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

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1363436

Luminaire Tested: **GSS-SB4B-730-U-SL3**

Issue Date: 02/18/2026

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1363436 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 02/18/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GSS-SB4B-730-U-SL3 |
| Description: | GALLEON II SLIM SITE HIGH DENSITY LED ARRAYS 4SQUARE 148W 70CRI 3000K FIXTURE w/ TYPE III SPILL CONTROL DISTRIBUTION OPTIC |
| Light Source: | (104) 3000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 20450.5 lumens |
| Efficiency: | N/A |
| Efficacy: | 138.2 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1' x H: 0') |
| IES Classification: | Type III - Medium |
| BUG Rating: | B3 - U0 - G3 |

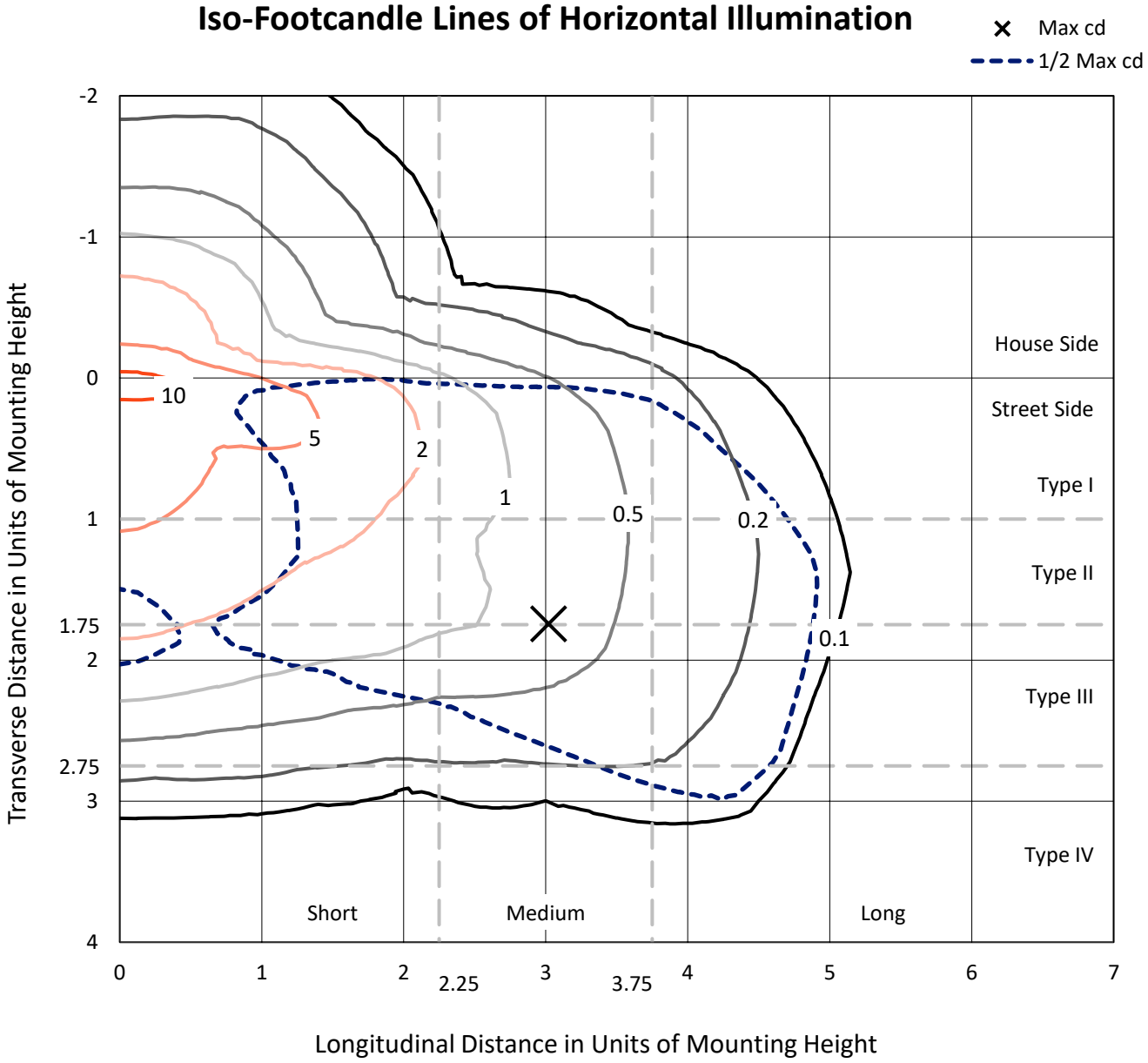
| | |
|---|---|
| Input Watts (W): | 148 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.98 |
| Total Harmonic Distortion (THDi): | 13.6% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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Scaled Data Report

REPORT NUMBER: P1363436
CATALOG NUMBER: GSS-SB4B-730-U-SL3

## Iso-Footcandle Lines of Horizontal Illumination



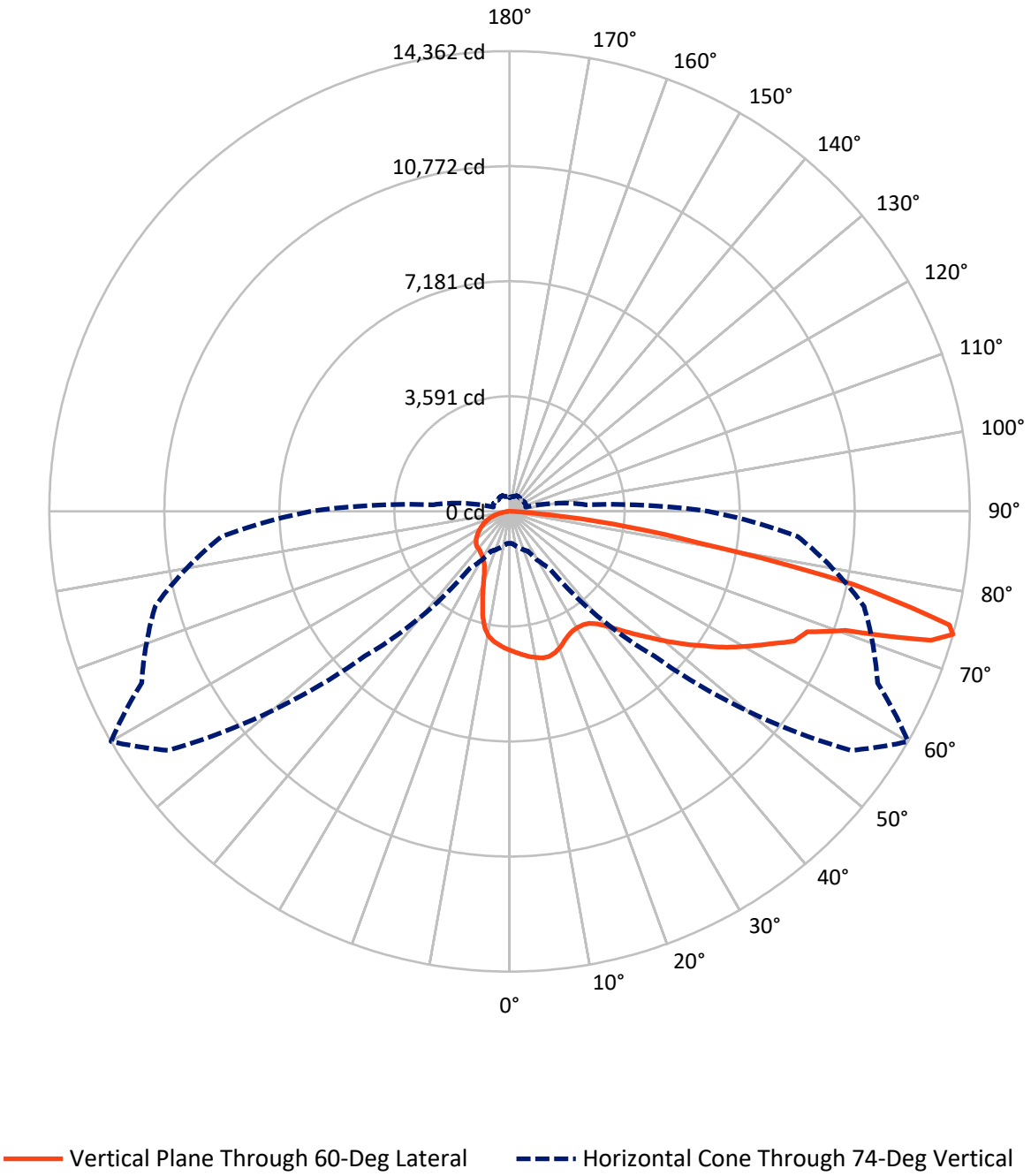

Based on 20 foot mounting height. Maximum calculated value = 10.8 fc
Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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Scaled Data Report

