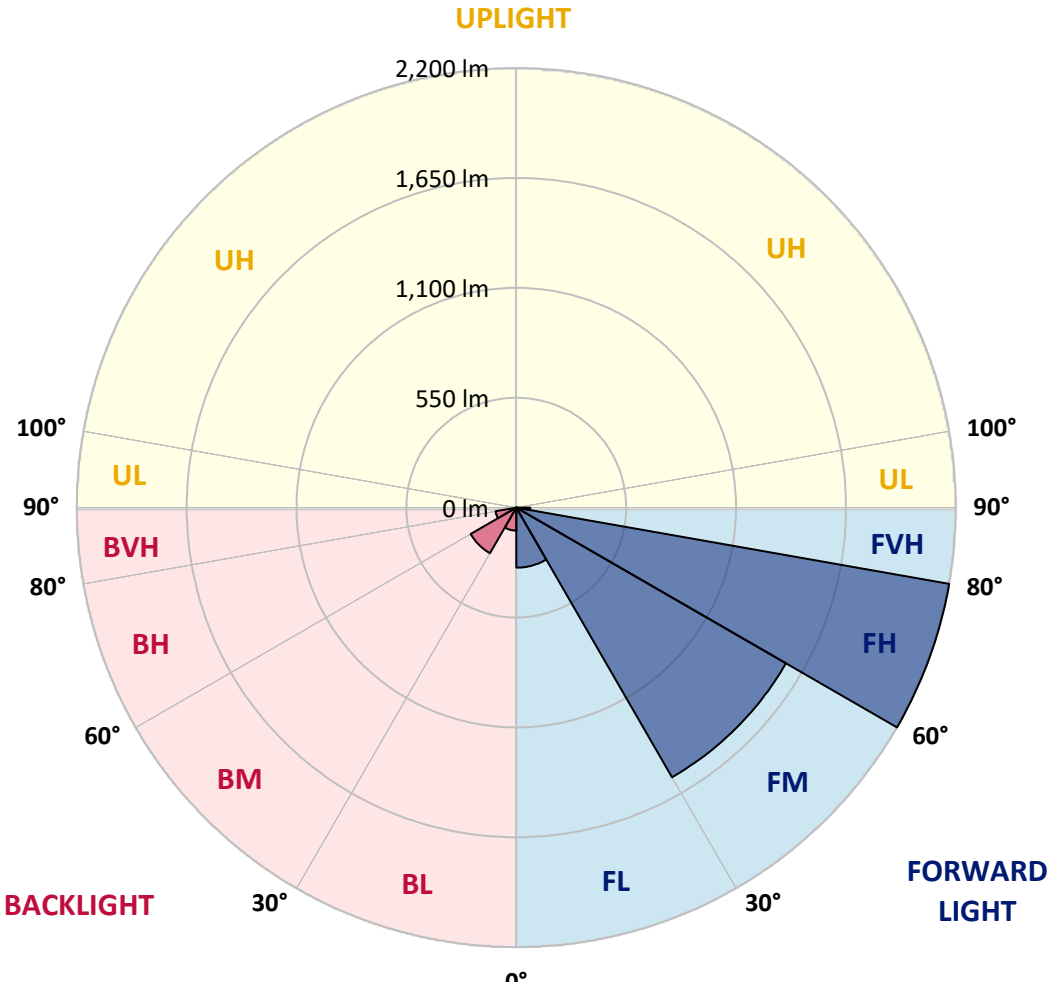
Scaled Data Report

REPORT NUMBER: P1197892
CATALOG NUMBER: GPC-SB1B-750-U-T4W-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 300.5 | 6.5 | | | |
| FM | (30°-60°) | 1558.5 | 33.8 | | | |
| FH | (60°-80°) | 2199.8 | 47.7 | | | G2/5000 |
| FVH | (80°-90°) | 69.5 | 1.5 | | | G1/100 |
| BL | (0°-30°) | 114.8 | 2.5 | B1/500 | | |
| BM | (30°-60°) | 263.6 | 5.7 | B1/1000 | | |
| BH | (60°-80°) | 105.7 | 2.3 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 0.6 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type IV Short



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1197892
CATALOG NUMBER: GPC-SB1B-750-U-T4W-HSS

