

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: P879864

Luminaire Tested: **MEM2-HTN-VA-80-730-U-WT4**

Issue Date: 10/01/2024



Test Information

Test Method: LM-79-08
Report Number: P879864
Test Lab: INNOVATION CENTER(G3)
Issue Date: 10/01/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-VA-80-730-U-WT4
Description: EPIC MODERN TALL HOUSING 80W 70CRI 3000K VISUAL COMFORT FIXTURE w/
DRIVE LANE TYPE IV DISTRIBUTION OPTIC
Light Source: (1) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

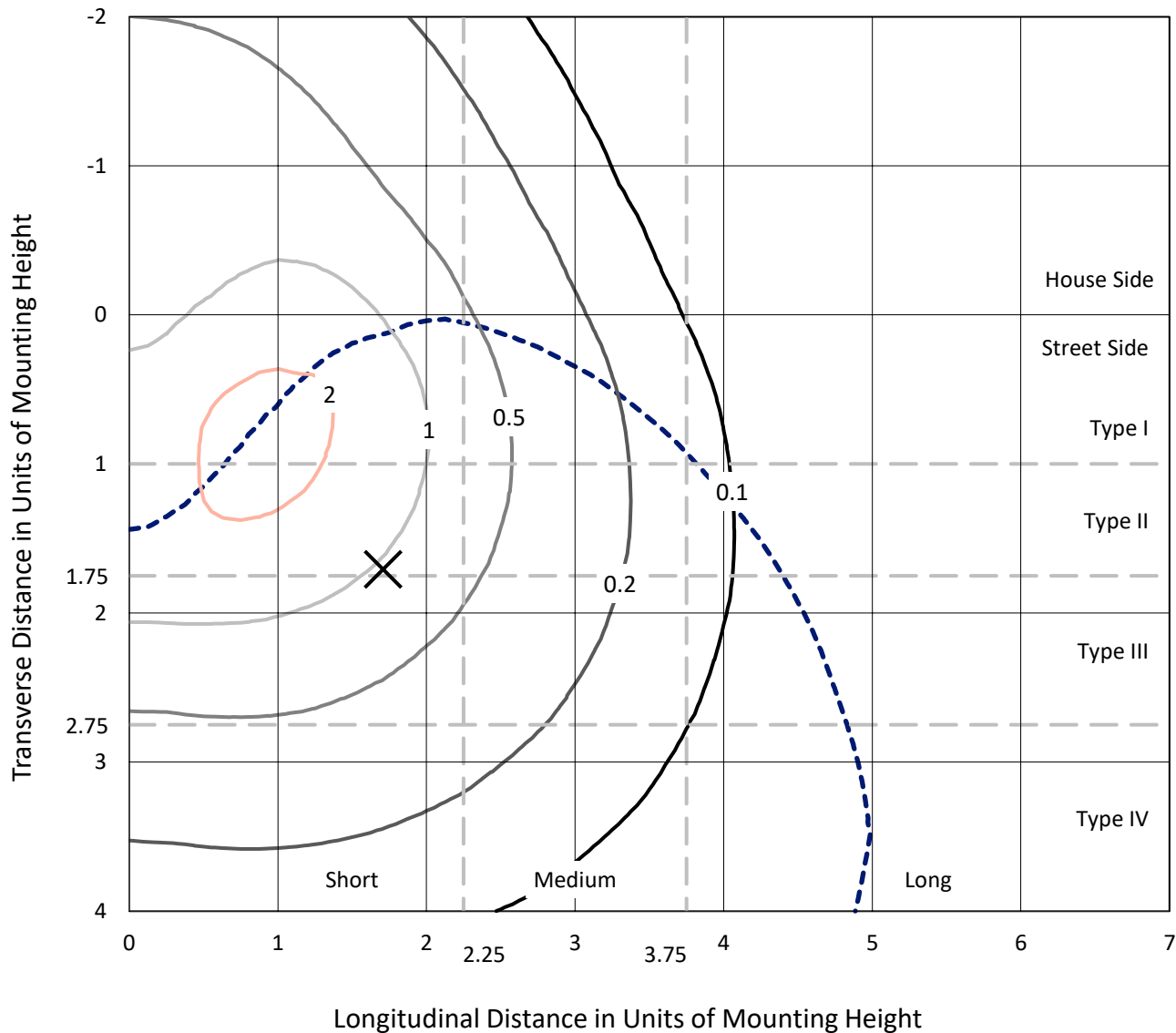
Lumens per Lamp: N/A
Luminaire Lumens: 7297.2 lumens
Efficiency: N/A
Efficacy: 93.6 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 78
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 6%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P879864
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Iso-Footcandle Lines of Horizontal Illumination

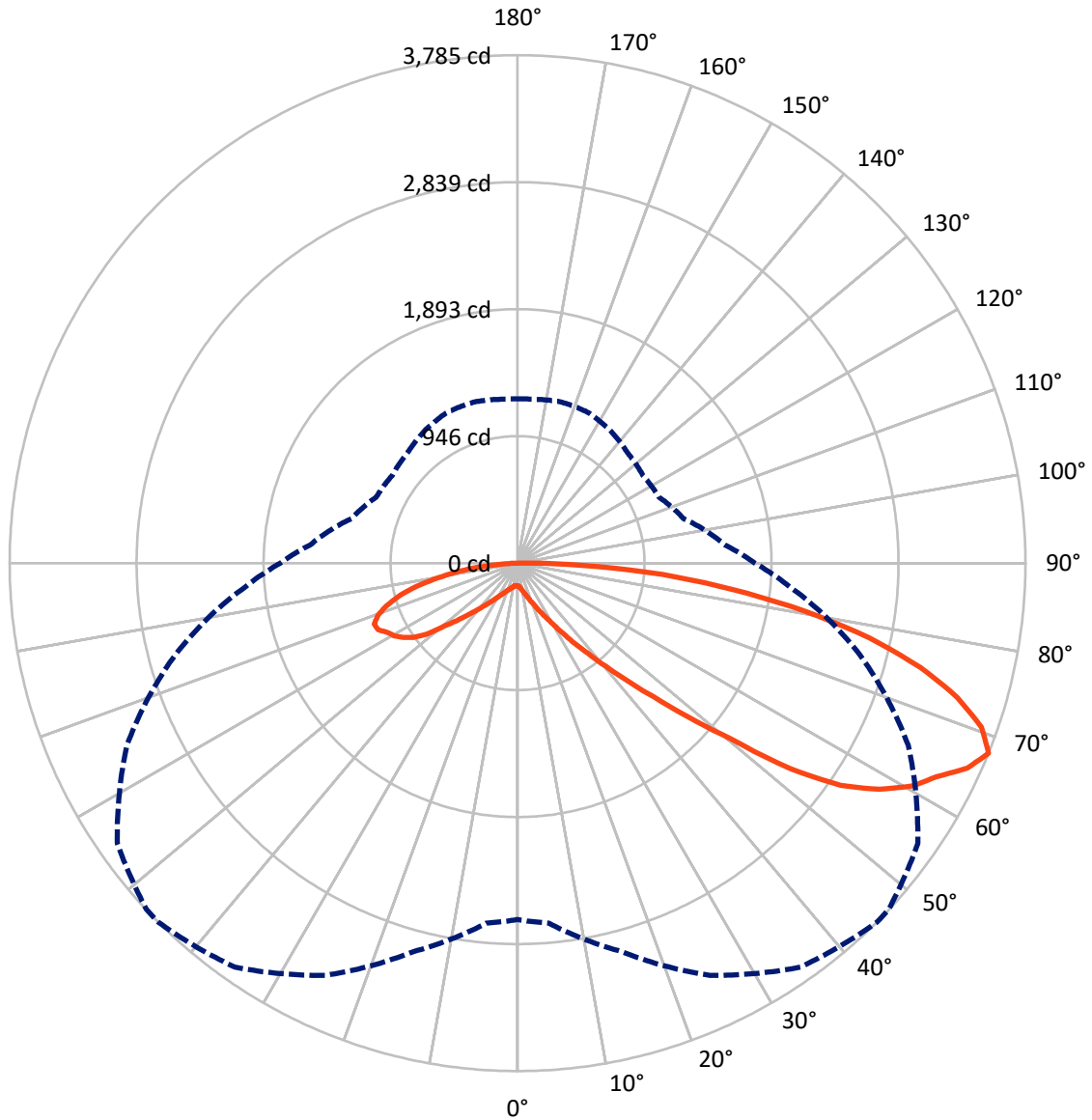
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 2.5 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2162.6 | 0.0 | 2162.6 |
| | % Fixture | 29.6 | 0.0 | 29.6 |
| Street Side | Lumens | 5134.6 | 0.0 | 5134.6 |
| | % Fixture | 70.4 | 0.0 | 70.4 |
| Total | Lumens | 7297.2 | 0.0 | 7297.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 17.3 | 0.2 |
| 10°-20° | 64.9 | 0.9 |
| 20°-30° | 152.9 | 2.1 |
| 30°-40° | 335.4 | 4.6 |
| 40°-50° | 730.2 | 10.0 |
| 50°-60° | 1500.3 | 20.6 |
| 60°-70° | 2113.7 | 29.0 |
| 70°-80° | 1794.5 | 24.6 |
| 80°-90° | 588.1 | 8.1 |
| 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° | 7297.2 | 100.0 |
| 0°-180° | 7297.2 | 100.0 |



