

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



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: STREETWORKS

Report Number: P879636

Luminaire Tested: **MEM2-HSN-VA-130-750-U-WT4**

Issue Date: 10/01/2024



Test Information

Test Method: LM-79-08
Report Number: P879636
Test Lab: INNOVATION CENTER(G3)
Issue Date: 10/01/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-VA-130-750-U-WT4
Description: EPIC MODERN SHORT HOUSING 130W 70CRI 5000K VISUAL COMFORT FIXTURE
w/ DRIVE LANE TYPE IV DISTRIBUTION OPTIC
Light Source: (1) 5000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

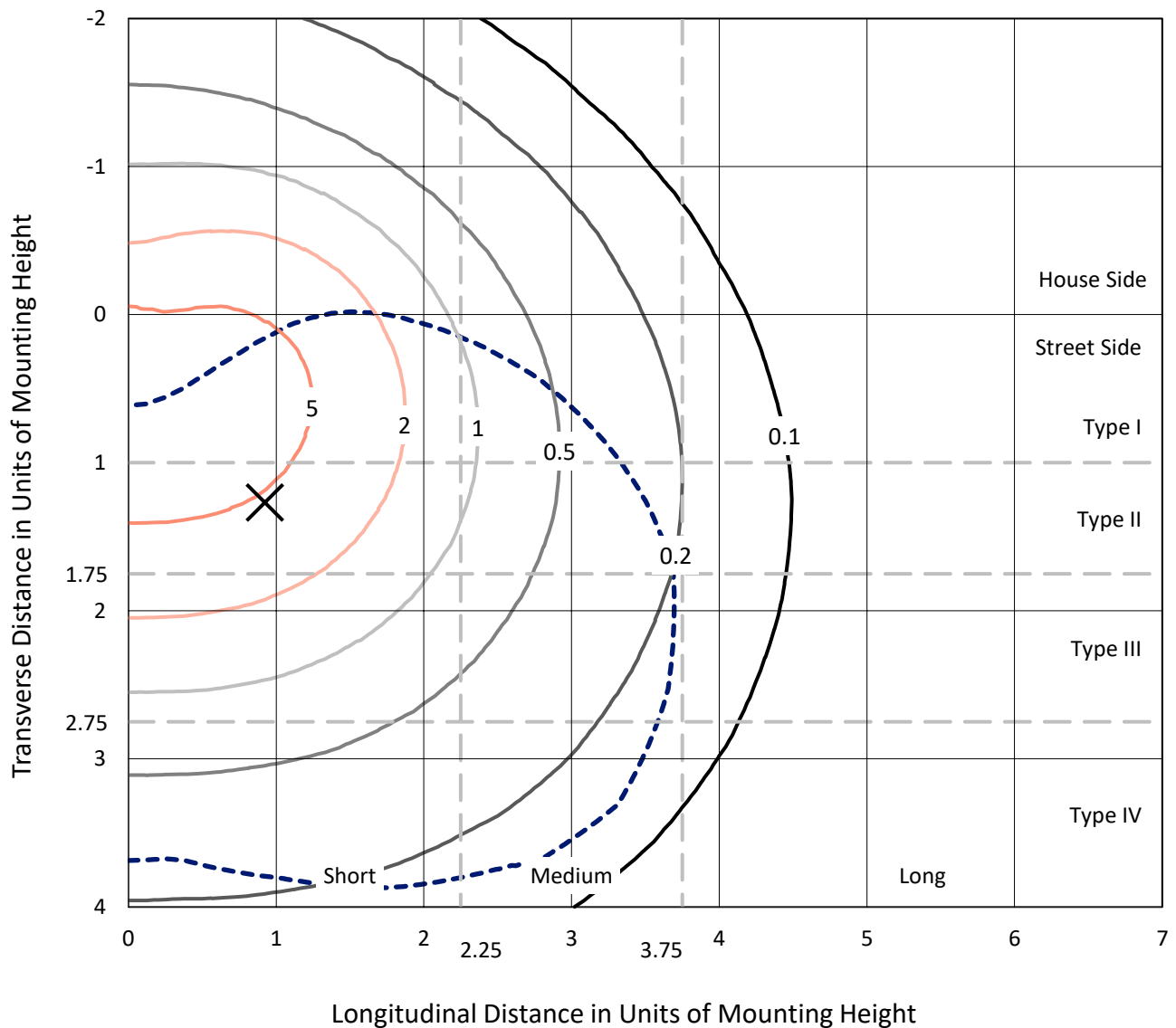
Lumens per Lamp: N/A
Luminaire Lumens: 14170 lumens
Efficiency: N/A
Efficacy: 109.0 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 130
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.995
Total Harmonic Distortion (THDi): 8.1%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Iso-Footcandle Lines of Horizontal Illumination

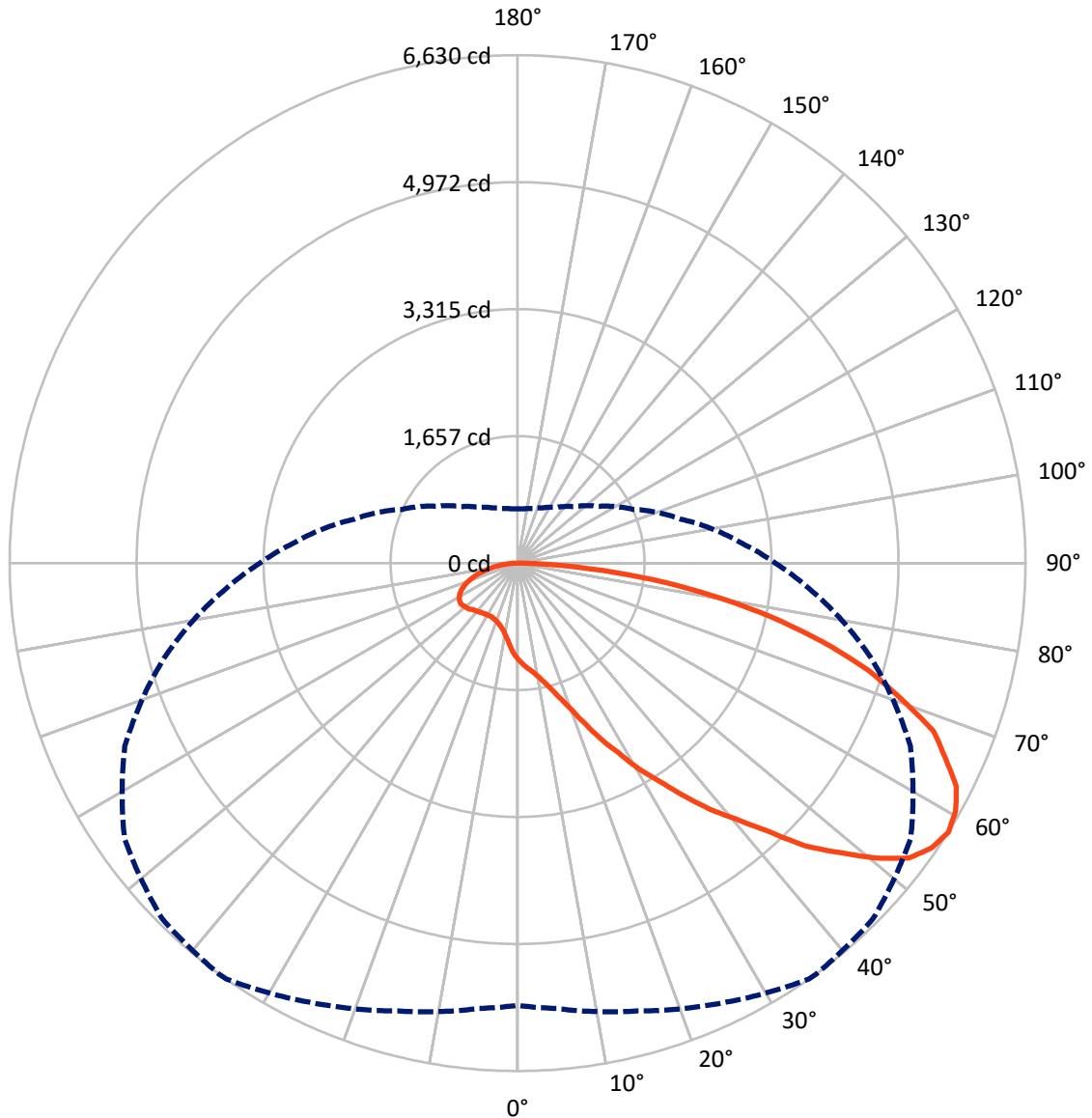
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 9.1 fc
 Type IV - Short - N/A