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 46° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | *505.4* | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 |
| 2.5° | 552.0 | 552.9 | 552.3 | 548.5 | 542.2 | *538.7* | 536.9 | 530.6 | 526.5 | 519.2 | 511.7 |
| 5° | 602.7 | 606.4 | 604.2 | 596.7 | 584.7 | *576.2* | 573.7 | 560.8 | 549.1 | 535.6 | 519.8 |
| 7.5° | 656.5 | 658.4 | 654.3 | 644.5 | 628.5 | *614.0* | 611.8 | 593.8 | 575.3 | 554.5 | 533.1 |
| 10° | 703.1 | 705.3 | 699.0 | 684.8 | 666.6 | *648.6* | 645.5 | 625.6 | 603.6 | 578.1 | 550.7 |
| 12.5° | 742.1 | 744.3 | 736.2 | 719.2 | 699.0 | *680.4* | 677.3 | 656.5 | 632.3 | 603.9 | 569.9 |
| 15° | 771.7 | 775.8 | 764.8 | 746.6 | 724.8 | *706.3* | 704.7 | 684.2 | 660.6 | 629.1 | 592.9 |
| 17.5° | 789.1 | 793.2 | 782.8 | 760.7 | 742.1 | *726.4* | 724.5 | 707.5 | 685.5 | 655.2 | 615.3 |
| 20° | 791.9 | 795.7 | 784.7 | 765.4 | 750.0 | *737.4* | 736.5 | 724.2 | 708.1 | 679.2 | 639.5 |
| 22.5° | 783.4 | 788.1 | 778.0 | 762.6 | 751.9 | *745.3* | 744.0 | 737.1 | 728.0 | 703.4 | 662.2 |
| 25° | 774.6 | 778.4 | 770.8 | 757.3 | 751.6 | *751.0* | 751.9 | 750.6 | 748.8 | 728.0 | 688.6 |
| 27.5° | 773.9 | 778.0 | 769.5 | 756.6 | 753.5 | *760.1* | 761.0 | 767.0 | 768.6 | 750.3 | 714.1 |
| 30° | 779.3 | 782.1 | 773.9 | 760.4 | 758.8 | *773.9* | 774.3 | 785.0 | 787.5 | 769.2 | 739.3 |
| 32.5° | 790.9 | 794.1 | 785.9 | 766.1 | 763.9 | *785.0* | 785.9 | 800.1 | 804.2 | 789.4 | 765.8 |
| 35° | 818.3 | 822.1 | 812.7 | 781.8 | 773.9 | *795.4* | 798.2 | 814.9 | 823.1 | 810.8 | 793.2 |
| 37.5° | 886.7 | 875.6 | 862.7 | 813.6 | 796.9 | *811.7* | 816.5 | 836.0 | 850.5 | 836.3 | 825.9 |
| 40° | 1056.4 | 1021.7 | 981.4 | 867.8 | 837.2 | *846.7* | 850.5 | 870.0 | 889.8 | 876.0 | 870.9 |
| 42.5° | 1311.1 | 1270.2 | 1205.3 | 992.5 | 898.0 | *902.7* | 905.6 | 922.6 | 950.6 | 939.6 | 940.8 |
| 45° | 1538.1 | 1523.3 | 1457.2 | 1205.3 | 1011.7 | *988.4* | 991.8 | 1000.7 | 1041.9 | 1037.8 | 1046.0 |
| 47.5° | 1712.6 | 1704.1 | 1653.1 | 1449.7 | 1203.7 | *1093.2* | 1103.0 | 1107.1 | 1166.6 | 1181.1 | 1203.1 |
| 50° | 1846.7 | 1843.6 | 1797.9 | 1666.9 | 1454.7 | *1247.8* | 1251.3 | 1242.5 | 1331.6 | 1367.5 | 1409.4 |
| 52.5° | 1973.3 | 1984.0 | 1950.3 | 1868.7 | 1722.6 | *1450.3* | 1449.7 | 1408.1 | 1528.4 | 1582.5 | 1654.0 |
| 55° | 2087.6 | 2091.4 | 2094.8 | 2074.7 | 1992.2 | *1680.8* | 1674.8 | 1606.8 | 1756.7 | 1812.7 | 1890.2 |
| 57.5° | 2194.9 | 2196.5 | 2227.4 | 2268.6 | 2272.7 | *1928.3* | 1917.2 | 1835.7 | 2006.0 | 2046.0 | 2093.6 |
| 60° | 2267.1 | 2274.3 | 2339.5 | 2454.1 | 2504.1 | *2183.6* | 2177.6 | 2094.5 | 2259.8 | 2278.4 | 2269.6 |
| 62.5° | 2163.1 | 2207.2 | 2371.6 | 2598.9 | 2722.7 | *2466.7* | 2463.8 | 2385.8 | 2526.8 | 2511.7 | 2436.1 |
| 65° | 1751.0 | 1825.6 | 2114.7 | 2696.8 | 2937.1 | *2782.8* | 2786.9 | 2703.8 | 2801.1 | 2752.0 | 2571.5 |
| 67.5° | 1224.8 | 1303.6 | 1645.5 | 2704.7 | 3176.7 | *3154.0* | 3177.7 | 3047.3 | 3092.3 | 2982.1 | 2603.6 |
| 70° | 847.0 | 887.6 | 1110.2 | 2535.3 | 3363.4 | *3665.4* | 3664.8 | 3469.2 | 3382.0 | 3087.0 | 2439.9 |
| 72.5° | *569.6* | *590.7* | *721.0* | *2011.4* | *3226.1* | *3969.2* | *3951.0* | *3791.6* | *3479.6* | *2887.0* | *1993.4* |
| 75° | 240.2 | 255.7 | 333.8 | 1130.4 | 2552.3 | *3631.4* | 3581.9 | 3350.8 | 3091.7 | 2273.4 | 1243.7 |
| 77.5° | 76.2 | 82.8 | 131.6 | 404.6 | 1405.9 | *2729.6* | 2677.3 | 2092.6 | 2072.1 | 1140.5 | 454.7 |
| 80° | 36.2 | 42.2 | 74.0 | 162.5 | 553.2 | *1484.6* | 1477.4 | 949.3 | 891.4 | 307.9 | 91.3 |
| 82.5° | 15.7 | 18.6 | 40.9 | 86.9 | 247.5 | *529.6* | 540.3 | 323.1 | 267.3 | 116.8 | 28.0 |