REPORT NUMBER: P879864

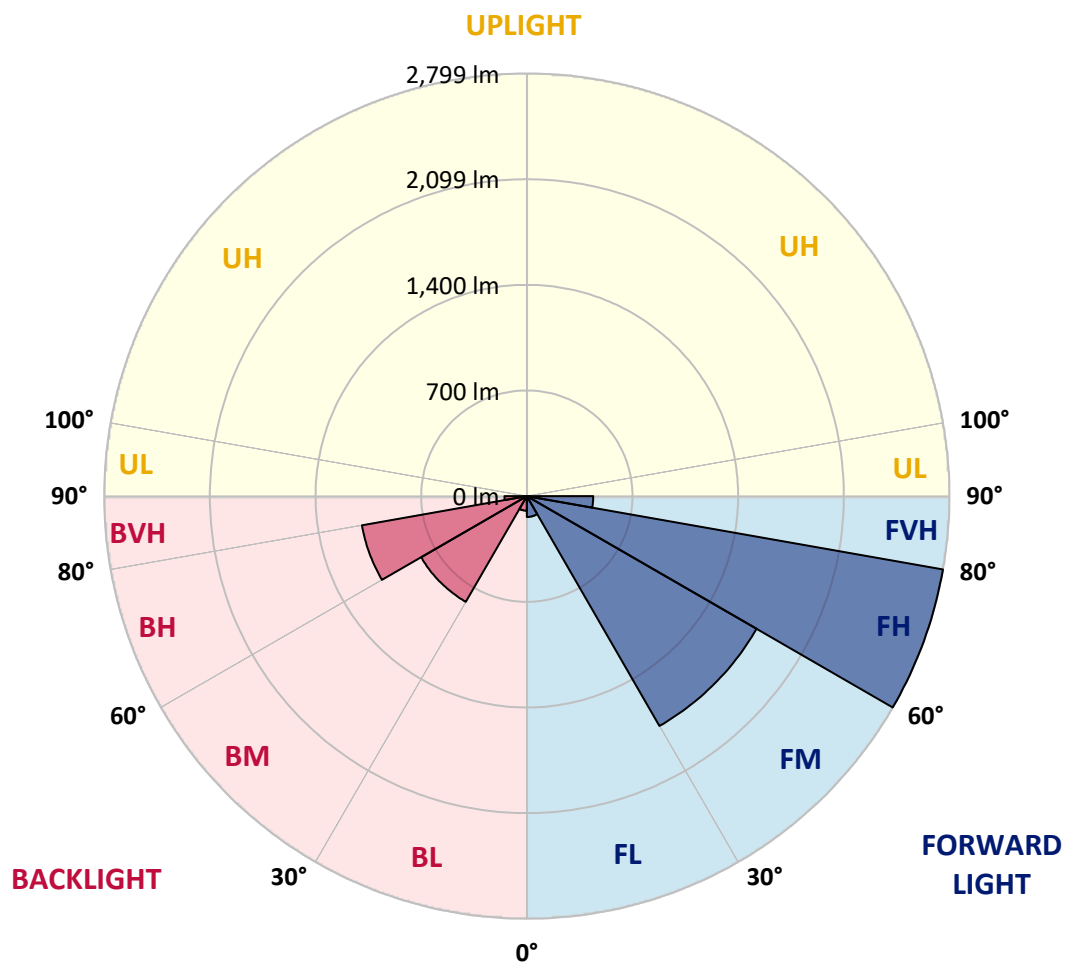
CATALOG NUMBER: MEM2-HTN-VA-80-730-U-WT4

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 138.1 | 1.9 | | | |
| FM (30°-60°) | 1757.5 | 24.1 | | | |
| FH (60°-80°) | 2799.2 | 38.4 | | | G2/5000 |
| FVH (80°-90°) | 439.8 | 6.0 | | | G3/500 |
| BL (0°-30°) | 97.1 | 1.3 | B0/110 | | |
| BM (30°-60°) | 808.3 | 11.1 | B1/1000 | | |
| BH (60°-80°) | 1108.9 | 15.2 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 148.3 | 2.0 | | | 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





