

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: STREETWORKS

Report Number: P1379556

Luminaire Tested: **VAL-T-SB2B-730-U-SL4-HSS**

Issue Date: 02/18/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been  
influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P1379556  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB2B-730-U-SL4-HSS  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 2SQUARE 74W 70CRI  
3000K FIXTURE w/ TYPE IV SPILL CONTROL DISTRIBUTION OPTIC AND HOUSE SIDE  
SHIELD  
Light Source: (52) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment: 

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

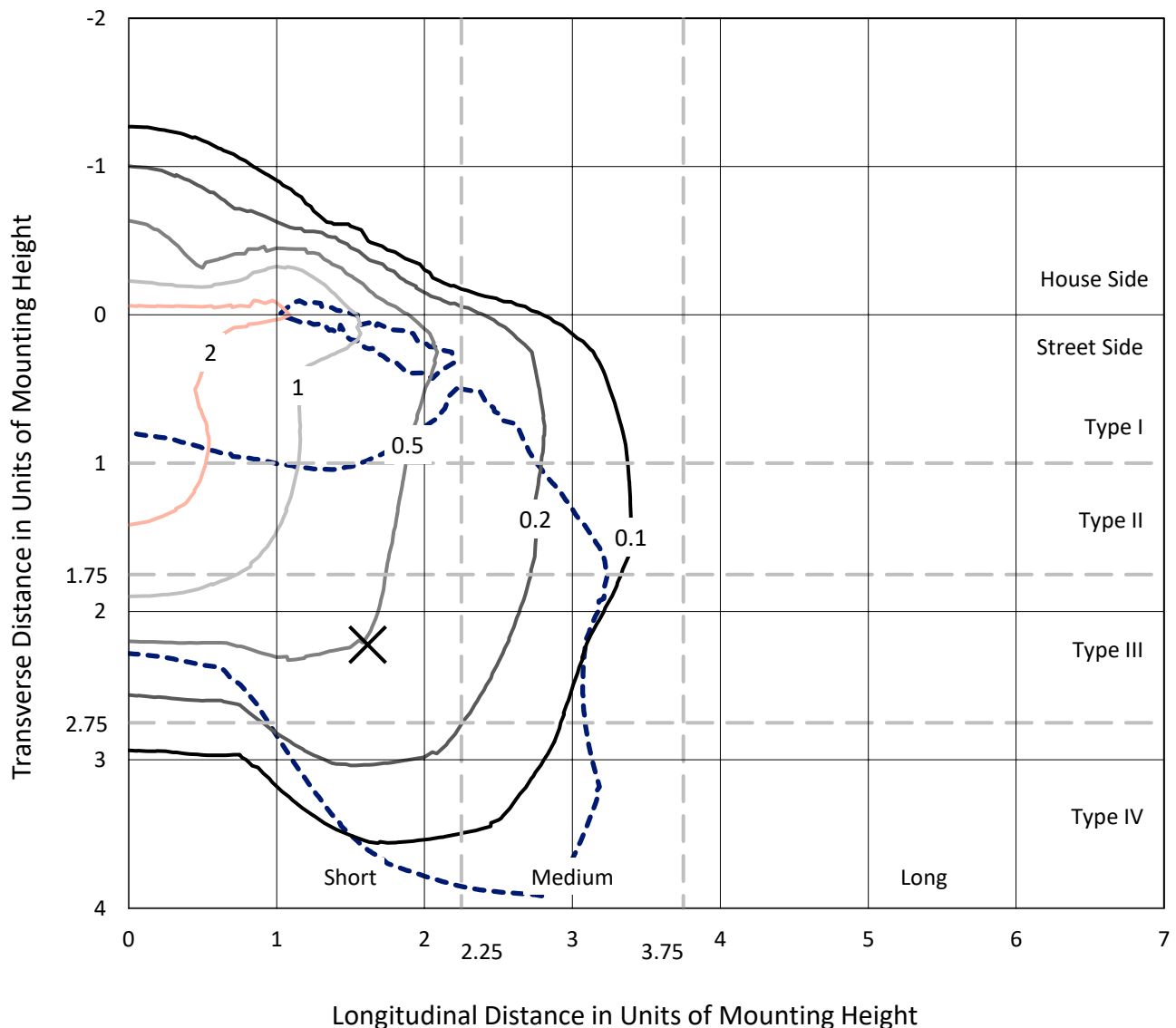
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6673.4 lumens  
Efficiency: N/A  
Efficacy: 90.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 74  
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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## Iso-Footcandle Lines of Horizontal Illumination