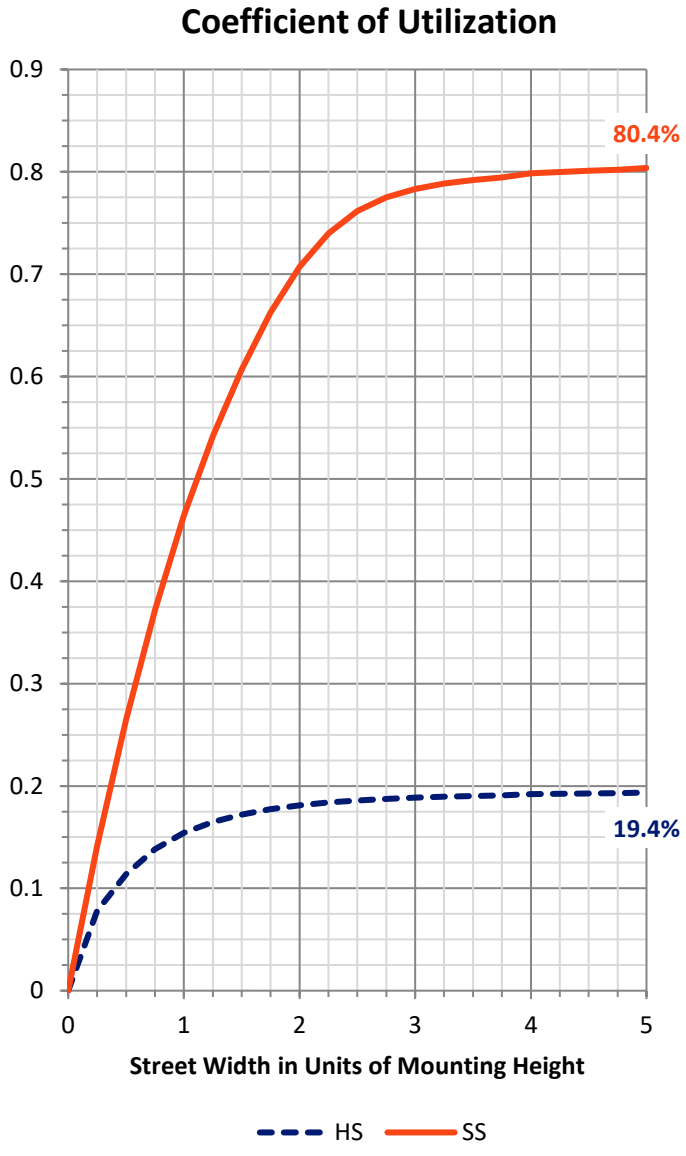
REPORT NUMBER: P1363436
CATALOG NUMBER: GSS-SB4B-730-U-SL3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 3991.9 | 0.0 | 3991.9 |
| | % Fixture | 19.5 | 0.0 | 19.5 |
| **Street Side** | Lumens | 16458.6 | 0.0 | 16458.6 |
| | % Fixture | 80.5 | 0.0 | 80.5 |
| **Total** | Lumens | 20450.5 | 0.0 | 20450.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 399.1 | 2.0 |
| 10°-20° | 979.4 | 4.8 |
| 20°-30° | 1464.3 | 7.2 |
| 30°-40° | 2087.3 | 10.2 |
| 40°-50° | 3001.4 | 14.7 |
| 50°-60° | 4018.7 | 19.7 |
| 60°-70° | 4719.0 | 23.1 |
| 70°-80° | 3365.9 | 16.5 |
| 80°-90° | 415.4 | 2.0 |
| 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° | 20450.5 | 100.0 |
| 0°-180° | 20450.5 | 100.0 |



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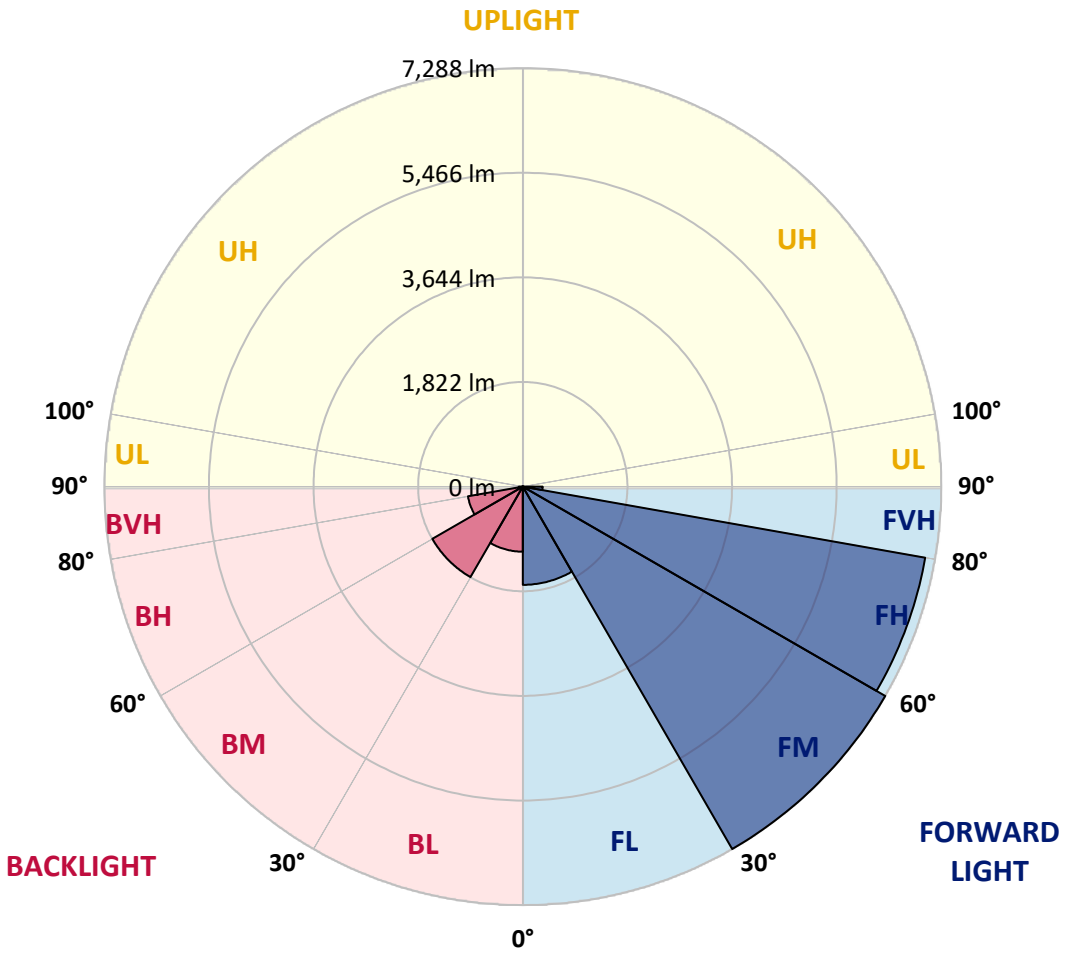
Scaled Data Report