REPORT NUMBER: P879864

CATALOG NUMBER: MEM2-HTN-VA-80-730-U-WT4

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 |
| 2.5° | 173.7 | 173.0 | 173.7 | 173.7 | 173.7 | 173.0 | 173.0 | 173.0 | 172.2 | 171.5 | 170.7 |
| 5° | 184.2 | 184.2 | 184.2 | 183.4 | 183.4 | 181.9 | 181.9 | 181.2 | 179.7 | 178.2 | 176.7 |
| 7.5° | 198.3 | 197.6 | 197.6 | 196.8 | 196.1 | 194.6 | 193.8 | 193.1 | 190.1 | 187.9 | 184.9 |
| 10° | 215.5 | 215.5 | 214.7 | 213.2 | 213.2 | 209.5 | 210.2 | 208.8 | 205.0 | 200.6 | 195.3 |
| 12.5° | 236.3 | 236.3 | 234.9 | 234.9 | 233.4 | 230.4 | 229.6 | 227.4 | 223.7 | 216.2 | 210.2 |
| 15° | 259.5 | 259.5 | 260.9 | 259.5 | 258.0 | 254.2 | 254.2 | 251.3 | 243.1 | 237.1 | 228.1 |
| 17.5° | 288.5 | 284.8 | 287.0 | 286.3 | 286.3 | 284.1 | 281.8 | 278.1 | 271.4 | 260.9 | 249.8 |
| 20° | 318.4 | 319.1 | 316.9 | 319.1 | 319.8 | 316.9 | 316.9 | 312.4 | 302.7 | 290.0 | 272.1 |
| 22.5° | 355.6 | 355.6 | 351.2 | 357.1 | 360.9 | 358.6 | 357.9 | 348.9 | 337.0 | 319.8 | 302.0 |
| 25° | 394.4 | 392.9 | 400.4 | 401.9 | 410.1 | 409.3 | 408.6 | 400.4 | 382.5 | 361.6 | 334.0 |
| 27.5° | 438.4 | 440.6 | 454.8 | 458.5 | 466.7 | 466.0 | 465.2 | 456.3 | 436.9 | 408.6 | 372.8 |
| 30° | 492.8 | 495.8 | 509.2 | 521.9 | 536.1 | 537.6 | 536.1 | 528.6 | 500.3 | 463.0 | 422.7 |
| 32.5° | 556.2 | 564.4 | 577.8 | 599.4 | 617.3 | 625.5 | 627.0 | 613.6 | 581.5 | 532.3 | 479.4 |
| 35° | 642.7 | 636.0 | 654.6 | 690.4 | 720.2 | 736.6 | 735.9 | 718.0 | 682.9 | 620.3 | 545.0 |
| 37.5° | 727.7 | 725.4 | 754.5 | 801.5 | 841.7 | 855.2 | 858.9 | 847.0 | 802.2 | 719.5 | 630.7 |
| 40° | 816.4 | 835.0 | 868.6 | 923.0 | 982.7 | 1011.0 | 1013.2 | 996.1 | 934.9 | 841.7 | 724.7 |
| 42.5° | 932.0 | 950.6 | 993.1 | 1060.2 | 1146.7 | 1193.6 | 1196.6 | 1177.2 | 1103.4 | 982.7 | 838.0 |
| 45° | 1078.1 | 1088.5 | 1133.3 | 1235.4 | 1346.5 | 1421.8 | 1443.4 | 1419.6 | 1328.6 | 1160.8 | 978.9 |
| 47.5° | 1235.4 | 1235.4 | 1308.5 | 1443.4 | 1611.2 | 1710.3 | 1726.7 | 1705.1 | 1569.4 | 1367.4 | 1136.2 |
| 50° | 1410.6 | 1411.4 | 1527.7 | 1720.8 | 1932.5 | 2056.3 | 2068.9 | 2016.7 | 1852.7 | 1577.6 | 1296.5 |
| 52.5° | 1592.5 | 1611.9 | 1781.9 | 2074.2 | 2358.2 | 2547.6 | 2560.3 | 2499.9 | 2281.4 | 1878.8 | 1467.3 |
| 55° | 1843.0 | 1873.6 | 2120.4 | 2479.0 | 2774.2 | 2923.4 | 2924.1 | 2851.8 | 2589.3 | 2171.1 | 1671.6 |
| 57.5° | 2190.5 | 2202.4 | 2432.8 | 2798.8 | 3077.7 | 3179.8 | 3172.4 | 3066.5 | 2763.8 | 2334.4 | 1839.3 |
| 60° | 2477.5 | 2505.1 | 2693.0 | 3033.0 | 3305.1 | 3375.2 | 3367.0 | 3226.8 | 2883.1 | 2429.8 | 1919.8 |
| 62.5° | 2666.1 | 2679.6 | 2874.1 | 3200.7 | 3445.2 | 3504.1 | 3495.2 | 3364.7 | 3029.2 | 2596.1 | 2054.0 |
| 65° | 2711.6 | 2734.0 | 2980.8 | 3312.5 | 3549.6 | 3682.3 | 3676.4 | 3606.3 | 3261.8 | 2719.1 | 2117.4 |
| 67.5° | 2656.4 | 2693.7 | 2996.4 | 3389.3 | 3674.9 | 3785.2 | 3782.2 | 3641.3 | 3211.9 | 2640.0 | 2037.6 |
| 70° | 2543.9 | 2575.9 | 2951.7 | 3381.1 | 3638.4 | 3668.2 | 3645.1 | 3484.0 | 3065.0 | 2508.8 | 1918.3 |
| 72.5° | 2366.4 | 2420.8 | 2787.7 | 3194.0 | 3408.7 | 3428.1 | 3419.9 | 3223.1 | 2844.3 | 2282.9 | 1737.9 |
| 75° | 2133.8 | 2200.2 | 2532.7 | 2861.5 | 3065.8 | 3099.3 | 3083.7 | 2911.4 | 2528.2 | 2000.3 | 1514.2 |
| 77.5° | 1839.3 | 1876.6 | 2130.1 | 2442.5 | 2677.3 | 2683.3 | 2674.3 | 2482.0 | 2129.3 | 1675.3 | 1274.2 |
| 80° | 1449.4 | 1471.7 | 1691.7 | 1951.9 | 2146.5 | 2170.3 | 2162.1 | 2032.4 | 1690.9 | 1325.6 | 993.8 |
| 82.5° | 1073.6 | 1058.7 | 1206.3 | 1419.6 | 1612.7 | 1614.1 | 1627.6 | 1483.7 | 1266.0 | 961.8 | 711.3 |
| 85° | 618.1 | 624.0 | 752.3 | 897.7 | 1014.7 | 1082.6 | 1081.8 | 1012.5 | 814.2 | 612.1 | 433.9 |
| 87.5° | 172.2 | 185.6 | 266.9 | 388.4 | 441.4 | 480.1 | 466.0 | 420.5 | 340.0 | 192.4 | 110.3 |
| 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: P879864
 CATALOG NUMBER: MEM2-HTN-VA-80-730-U-WT4