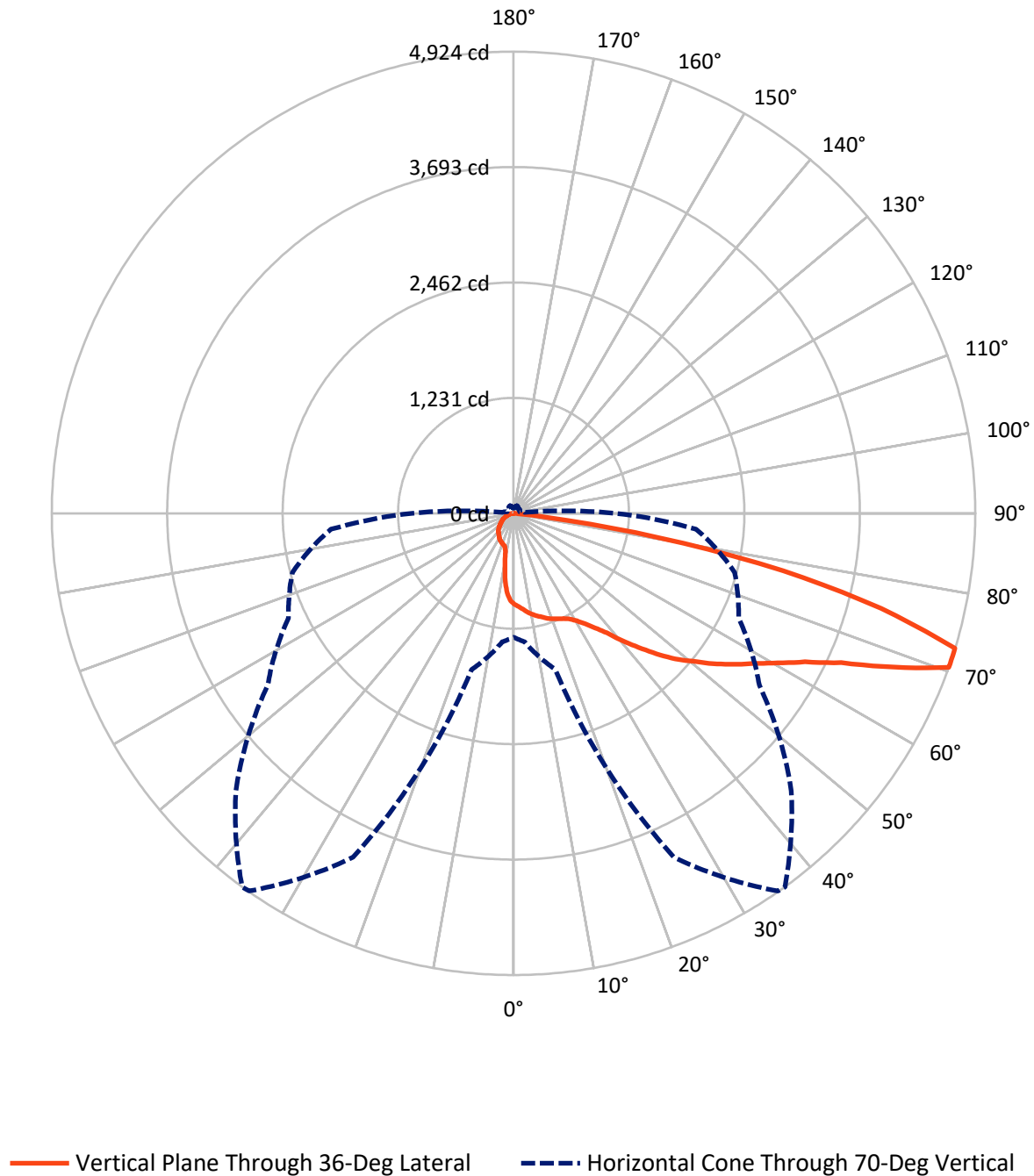
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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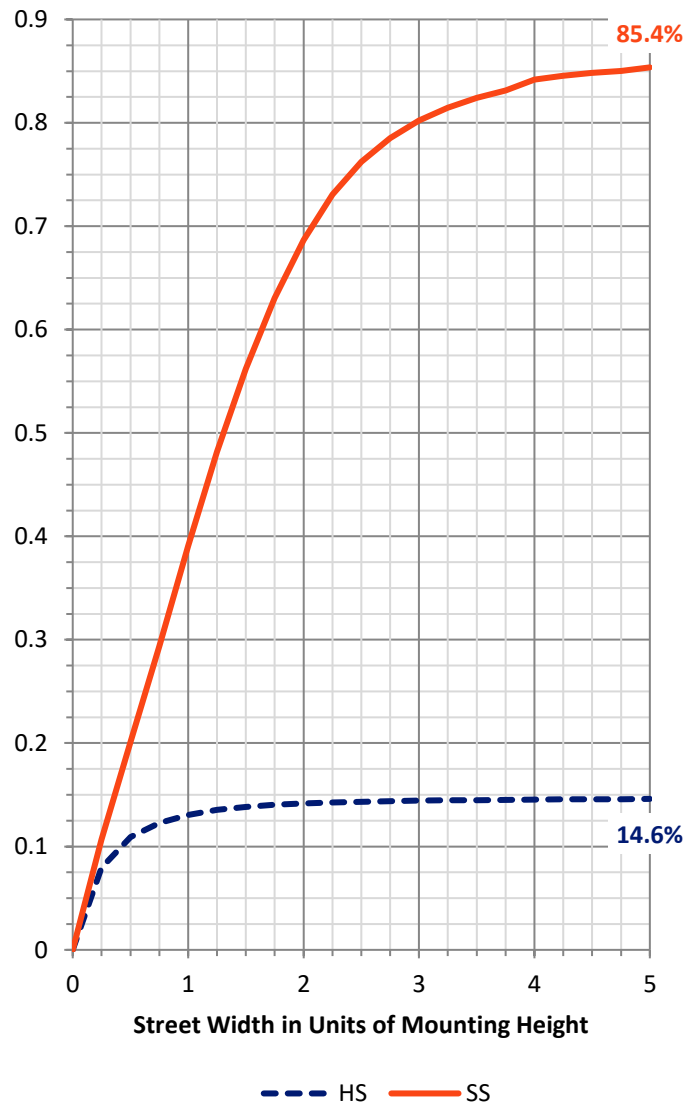
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 985.1    | 0.0    | 985.1  |
|                    | % Fixture | 14.8     | 0.0    | 14.8   |
| <b>Street Side</b> | Lumens    | 5688.2   | 0.0    | 5688.2 |
|                    | % Fixture | 85.2     | 0.0    | 85.2   |
| <b>Total</b>       | Lumens    | 6673.4   | 0.0    | 6673.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 88.2   | 1.3       |
| 10°-20°   | 244.5  | 3.7       |
| 20°-30°   | 412.2  | 6.2       |
| 30°-40°   | 658.3  | 9.9       |
| 40°-50°   | 1075.9 | 16.1      |
| 50°-60°   | 1451.6 | 21.8      |
| 60°-70°   | 1612.2 | 24.2      |
| 70°-80°   | 1067.3 | 16.0      |
| 80°-90°   | 63.1   | 0.9       |
| 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°    | 6673.4 | 100.0     |
| 0°-180°   | 6673.4 | 100.0     |

**Coefficient of Utilization**



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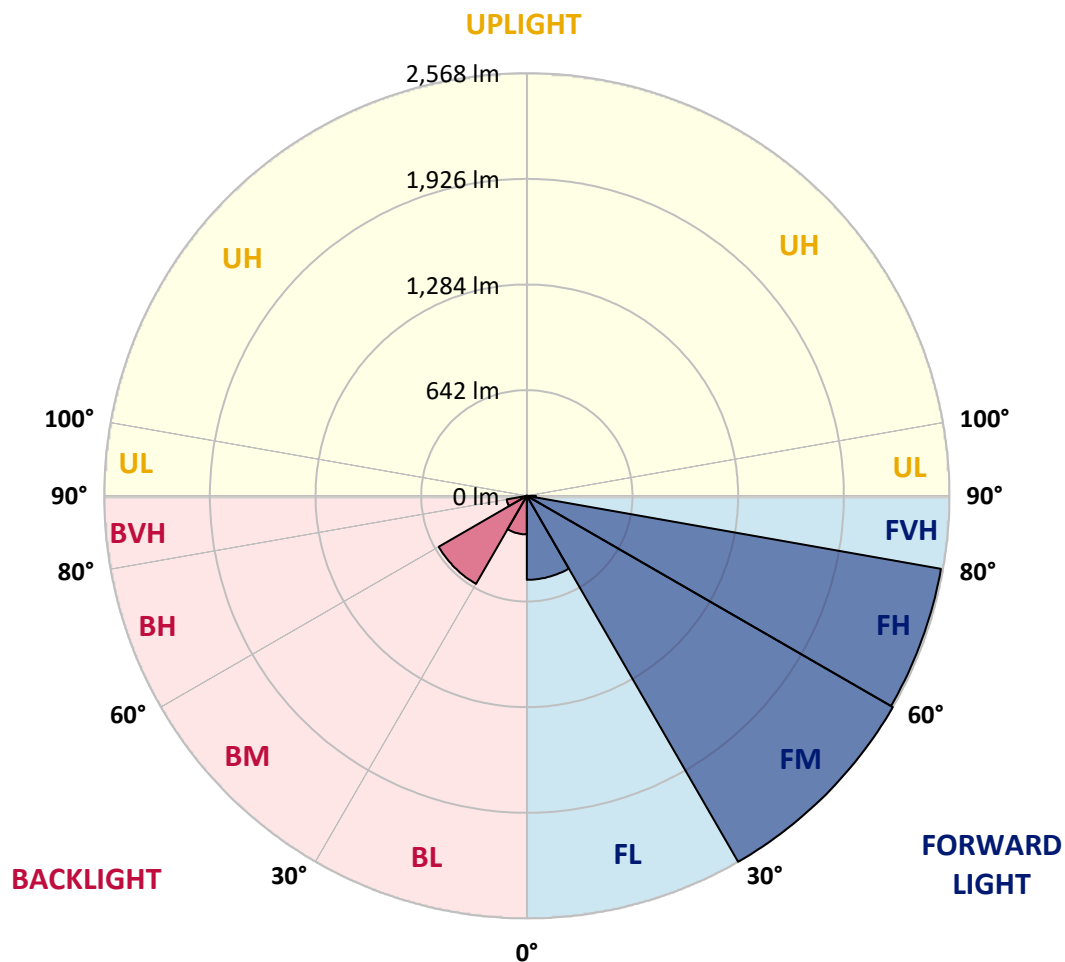
CATALOG NUMBER: VAL-T-SB2B-730-U-SL4-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 510.4  | 7.6       |                         |      |         |
| FM   | (30°-60°)   | 2567.9 | 38.5      |                         |      |         |
| FH   | (60°-80°)   | 2555.0 | 38.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 55.0   | 0.8       |                         |      | G1/100  |
| BL   | (0°-30°)    | 234.6  | 3.5       | B1/500                  |      |         |
| BM   | (30°-60°)   | 617.9  | 9.3       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 124.5  | 1.9       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 8.1    | 0.1       |                         |      | 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