| 85° | 5.0 | 6.6 | 18.9 | 40.0 | 104.5 | *131.6* | 130.0 | 76.8 | 107.7 | 63.6 | 9.8 |
| 87.5° | 0.0 | 0.0 | 6.3 | 9.1 | 10.7 | *7.6* | 8.5 | 6.6 | 29.9 | 17.6 | 3.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1197892
CATALOG NUMBER: GPC-SB1B-750-U-T4W-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 | 505.4 |
| 2.5° | 507.9 | 502.8 | 494.0 | 485.8 | 478.6 | 471.4 | 467.0 | 460.7 | 460.0 | 460.0 | 461.6 |
| 5° | 511.3 | 503.2 | 487.4 | 470.7 | 451.5 | 433.3 | 415.0 | 397.4 | 391.7 | 387.6 | 389.5 |
| 7.5° | 521.4 | 508.5 | 483.6 | 451.8 | 415.3 | 375.3 | 347.3 | 317.1 | 305.4 | 299.1 | 300.1 |
| 10° | 535.9 | 518.3 | 480.5 | 424.8 | 365.6 | 311.1 | 271.1 | 238.4 | 225.8 | 220.4 | 220.4 |
| 12.5° | 552.0 | 530.2 | 474.8 | 391.1 | 311.1 | 245.9 | 206.9 | 191.8 | 189.9 | 189.9 | 189.9 |
| 15° | 571.2 | 544.7 | 465.1 | 351.4 | 254.1 | 194.6 | 180.7 | 181.4 | 183.3 | 184.5 | 184.5 |
| 17.5° | 591.0 | 560.2 | 449.6 | 307.0 | 203.7 | 175.1 | 175.4 | 176.3 | 177.9 | 179.2 | 179.2 |
| 20° | 612.4 | 575.6 | 429.2 | 259.8 | 174.8 | 169.4 | 170.3 | 171.3 | 172.5 | 173.2 | 173.5 |
| 22.5° | 635.4 | 590.1 | 404.9 | 213.5 | 165.0 | 164.7 | 165.0 | 165.9 | 167.5 | 167.5 | 168.1 |
| 25° | 660.0 | 606.1 | 377.2 | 179.8 | 160.0 | 160.0 | 160.6 | 161.2 | 162.5 | 162.5 | 162.8 |
| 27.5° | 685.2 | 620.9 | 347.9 | 162.2 | 155.5 | 155.2 | 155.2 | 156.2 | 156.8 | 157.1 | 157.4 |
| 30° | 712.9 | 638.2 | 318.6 | 158.4 | 152.1 | 150.5 | 149.6 | 150.2 | 150.8 | 151.1 | 151.8 |
| 32.5° | 741.2 | 654.9 | 292.5 | 160.0 | 148.6 | 145.8 | 142.6 | 142.0 | 142.0 | 143.3 | 144.2 |
| 35° | 772.7 | 673.2 | 272.4 | 165.3 | 146.7 | 138.9 | 133.8 | 131.0 | 131.3 | 133.2 | 134.1 |
| 37.5° | 810.5 | 695.2 | 257.6 | 170.0 | 145.5 | 131.0 | 122.8 | 119.3 | 117.1 | 119.3 | 118.7 |
| 40° | 859.9 | 727.7 | 246.9 | 173.8 | 143.9 | 121.9 | 110.8 | 105.2 | 101.1 | 102.3 | 101.7 |
| 42.5° | 932.6 | 778.7 | 242.8 | 174.1 | 140.4 | 111.1 | 98.6 | 91.0 | 85.0 | 85.3 | 84.1 |
| 45° | 1034.7 | 859.3 | 263.9 | 170.0 | 132.9 | 99.5 | 85.6 | 75.6 | 71.8 | 70.8 | 69.6 |
| 47.5° | 1174.5 | 976.7 | 312.7 | 161.5 | 121.9 | 88.2 | 73.0 | 64.5 | 61.7 | 60.1 | 59.2 |
| 50° | 1361.8 | 1127.5 | 366.8 | 152.1 | 110.8 | 77.5 | 62.7 | 57.3 | 55.4 | 53.8 | 53.5 |
| 52.5° | 1579.1 | 1280.6 | 411.2 | 142.6 | 99.8 | 68.0 | 56.0 | 52.9 | 51.3 | 50.1 | 49.7 |
| 55° | 1778.4 | 1386.1 | 408.7 | 132.6 | 89.1 | 60.5 | 51.3 | 49.4 | 47.5 | 46.3 | 45.7 |
| 57.5° | 1902.4 | 1400.9 | 336.9 | 121.5 | 76.8 | 54.5 | 46.9 | 45.7 | 43.5 | 41.9 | 41.6 |
| 60° | 1959.4 | 1316.5 | 236.2 | 107.1 | 64.5 | 48.8 | 42.2 | 41.6 | 38.7 | 36.5 | 35.9 |
| 62.5° | 1969.8 | 1159.7 | 157.4 | 89.1 | 53.8 | 43.5 | 37.5 | 36.5 | 32.7 | 29.0 | 27.1 |
| 65° | 1927.6 | 935.5 | 108.9 | 69.6 | 46.0 | 37.8 | 32.1 | 30.2 | 26.1 | 22.4 | 21.1 |
| 67.5° | 1794.1 | 656.8 | 75.9 | 50.1 | 39.0 | 29.9 | 25.5 | 24.9 | 21.7 | 18.6 | 17.6 |
| 70° | 1549.5 | 374.4 | 50.7 | 37.5 | 30.9 | 20.5 | 20.2 | 20.8 | 17.6 | 15.1 | 13.9 |
| 72.5° | *1188.0* | *171.3* | *31.5* | *27.4* | *21.1* | *13.9* | *16.1* | *16.4* | *13.5* | *11.3* | *10.1* |
| 75° | 699.3 | 73.4 | 19.8 | 17.6 | 10.7 | 9.1 | 11.7 | 12.0 | 9.1 | 7.2 | 6.3 |
| 77.5° | 238.0 | 27.7 | 12.6 | 10.4 | 5.4 | 5.0 | 7.6 | 7.6 | 5.0 | 2.8 | 2.2 |
| 80° | 54.2 | 10.4 | 6.3 | 4.1 | 2.5 | 2.2 | 2.5 | 2.2 | 1.3 | 0.3 | 0.0 |
| 82.5° | 15.4 | 4.1 | 2.5 | 1.6 | 0.9 | 0.9 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 4.4 | 1.9 | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.9 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
SS