REPORT NUMBER: P879636
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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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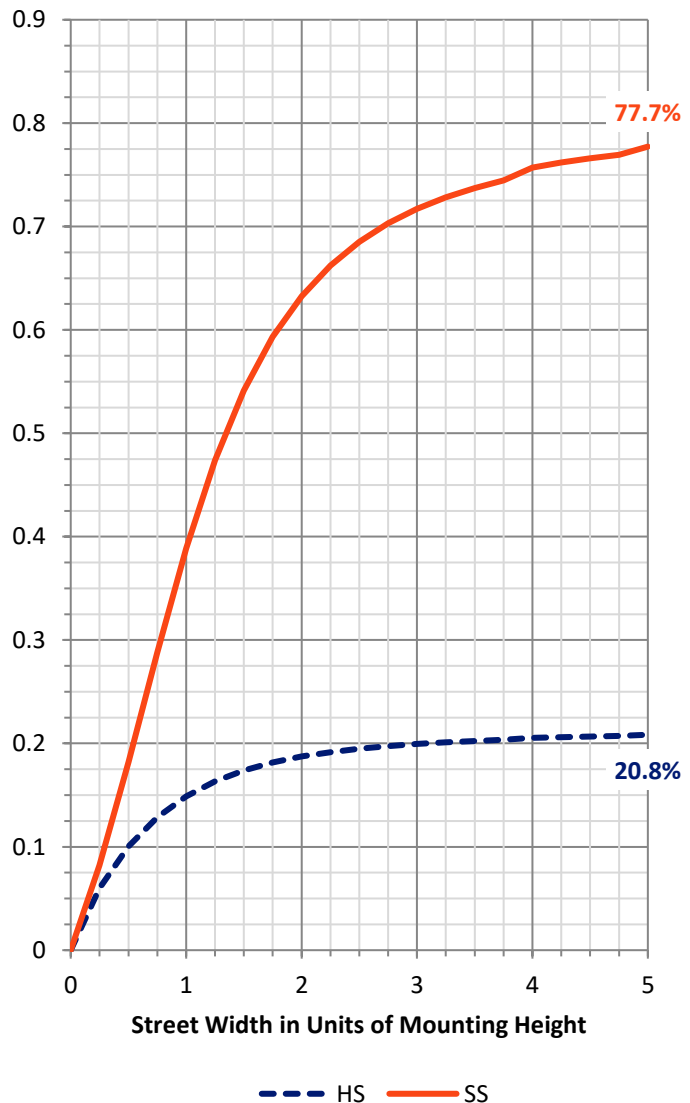
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2995.5 | 0.0 | 2995.5 |
| | % Fixture | 21.1 | 0.0 | 21.1 |
| Street Side | Lumens | 11174.5 | 0.0 | 11174.5 |
| | % Fixture | 78.9 | 0.0 | 78.9 |
| Total | Lumens | 14170.0 | 0.0 | 14170.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 117.9 | 0.8 |
| 10°-20° | 372.5 | 2.6 |
| 20°-30° | 772.7 | 5.5 |
| 30°-40° | 1405.5 | 9.9 |
| 40°-50° | 2291.5 | 16.2 |
| 50°-60° | 3145.3 | 22.2 |
| 60°-70° | 3202.4 | 22.6 |
| 70°-80° | 2253.0 | 15.9 |
| 80°-90° | 609.2 | 4.3 |
| 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° | 14170.0 | 100.0 |
| 0°-180° | 14170.0 | 100.0 |



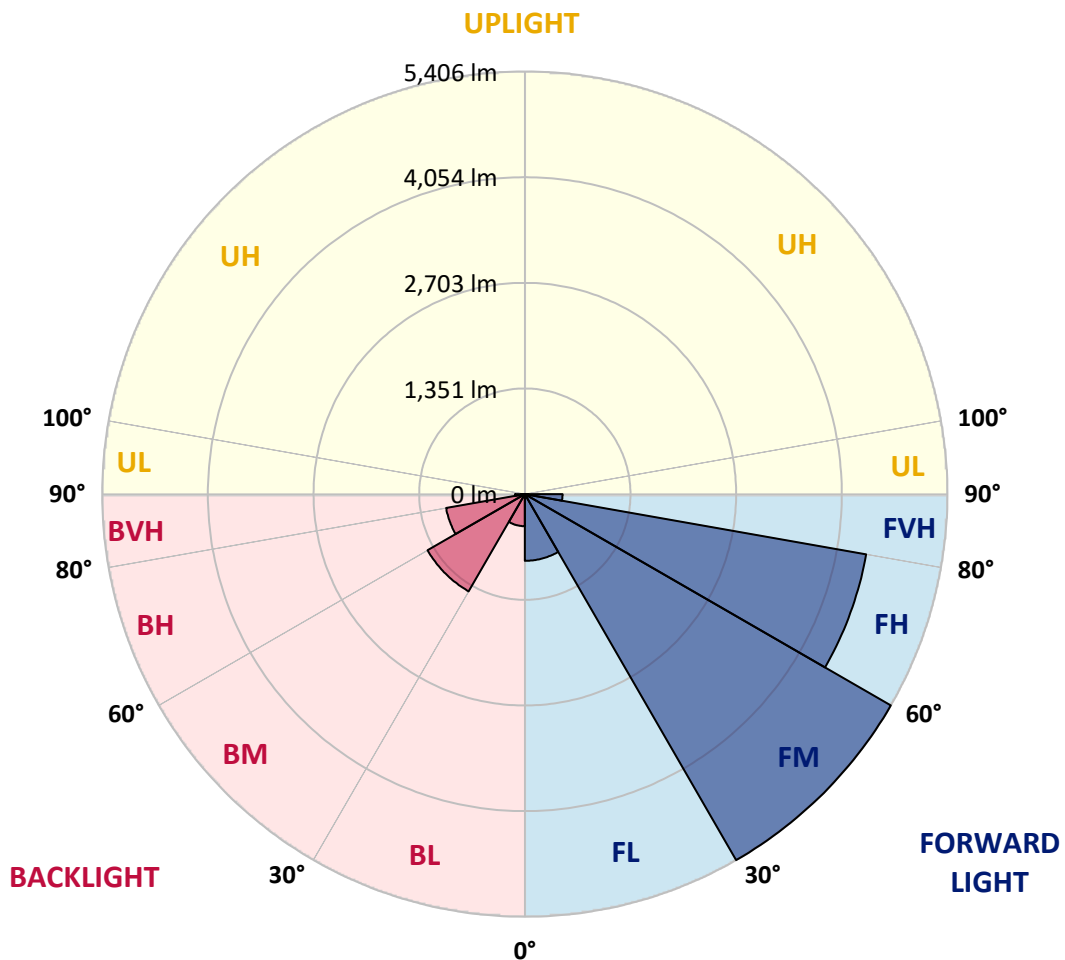
REPORT NUMBER: P879636
 CATALOG NUMBER: MEM2-HSN-VA-130-750-U-WT4

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 853.1 | 6.0 | | | |
| FM (30°-60°) | 5405.9 | 38.2 | | | |
| FH (60°-80°) | 4433.2 | 31.3 | | | G2/5000 |
| FVH (80°-90°) | 482.3 | 3.4 | | | G3/500 |
| BL (0°-30°) | 410.0 | 2.9 | B1/500 | | |
| BM (30°-60°) | 1436.4 | 10.1 | B2/2500 | | |
| BH (60°-80°) | 1022.3 | 7.2 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 126.8 | 0.9 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type IV Short





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CATALOG NUMBER: MEM2-HSN-VA-130-750-U-WT4

