

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: McGRAW-EDISON

Report Number: P436804

Luminaire Tested: **TT-D3-740-U-DL-HSS**

Issue Date: 12/2/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P436804  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-4)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D3-740-U-DL-HSS  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE  
4000K, 70 CRI LEDS AND DRIVE LANE DISTRIBUTION WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4715 lumens  
Efficiency: N/A  
Efficacy: 96.6 lumens/watt  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U1 - G3

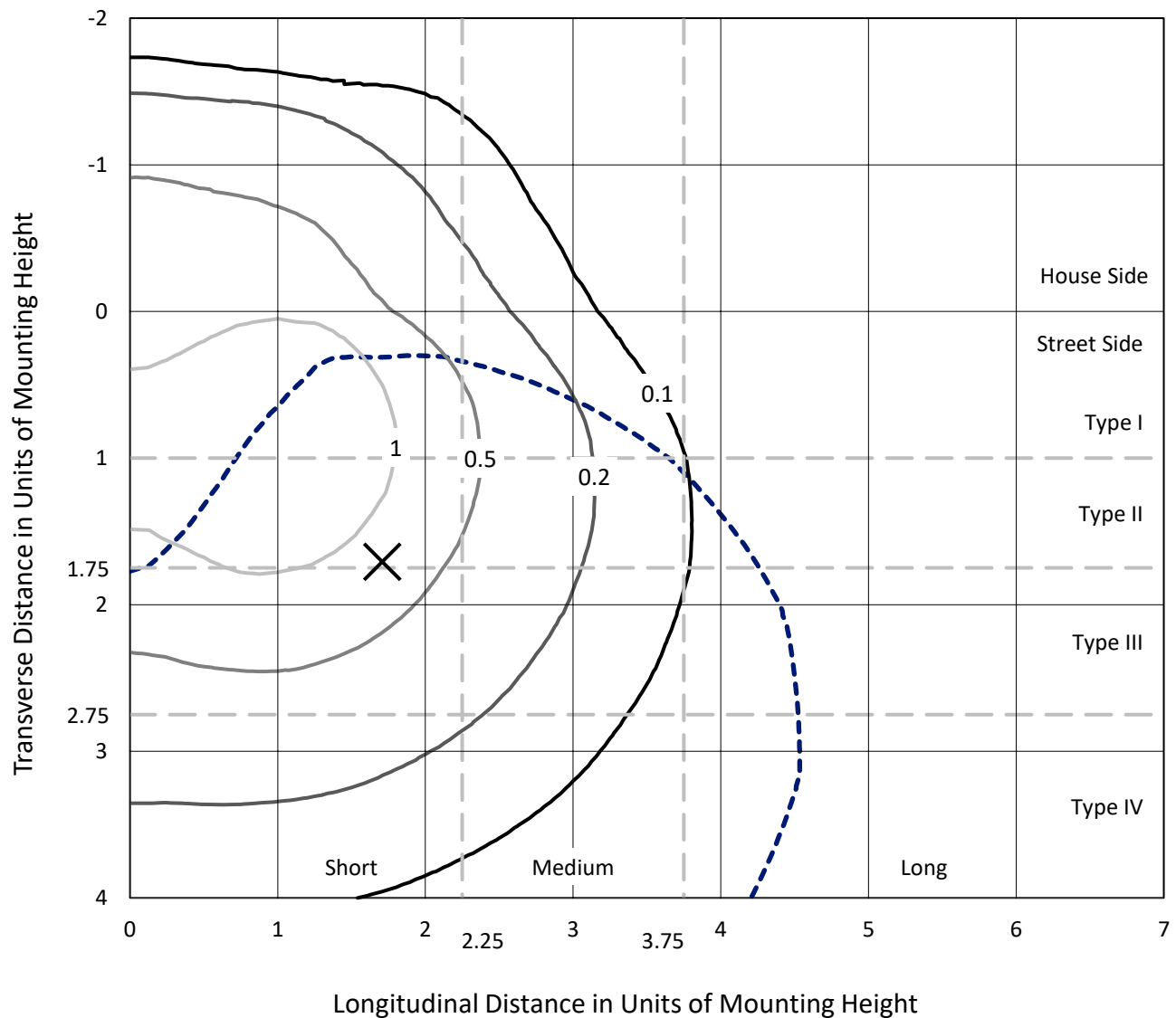
Input Watts (W): 48.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