0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

# LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to products using SA and SB light squares

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

## Test Information

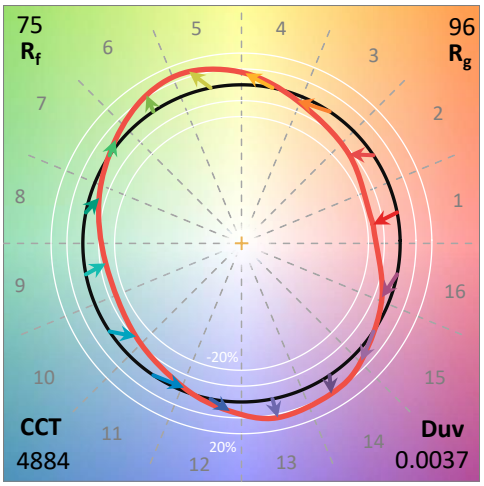
| | |
|---|---|
| Test Method: | LM-79-2008 |
| Report Number: | SP1-1908-441-4-R4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/28/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | **SA1C-750-U-5WQ** |
| Description: | McGRAW EDISON ROADWAY AND AREA LUMINAIRE |

***THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.***TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 4884 | CRI (Ra): | 73.5 | | |
| CIE u': | 0.2101 | R1: | 70.5 | R9: | -28.4 |
| CIE v': | 0.4904 | R2: | 77.7 | R10: | 48.6 |
| Duv: | 0.0037 | R3: | 84.6 | R11: | 73.2 |
| CIE x: | 0.3493 | R4: | 74.7 | R12: | 50.7 |
| CIE y: | 0.3624 | R5: | 71.9 | R13: | 71.2 |
| CIE z: | 0.2884 | R6: | 70.7 | R14: | 91.4 |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |

| | |
|---|---|
| Rf: | 74.9 |
| Rg: | 96.3 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 240M |
| Operation Time: | 12H |
| Room Temperature (°C) / RH%: | 25.0./44% |
| Sphere Temperature (°C): | 25.7 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

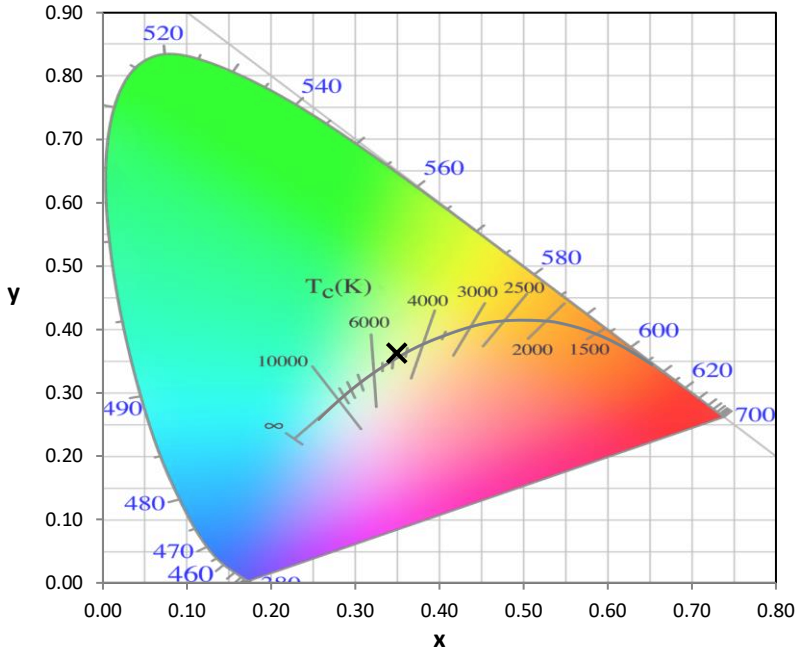
REPORT NUMBER: SP1-1908-441-4-R4

| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

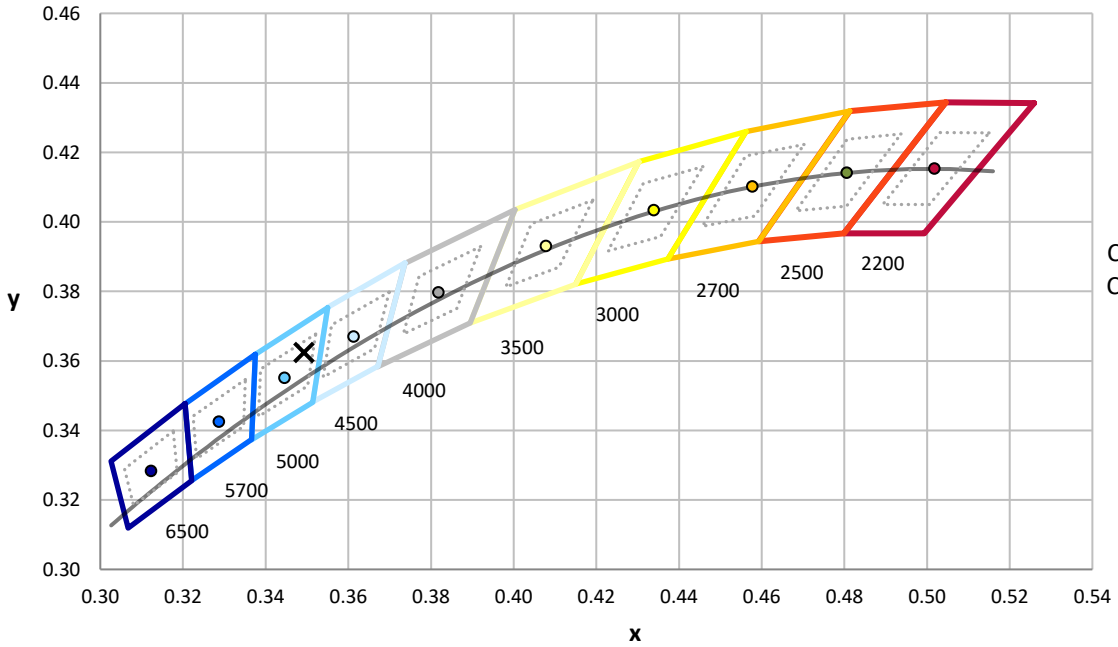
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-4-R4