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CATALOG NUMBER: VAL-T-SB2B-730-U-SL4-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 36°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  | 968.0  |
| 2.5°  | 1002.1 | 993.0  | 997.6  | 999.9  | 993.0  | 995.3  | 990.7  | 988.5  | 979.4  | 986.2  | 977.1  |
| 5°    | 1038.6 | 1036.3 | 1034.0 | 1034.0 | 1027.2 | 1024.9 | 1018.1 | 1013.5 | 1004.4 | 997.6  | 986.2  |
| 7.5°  | 1081.9 | 1068.2 | 1065.9 | 1070.5 | 1056.8 | 1063.6 | 1056.8 | 1050.0 | 1034.0 | 1015.8 | 997.6  |
| 10°   | 1116.0 | 1109.2 | 1100.1 | 1097.8 | 1100.1 | 1095.5 | 1088.7 | 1081.9 | 1072.7 | 1050.0 | 1029.5 |
| 12.5° | 1154.7 | 1150.2 | 1141.1 | 1136.5 | 1120.6 | 1122.8 | 1122.8 | 1113.7 | 1100.1 | 1086.4 | 1063.6 |
| 15°   | 1198.0 | 1179.8 | 1175.2 | 1163.8 | 1154.7 | 1147.9 | 1150.2 | 1152.5 | 1136.5 | 1122.8 | 1100.1 |
| 17.5° | 1218.5 | 1214.0 | 1202.6 | 1188.9 | 1188.9 | 1179.8 | 1177.5 | 1177.5 | 1170.7 | 1166.1 | 1138.8 |
| 20°   | 1250.4 | 1245.8 | 1225.3 | 1214.0 | 1202.6 | 1200.3 | 1207.1 | 1207.1 | 1195.7 | 1193.5 | 1188.9 |
| 22.5° | 1298.2 | 1284.6 | 1257.2 | 1239.0 | 1225.3 | 1223.1 | 1232.2 | 1229.9 | 1229.9 | 1232.2 | 1241.3 |
| 25°   | 1343.8 | 1327.8 | 1298.2 | 1268.6 | 1239.0 | 1243.6 | 1254.9 | 1257.2 | 1248.1 | 1261.8 | 1295.9 |
| 27.5° | 1412.1 | 1409.8 | 1364.3 | 1305.1 | 1277.7 | 1275.4 | 1280.0 | 1275.4 | 1266.3 | 1282.3 | 1346.1 |
| 30°   | 1592.0 | 1571.5 | 1496.4 | 1387.0 | 1325.6 | 1330.1 | 1323.3 | 1295.9 | 1273.2 | 1291.4 | 1393.9 |
| 32.5° | 1767.4 | 1719.6 | 1642.1 | 1516.9 | 1403.0 | 1405.3 | 1357.4 | 1305.1 | 1280.0 | 1300.5 | 1441.7 |
| 35°   | 2022.5 | 1972.4 | 1856.2 | 1637.6 | 1521.4 | 1500.9 | 1403.0 | 1339.2 | 1293.7 | 1316.4 | 1496.4 |
| 37.5° | 2382.4 | 2309.5 | 2152.3 | 1876.7 | 1626.2 | 1617.1 | 1482.7 | 1368.8 | 1305.1 | 1314.2 | 1569.3 |
| 40°   | 2660.2 | 2589.6 | 2462.1 | 2129.5 | 1806.1 | 1787.9 | 1608.0 | 1425.8 | 1307.3 | 1325.6 | 1637.6 |
| 42.5° | 2901.6 | 2865.2 | 2694.4 | 2352.7 | 1992.9 | 1954.2 | 1728.7 | 1496.4 | 1355.2 | 1355.2 | 1751.5 |
| 45°   | 3225.1 | 3156.7 | 2963.1 | 2562.3 | 2179.6 | 2136.4 | 1888.1 | 1608.0 | 1414.4 | 1389.3 | 1869.9 |
| 47.5° | 3509.8 | 3452.8 | 3227.3 | 2760.4 | 2357.3 | 2320.9 | 2040.7 | 1728.7 | 1489.5 | 1450.8 | 2008.8 |
| 50°   | 3821.8 | 3762.6 | 3502.9 | 2997.3 | 2532.7 | 2480.3 | 2209.3 | 1840.3 | 1580.6 | 1546.5 | 2175.1 |
| 52.5° | 4038.2 | 3988.1 | 3728.4 | 3211.4 | 2701.2 | 2664.8 | 2345.9 | 1954.2 | 1687.7 | 1653.5 | 2334.5 |
| 55°   | 4181.6 | 4101.9 | 3849.1 | 3398.2 | 2888.0 | 2842.4 | 2468.9 | 2081.7 | 1808.4 | 1797.0 | 2471.2 |
| 57.5° | 4250.0 | 4170.3 | 3956.2 | 3562.1 | 3072.5 | 3022.4 | 2621.5 | 2220.6 | 1965.6 | 1974.7 | 2616.9 |
| 60°   | 4213.5 | 4154.3 | 3997.2 | 3717.0 | 3277.4 | 3236.4 | 2767.3 | 2380.1 | 2127.3 | 2166.0 | 2685.3 |
| 62.5° | 3944.8 | 3958.4 | 4001.7 | 3947.1 | 3539.4 | 3489.3 | 2979.1 | 2582.8 | 2348.2 | 2355.0 | 2678.4 |
| 65°   | 3052.0 | 3108.9 | 3605.4 | 4213.5 | 3906.1 | 3840.0 | 3270.6 | 2837.9 | 2498.5 | 2421.1 | 2500.8 |
| 67.5° | 1940.5 | 2061.2 | 2607.8 | 4361.6 | 4418.5 | 4377.5 | 3655.5 | 3047.4 | 2535.0 | 2519.0 | 2339.1 |
| 70°   | 1321.0 | 1375.7 | 1724.1 | 4047.3 | 4917.3 | 4924.1 | 4188.5 | 3200.0 | 2648.8 | 2441.6 | 1954.2 |
| 72.5° | 1038.6 | 1043.1 | 1218.5 | 3646.4 | 4896.8 | 4921.9 | 4149.8 | 3359.4 | 2569.1 | 2175.1 | 1489.5 |
| 75°   | 696.9  | 715.2  | 831.3  | 2974.5 | 4067.8 | 4047.3 | 3389.0 | 2580.5 | 2343.6 | 1719.6 | 965.7  |
| 77.5° | 195.9  | 202.7  | 346.2  | 1895.0 | 2851.5 | 2938.1 | 2459.8 | 886.0  | 1630.8 | 788.0  | 364.4  |
| 80°   | 59.2   | 63.8   | 141.2  | 544.3  | 1364.3 | 1562.4 | 1280.0 | 266.5  | 394.0  | 186.8  | 72.9   |
| 82.5° | 25.1   | 27.3   | 84.3   | 125.3  | 312.0  | 337.1  | 300.6  | 70.6   | 123.0  | 59.2   | 25.1   |
| 85°   | 9.1    | 11.4   | 27.3   | 29.6   | 47.8   | 43.3   | 34.2   | 22.8   | 31.9   | 27.3   | 13.7   |
| 87.5° | 0.0    | 2.3    | 2.3    | 4.6    | 6.8    | 6.8    | 9.1    | 9.1    | 9.1    | 9.1    | 9.1    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