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 |
| 2.5° | 170.7 | 170.0 | 169.2 | 168.5 | 167.0 | 167.0 | 166.3 | 167.0 | 167.0 | 167.0 | 167.0 |
| 5° | 175.2 | 174.5 | 172.2 | 170.7 | 168.5 | 167.0 | 166.3 | 166.3 | 166.3 | 166.3 | 166.3 |
| 7.5° | 182.7 | 181.9 | 178.2 | 175.2 | 172.2 | 170.7 | 169.2 | 168.5 | 167.8 | 167.0 | 167.8 |
| 10° | 193.8 | 190.9 | 187.1 | 182.7 | 178.2 | 176.0 | 173.7 | 173.0 | 172.2 | 171.5 | 171.5 |
| 12.5° | 206.5 | 204.3 | 197.6 | 191.6 | 187.1 | 183.4 | 180.4 | 178.9 | 178.2 | 177.4 | 177.4 |
| 15° | 223.7 | 219.2 | 210.2 | 202.8 | 196.1 | 191.6 | 188.6 | 187.1 | 186.4 | 185.6 | 185.6 |
| 17.5° | 243.1 | 237.1 | 225.2 | 215.5 | 208.0 | 202.0 | 198.3 | 196.1 | 194.6 | 195.3 | 196.1 |
| 20° | 265.4 | 255.7 | 242.3 | 230.4 | 220.7 | 214.0 | 210.2 | 207.3 | 205.8 | 206.5 | 207.3 |
| 22.5° | 291.5 | 281.1 | 261.7 | 247.5 | 235.6 | 227.4 | 223.7 | 221.4 | 219.9 | 219.2 | 217.7 |
| 25° | 321.3 | 307.9 | 285.6 | 266.2 | 252.0 | 243.8 | 239.3 | 237.8 | 236.3 | 234.9 | 234.9 |
| 27.5° | 357.1 | 341.5 | 310.9 | 290.0 | 272.9 | 264.7 | 259.5 | 257.2 | 257.2 | 255.0 | 255.0 |
| 30° | 398.9 | 378.0 | 340.7 | 313.1 | 296.0 | 285.6 | 279.6 | 278.8 | 277.3 | 279.6 | 279.6 |
| 32.5° | 448.8 | 420.5 | 375.0 | 343.0 | 323.6 | 313.9 | 307.9 | 306.4 | 304.2 | 305.7 | 310.2 |
| 35° | 511.5 | 474.9 | 420.5 | 382.5 | 358.6 | 348.9 | 341.5 | 340.7 | 337.0 | 340.7 | 334.8 |
| 37.5° | 581.5 | 541.3 | 469.0 | 424.2 | 398.1 | 386.9 | 381.7 | 379.5 | 378.7 | 378.7 | 374.3 |
| 40° | 667.3 | 618.8 | 530.8 | 475.7 | 445.8 | 432.4 | 427.2 | 426.5 | 425.0 | 430.2 | 425.0 |
| 42.5° | 773.1 | 699.3 | 595.0 | 532.3 | 501.8 | 487.6 | 481.6 | 479.4 | 483.1 | 485.4 | 484.6 |
| 45° | 890.9 | 811.2 | 677.0 | 604.7 | 569.6 | 555.4 | 547.2 | 545.0 | 546.5 | 546.5 | 554.0 |
| 47.5° | 1026.6 | 932.7 | 770.9 | 683.7 | 651.6 | 634.5 | 629.3 | 621.8 | 618.1 | 616.6 | 629.3 |
| 50° | 1168.3 | 1051.2 | 867.1 | 769.4 | 740.3 | 726.9 | 728.4 | 713.5 | 708.3 | 702.3 | 700.8 |
| 52.5° | 1310.7 | 1178.0 | 976.7 | 888.7 | 855.2 | 861.9 | 858.9 | 843.2 | 812.7 | 805.2 | 787.3 |
| 55° | 1481.4 | 1321.1 | 1081.8 | 976.7 | 947.6 | 952.8 | 964.8 | 964.8 | 958.0 | 941.6 | 927.5 |
| 57.5° | 1626.1 | 1439.7 | 1160.8 | 1029.6 | 1004.3 | 1017.7 | 1041.6 | 1059.4 | 1075.1 | 1087.0 | 1086.3 |
| 60° | 1706.6 | 1512.7 | 1212.3 | 1069.9 | 1040.1 | 1066.2 | 1101.9 | 1132.5 | 1166.1 | 1201.1 | 1199.6 |
| 62.5° | 1817.7 | 1614.9 | 1304.0 | 1141.5 | 1090.0 | 1098.2 | 1139.2 | 1192.2 | 1222.7 | 1251.8 | 1260.0 |
| 65° | 1846.8 | 1633.5 | 1338.3 | 1192.2 | 1150.4 | 1151.9 | 1179.5 | 1222.7 | 1248.8 | 1256.3 | 1260.7 |
| 67.5° | 1768.5 | 1551.5 | 1281.6 | 1162.3 | 1140.0 | 1160.8 | 1205.6 | 1239.9 | 1243.6 | 1225.7 | 1224.2 |
| 70° | 1650.7 | 1450.9 | 1192.2 | 1092.3 | 1078.1 | 1110.1 | 1169.0 | 1210.0 | 1201.1 | 1164.6 | 1162.3 |
| 72.5° | 1484.4 | 1298.8 | 1072.1 | 999.8 | 985.6 | 1025.9 | 1078.1 | 1121.3 | 1107.9 | 1080.3 | 1078.1 |
| 75° | 1284.6 | 1110.9 | 926.7 | 873.1 | 872.3 | 916.3 | 961.8 | 987.9 | 987.1 | 967.7 | 961.8 |
| 77.5° | 1067.6 | 926.7 | 763.5 | 715.0 | 732.9 | 774.6 | 808.2 | 827.6 | 820.9 | 814.2 | 811.9 |
| 80° | 835.8 | 710.5 | 589.0 | 559.9 | 587.5 | 601.7 | 637.5 | 636.0 | 639.7 | 625.5 | 636.0 |
| 82.5° | 595.0 | 512.2 | 422.0 | 409.3 | 413.0 | 441.4 | 460.8 | 458.5 | 448.8 | 438.4 | 433.9 |
| 85° | 360.9 | 315.4 | 270.6 | 252.7 | 265.4 | 263.2 | 275.1 | 265.4 | 259.5 | 254.2 | 258.7 |
| 87.5° | 99.9 | 86.5 | 82.8 | 59.6 | 73.8 | 58.2 | 61.1 | 42.5 | 37.3 | 44.7 | 38.8 |
| 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

Streetworks

Report Number: SP1-2407-176-3

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-730-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-730-U-WQ

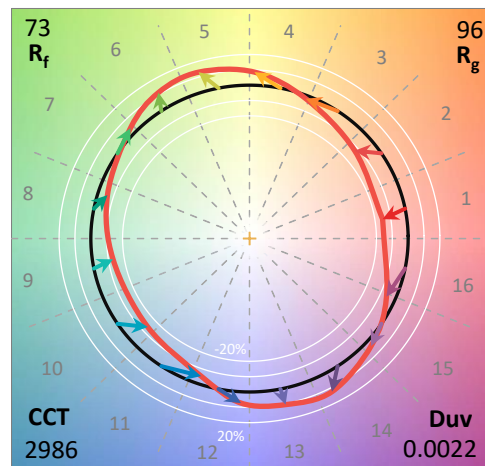
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-176-3
 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-30-730-U-WQ**
 Description: EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K): 2986
 CIE u': 0.2503
 CIE v': 0.5248
 Duv: 0.0022
 CIE x: 0.4413
 CIE y: 0.4112
 CIE z: 0.1476
 Peak Wavelength (nm): 596
 Dominant Wavelength (nm): 582
 Purity: 55.87534
 Rf: 73.2
 Rg: 95.9

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.3 | | |
| R1: | 68.5 | R9: | -25.2 |
| R2: | 79.2 | R10: | 51.0 |
| R3: | 88.4 | R11: | 63.6 |
| R4: | 69.4 | R12: | 39.8 |
| R5: | 66.3 | R13: | 69.9 |
| R6: | 70.0 | R14: | 92.9 |
| R7: | 80.1 | R15: | 61.4 |
| R8: | 48.3 | | |



Test Conditions

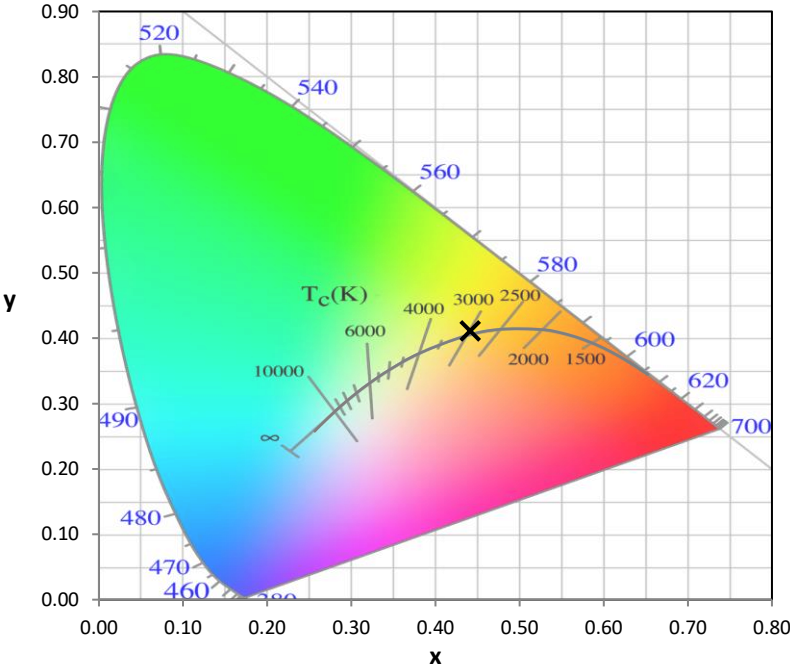
Stabilization Time: 27M
 Operation Time: 1H 27M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-176-3