## CIE 1931 Chromaticity Diagram




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



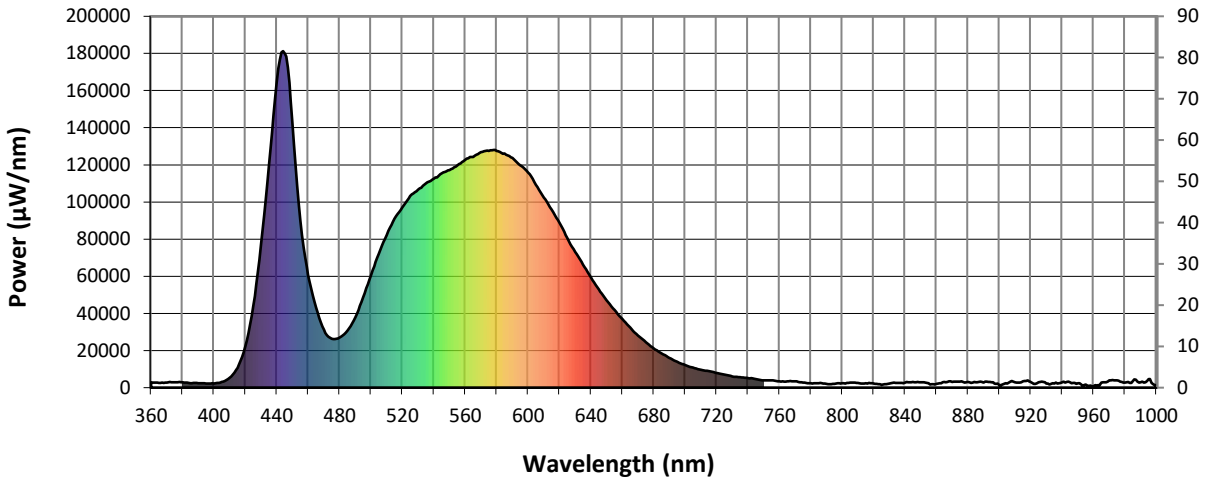

CCT = 4884K
CIE x = 0.3493
CIE y = 0.3624
Duv = 0.0037

Point lies inside the ANSI 5000K 4-step quadrangle

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-4-R4

## Photopic Flux vs. Wavelength



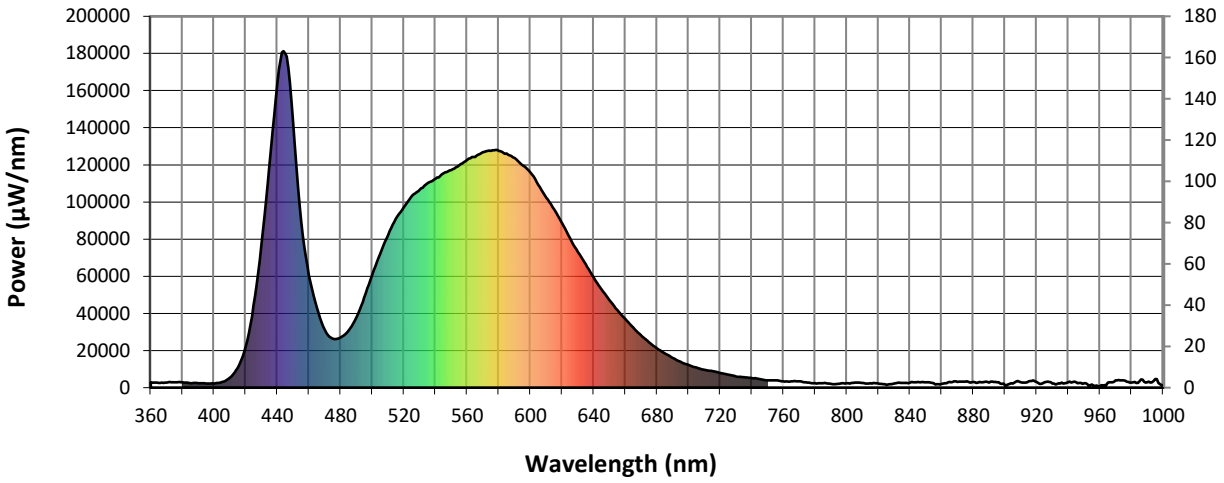

######

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-4-R4

## Scotopic Flux vs. Wavelength



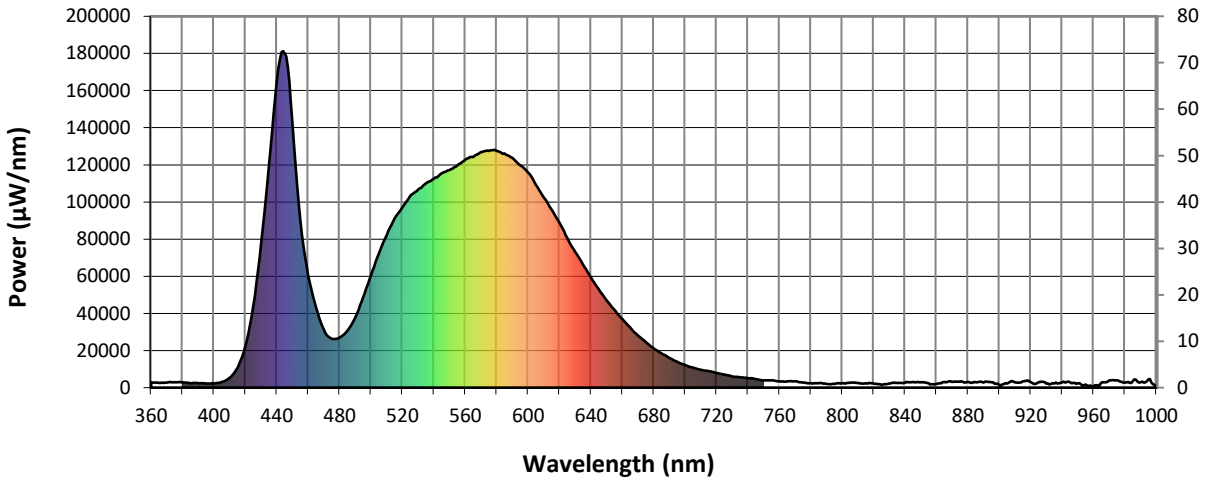