REPORT NUMBER: P1363436
CATALOG NUMBER: GSS-SB4B-730-U-SL3

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 1709.9 | 8.4 | | | |
| FM | (30°-60°) | 7288.1 | 35.6 | | | |
| FH | (60°-80°) | 7115.4 | 34.8 | | | G3/7500 |
| FVH | (80°-90°) | 345.2 | 1.7 | | | G3/500 |
| BL | (0°-30°) | 1132.9 | 5.5 | B3/2500 | | |
| BM | (30°-60°) | 1819.3 | 8.9 | B2/2500 | | |
| BH | (60°-80°) | 969.5 | 4.7 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 70.2 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B3-U0-G3**
Type III Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 60° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 |
| 2.5° | 4475.1 | 4480.2 | 4459.9 | 4444.6 | 4444.6 | 4419.1 | 4419.1 | 4419.1 | 4393.7 | 4388.6 | 4353.0 |
| 5° | 4526.1 | 4521.0 | 4510.8 | 4515.9 | 4521.0 | 4510.8 | 4515.9 | 4500.6 | 4465.0 | 4454.8 | 4398.8 |
| 7.5° | 4383.5 | 4383.5 | 4409.0 | 4459.9 | 4531.1 | 4566.8 | 4587.1 | 4577.0 | 4561.7 | 4531.1 | 4449.7 |
| 10° | 3869.3 | 3904.9 | 3981.3 | 4149.3 | 4358.0 | 4531.1 | 4643.1 | 4638.1 | 4643.1 | 4602.4 | 4510.8 |
| 12.5° | 3416.2 | 3431.5 | 3502.7 | 3650.4 | 3950.7 | 4322.4 | 4633.0 | 4694.1 | 4709.3 | 4683.9 | 4571.9 |
| 15° | 3171.8 | 3166.7 | 3222.7 | 3339.8 | 3568.9 | 3976.2 | 4521.0 | 4689.0 | 4780.6 | 4775.5 | 4658.4 |
| 17.5° | 3064.9 | 3070.0 | 3100.5 | 3176.9 | 3344.9 | 3680.9 | 4322.4 | 4627.9 | 4816.2 | 4877.3 | 4739.9 |
| 20° | 3115.8 | 3100.5 | 3115.8 | 3131.1 | 3222.7 | 3487.5 | 4108.6 | 4521.0 | 4846.8 | 4974.1 | 4831.5 |
| 22.5° | 3222.7 | 3207.4 | 3202.3 | 3192.2 | 3212.5 | 3375.4 | 3915.1 | 4388.6 | 4872.3 | 5101.4 | 4938.4 |
| 25° | 3411.1 | 3395.8 | 3350.0 | 3294.0 | 3268.5 | 3339.8 | 3787.8 | 4276.6 | 4897.7 | 5279.5 | 5075.9 |
| 27.5° | 3680.9 | 3660.6 | 3594.4 | 3462.0 | 3380.5 | 3390.7 | 3747.1 | 4215.5 | 4943.5 | 5452.6 | 5208.3 |
| 30° | 4083.1 | 4072.9 | 3925.3 | 3711.5 | 3543.5 | 3482.4 | 3767.5 | 4200.2 | 4994.4 | 5651.2 | 5340.6 |
| 32.5° | 4444.6 | 4434.4 | 4322.4 | 4083.1 | 3803.1 | 3630.0 | 3818.4 | 4220.6 | 5060.6 | 5905.8 | 5534.1 |
| 35° | 4739.9 | 4719.5 | 4627.9 | 4444.6 | 4159.5 | 3854.0 | 3930.4 | 4291.9 | 5203.2 | 6241.8 | 5768.3 |
| 37.5° | 5040.3 | 5025.0 | 4897.7 | 4704.2 | 4526.1 | 4164.6 | 4118.8 | 4454.8 | 5396.6 | 6700.0 | 6109.4 |
| 40° | 5401.7 | 5381.4 | 5228.6 | 4999.5 | 4841.7 | 4587.1 | 4388.6 | 4714.4 | 5691.9 | 7224.4 | 6496.3 |
| 42.5° | 5747.9 | 5727.6 | 5549.4 | 5350.8 | 5152.3 | 4994.4 | 4770.4 | 5060.6 | 6058.5 | 7891.3 | 6954.5 |
| 45° | 6150.1 | 6150.1 | 5900.7 | 5681.7 | 5473.0 | 5279.5 | 5131.9 | 5457.7 | 6486.2 | 8644.8 | 7463.7 |
| 47.5° | 6526.9 | 6491.2 | 6246.9 | 6007.6 | 5803.9 | 5437.4 | 5478.1 | 5875.2 | 6964.7 | 9408.5 | 8013.5 |
| 50° | 6649.1 | 6638.9 | 6476.0 | 6262.1 | 6089.0 | 5630.8 | 5834.5 | 6374.1 | 7504.4 | 10136.5 | 8532.8 |
| 52.5° | 6791.6 | 6745.8 | 6511.6 | 6481.1 | 6282.5 | 5875.2 | 6272.3 | 6888.4 | 7998.2 | 10798.4 | 8950.3 |
| 55° | 6969.8 | 6918.9 | 6598.2 | 6537.1 | 6430.2 | 6150.1 | 6771.3 | 7417.8 | 8466.6 | 11312.6 | 9342.3 |
| 57.5° | 7295.7 | 7234.6 | 6781.4 | 6649.1 | 6562.5 | 6496.3 | 7336.4 | 8003.3 | 8940.1 | 11714.8 | 9678.3 |
| 60° | 7484.0 | 7433.1 | 7046.2 | 6949.5 | 6822.2 | 6974.9 | 7942.2 | 8543.0 | 9388.1 | 12025.3 | 9938.0 |
| 62.5° | 7387.3 | 7351.7 | 7081.8 | 7265.1 | 7366.9 | 7606.2 | 8634.6 | 9103.0 | 9744.5 | 12259.5 | 9948.2 |
| 65° | 6888.4 | 6817.1 | 6633.8 | 7188.7 | 7993.1 | 8670.3 | 9515.4 | 9759.8 | 9978.7 | 11628.2 | 9347.4 |
| 67.5° | 5691.9 | 5620.7 | 5727.6 | 6297.8 | 7636.8 | 10309.6 | 10727.1 | 10024.5 | 9556.1 | 11052.9 | 9260.8 |
| 70° | 2586.3 | 2469.2 | 3115.8 | 4454.8 | 6318.1 | 9953.2 | 12412.3 | 11124.2 | 9983.8 | 11002.0 | 9087.7 |
| 72.5° | 1267.7 | 1318.6 | 1522.3 | 2000.8 | 3864.2 | 7641.8 | 13685.1 | 13756.3 | 11434.8 | 11134.4 | 9209.9 |
| 74° | 992.8 | 1008.1 | 1176.1 | 1374.6 | 2158.7 | 6379.2 | 13002.9 | 14362.2 | 12671.9 | 11450.0 | 9021.6 |
| 75° | 855.3 | 875.7 | 1043.7 | 1145.5 | 1389.9 | 5371.2 | 12137.4 | 14178.9 | 13237.0 | 11389.0 | 8604.1 |
| 77.5° | 626.2 | 621.1 | 743.3 | 911.3 | 651.7 | 2392.9 | 9831.1 | 10986.8 | 11287.1 | 9276.1 | 5737.8 |
| 80° | 386.9 | 402.2 | 514.2 | 636.4 | 432.7 | 911.3 | 5778.5 | 6002.5 | 5340.6 | 5371.2 | 2784.9 |
| 82.5° | 234.2 | 244.4 | 274.9 | 330.9 | 239.3 | 320.7 | 2616.9 | 3263.4 | 2703.4 | 1756.5 | 468.4 |
| 85° | 71.3 | 76.4 | 91.6 | 117.1 | 86.5 | 117.1 | 880.8 | 794.2 | 565.1 | 234.2 | 137.5 |
| 87.5° | 5.1 | 5.1 | 10.2 | 10.2 | 15.3 | 25.5 | 35.6 | 40.7 | 45.8 | 50.9 | 50.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1363436
CATALOG NUMBER: GSS-SB4B-730-U-SL3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 | 4337.7 |
| 2.5° | 4353.0 | 4337.7 | 4317.3 | 4281.7 | 4256.2 | 4230.8 | 4200.2 | 4154.4 | 4139.1 | 4144.2 | 4154.4 |
| 5° | 4388.6 | 4347.9 | 4286.8 | 4205.3 | 4144.2 | 4093.3 | 4011.8 | 3945.7 | 3904.9 | 3904.9 | 3884.6 |
| 7.5° | 4424.2 | 4368.2 | 4271.5 | 4134.0 | 4027.1 | 3884.6 | 3731.8 | 3579.1 | 3472.2 | 3426.4 | 3385.6 |
| 10° | 4485.3 | 4398.8 | 4240.9 | 4057.7 | 3828.6 | 3543.5 | 3232.9 | 2917.2 | 2718.7 | 2616.9 | 2611.8 |
| 12.5° | 4526.1 | 4439.5 | 4225.7 | 3930.4 | 3497.6 | 2958.0 | 2484.5 | 2224.8 | 2143.4 | 2107.7 | 2097.6 |
| 15° | 4592.2 | 4475.1 | 4190.0 | 3696.2 | 2988.5 | 2341.9 | 2082.3 | 2005.9 | 2000.8 | 2005.9 | 2011.0 |
| 17.5° | 4648.2 | 4505.7 | 4098.4 | 3324.5 | 2397.9 | 2036.5 | 1970.3 | 1965.2 | 2000.8 | 2016.1 | 2031.4 |
| 20° | 4709.3 | 4531.1 | 3935.5 | 2805.2 | 2067.0 | 1944.8 | 1934.6 | 1965.2 | 2016.1 | 2056.8 | 2061.9 |
| 22.5° | 4795.9 | 4551.5 | 3650.4 | 2291.0 | 1909.2 | 1893.9 | 1919.4 | 1949.9 | 1980.5 | 2016.1 | 2026.3 |
| 25° | 4887.5 | 4551.5 | 3258.4 | 1939.7 | 1827.7 | 1868.5 | 1893.9 | 1868.5 | 1858.3 | 1888.8 | 1888.8 |
| 27.5° | 4958.8 | 4515.9 | 2703.4 | 1751.4 | 1771.7 | 1837.9 | 1822.6 | 1766.6 | 1756.5 | 1776.8 | 1771.7 |
| 30° | 5009.7 | 4383.5 | 2143.4 | 1649.5 | 1715.7 | 1771.7 | 1731.0 | 1700.5 | 1680.1 | 1685.2 | 1690.3 |
| 32.5° | 5086.1 | 4179.9 | 1756.5 | 1578.3 | 1669.9 | 1664.8 | 1659.7 | 1629.2 | 1603.7 | 1608.8 | 1613.9 |
| 35° | 5177.7 | 3843.8 | 1537.5 | 1527.4 | 1629.2 | 1588.4 | 1593.5 | 1557.9 | 1527.4 | 1527.4 | 1532.4 |
| 37.5° | 5294.8 | 3441.6 | 1445.9 | 1507.0 | 1563.0 | 1557.9 | 1542.6 | 1496.8 | 1451.0 | 1440.8 | 1440.8 |
| 40° | 5422.1 | 2947.8 | 1400.1 | 1496.8 | 1532.4 | 1547.7 | 1517.2 | 1461.2 | 1339.0 | 1262.6 | 1257.5 |
| 42.5° | 5503.6 | 2540.5 | 1384.8 | 1481.5 | 1527.4 | 1542.6 | 1501.9 | 1328.8 | 1211.7 | 1160.8 | 1155.7 |
| 45° | 5620.7 | 2316.5 | 1384.8 | 1440.8 | 1507.0 | 1522.3 | 1379.7 | 1262.6 | 1196.4 | 1171.0 | 1176.1 |
| 47.5° | 5737.8 | 2316.5 | 1384.8 | 1410.3 | 1451.0 | 1471.3 | 1283.0 | 1232.1 | 1171.0 | 1171.0 | 1191.3 |
| 50° | 5900.7 | 2443.8 | 1374.6 | 1364.4 | 1379.7 | 1303.3 | 1221.9 | 1181.2 | 1099.7 | 1069.1 | 1074.2 |
| 52.5° | 6145.0 | 2637.2 | 1333.9 | 1298.2 | 1303.3 | 1206.6 | 1181.2 | 1120.1 | 1038.6 | 977.5 | 962.2 |
| 55° | 6409.8 | 2846.0 | 1252.4 | 1221.9 | 1216.8 | 1145.5 | 1135.3 | 1069.1 | 992.8 | 911.3 | 896.0 |
| 57.5° | 6700.0 | 3014.0 | 1150.6 | 1145.5 | 1130.2 | 1084.4 | 1099.7 | 1053.9 | 947.0 | 840.0 | 824.8 |
| 60° | 6974.9 | 3202.3 | 1053.9 | 1064.1 | 1038.6 | 1028.4 | 1048.8 | 1018.2 | 885.9 | 768.8 | 758.6 |
| 62.5° | 6974.9 | 3197.3 | 967.3 | 977.5 | 972.4 | 947.0 | 982.6 | 962.2 | 804.4 | 707.7 | 697.5 |
| 65° | 6593.1 | 3054.7 | 865.5 | 891.0 | 911.3 | 860.4 | 906.2 | 870.6 | 733.1 | 656.8 | 641.5 |
| 67.5° | 6542.2 | 2998.7 | 763.7 | 789.1 | 824.8 | 768.8 | 799.3 | 763.7 | 666.9 | 600.8 | 590.6 |
| 70° | 6440.3 | 2871.4 | 672.0 | 702.6 | 717.9 | 656.8 | 697.5 | 672.0 | 600.8 | 549.8 | 539.7 |
| 72.5° | 6491.2 | 2759.4 | 575.3 | 610.9 | 616.0 | 560.0 | 600.8 | 590.6 | 529.5 | 493.8 | 473.5 |
| 74° | *6206.1* | *2387.8* | *519.3* | *549.8* | *539.7* | *498.9* | *534.6* | *534.6* | *478.6* | *453.1* | *427.7* |
| 75° | 5829.4 | 2117.9 | 478.6 | 509.1 | 483.7 | 458.2 | 493.8 | 498.9 | 442.9 | 442.9 | 402.2 |
| 77.5° | 3828.6 | 1420.4 | 376.7 | 397.1 | 386.9 | 371.7 | 392.0 | 386.9 | 346.2 | 336.0 | 310.6 |
| 80° | 1873.6 | 778.9 | 285.1 | 274.9 | 280.0 | 274.9 | 290.2 | 285.1 | 264.7 | 254.6 | 249.5 |
| 82.5° | 351.3 | 259.6 | 188.4 | 183.3 | 173.1 | 162.9 | 183.3 | 183.3 | 244.4 | 274.9 | 274.9 |
| 85° | 106.9 | 101.8 | 91.6 | 91.6 | 86.5 | 76.4 | 81.5 | 117.1 | 142.6 | 96.7 | 91.6 |
| 87.5° | 45.8 | 45.8 | 40.7 | 35.6 | 25.5 | 25.5 | 20.4 | 20.4 | 20.4 | 20.4 | 20.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