REPORT NUMBER: P1379556

CATALOG NUMBER: VAL-T-SB2B-730-U-SL4-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 968.0  | 968.0  | 968.0  | 968.0 | 968.0 | 968.0 | 968.0 | 968.0 | 968.0 | 968.0 | 968.0 |
| 2.5°  | 970.3  | 968.0  | 958.9  | 947.5 | 940.6 | 938.4 | 931.5 | 917.9 | 922.4 | 924.7 | 913.3 |
| 5°    | 979.4  | 963.4  | 945.2  | 922.4 | 897.4 | 876.9 | 849.5 | 829.0 | 815.4 | 813.1 | 810.8 |
| 7.5°  | 988.5  | 974.8  | 942.9  | 892.8 | 842.7 | 790.3 | 719.7 | 669.6 | 633.2 | 614.9 | 621.8 |
| 10°   | 1018.1 | 995.3  | 940.6  | 863.2 | 756.2 | 642.3 | 539.8 | 480.6 | 446.4 | 430.5 | 423.6 |
| 12.5° | 1047.7 | 1015.8 | 940.6  | 810.8 | 628.6 | 485.1 | 403.1 | 384.9 | 384.9 | 389.5 | 387.2 |
| 15°   | 1086.4 | 1050.0 | 947.5  | 731.1 | 498.8 | 380.4 | 366.7 | 369.0 | 375.8 | 380.4 | 380.4 |
| 17.5° | 1129.7 | 1102.4 | 947.5  | 630.9 | 389.5 | 353.0 | 355.3 | 362.1 | 369.0 | 371.2 | 373.5 |
| 20°   | 1191.2 | 1152.5 | 917.9  | 514.7 | 341.6 | 341.6 | 346.2 | 350.7 | 359.9 | 364.4 | 366.7 |
| 22.5° | 1248.1 | 1204.8 | 863.2  | 410.0 | 328.0 | 330.2 | 339.4 | 343.9 | 353.0 | 357.6 | 355.3 |
| 25°   | 1318.7 | 1277.7 | 804.0  | 332.5 | 314.3 | 318.9 | 325.7 | 332.5 | 346.2 | 350.7 | 350.7 |
| 27.5° | 1396.2 | 1359.7 | 758.4  | 325.7 | 300.6 | 307.5 | 318.9 | 328.0 | 339.4 | 343.9 | 343.9 |
| 30°   | 1480.4 | 1444.0 | 731.1  | 350.7 | 293.8 | 291.5 | 305.2 | 312.0 | 325.7 | 337.1 | 339.4 |
| 32.5° | 1569.3 | 1512.3 | 722.0  | 400.9 | 298.4 | 280.1 | 291.5 | 300.6 | 318.9 | 332.5 | 332.5 |
| 35°   | 1696.8 | 1614.8 | 722.0  | 455.5 | 316.6 | 268.8 | 277.9 | 289.3 | 309.8 | 323.4 | 323.4 |
| 37.5° | 1854.0 | 1776.5 | 792.6  | 494.2 | 332.5 | 259.6 | 264.2 | 275.6 | 291.5 | 309.8 | 312.0 |
| 40°   | 2040.7 | 2004.3 | 979.4  | 519.3 | 341.6 | 250.5 | 255.1 | 259.6 | 268.8 | 287.0 | 291.5 |
| 42.5° | 2241.1 | 2202.4 | 1245.8 | 544.3 | 337.1 | 243.7 | 241.4 | 241.4 | 246.0 | 257.4 | 259.6 |
| 45°   | 2434.7 | 2380.1 | 1485.0 | 535.2 | 316.6 | 230.0 | 225.5 | 218.6 | 218.6 | 227.8 | 227.8 |
| 47.5° | 2605.6 | 2507.6 | 1601.1 | 473.7 | 291.5 | 216.4 | 207.3 | 195.9 | 195.9 | 200.4 | 200.4 |
| 50°   | 2714.9 | 2503.1 | 1528.3 | 375.8 | 255.1 | 202.7 | 189.0 | 179.9 | 177.7 | 179.9 | 177.7 |
| 52.5° | 2730.8 | 2343.6 | 1257.2 | 291.5 | 220.9 | 186.8 | 170.8 | 166.3 | 164.0 | 164.0 | 164.0 |
| 55°   | 2623.8 | 2049.8 | 883.7  | 223.2 | 193.6 | 168.5 | 157.2 | 154.9 | 152.6 | 150.3 | 148.0 |
| 57.5° | 2439.3 | 1623.9 | 539.8  | 179.9 | 175.4 | 152.6 | 145.8 | 143.5 | 138.9 | 132.1 | 129.8 |
| 60°   | 2193.3 | 1195.7 | 284.7  | 152.6 | 152.6 | 134.4 | 134.4 | 134.4 | 123.0 | 113.9 | 109.3 |
| 62.5° | 1920.0 | 806.3  | 159.4  | 129.8 | 127.5 | 120.7 | 123.0 | 120.7 | 109.3 | 93.4  | 91.1  |
| 65°   | 1614.8 | 457.8  | 107.0  | 107.0 | 109.3 | 104.8 | 109.3 | 107.0 | 91.1  | 75.2  | 70.6  |
| 67.5° | 1393.9 | 239.1  | 84.3   | 91.1  | 91.1  | 86.5  | 93.4  | 95.7  | 82.0  | 66.0  | 61.5  |
| 70°   | 1091.0 | 120.7  | 68.3   | 75.2  | 75.2  | 68.3  | 82.0  | 88.8  | 75.2  | 56.9  | 54.7  |
| 72.5° | 769.8  | 75.2   | 56.9   | 59.2  | 56.9  | 52.4  | 70.6  | 79.7  | 66.0  | 47.8  | 45.6  |
| 75°   | 469.2  | 50.1   | 43.3   | 47.8  | 41.0  | 41.0  | 61.5  | 70.6  | 56.9  | 38.7  | 36.4  |
| 77.5° | 218.6  | 36.4   | 31.9   | 34.2  | 29.6  | 31.9  | 50.1  | 54.7  | 41.0  | 31.9  | 29.6  |
| 80°   | 54.7   | 25.1   | 25.1   | 22.8  | 22.8  | 25.1  | 36.4  | 34.2  | 29.6  | 27.3  | 25.1  |
| 82.5° | 22.8   | 18.2   | 15.9   | 15.9  | 15.9  | 18.2  | 22.8  | 22.8  | 25.1  | 22.8  | 22.8  |
| 85°   | 11.4   | 11.4   | 11.4   | 11.4  | 13.7  | 13.7  | 18.2  | 20.5  | 20.5  | 20.5  | 18.2  |
| 87.5° | 6.8    | 6.8    | 6.8    | 6.8   | 6.8   | 9.1   | 11.4  | 13.7  | 15.9  | 9.1   | 6.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