**Scotopic Lumens: 13493.5** **S/P: 1.77**

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-4-R4

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: 5378.9** **M/P: 0.71**

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

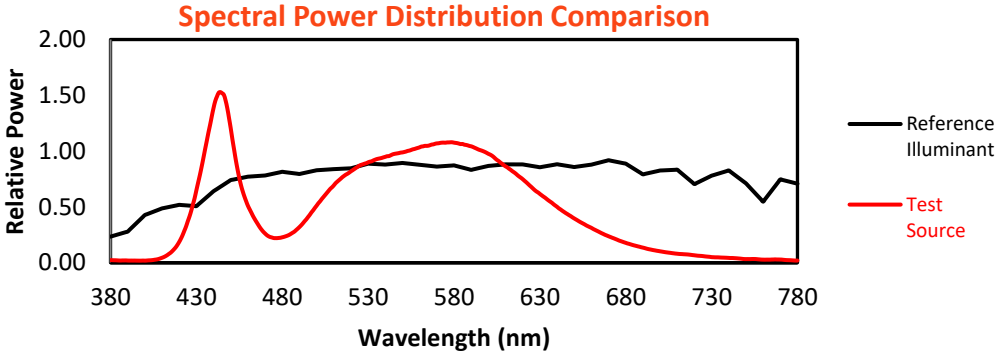
REPORT NUMBER: SP1-1908-441-4-R4

# TM-30-18

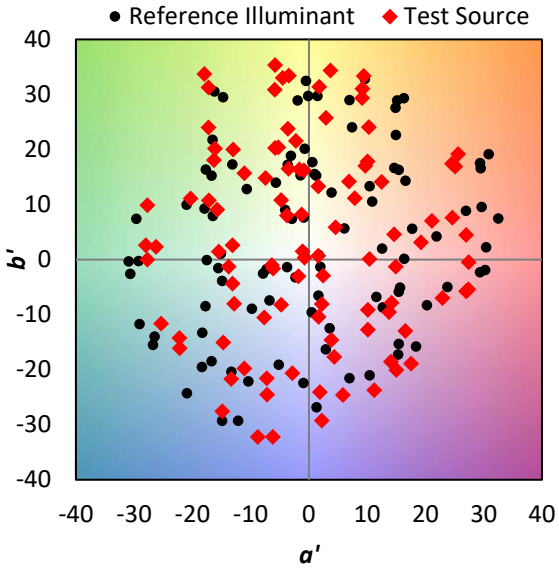
## Summary

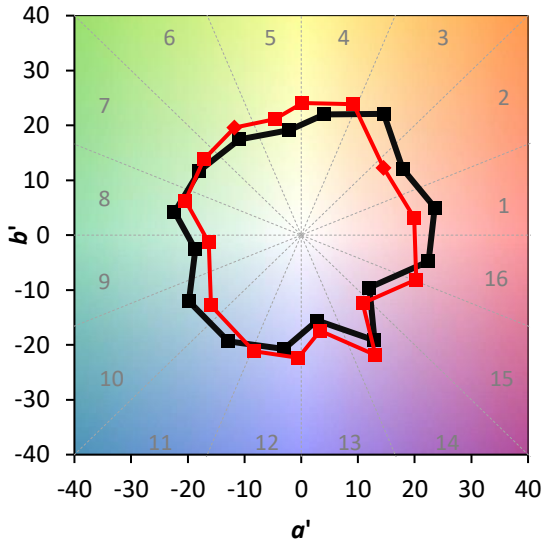
$R_f$ = 74.9
$R_g$ = 96.3
CIE $R_a$ = 73.5
$R_9$ = -28.4

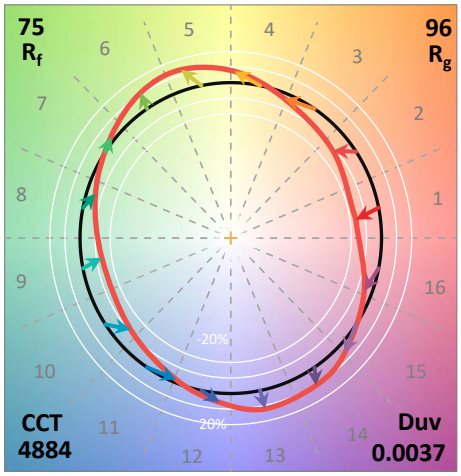
## Spectral Power Distribution Comparison