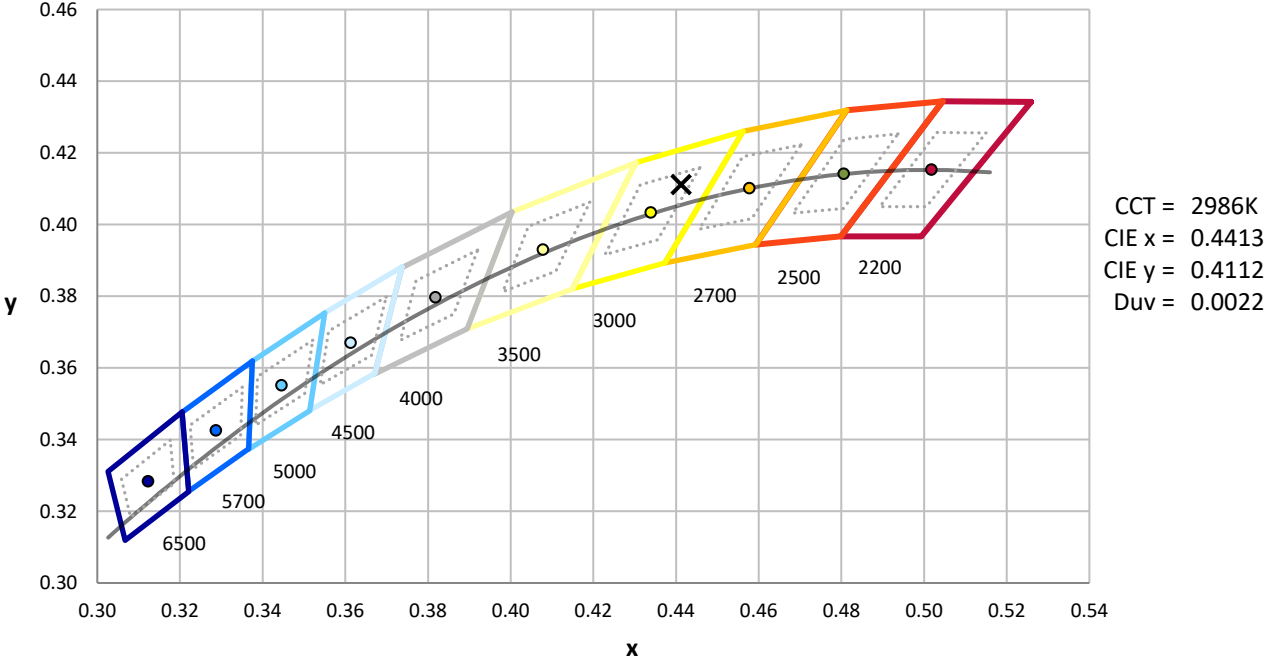
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 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: SP1-2407-176-3

CIE 1931 Chromaticity Diagram



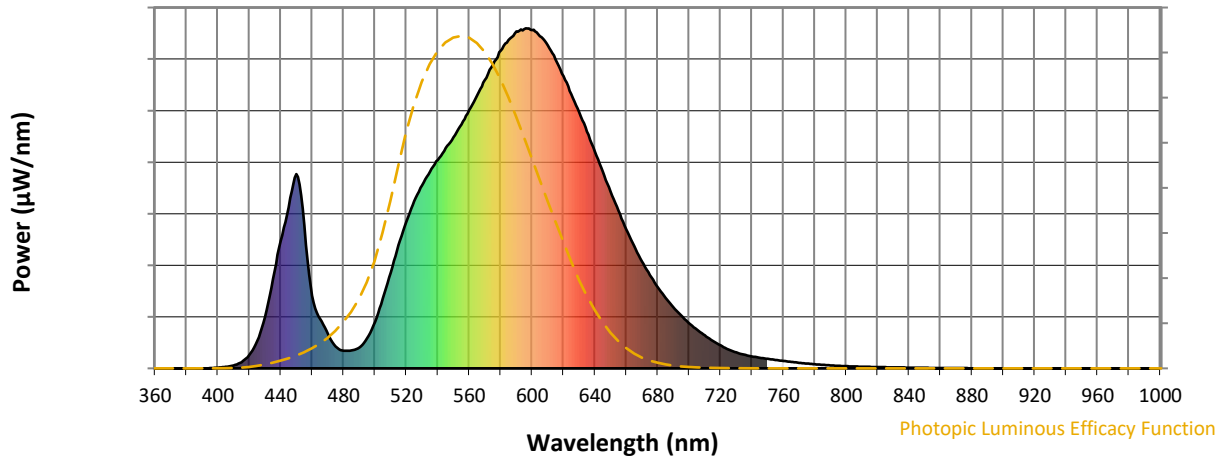
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

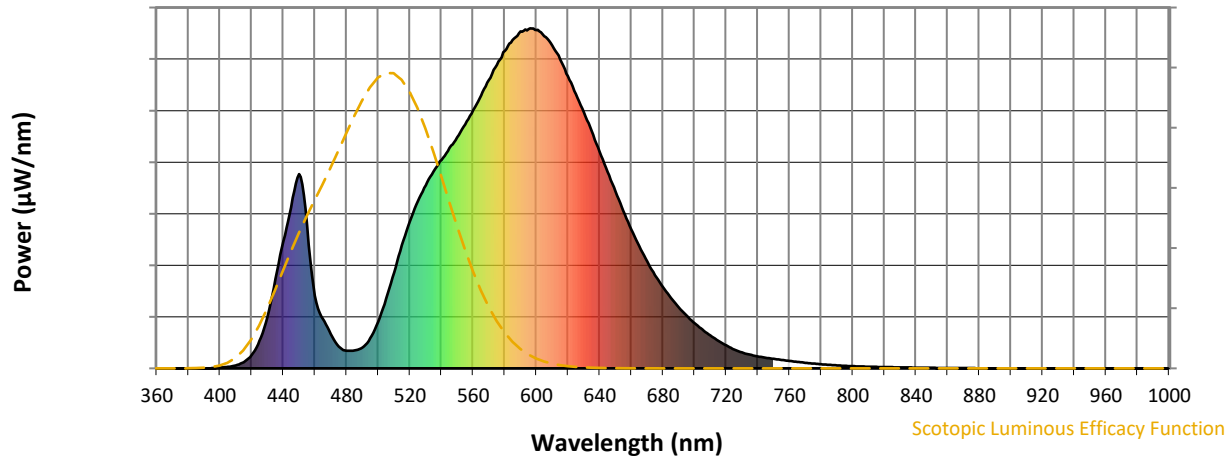


Photopic Lumens: NR

| λ (nm) | Power W [^] /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 | 61 | NR | 620 | 859 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 88 | NR | 625 | 807 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 137 | NR | 630 | 753 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 205 | NR | 635 | 697 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 281 | NR | 640 | 637 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 363 | NR | 645 | 578 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 432 | NR | 650 | 520 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 492 | NR | 655 | 463 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 539 | NR | 660 | 409 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 579 | NR | 665 | 359 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 613 | NR | 670 | 315 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 648 | NR | 675 | 274 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 39 | NR | 550 | 680 | NR | 680 | 239 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 81 | NR | 555 | 717 | NR | 685 | 207 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 151 | NR | 560 | 759 | NR | 690 | 180 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 263 | NR | 565 | 803 | NR | 695 | 155 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 375 | NR | 570 | 848 | NR | 700 | 133 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 474 | NR | 575 | 892 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 571 | NR | 580 | 933 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 421 | NR | 585 | 966 | NR | 715 | 81 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 991 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 146 | NR | 595 | 998 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 101 | NR | 600 | 995 | NR | 730 | 47 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 64 | NR | 605 | 977 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 52 | NR | 610 | 949 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 53 | NR | 615 | 908 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-176-3