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

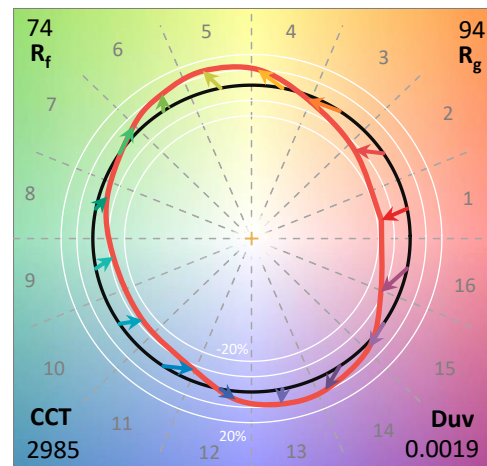
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 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  
 R<sub>f</sub>: 73.8  
 R<sub>g</sub>: 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

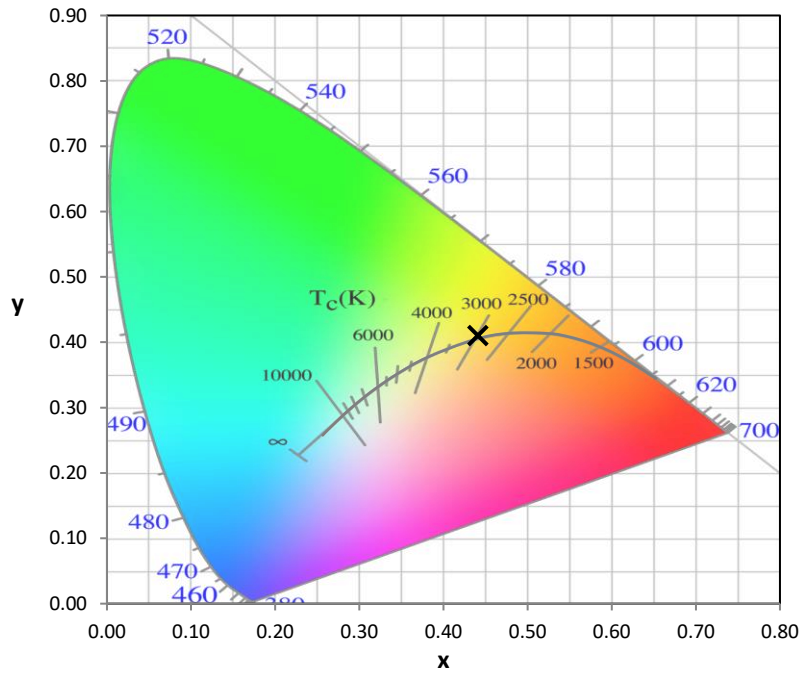
Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

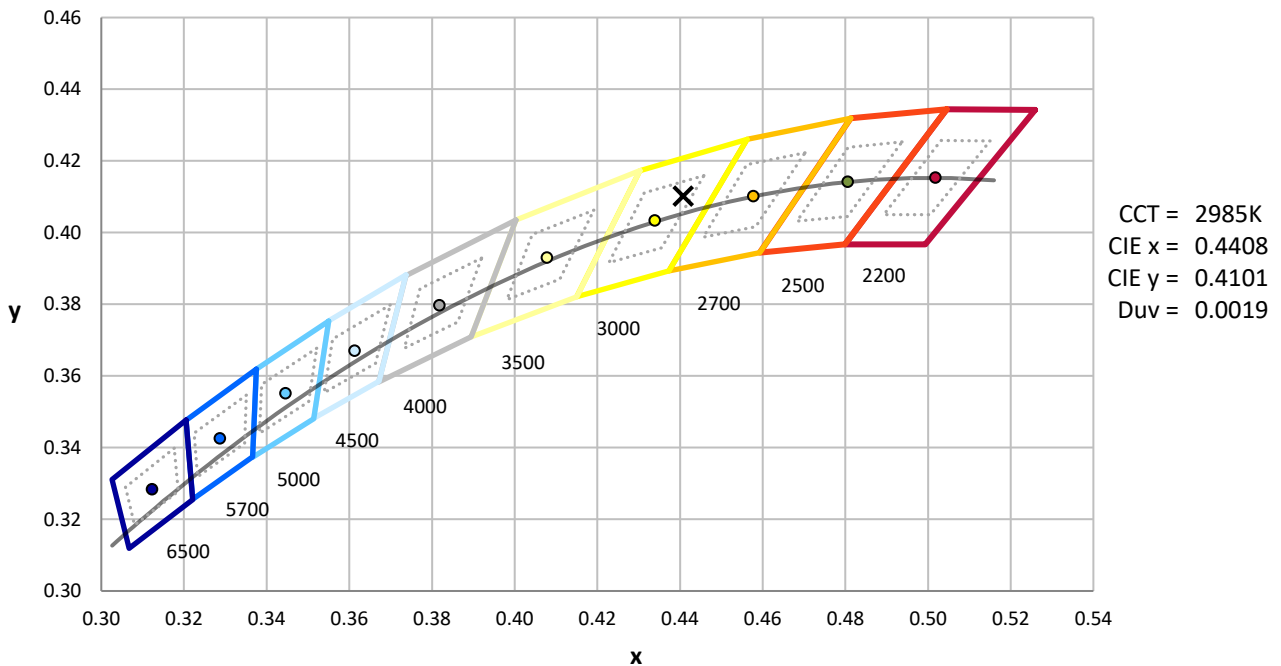
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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           |