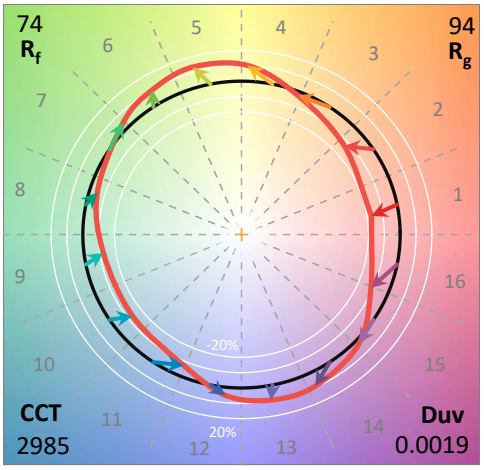
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/15/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GSS-SB1A-730-U-5WQ** |
| Description: | GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3000K CCT 26 LEDS |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 2985 |
| CIE u': | 0.2504 |
| CIE v': | 0.5243 |
| Duv: | 0.0019 |
| CIE x: | 0.4408 |
| CIE y: | 0.4101 |
| CIE z: | 0.1491 |
| Peak Wavelength (nm): | 595 |
| Dominant Wavelength (nm): | 582 |
| Purity: | 55.41818 |
| Rf: | 73.8 |
| Rg: | 94.4 |

| | |
|---|---|
| CRI (Ra): | 70.8 |
| R1: | 66.3 |
| R2: | 80.6 |
| R3: | 94.5 |
| R4: | 68.2 |
| R5: | 66.5 |
| R6: | 74.7 |
| R7: | 76.2 |
| R8: | 39.6 |
| R9: | -43.2 |
| R10: | 57.6 |
| R11: | 64.8 |
| R12: | 53.5 |
| R13: | 68.7 |
| R14: | 97.0 |
| R15: | 56.4 |