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 |
| 2.5° | 1329.2 | 1338.4 | 1330.2 | 1330.2 | 1317.9 | 1322.0 | 1308.8 | 1298.5 | 1286.3 | 1273.0 | 1259.7 |
| 5° | 1398.7 | 1404.8 | 1401.7 | 1387.4 | 1372.1 | 1377.2 | 1355.7 | 1332.3 | 1307.7 | 1282.2 | 1256.6 |
| 7.5° | 1475.3 | 1483.5 | 1474.3 | 1453.8 | 1433.4 | 1433.4 | 1406.8 | 1370.1 | 1333.3 | 1292.4 | 1250.5 |
| 10° | 1561.1 | 1571.3 | 1560.1 | 1536.6 | 1502.9 | 1511.0 | 1469.2 | 1428.3 | 1373.1 | 1317.9 | 1260.7 |
| 12.5° | 1678.6 | 1687.8 | 1668.4 | 1653.1 | 1612.2 | 1606.1 | 1562.1 | 1509.0 | 1442.6 | 1362.9 | 1287.3 |
| 15° | 1803.2 | 1807.3 | 1812.4 | 1781.8 | 1732.7 | 1731.7 | 1680.6 | 1610.1 | 1527.4 | 1433.4 | 1337.4 |
| 17.5° | 1965.7 | 1967.7 | 1949.3 | 1932.0 | 1879.9 | 1876.8 | 1827.8 | 1747.0 | 1634.7 | 1520.2 | 1402.7 |
| 20° | 2128.1 | 2144.5 | 2139.4 | 2115.9 | 2078.1 | 2061.7 | 2007.6 | 1907.4 | 1788.9 | 1641.8 | 1488.6 |
| 22.5° | 2346.8 | 2360.0 | 2363.1 | 2336.5 | 2306.9 | 2293.6 | 2234.4 | 2111.8 | 1955.5 | 1781.8 | 1608.1 |
| 25° | 2593.0 | 2594.0 | 2606.3 | 2597.1 | 2545.0 | 2554.2 | 2474.5 | 2366.2 | 2183.3 | 1964.7 | 1745.0 |
| 27.5° | 2860.7 | 2866.8 | 2878.0 | 2863.7 | 2815.7 | 2803.4 | 2718.7 | 2597.1 | 2403.0 | 2160.8 | 1887.0 |
| 30° | 3102.8 | 3133.4 | 3127.3 | 3142.6 | 3129.4 | 3113.0 | 3029.2 | 2871.9 | 2611.4 | 2341.7 | 2062.7 |
| 32.5° | 3415.4 | 3398.1 | 3409.3 | 3441.0 | 3388.9 | 3389.9 | 3304.1 | 3141.6 | 2887.2 | 2568.5 | 2210.9 |
| 35° | 3655.5 | 3699.4 | 3722.9 | 3738.3 | 3714.8 | 3725.0 | 3656.5 | 3461.4 | 3155.9 | 2792.2 | 2385.6 |
| 37.5° | 3936.5 | 3982.4 | 4003.9 | 4064.2 | 4090.7 | 4074.4 | 4004.9 | 3815.9 | 3446.1 | 3026.2 | 2585.8 |
| 40° | 4262.4 | 4293.0 | 4343.1 | 4396.2 | 4408.5 | 4391.1 | 4320.6 | 4103.0 | 3753.6 | 3287.7 | 2766.7 |
| 42.5° | 4610.8 | 4569.9 | 4710.9 | 4739.5 | 4811.0 | 4776.3 | 4755.9 | 4460.6 | 4041.7 | 3554.4 | 2957.7 |
| 45° | 4917.3 | 4938.7 | 5083.8 | 5227.9 | 5304.5 | 5266.7 | 5180.9 | 4942.8 | 4455.5 | 3818.0 | 3166.1 |
| 47.5° | 5195.2 | 5292.2 | 5382.1 | 5595.7 | 5670.2 | 5644.7 | 5578.3 | 5285.1 | 4816.1 | 4130.6 | 3405.2 |
| 50° | 5504.7 | 5528.2 | 5702.9 | 5905.2 | 6080.9 | 6052.3 | 5985.9 | 5695.8 | 5120.6 | 4415.6 | 3577.9 |
| 52.5° | 5761.2 | 5694.8 | 5920.5 | 6209.7 | 6415.0 | 6394.6 | 6298.6 | 5990.0 | 5450.6 | 4604.6 | 3715.8 |
| 55° | 5768.3 | 5848.0 | 6017.6 | 6345.6 | 6568.3 | 6561.1 | 6514.1 | 6181.1 | 5624.3 | 4745.6 | 3805.7 |
| 57.5° | 5772.4 | 5836.8 | 6052.3 | 6333.3 | 6627.5 | 6629.6 | 6563.2 | 6263.8 | 5655.9 | 4773.2 | 3820.0 |
| 60° | 5662.1 | 5686.6 | 5982.9 | 6287.3 | 6557.0 | 6569.3 | 6502.9 | 6241.4 | 5598.7 | 4727.2 | 3763.8 |
| 62.5° | 5461.8 | 5504.7 | 5800.0 | 6094.2 | 6401.8 | 6427.3 | 6360.9 | 6115.7 | 5476.1 | 4626.1 | 3655.5 |
| 65° | 5190.1 | 5200.3 | 5457.7 | 5857.2 | 6090.1 | 6134.1 | 6122.8 | 5857.2 | 5277.9 | 4438.1 | 3492.1 |
| 67.5° | 4812.0 | 4805.9 | 5123.6 | 5454.7 | 5785.7 | 5856.2 | 5799.0 | 5607.9 | 4952.0 | 4166.3 | 3289.8 |
| 70° | 4332.9 | 4417.7 | 4702.7 | 5047.0 | 5270.8 | 5309.6 | 5334.1 | 5124.7 | 4624.1 | 3898.7 | 3025.1 |
| 72.5° | 3854.7 | 3877.2 | 4104.0 | 4506.6 | 4753.8 | 4783.4 | 4824.3 | 4607.7 | 4178.6 | 3458.3 | 2698.2 |
| 75° | 3263.2 | 3256.0 | 3502.3 | 3821.0 | 4036.6 | 4118.3 | 4134.7 | 3964.1 | 3607.5 | 3010.8 | 2340.6 |
| 77.5° | 2619.5 | 2648.2 | 2840.2 | 3111.0 | 3325.5 | 3385.8 | 3453.2 | 3262.2 | 2970.0 | 2501.0 | 1908.5 |
| 80° | 1923.8 | 1921.8 | 2096.5 | 2351.9 | 2599.1 | 2592.0 | 2615.5 | 2573.6 | 2271.2 | 1942.2 | 1477.3 |
| 82.5° | 1266.9 | 1240.3 | 1394.6 | 1563.1 | 1758.3 | 1776.7 | 1848.2 | 1805.3 | 1624.4 | 1353.7 | 1027.8 |
| 85° | 521.0 | 515.9 | 655.9 | 758.1 | 916.4 | 937.9 | 1000.2 | 969.6 | 900.1 | 751.9 | 568.0 |
| 87.5° | 12.3 | 12.3 | 12.3 | 51.1 | 149.2 | 211.5 | 213.5 | 271.8 | 278.9 | 239.1 | 175.7 |
| 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: P879636