REPORT NUMBER: SP1-2407-184-4

**CIE 1931 Chromaticity Diagram**



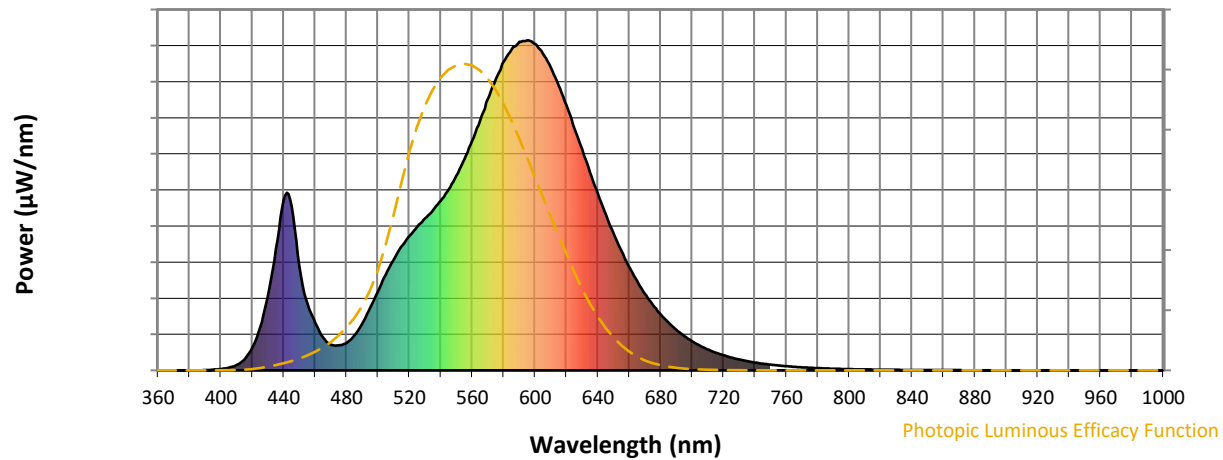
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

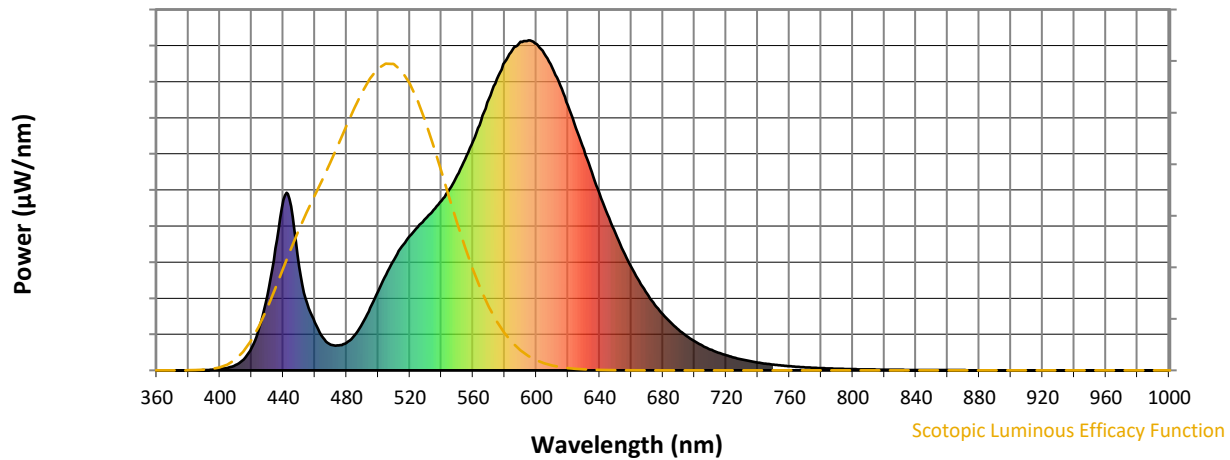


### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /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



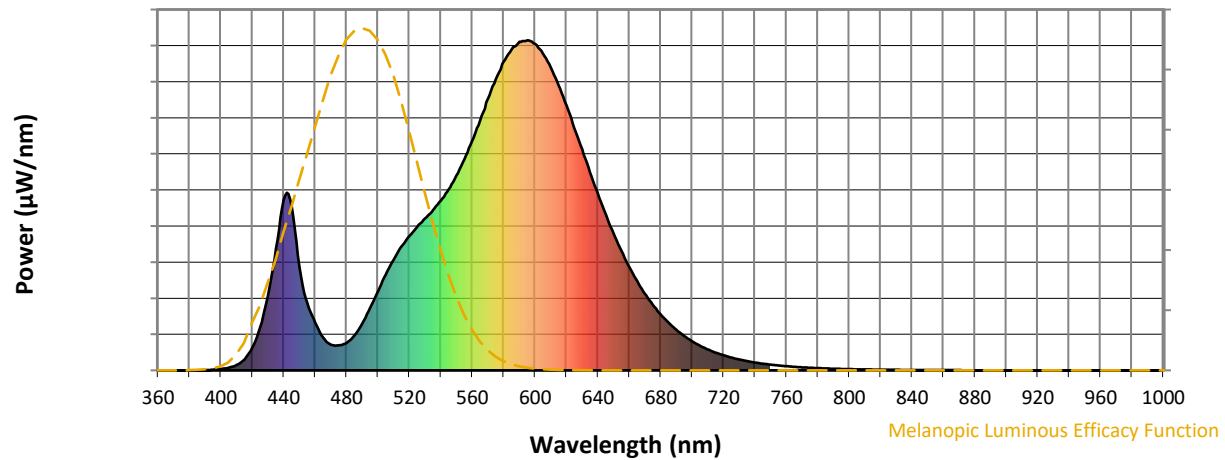
Scotopic Lumens: NR

S/P: 1.19

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /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