## Test Conditions

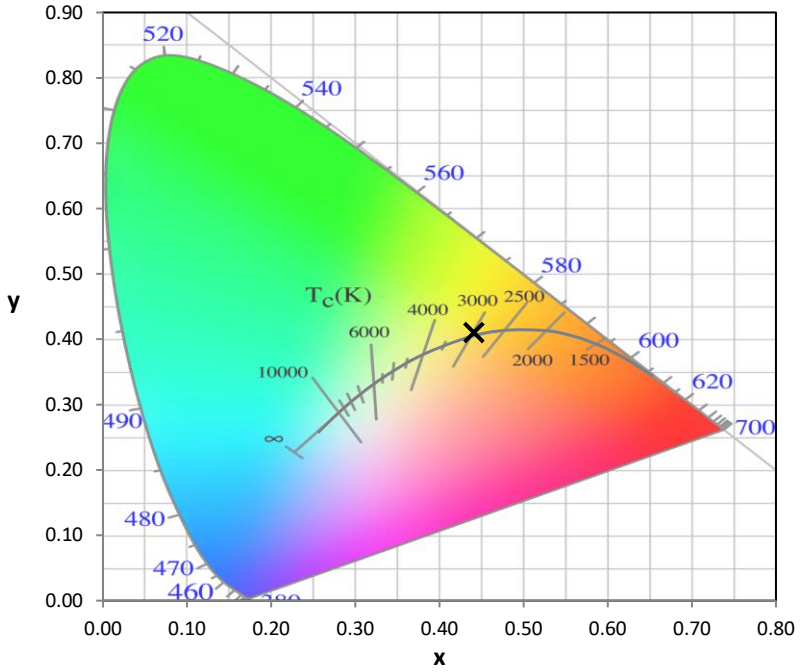
| | |
|---|---|
| Stabilization Time: | 36M |
| Operation Time: | 1H 36M |
| Sphere Temperature (°C): | 25.2 |

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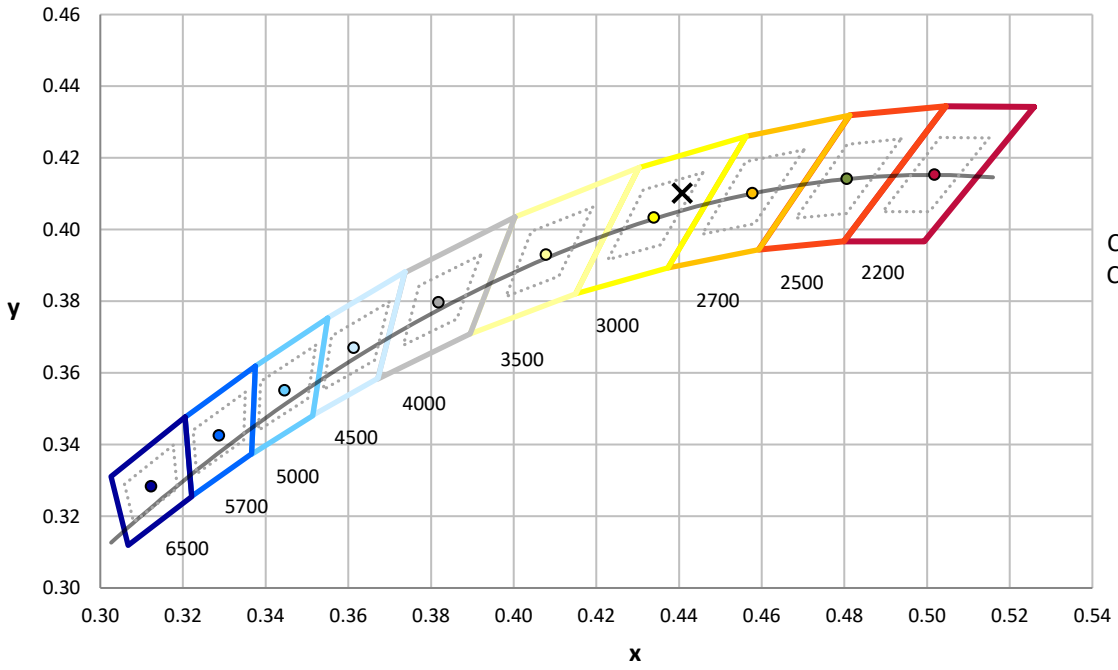
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | 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

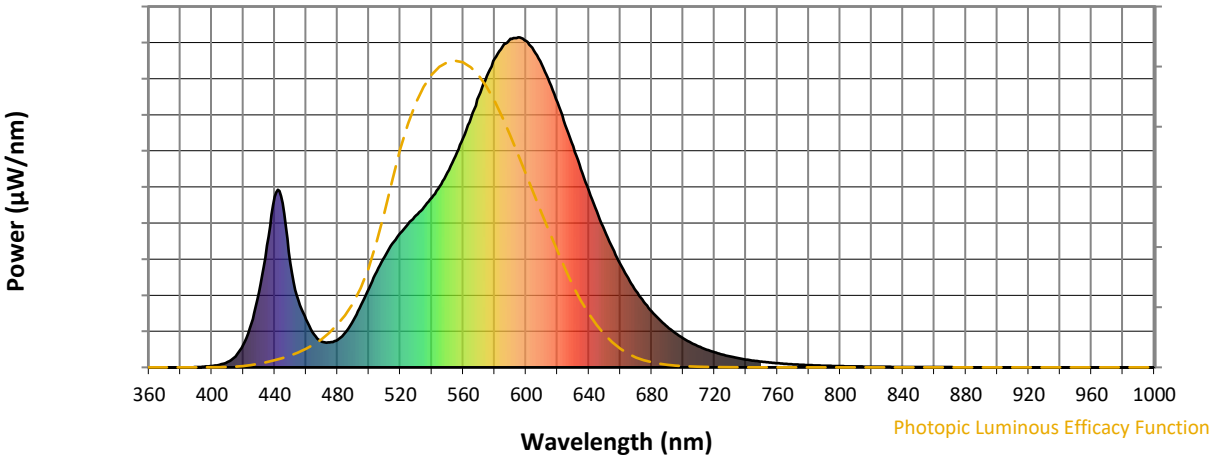



CCT = 2985K
CIE x = 0.4408
CIE y = 0.4101
Duv = 0.0019

Point lies inside the ANSI 3000K 4-step quadrangle

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## Photopic Flux vs. Wavelength