Scotopic Flux vs. Wavelength



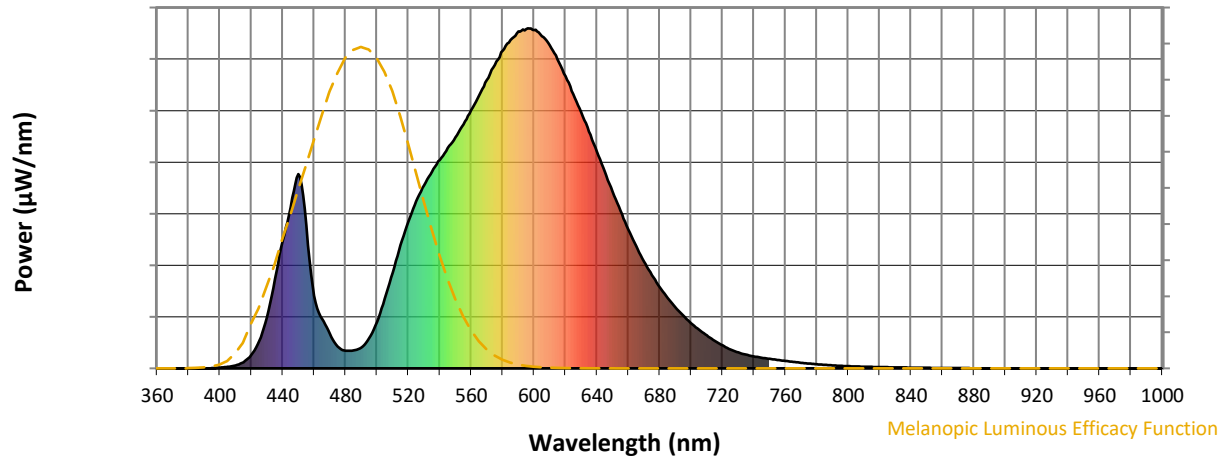
Scotopic Lumens: NR

S/P: 1.15

| 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 | 61 | NR | 620 | 859 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 88 | NR | 625 | 807 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 137 | NR | 630 | 753 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 205 | NR | 635 | 697 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 281 | NR | 640 | 637 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 363 | NR | 645 | 578 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 432 | NR | 650 | 520 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 492 | NR | 655 | 463 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 539 | NR | 660 | 409 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 579 | NR | 665 | 359 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 613 | NR | 670 | 315 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 648 | NR | 675 | 274 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 39 | NR | 550 | 680 | NR | 680 | 239 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 81 | NR | 555 | 717 | NR | 685 | 207 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 151 | NR | 560 | 759 | NR | 690 | 180 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 263 | NR | 565 | 803 | NR | 695 | 155 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 375 | NR | 570 | 848 | NR | 700 | 133 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 474 | NR | 575 | 892 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 571 | NR | 580 | 933 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 421 | NR | 585 | 966 | NR | 715 | 81 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 991 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 146 | NR | 595 | 998 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 101 | NR | 600 | 995 | NR | 730 | 47 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 64 | NR | 605 | 977 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 52 | NR | 610 | 949 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 53 | NR | 615 | 908 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-176-3

Melanopic Flux vs. Wavelength



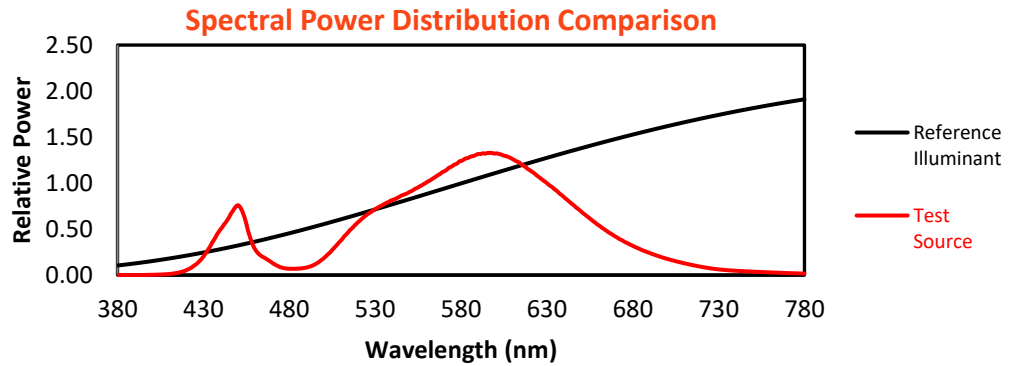
Melanopic Lumens: NR

M/P: 2.01

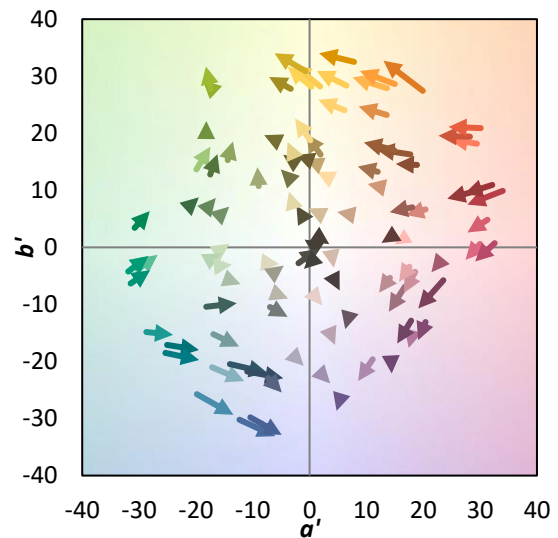
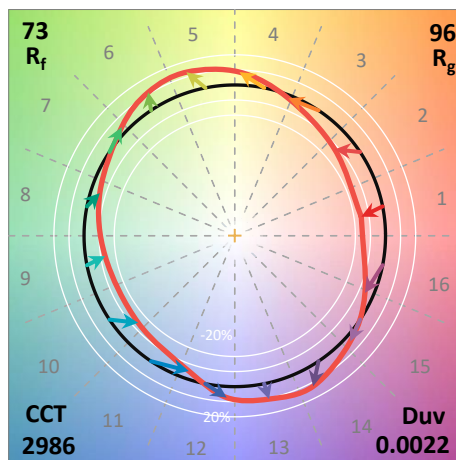
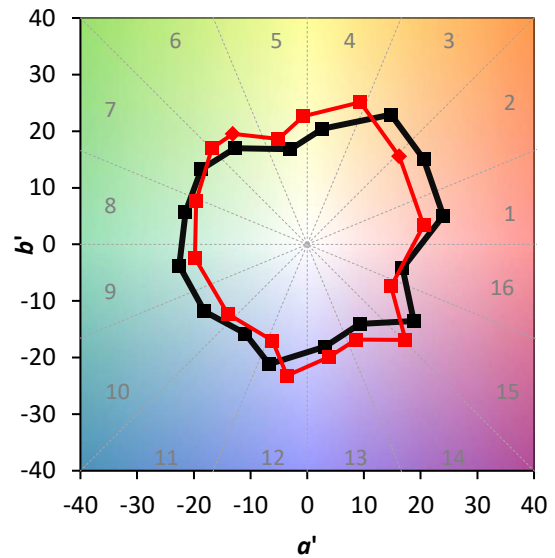
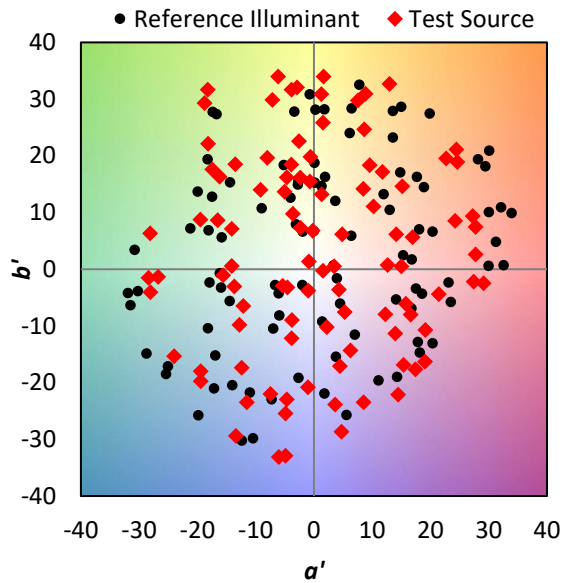
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 61 | NR | 620 | 859 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 88 | NR | 625 | 807 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 137 | NR | 630 | 753 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 205 | NR | 635 | 697 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 281 | NR | 640 | 637 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 363 | NR | 645 | 578 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 432 | NR | 650 | 520 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 492 | NR | 655 | 463 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 539 | NR | 660 | 409 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 579 | NR | 665 | 359 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 613 | NR | 670 | 315 | NR | 800 | 6 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 648 | NR | 675 | 274 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 39 | NR | 550 | 680 | NR | 680 | 239 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 81 | NR | 555 | 717 | NR | 685 | 207 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 151 | NR | 560 | 759 | NR | 690 | 180 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 263 | NR | 565 | 803 | NR | 695 | 155 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 375 | NR | 570 | 848 | NR | 700 | 133 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 474 | NR | 575 | 892 | NR | 705 | 114 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 571 | NR | 580 | 933 | NR | 710 | 97 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 421 | NR | 585 | 966 | NR | 715 | 81 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 991 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 146 | NR | 595 | 998 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 101 | NR | 600 | 995 | NR | 730 | 47 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 64 | NR | 605 | 977 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 52 | NR | 610 | 949 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 53 | NR | 615 | 908 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 73.2$
 $R_g = 95.9$
 $CIE R_a = 71.3$
 $R_9 = -25.2$