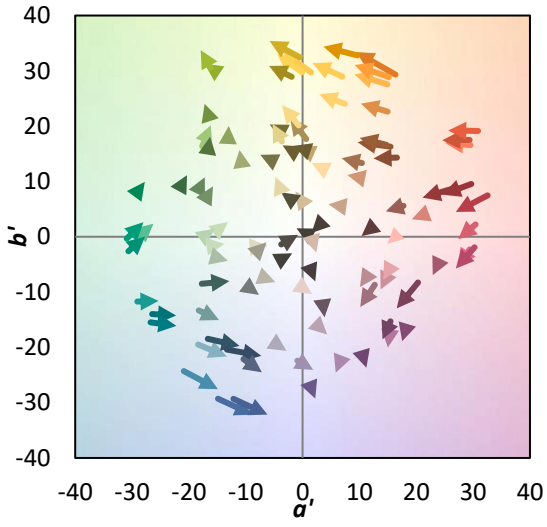



## Color Vector Graphics



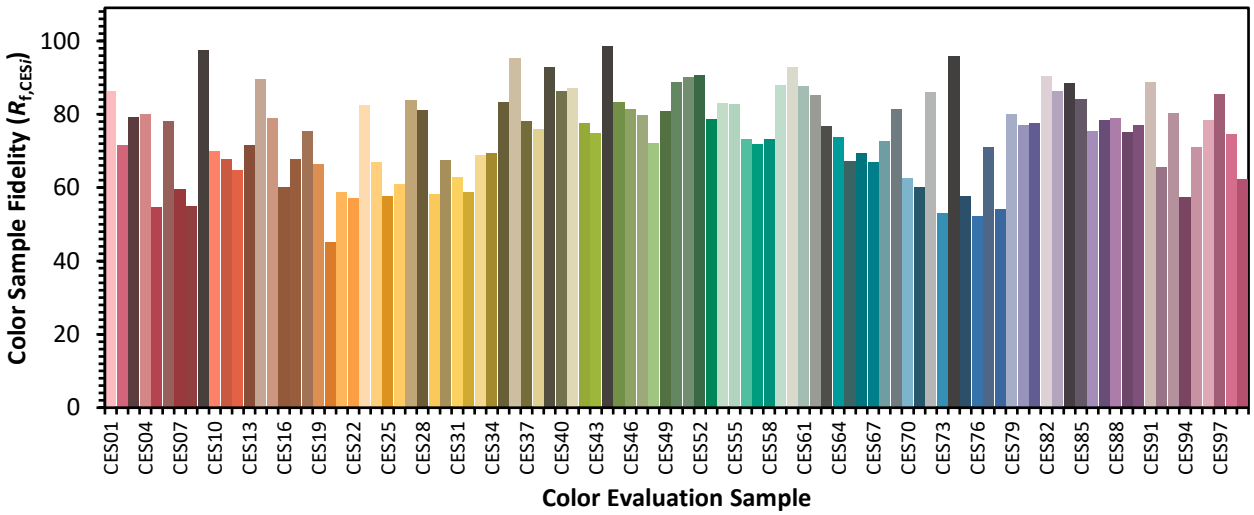
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-4-R4

# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |

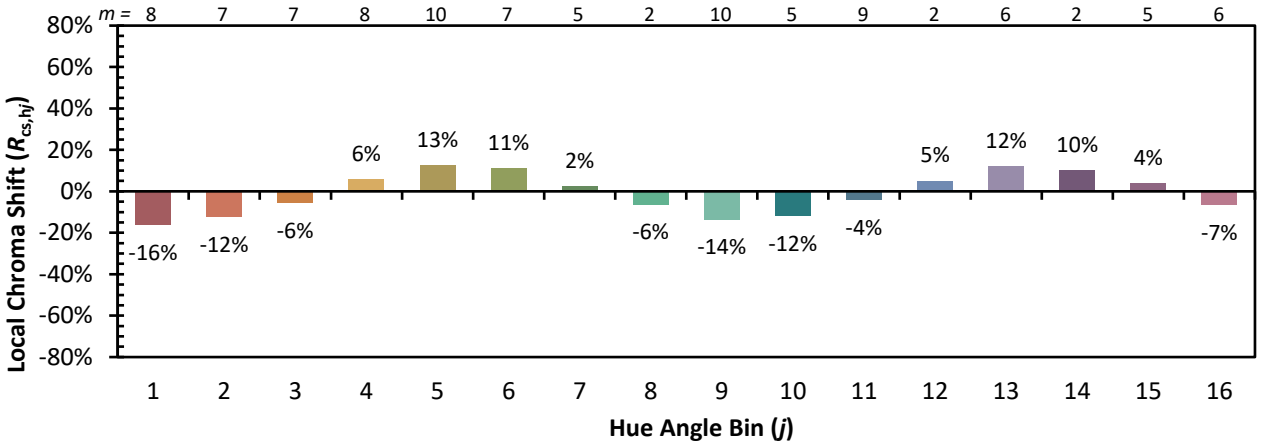


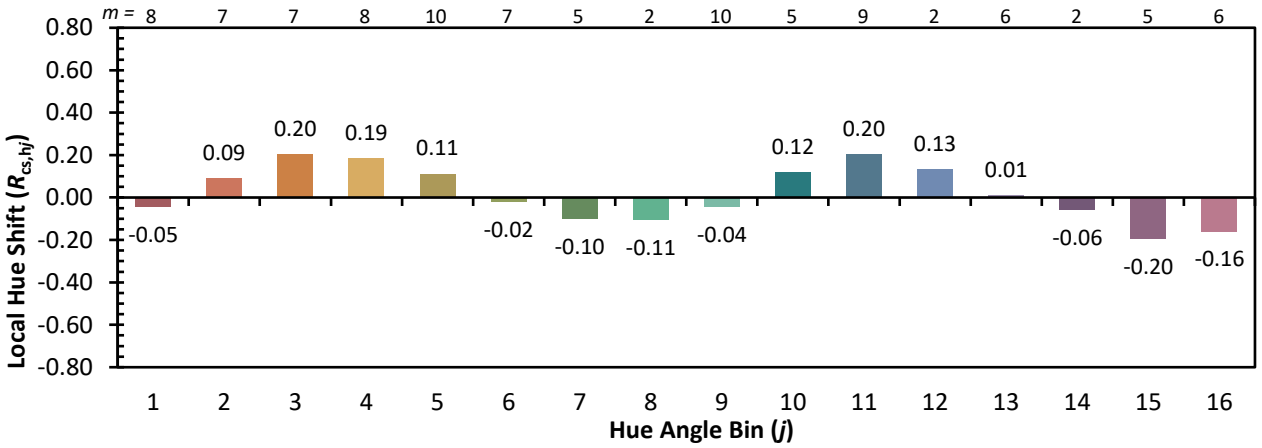
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