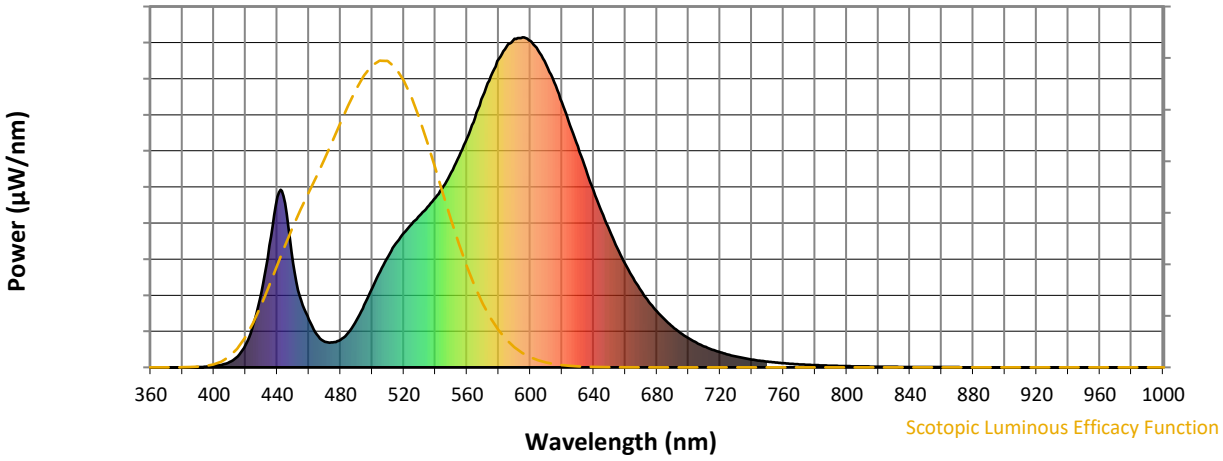



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 142 | NR | 620 | 803 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 189 | NR | 625 | 734 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 240 | NR | 630 | 670 | NR | 760 | 13 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 290 | NR | 635 | 600 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 335 | NR | 640 | 535 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 375 | NR | 645 | 473 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 408 | NR | 650 | 415 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 434 | NR | 655 | 362 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 461 | NR | 660 | 313 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 486 | NR | 665 | 271 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 16 | NR | 540 | 514 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 33 | NR | 545 | 549 | NR | 675 | 198 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 591 | NR | 680 | 169 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 131 | NR | 555 | 640 | NR | 685 | 144 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 227 | NR | 560 | 695 | NR | 690 | 123 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 369 | NR | 565 | 757 | NR | 695 | 104 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 517 | NR | 570 | 822 | NR | 700 | 88 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 498 | NR | 575 | 882 | NR | 705 | 75 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 315 | NR | 580 | 935 | NR | 710 | 63 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 204 | NR | 585 | 972 | NR | 715 | 54 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 145 | NR | 590 | 996 | NR | 720 | 46 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 100 | NR | 595 | 1000 | NR | 725 | 39 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 78 | NR | 600 | 989 | NR | 730 | 33 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 76 | NR | 605 | 960 | NR | 735 | 28 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 83 | NR | 610 | 918 | NR | 740 | 24 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 864 | NR | 745 | 20 | NR | 875 | 1 | NR | | | |

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## Scotopic Flux vs. Wavelength

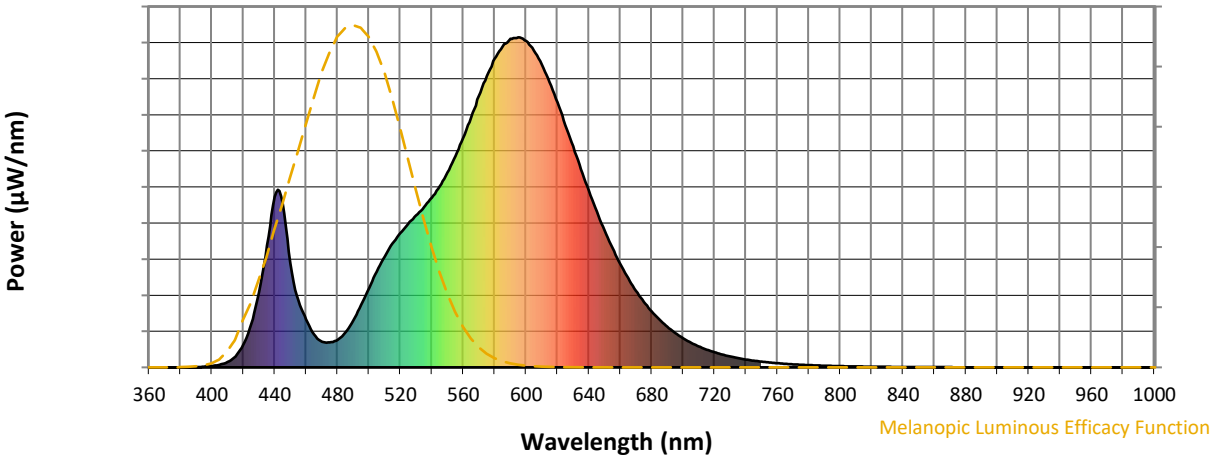



**Scotopic Lumens: NR** **S/P: 1.19**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 142 | NR | 620 | 803 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 189 | NR | 625 | 734 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 240 | NR | 630 | 670 | NR | 760 | 13 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 290 | NR | 635 | 600 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 335 | NR | 640 | 535 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 375 | NR | 645 | 473 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 408 | NR | 650 | 415 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 434 | NR | 655 | 362 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 461 | NR | 660 | 313 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 486 | NR | 665 | 271 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 16 | NR | 540 | 514 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 33 | NR | 545 | 549 | NR | 675 | 198 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 591 | NR | 680 | 169 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 131 | NR | 555 | 640 | NR | 685 | 144 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 227 | NR | 560 | 695 | NR | 690 | 123 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 369 | NR | 565 | 757 | NR | 695 | 104 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 517 | NR | 570 | 822 | NR | 700 | 88 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 498 | NR | 575 | 882 | NR | 705 | 75 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 315 | NR | 580 | 935 | NR | 710 | 63 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 204 | NR | 585 | 972 | NR | 715 | 54 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 145 | NR | 590 | 996 | NR | 720 | 46 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 100 | NR | 595 | 1000 | NR | 725 | 39 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 78 | NR | 600 | 989 | NR | 730 | 33 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 76 | NR | 605 | 960 | NR | 735 | 28 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 83 | NR | 610 | 918 | NR | 740 | 24 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 864 | NR | 745 | 20 | NR | 875 | 1 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.13**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 142 | NR | 620 | 803 | NR | 750 | 17 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 189 | NR | 625 | 734 | NR | 755 | 15 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 240 | NR | 630 | 670 | NR | 760 | 13 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 290 | NR | 635 | 600 | NR | 765 | 11 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 335 | NR | 640 | 535 | NR | 770 | 9 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 375 | NR | 645 | 473 | NR | 775 | 8 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 408 | NR | 650 | 415 | NR | 780 | 7 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 434 | NR | 655 | 362 | NR | 785 | 6 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 461 | NR | 660 | 313 | NR | 790 | 5 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 486 | NR | 665 | 271 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 16 | NR | 540 | 514 | NR | 670 | 231 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 33 | NR | 545 | 549 | NR | 675 | 198 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 69 | NR | 550 | 591 | NR | 680 | 169 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 131 | NR | 555 | 640 | NR | 685 | 144 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 227 | NR | 560 | 695 | NR | 690 | 123 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 369 | NR | 565 | 757 | NR | 695 | 104 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 517 | NR | 570 | 822 | NR | 700 | 88 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 498 | NR | 575 | 882 | NR | 705 | 75 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 315 | NR | 580 | 935 | NR | 710 | 63 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 204 | NR | 585 | 972 | NR | 715 | 54 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 145 | NR | 590 | 996 | NR | 720 | 46 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 100 | NR | 595 | 1000 | NR | 725 | 39 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 78 | NR | 600 | 989 | NR | 730 | 33 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 76 | NR | 605 | 960 | NR | 735 | 28 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 83 | NR | 610 | 918 | NR | 740 | 24 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 864 | NR | 745 | 20 | NR | 875 | 1 | NR | | | |