CATALOG NUMBER: MEM2-HSN-VA-130-750-U-WT4

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 | 1258.7 |
| 2.5° | 1253.6 | 1246.4 | 1231.1 | 1219.9 | 1209.7 | 1198.4 | 1192.3 | 1185.1 | 1182.1 | 1181.0 | 1172.9 |
| 5° | 1242.3 | 1227.0 | 1199.4 | 1171.8 | 1147.3 | 1126.9 | 1106.5 | 1091.1 | 1076.8 | 1069.7 | 1066.6 |
| 7.5° | 1228.0 | 1205.6 | 1163.7 | 1124.9 | 1083.0 | 1050.3 | 1017.6 | 994.1 | 984.9 | 976.7 | 969.6 |
| 10° | 1230.1 | 1200.5 | 1140.2 | 1084.0 | 1033.9 | 990.0 | 949.1 | 917.5 | 898.0 | 879.7 | 882.7 |
| 12.5° | 1247.5 | 1209.7 | 1136.1 | 1063.6 | 1001.2 | 944.0 | 891.9 | 854.1 | 825.5 | 806.1 | 804.1 |
| 15° | 1283.2 | 1236.2 | 1145.3 | 1059.5 | 981.8 | 911.3 | 852.1 | 801.0 | 766.2 | 745.8 | 741.7 |
| 17.5° | 1340.4 | 1284.2 | 1168.8 | 1069.7 | 974.7 | 892.9 | 823.5 | 766.2 | 722.3 | 699.8 | 694.7 |
| 20° | 1417.0 | 1343.5 | 1210.7 | 1084.0 | 971.6 | 877.6 | 800.0 | 736.6 | 691.7 | 662.0 | 658.0 |
| 22.5° | 1513.1 | 1424.2 | 1257.7 | 1105.4 | 977.7 | 871.5 | 784.6 | 715.2 | 663.1 | 638.5 | 634.5 |
| 25° | 1634.7 | 1524.3 | 1321.0 | 1137.1 | 988.0 | 868.4 | 772.4 | 699.8 | 646.7 | 619.1 | 617.1 |
| 27.5° | 1753.2 | 1626.5 | 1383.3 | 1173.9 | 1005.3 | 872.5 | 768.3 | 689.6 | 635.5 | 607.9 | 603.8 |
| 30° | 1890.1 | 1739.9 | 1465.1 | 1220.9 | 1025.8 | 879.7 | 768.3 | 685.5 | 629.3 | 601.8 | 598.7 |
| 32.5° | 2051.5 | 1854.3 | 1542.7 | 1271.0 | 1053.3 | 894.0 | 772.4 | 683.5 | 628.3 | 599.7 | 596.7 |
| 35° | 2188.4 | 1988.2 | 1623.4 | 1321.0 | 1083.0 | 908.3 | 782.6 | 689.6 | 629.3 | 602.8 | 597.7 |
| 37.5° | 2340.6 | 2112.8 | 1709.2 | 1366.0 | 1109.5 | 922.6 | 788.7 | 695.8 | 636.5 | 607.9 | 606.9 |
| 40° | 2509.2 | 2248.7 | 1795.1 | 1424.2 | 1145.3 | 946.1 | 804.1 | 703.9 | 646.7 | 617.1 | 615.0 |
| 42.5° | 2674.7 | 2394.8 | 1888.0 | 1489.6 | 1175.9 | 962.4 | 815.3 | 719.3 | 655.9 | 632.4 | 626.3 |
| 45° | 2864.7 | 2542.9 | 1988.2 | 1536.6 | 1213.7 | 988.0 | 832.7 | 732.5 | 676.3 | 647.7 | 646.7 |
| 47.5° | 3017.0 | 2673.7 | 2071.9 | 1595.8 | 1262.8 | 1018.6 | 860.2 | 751.9 | 697.8 | 666.1 | 668.2 |
| 50° | 3183.5 | 2794.3 | 2127.1 | 1646.9 | 1279.1 | 1028.8 | 870.5 | 778.5 | 712.1 | 688.6 | 682.5 |
| 52.5° | 3286.7 | 2888.2 | 2192.5 | 1659.2 | 1303.6 | 1051.3 | 886.8 | 787.7 | 730.5 | 704.9 | 696.8 |
| 55° | 3368.4 | 2945.5 | 2216.0 | 1674.5 | 1311.8 | 1053.3 | 896.0 | 797.9 | 740.7 | 711.1 | 712.1 |
| 57.5° | 3364.3 | 2943.4 | 2211.9 | 1659.2 | 1291.4 | 1041.1 | 887.8 | 795.9 | 735.6 | 709.0 | 709.0 |
| 60° | 3315.3 | 2882.1 | 2157.8 | 1610.1 | 1256.6 | 1012.5 | 867.4 | 774.4 | 721.3 | 699.8 | 696.8 |
| 62.5° | 3200.9 | 2778.9 | 2085.2 | 1548.8 | 1206.6 | 975.7 | 840.8 | 745.8 | 701.9 | 679.4 | 674.3 |
| 65° | 3050.7 | 2647.1 | 1955.5 | 1467.1 | 1133.0 | 921.5 | 795.9 | 717.2 | 673.3 | 649.8 | 646.7 |
| 67.5° | 2858.6 | 2461.2 | 1808.3 | 1354.7 | 1051.3 | 861.3 | 745.8 | 674.3 | 630.4 | 614.0 | 614.0 |
| 70° | 2618.5 | 2241.5 | 1663.3 | 1230.1 | 956.3 | 781.6 | 682.5 | 618.1 | 583.4 | 564.0 | 564.0 |
| 72.5° | 2330.4 | 2001.4 | 1473.2 | 1095.2 | 851.0 | 696.8 | 606.9 | 558.9 | 526.2 | 514.9 | 507.8 |
| 75° | 2012.7 | 1714.4 | 1255.6 | 928.7 | 726.4 | 600.7 | 529.2 | 485.3 | 460.8 | 451.6 | 449.5 |
| 77.5° | 1664.3 | 1406.8 | 1011.4 | 762.2 | 602.8 | 500.6 | 441.4 | 408.7 | 392.3 | 379.0 | 378.0 |
| 80° | 1275.0 | 1072.7 | 775.4 | 594.6 | 464.9 | 384.1 | 348.4 | 325.9 | 314.7 | 310.6 | 306.5 |
| 82.5° | 875.6 | 759.1 | 542.5 | 400.5 | 324.9 | 274.8 | 256.4 | 246.2 | 232.9 | 234.0 | 231.9 |
| 85° | 491.4 | 416.8 | 291.2 | 232.9 | 193.1 | 171.6 | 164.5 | 158.4 | 160.4 | 156.3 | 158.4 |
| 87.5° | 148.1 | 137.9 | 99.1 | 84.8 | 73.6 | 74.6 | 80.7 | 83.8 | 84.8 | 85.8 | 87.9 |
| 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



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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-176-10

Test Date: 09/25/2024

Luminaire Tested: MEM2-HTN-VA-130-750-U-RW

Data in this report applies to families of products including MEM2-HTN-VA-130-750-U-RW

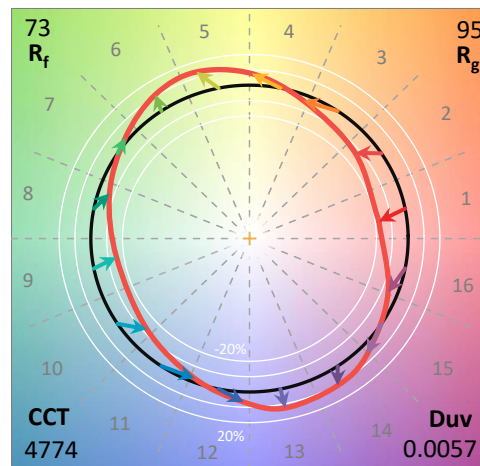
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-176-10
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 09/27/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-VA-130-750-U-RW**
 Description: EPIC MODERN VISUAL COMFORT 130W WAVESTREAM RECTANGULAR WIDE

Spectral Parameters

CCT (K): 4774
 CIE u': 0.2100
 CIE v': 0.4945
 Duv: 0.0057
 CIE x: 0.3535
 CIE y: 0.3699
 CIE z: 0.2766
 Peak Wavelength (nm): 444
 Dominant Wavelength (nm): 571
 Purity: 17.0787
 Rf: 73.1
 Rg: 94.9

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 70.8 | | |
| R1: | 67.0 | R9: | -40.0 |
| R2: | 75.4 | R10: | 43.4 |
| R3: | 83.5 | R11: | 69.3 |
| R4: | 71.8 | R12: | 45.5 |
| R5: | 68.4 | R13: | 67.9 |
| R6: | 67.5 | R14: | 90.8 |
| R7: | 80.0 | R15: | 58.2 |
| R8: | 53.1 | | |