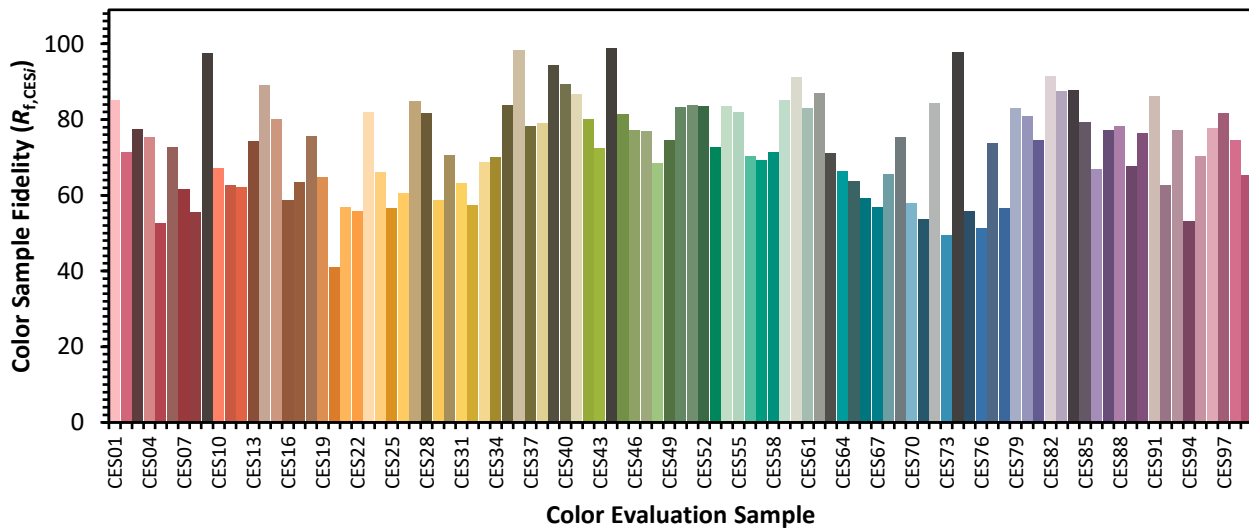


Color Vector Graphics

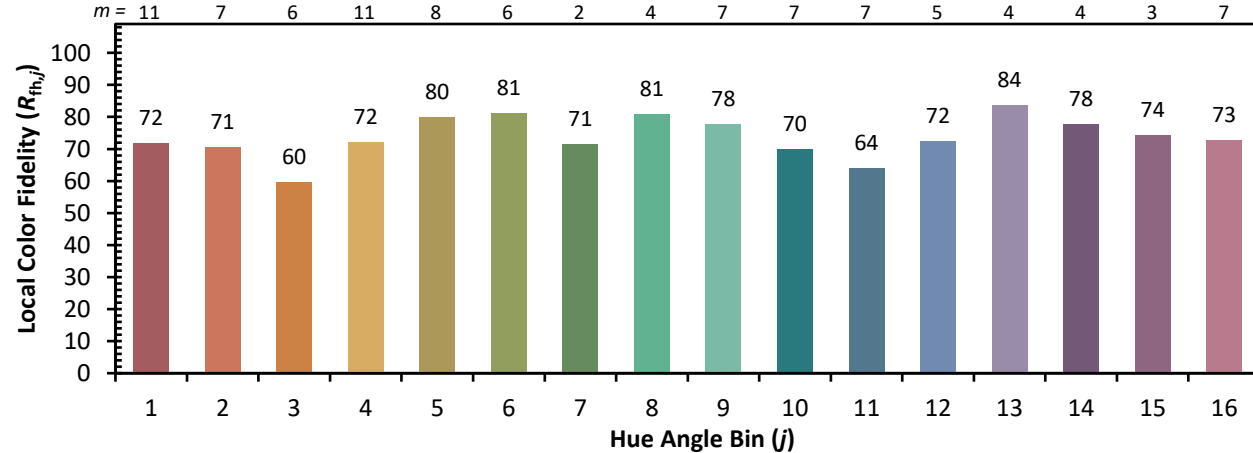
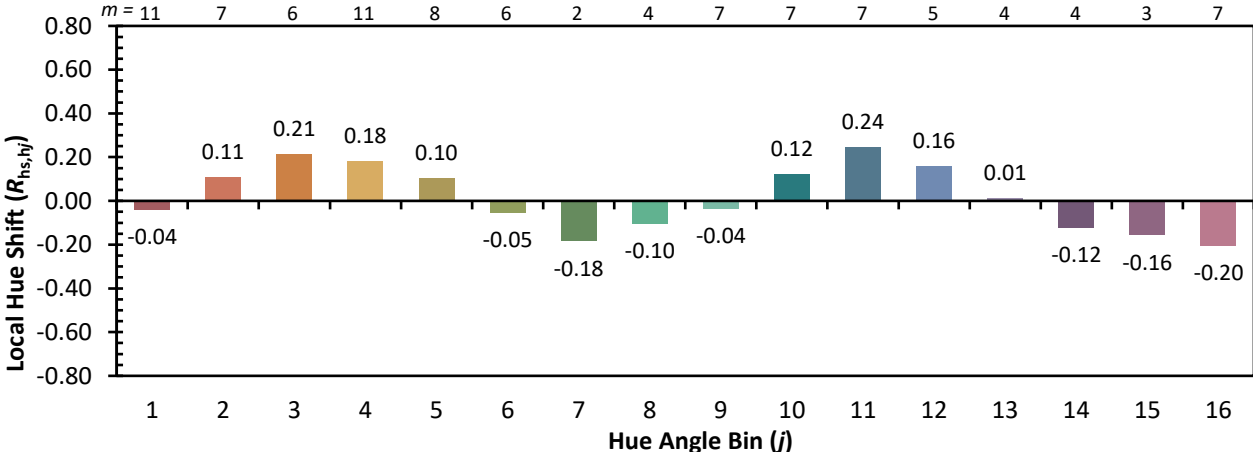
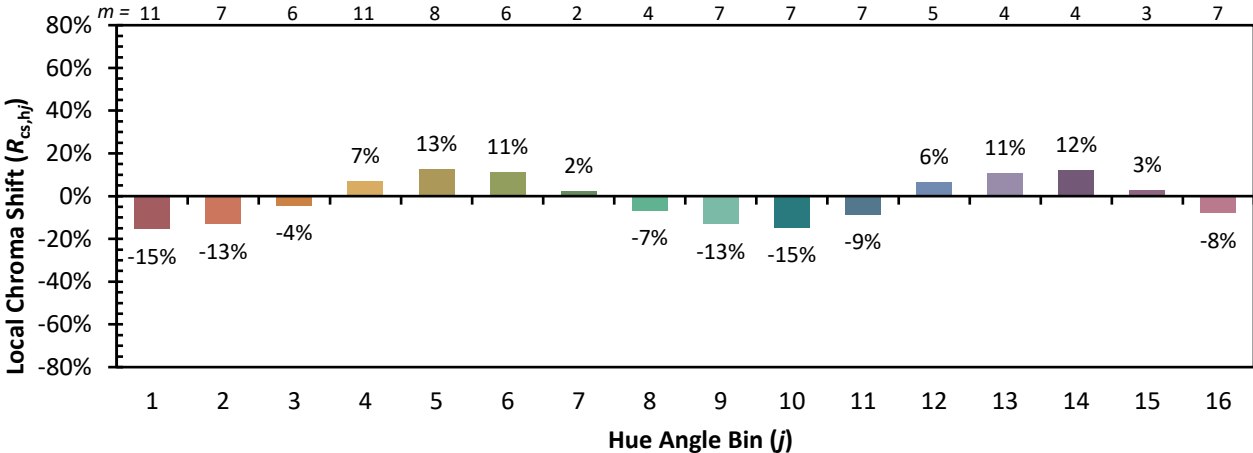