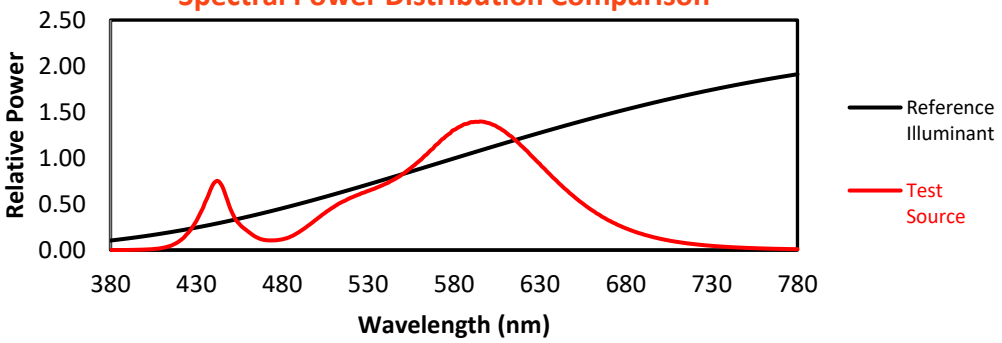
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# TM-30-18

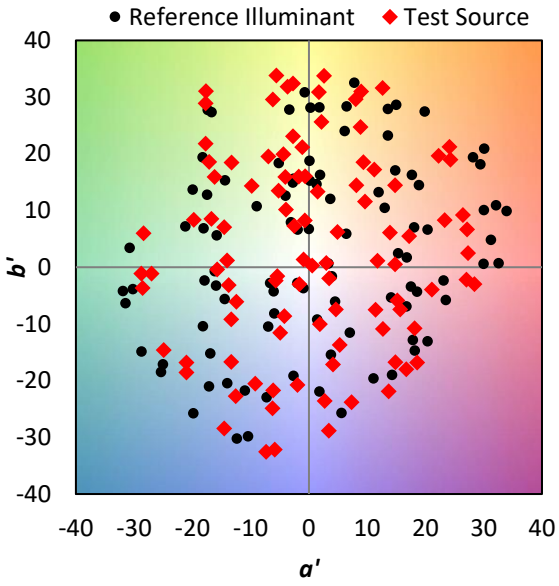
## Summary

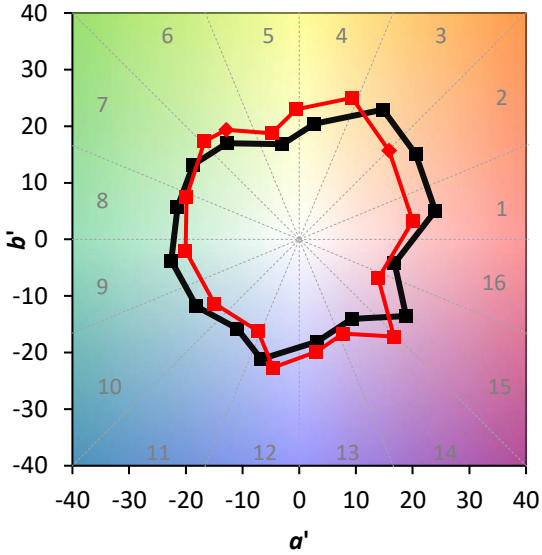
$R_f$ = 73.8
$R_g$ = 94.4
CIE $R_a$ = 70.8
$R_9$ = -43.2

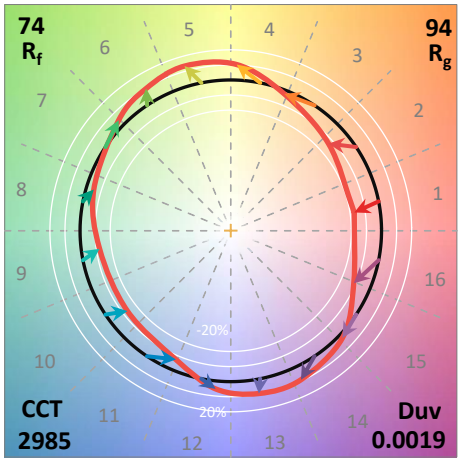
## Spectral Power Distribution Comparison

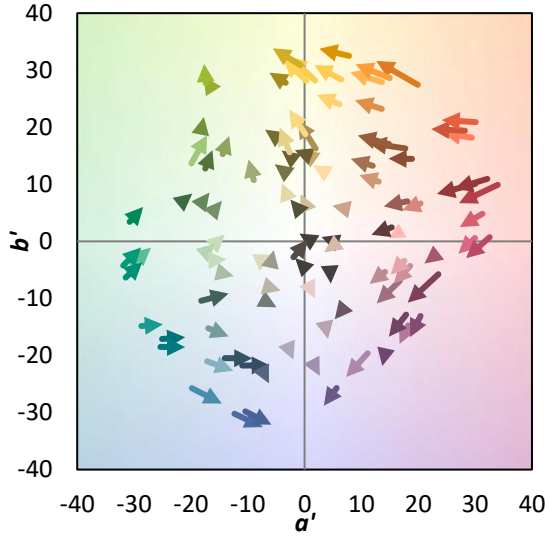



## Color Vector Graphics



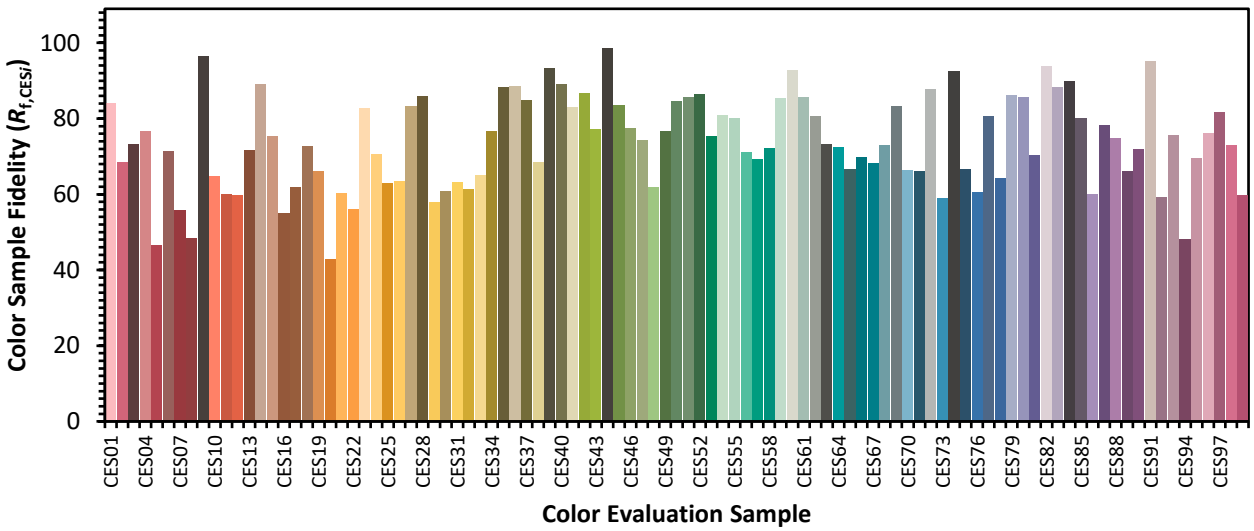



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**Individual Sample Fidelity Index ($R_{f,i}$)**