Test Conditions

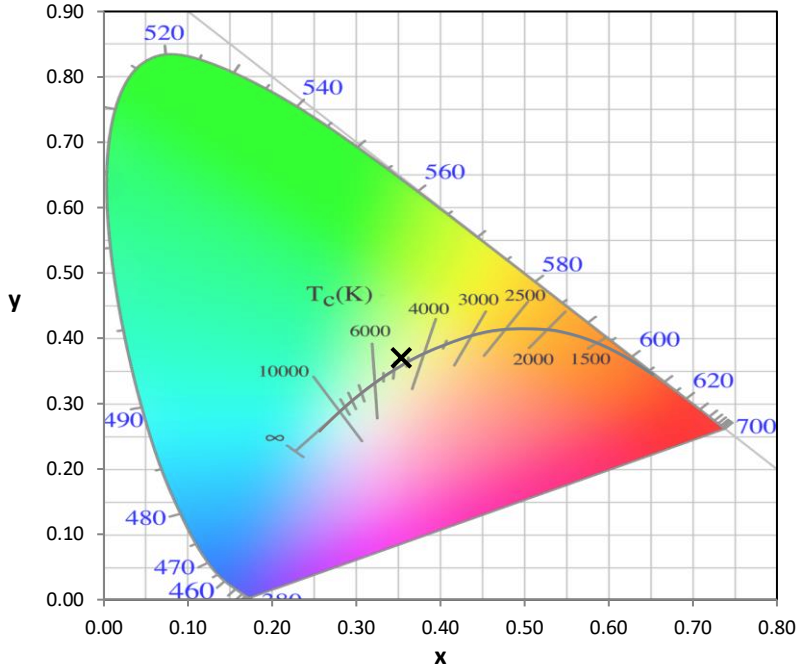
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.2

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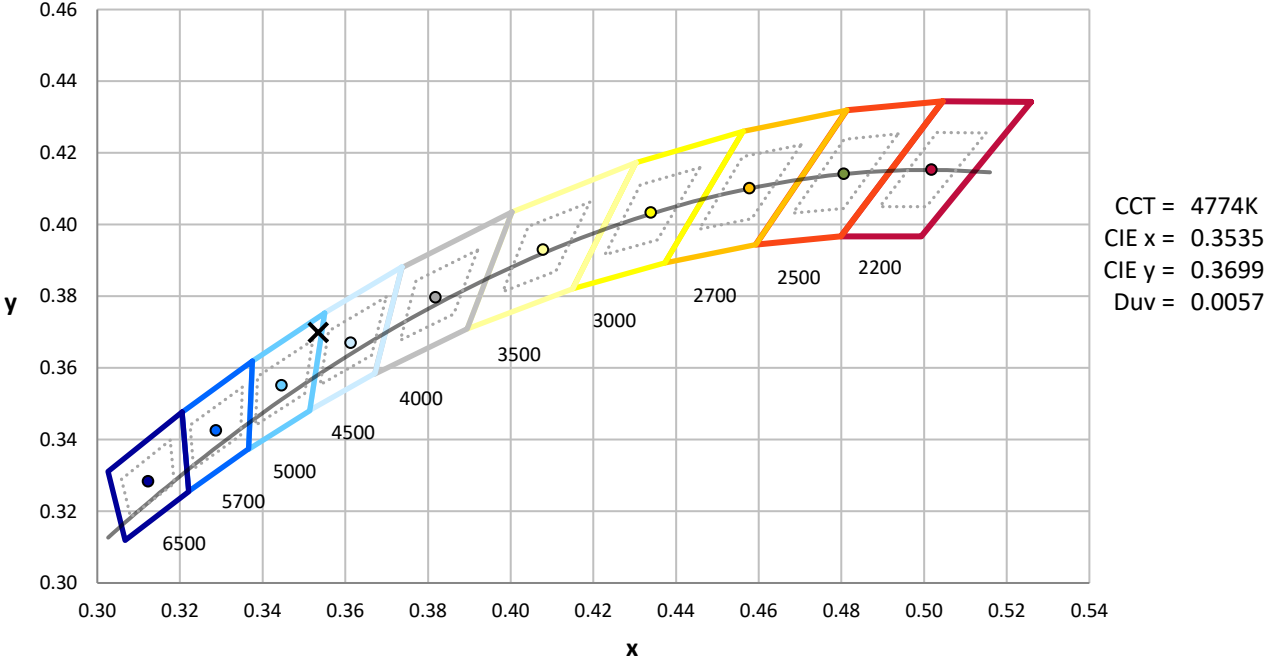
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 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 |

REPORT NUMBER: SP1-2407-176-10

CIE 1931 Chromaticity Diagram



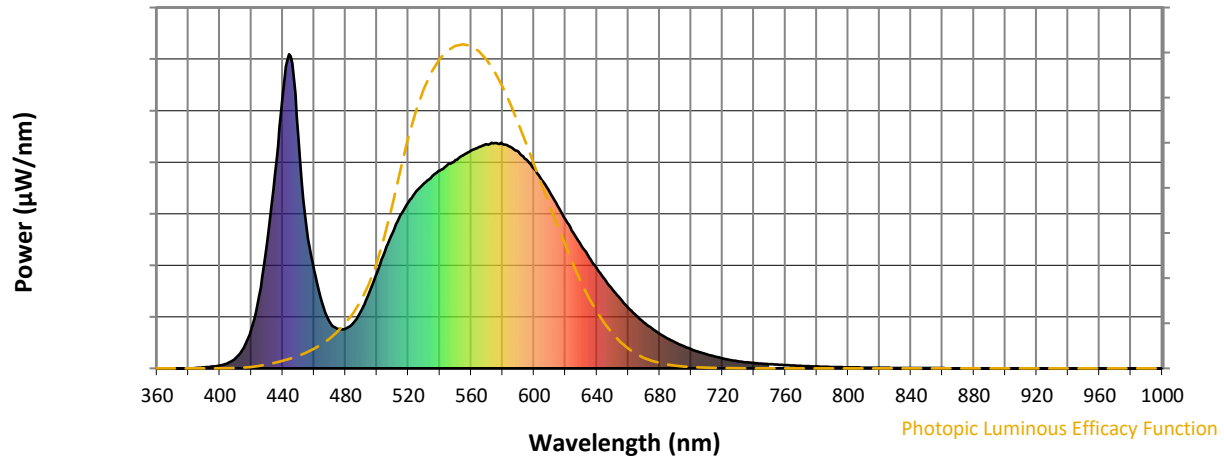
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 7-step quadrangle

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Photopic Flux vs. Wavelength