Individual Sample Fidelity Index ($R_{f,i}$)

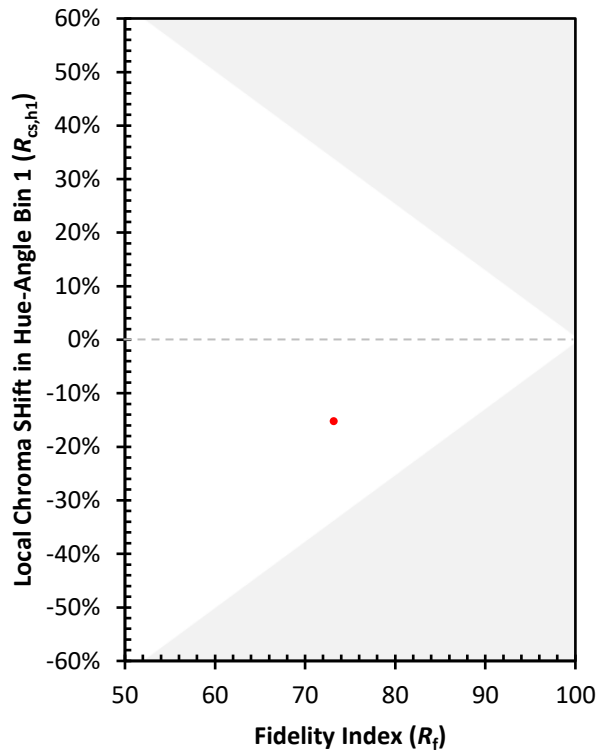
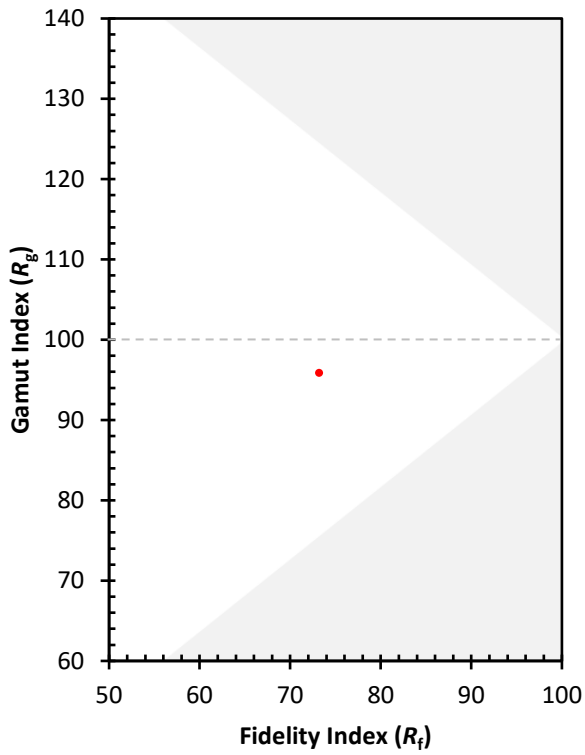
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 61 | CES51 = 84 | CES76 = 51 |
| CES02 = 62 | CES27 = 85 | CES52 = 84 | CES77 = 74 |
| CES03 = 31 | CES28 = 82 | CES53 = 73 | CES78 = 56 |
| CES04 = 71 | CES29 = 59 | CES54 = 84 | CES79 = 83 |
| CES05 = 49 | CES30 = 71 | CES55 = 82 | CES80 = 81 |
| CES06 = 51 | CES31 = 63 | CES56 = 70 | CES81 = 75 |
| CES07 = 41 | CES32 = 57 | CES57 = 69 | CES82 = 92 |
| CES08 = 40 | CES33 = 69 | CES58 = 71 | CES83 = 88 |
| CES09 = 29 | CES34 = 70 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 84 | CES60 = 91 | CES85 = 79 |
| CES11 = 59 | CES36 = 98 | CES61 = 83 | CES86 = 67 |
| CES12 = 65 | CES37 = 78 | CES62 = 87 | CES87 = 77 |
| CES13 = 43 | CES38 = 79 | CES63 = 71 | CES88 = 78 |
| CES14 = 74 | CES39 = 94 | CES64 = 66 | CES89 = 68 |
| CES15 = 71 | CES40 = 89 | CES65 = 64 | CES90 = 76 |
| CES16 = 47 | CES41 = 87 | CES66 = 59 | CES91 = 86 |
| CES17 = 50 | CES42 = 80 | CES67 = 57 | CES92 = 63 |
| CES18 = 56 | CES43 = 73 | CES68 = 66 | CES93 = 77 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 53 |
| CES20 = 66 | CES45 = 81 | CES70 = 58 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 54 | CES96 = 78 |
| CES22 = 79 | CES47 = 77 | CES72 = 84 | CES97 = 82 |
| CES23 = 92 | CES48 = 68 | CES73 = 49 | CES98 = 75 |
| CES24 = 91 | CES49 = 74 | CES74 = 98 | CES99 = 65 |
| CES25 = 73 | CES50 = 83 | CES75 = 56 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)