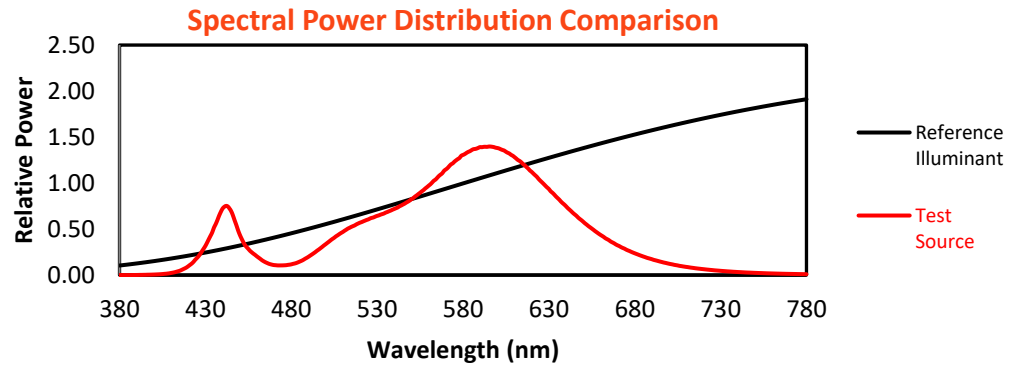
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 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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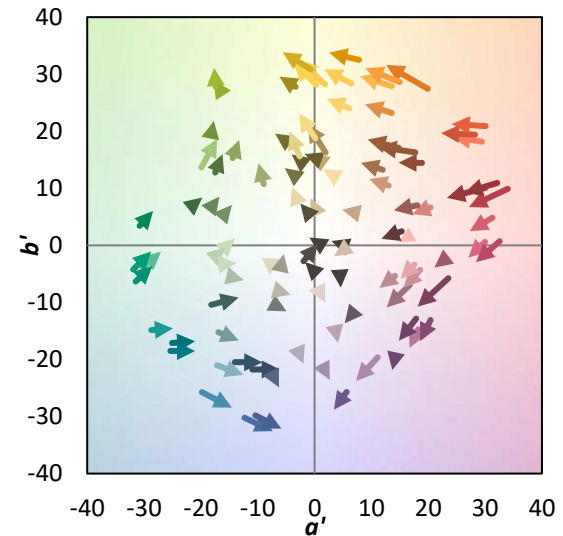
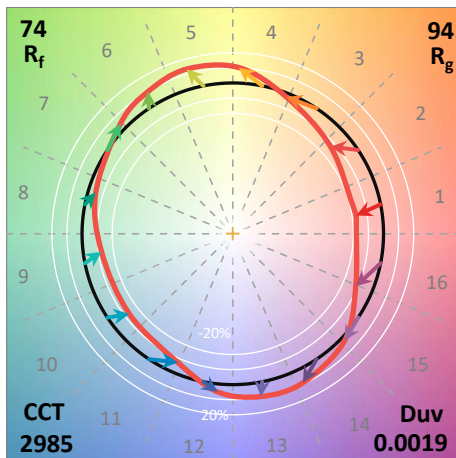
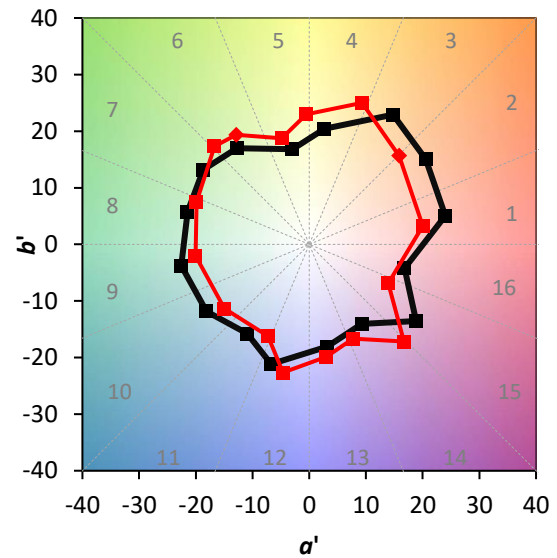
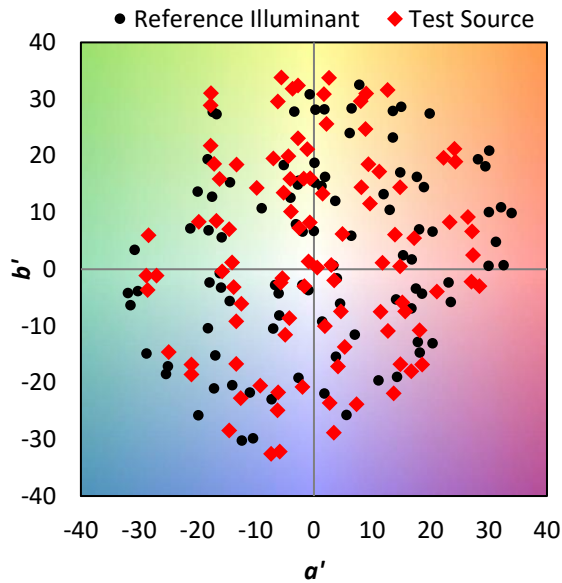
TM-30-18