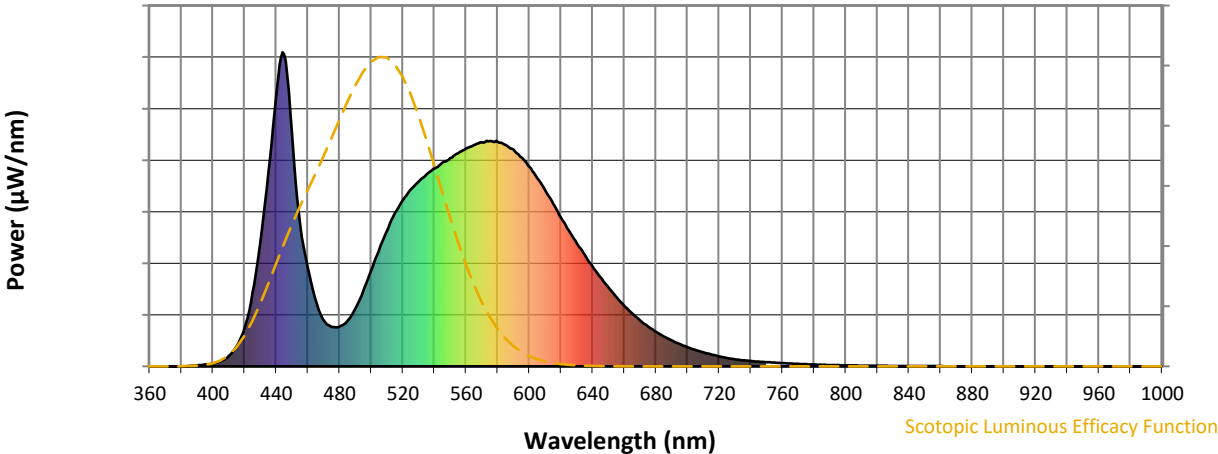


Photopic Lumens: NR

| 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 | 184 | NR | 620 | 474 | NR | 750 | 13 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 239 | NR | 625 | 432 | NR | 755 | 12 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 305 | NR | 630 | 392 | NR | 760 | 10 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 371 | NR | 635 | 354 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 432 | NR | 640 | 318 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 488 | NR | 645 | 283 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 529 | NR | 650 | 251 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 563 | NR | 655 | 221 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 589 | NR | 660 | 193 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 16 | NR | 535 | 611 | NR | 665 | 169 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 33 | NR | 540 | 629 | NR | 670 | 146 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 64 | NR | 545 | 649 | NR | 675 | 127 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 124 | NR | 550 | 663 | NR | 680 | 110 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 233 | NR | 555 | 678 | NR | 685 | 95 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 397 | NR | 560 | 693 | NR | 690 | 83 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 617 | NR | 565 | 705 | NR | 695 | 71 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 713 | NR | 700 | 61 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 994 | NR | 575 | 717 | NR | 705 | 52 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 736 | NR | 580 | 715 | NR | 710 | 45 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 454 | NR | 585 | 705 | NR | 715 | 38 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 314 | NR | 590 | 689 | NR | 720 | 32 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 210 | NR | 595 | 665 | NR | 725 | 27 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 146 | NR | 600 | 635 | NR | 730 | 23 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 126 | NR | 605 | 599 | NR | 735 | 19 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 126 | NR | 610 | 561 | NR | 740 | 17 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 144 | NR | 615 | 517 | NR | 745 | 15 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-176-10

Scotopic Flux vs. Wavelength



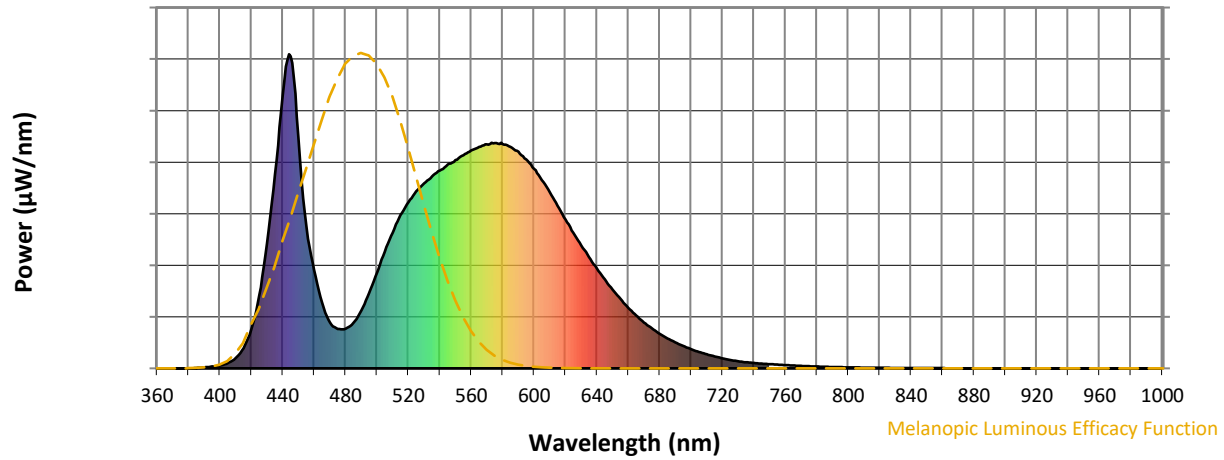
Scotopic Lumens: NR

S/P: 1.71

| 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 | 184 | NR | 620 | 474 | NR | 750 | 13 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 239 | NR | 625 | 432 | NR | 755 | 12 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 305 | NR | 630 | 392 | NR | 760 | 10 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 371 | NR | 635 | 354 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 432 | NR | 640 | 318 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 488 | NR | 645 | 283 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 529 | NR | 650 | 251 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 563 | NR | 655 | 221 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 589 | NR | 660 | 193 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 16 | NR | 535 | 611 | NR | 665 | 169 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 33 | NR | 540 | 629 | NR | 670 | 146 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 64 | NR | 545 | 649 | NR | 675 | 127 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 124 | NR | 550 | 663 | NR | 680 | 110 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 233 | NR | 555 | 678 | NR | 685 | 95 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 397 | NR | 560 | 693 | NR | 690 | 83 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 617 | NR | 565 | 705 | NR | 695 | 71 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 713 | NR | 700 | 61 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 994 | NR | 575 | 717 | NR | 705 | 52 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 736 | NR | 580 | 715 | NR | 710 | 45 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 454 | NR | 585 | 705 | NR | 715 | 38 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 314 | NR | 590 | 689 | NR | 720 | 32 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 210 | NR | 595 | 665 | NR | 725 | 27 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 146 | NR | 600 | 635 | NR | 730 | 23 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 126 | NR | 605 | 599 | NR | 735 | 19 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 126 | NR | 610 | 561 | NR | 740 | 17 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 144 | NR | 615 | 517 | NR | 745 | 15 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-176-10