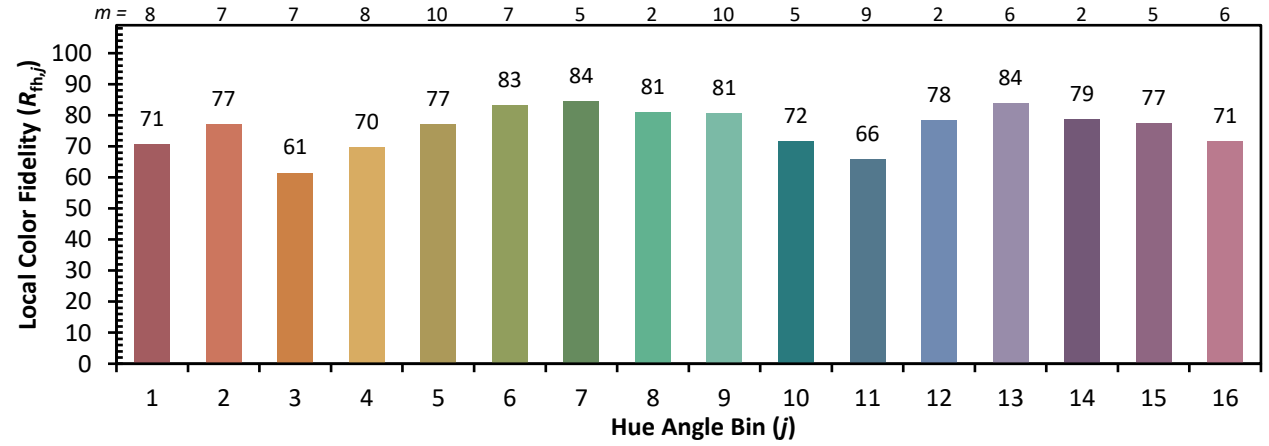
REPORT NUMBER: SP1-1908-441-4-R4

## TM-30-18

### Color Rendition by Hue-Angle Bin



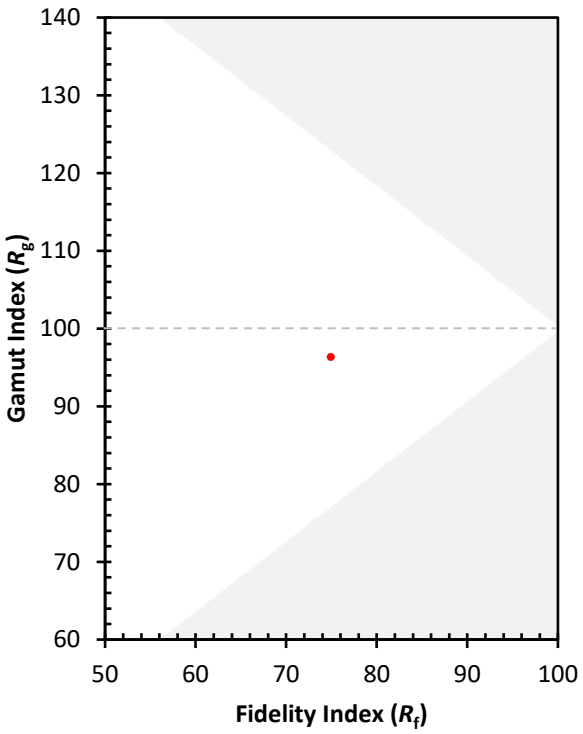



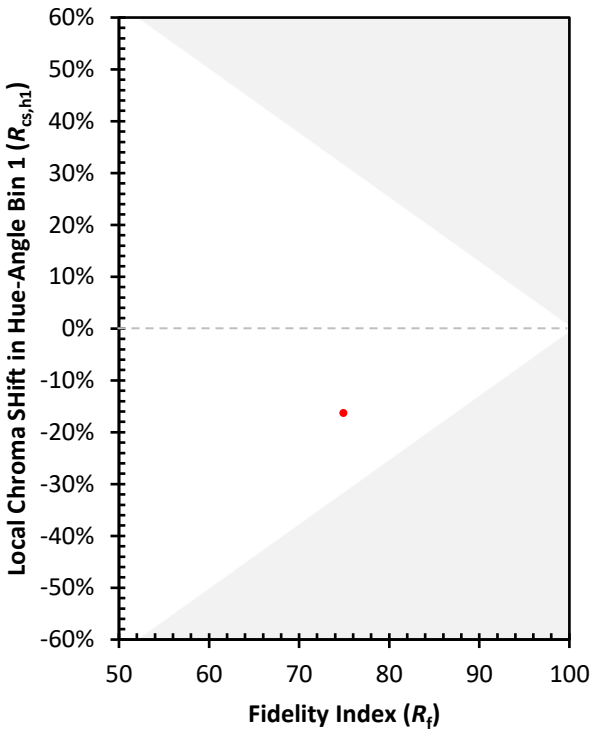
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

REPORT NUMBER: SP1-1908-441-4-R4

## TM-30-18

### Measure Comparisons




(END OF REPORT)