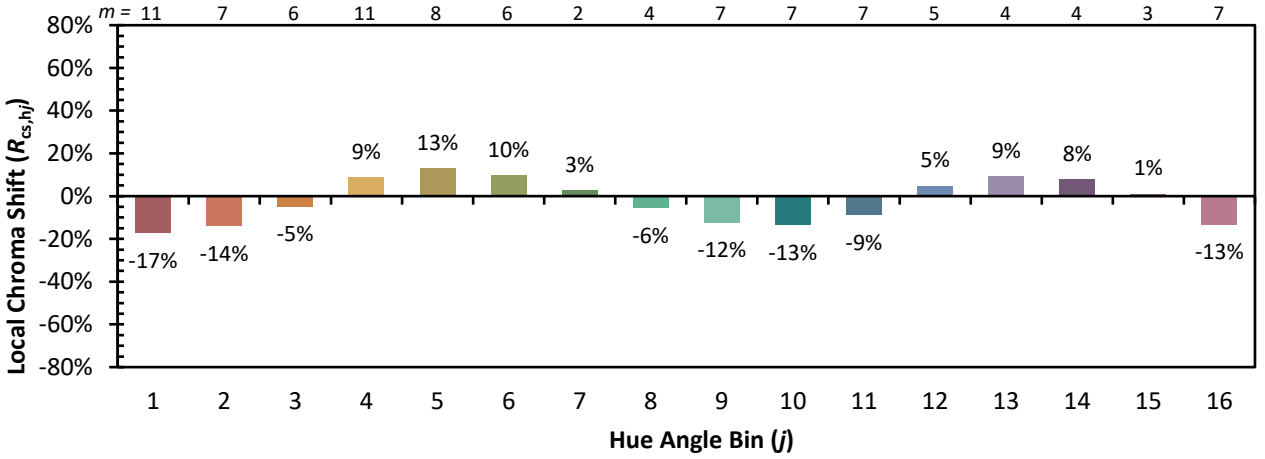
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 | |

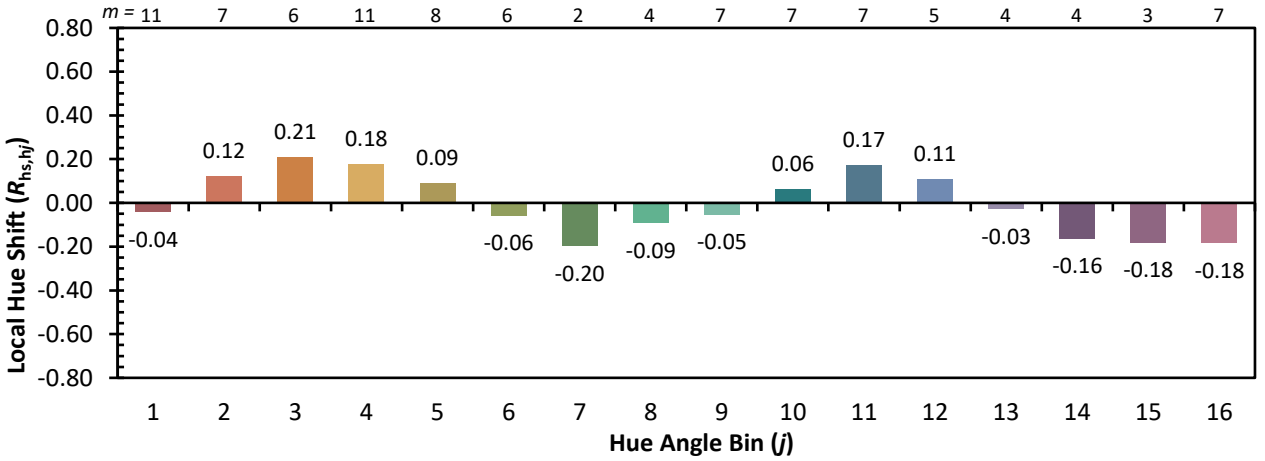


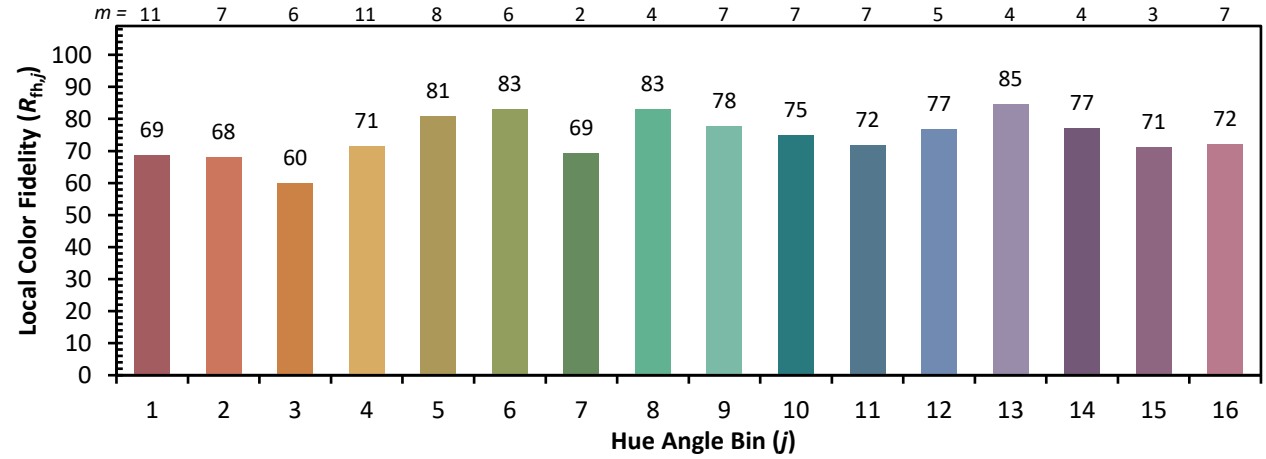
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## Color Rendition by Hue-Angle Bin



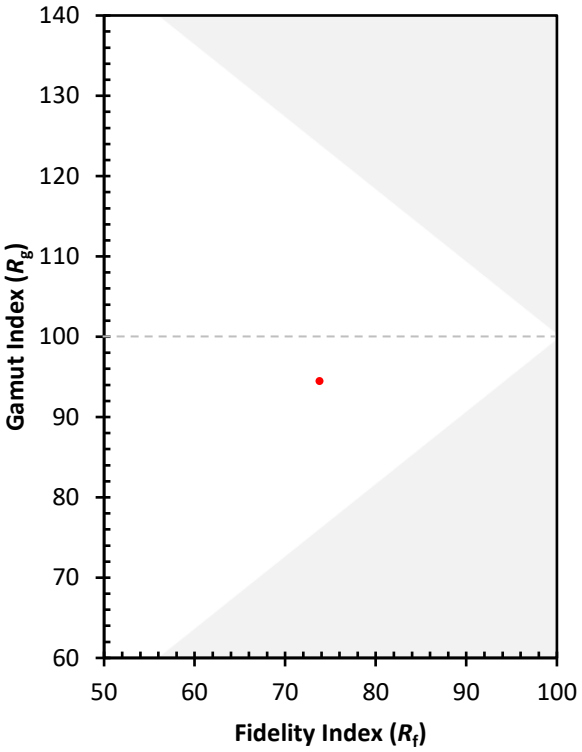



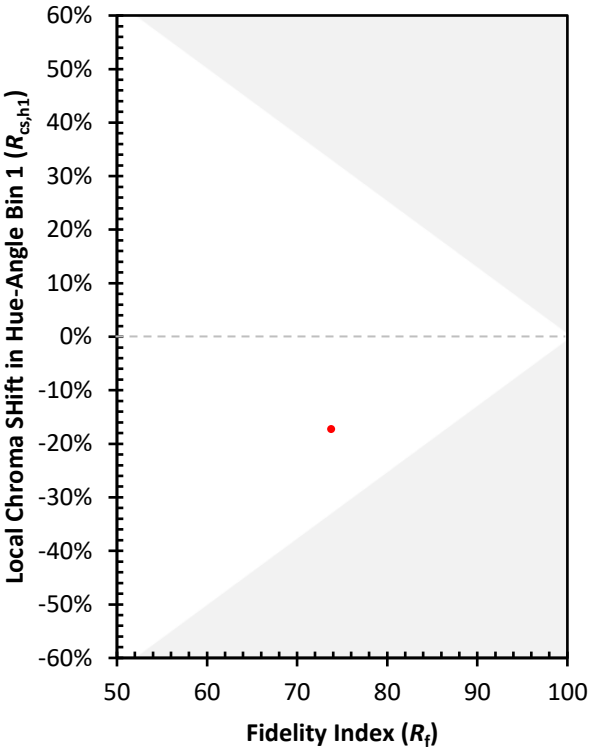



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## Measure Comparisons




(END OF REPORT)