Melanopic Flux vs. Wavelength



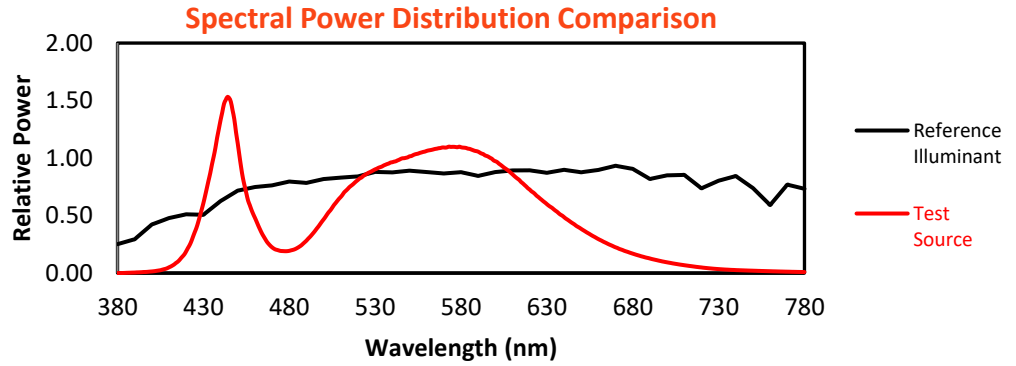
Melanopic Lumens: NR

M/P: 3.39

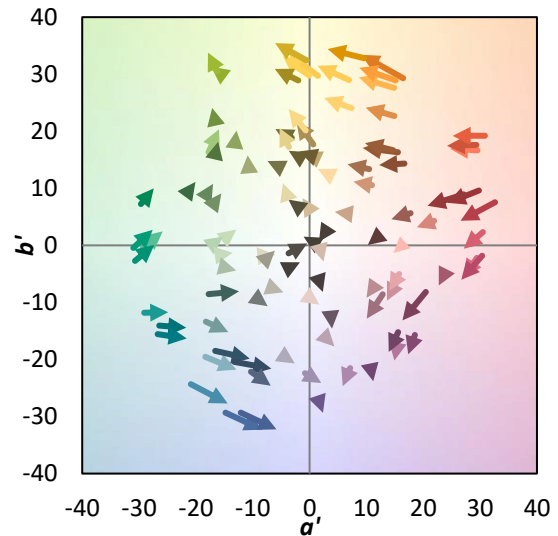
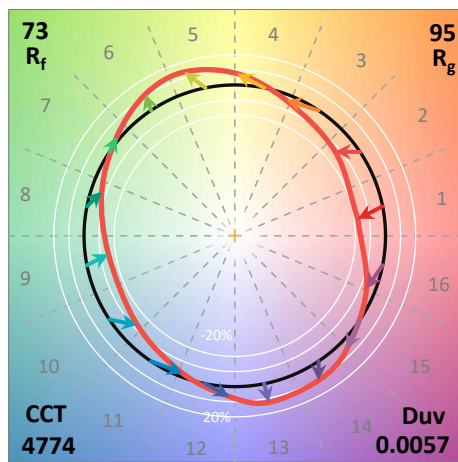
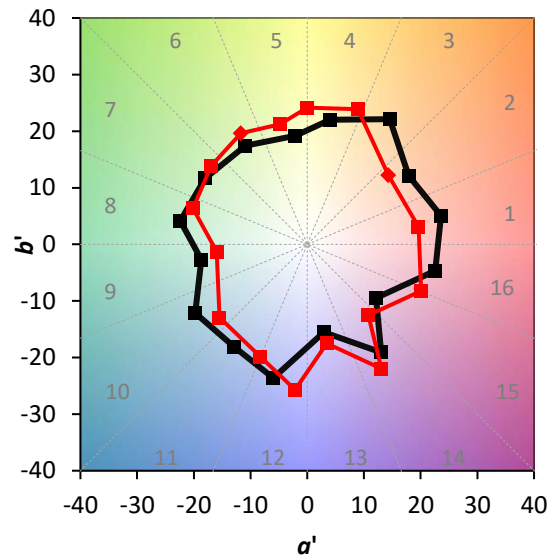
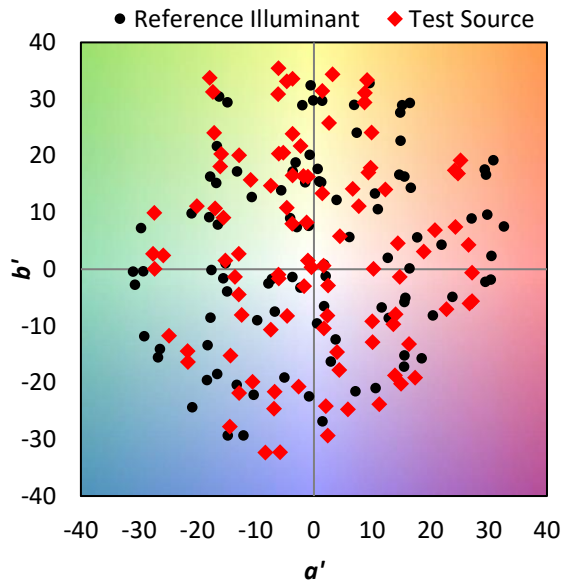
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 184 | NR | 620 | 474 | NR | 750 | 13 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 239 | NR | 625 | 432 | NR | 755 | 12 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 305 | NR | 630 | 392 | NR | 760 | 10 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 371 | NR | 635 | 354 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 432 | NR | 640 | 318 | NR | 770 | 8 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 488 | NR | 645 | 283 | NR | 775 | 7 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 529 | NR | 650 | 251 | NR | 780 | 6 | NR | 910 | 0 | NR |
| 395 | 6 | NR | 525 | 563 | NR | 655 | 221 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 9 | NR | 530 | 589 | NR | 660 | 193 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 16 | NR | 535 | 611 | NR | 665 | 169 | NR | 795 | 4 | NR | 925 | 0 | NR |
| 410 | 33 | NR | 540 | 629 | NR | 670 | 146 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 64 | NR | 545 | 649 | NR | 675 | 127 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 124 | NR | 550 | 663 | NR | 680 | 110 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 233 | NR | 555 | 678 | NR | 685 | 95 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 397 | NR | 560 | 693 | NR | 690 | 83 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 617 | NR | 565 | 705 | NR | 695 | 71 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 868 | NR | 570 | 713 | NR | 700 | 61 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 994 | NR | 575 | 717 | NR | 705 | 52 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 736 | NR | 580 | 715 | NR | 710 | 45 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 454 | NR | 585 | 705 | NR | 715 | 38 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 314 | NR | 590 | 689 | NR | 720 | 32 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 210 | NR | 595 | 665 | NR | 725 | 27 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 146 | NR | 600 | 635 | NR | 730 | 23 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 126 | NR | 605 | 599 | NR | 735 | 19 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 126 | NR | 610 | 561 | NR | 740 | 17 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 144 | NR | 615 | 517 | NR | 745 | 15 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 73.1$
 $R_g = 94.9$
 $CIE R_a = 70.8$
 $R_9 = -40.0$