### Summary

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



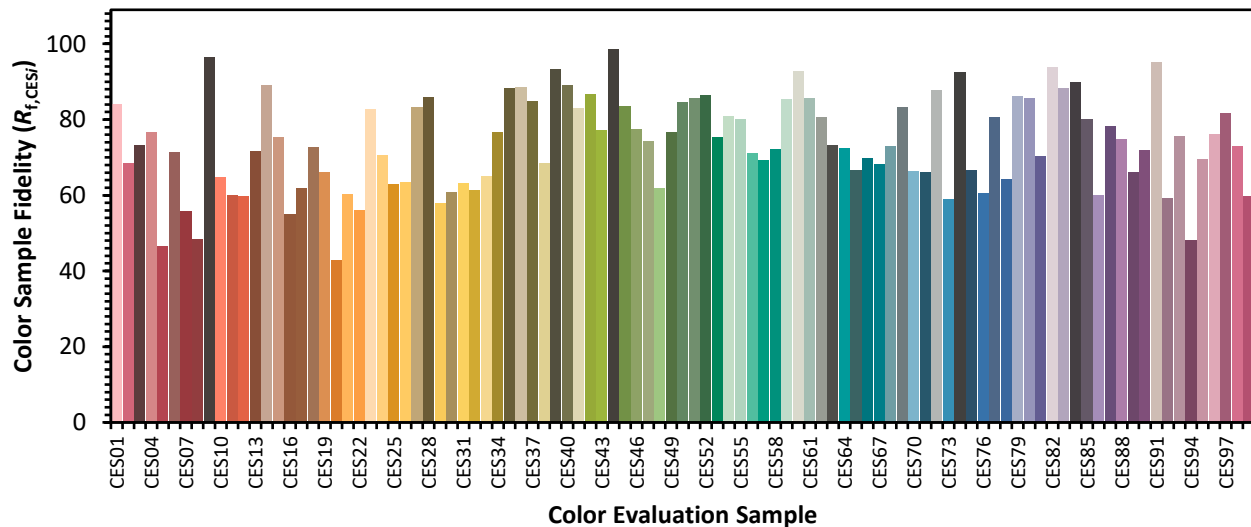
### Color Vector Graphics



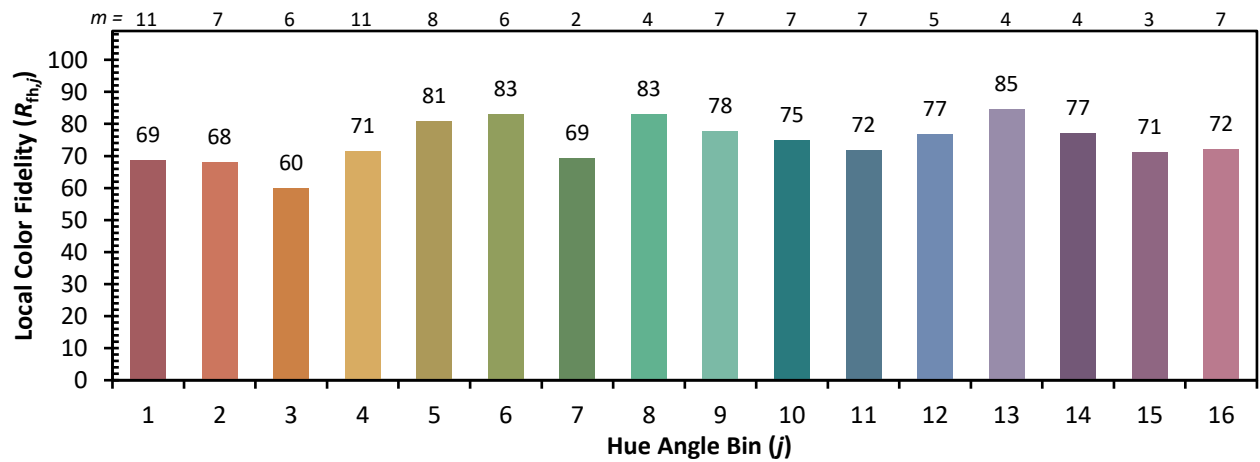
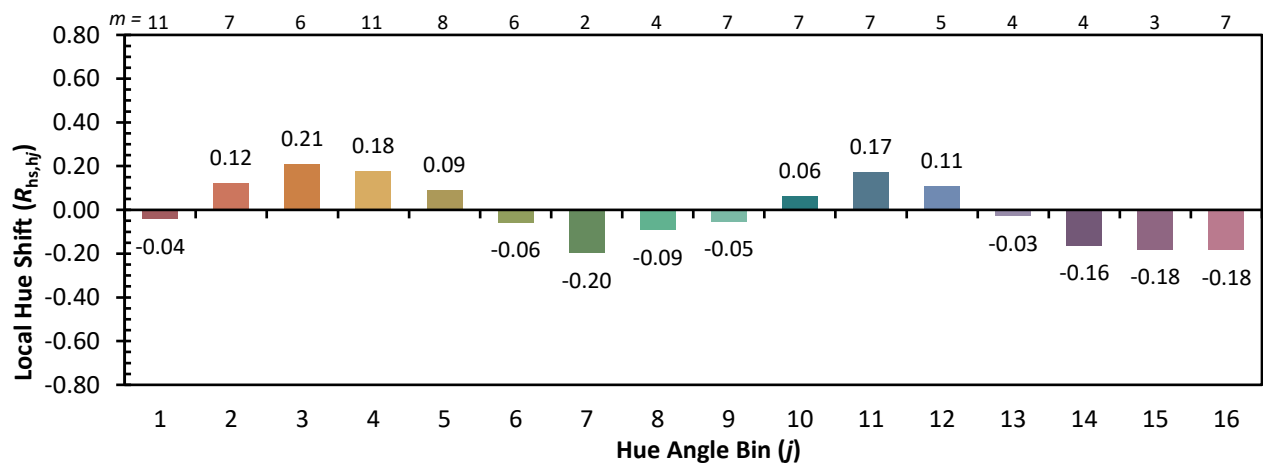
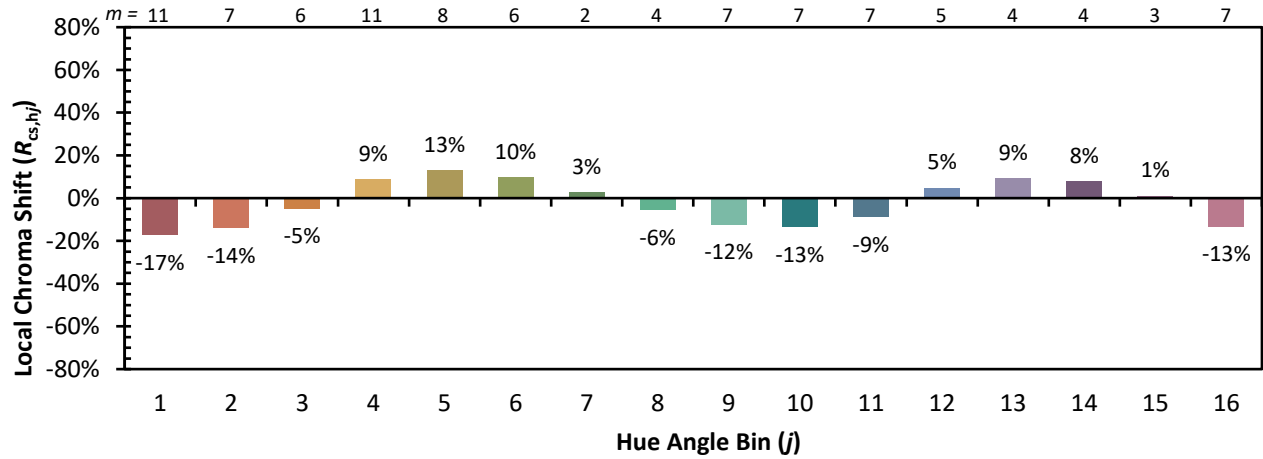


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

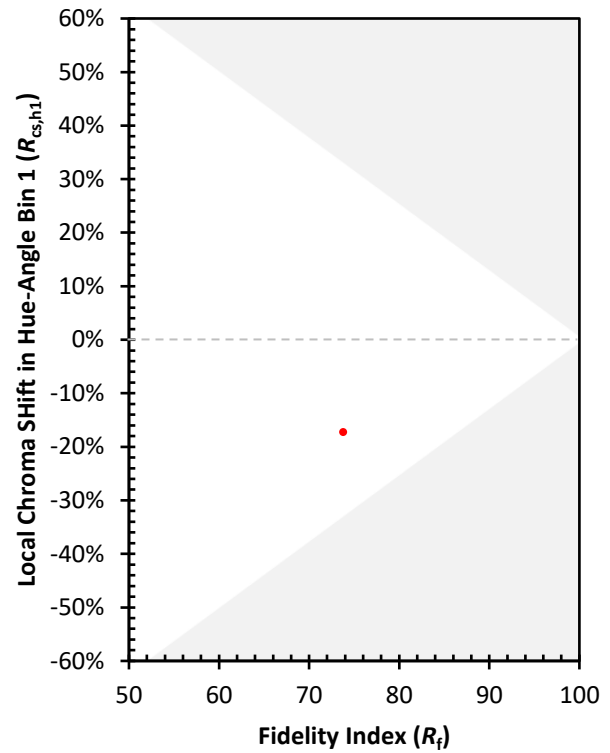
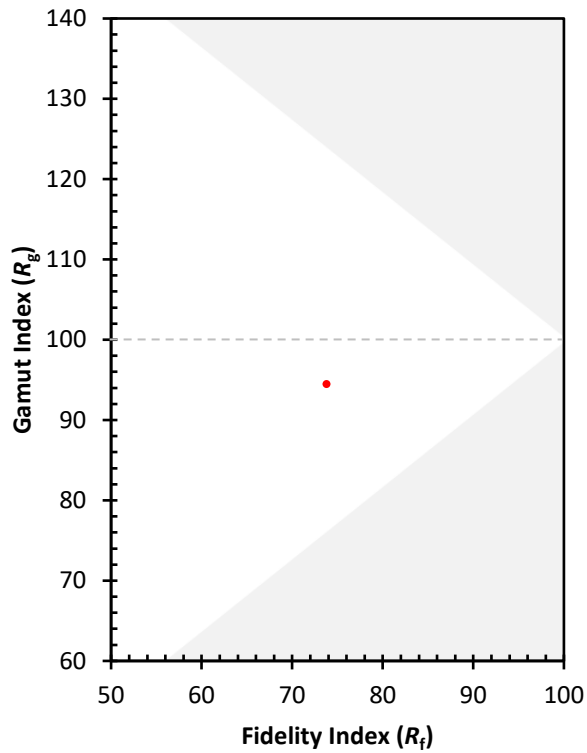
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 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 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)