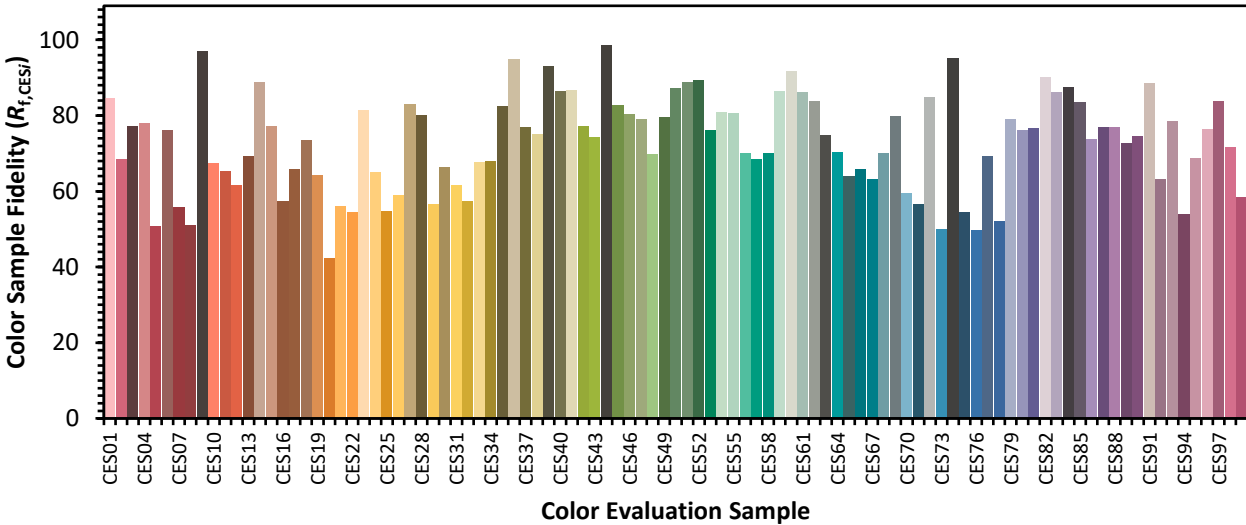


Color Vector Graphics

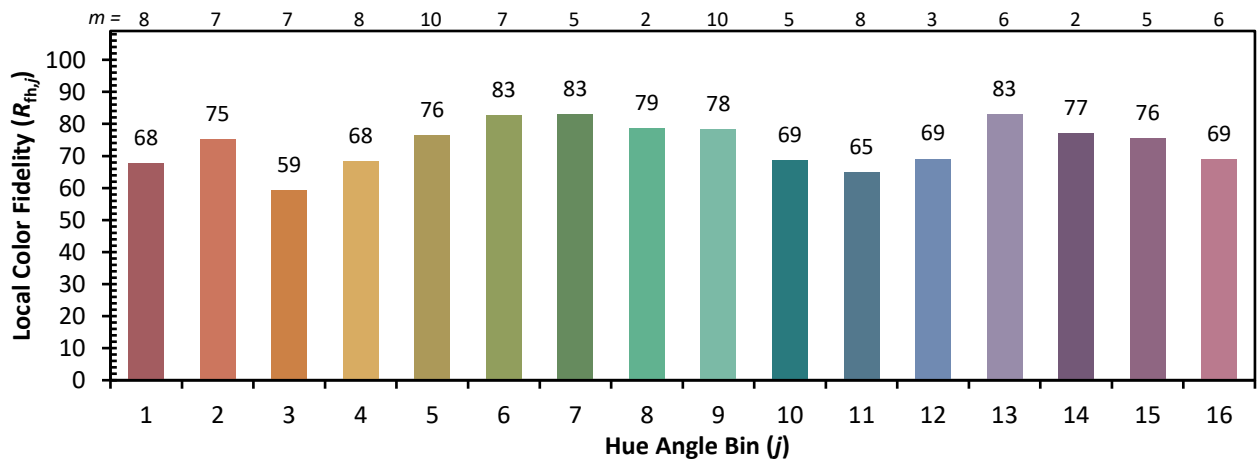
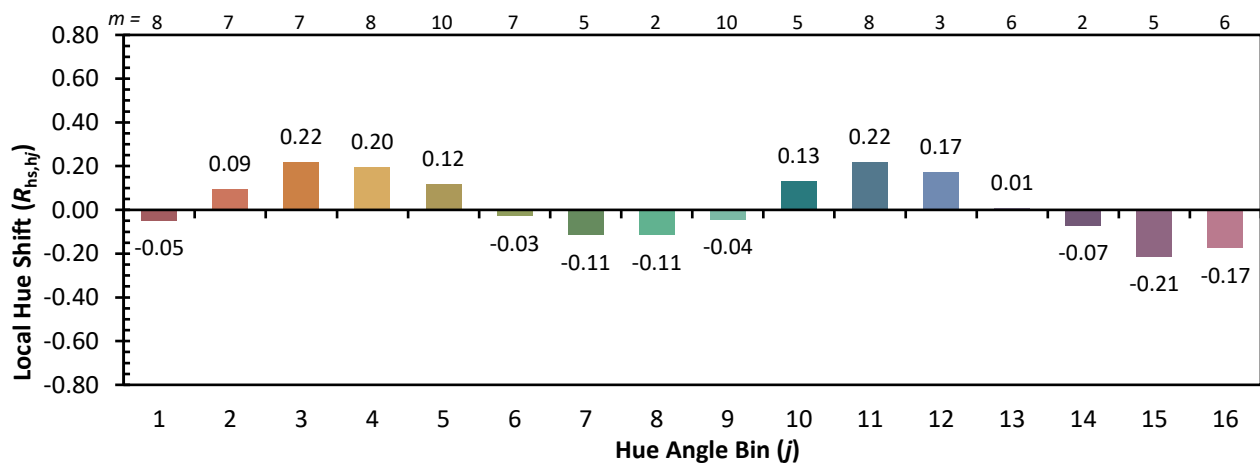
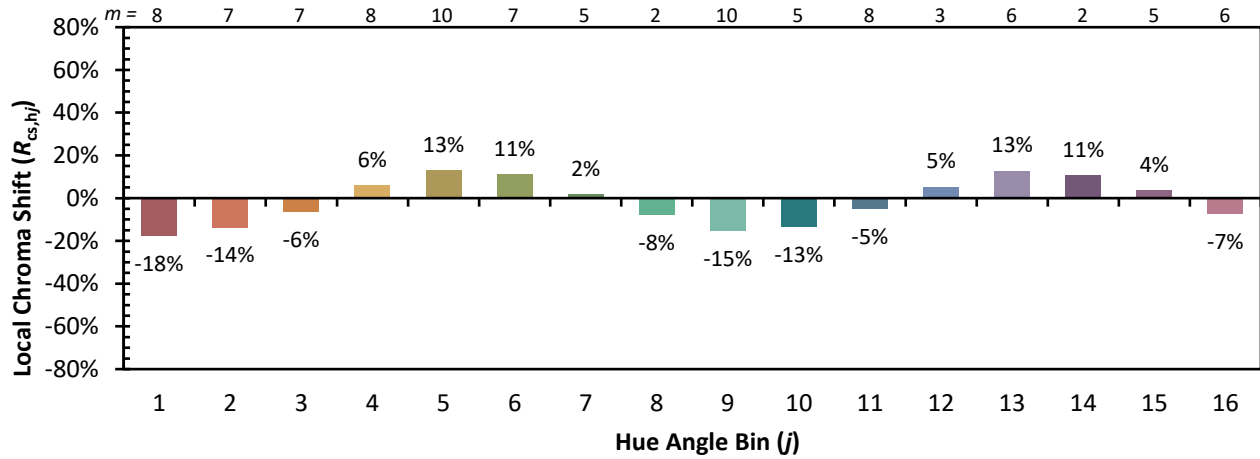


Individual Sample Fidelity Index ($R_{f,i}$)

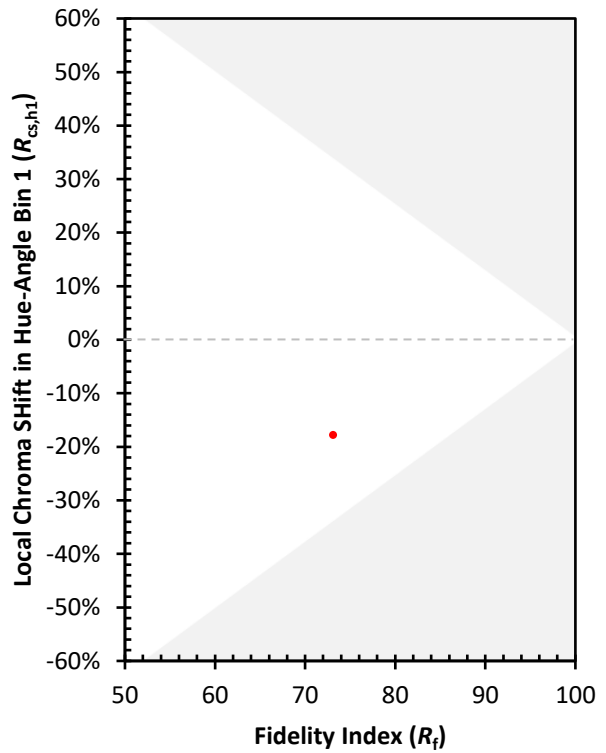
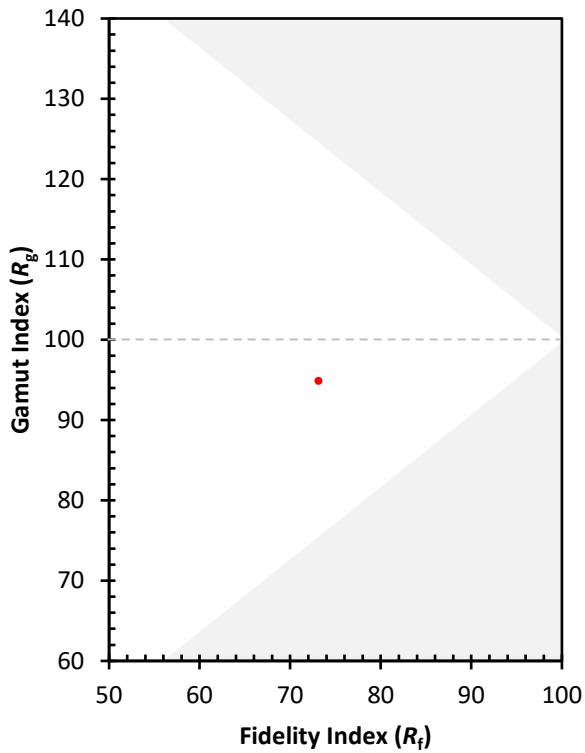
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 59 | CES51 = 89 | CES76 = 50 |
| CES02 = 59 | CES27 = 83 | CES52 = 89 | CES77 = 69 |
| CES03 = 30 | CES28 = 80 | CES53 = 76 | CES78 = 52 |
| CES04 = 69 | CES29 = 57 | CES54 = 81 | CES79 = 79 |
| CES05 = 46 | CES30 = 66 | CES55 = 81 | CES80 = 76 |
| CES06 = 50 | CES31 = 62 | CES56 = 70 | CES81 = 77 |
| CES07 = 39 | CES32 = 57 | CES57 = 69 | CES82 = 90 |
| CES08 = 38 | CES33 = 68 | CES58 = 70 | CES83 = 86 |
| CES09 = 29 | CES34 = 68 | CES59 = 86 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 92 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 86 | CES86 = 74 |
| CES12 = 61 | CES37 = 77 | CES62 = 84 | CES87 = 77 |
| CES13 = 41 | CES38 = 75 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 93 | CES64 = 70 | CES89 = 73 |
| CES15 = 70 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 87 | CES66 = 66 | CES91 = 89 |
| CES17 = 49 | CES42 = 77 | CES67 = 63 | CES92 = 63 |
| CES18 = 55 | CES43 = 74 | CES68 = 70 | CES93 = 78 |
| CES19 = 71 | CES44 = 99 | CES69 = 80 | CES94 = 54 |
| CES20 = 64 | CES45 = 83 | CES70 = 60 | CES95 = 69 |
| CES21 = 85 | CES46 = 80 | CES71 = 57 | CES96 = 76 |
| CES22 = 77 | CES47 = 79 | CES72 = 85 | CES97 = 84 |
| CES23 = 91 | CES48 = 70 | CES73 = 50 | CES98 = 72 |
| CES24 = 90 | CES49 = 80 | CES74 = 95 | CES99 = 58 |
| CES25 = 71 | CES50 = 87 | CES75 = 55 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)