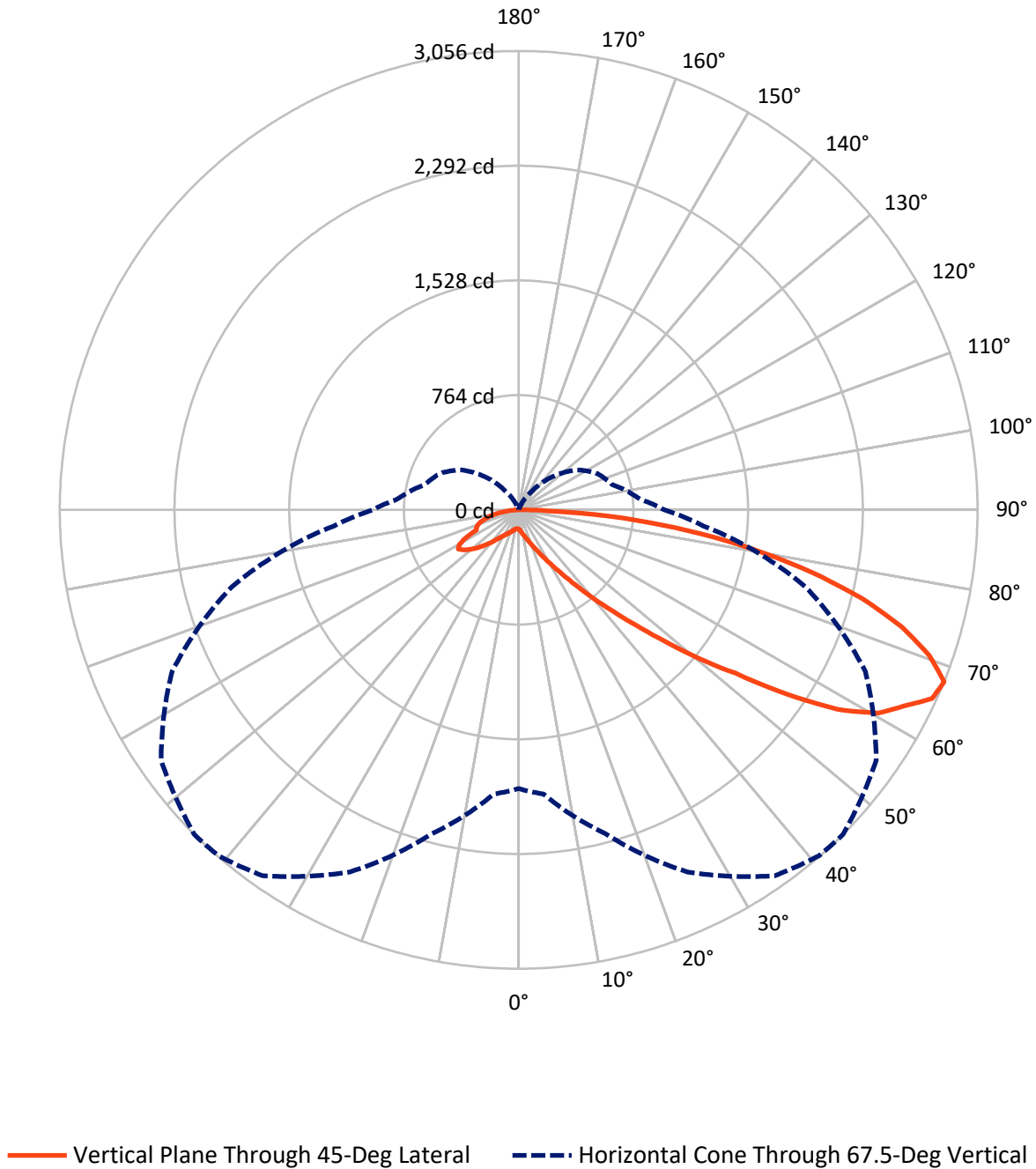


Based on 15 foot mounting height. Maximum calculated value = 1.8 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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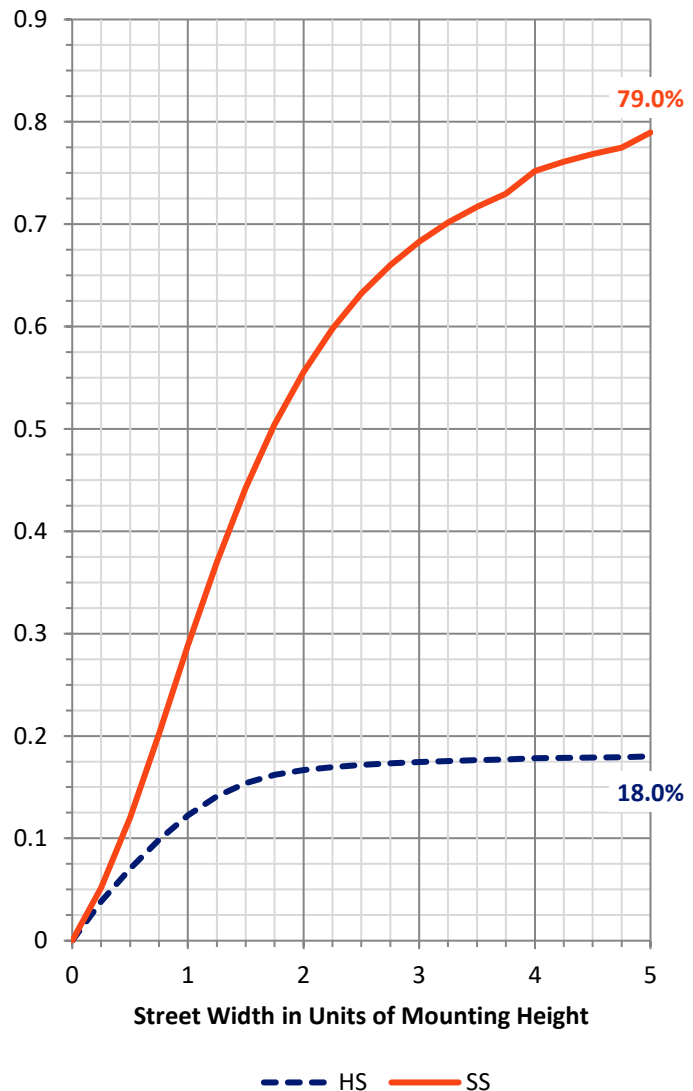
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 856.6    | 1.0    | 857.6  |
|                    | % Fixture | 18.2     | 0.0    | 18.2   |
| <b>Street Side</b> | Lumens    | 3846.9   | 10.5   | 3857.4 |
|                    | % Fixture | 81.6     | 0.2    | 81.8   |
| <b>Total</b>       | Lumens    | 4703.5   | 11.5   | 4715.0 |
|                    | % Fixture | 99.8     | 0.2    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 13.3   | 0.3       |
| 10°-20°   | 49.6   | 1.1       |
| 20°-30°   | 114.4  | 2.4       |
| 30°-40°   | 243.9  | 5.2       |
| 40°-50°   | 510.6  | 10.8      |
| 50°-60°   | 968.6  | 20.5      |
| 60°-70°   | 1318.2 | 28.0      |
| 70°-80°   | 1133.4 | 24.0      |
| 80°-90°   | 351.4  | 7.5       |
| 90°-100°  | 7.4    | 0.2       |
| 100°-110° | 2.2    | 0.0       |
| 110°-120° | 0.6    | 0.0       |
| 120°-130° | 0.4    | 0.0       |
| 130°-140° | 0.3    | 0.0       |
| 140°-150° | 0.3    | 0.0       |
| 150°-160° | 0.2    | 0.0       |
| 160°-170° | 0.1    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 4703.5 | 99.8      |
| 0°-180°   | 4715.0 | 100.0     |



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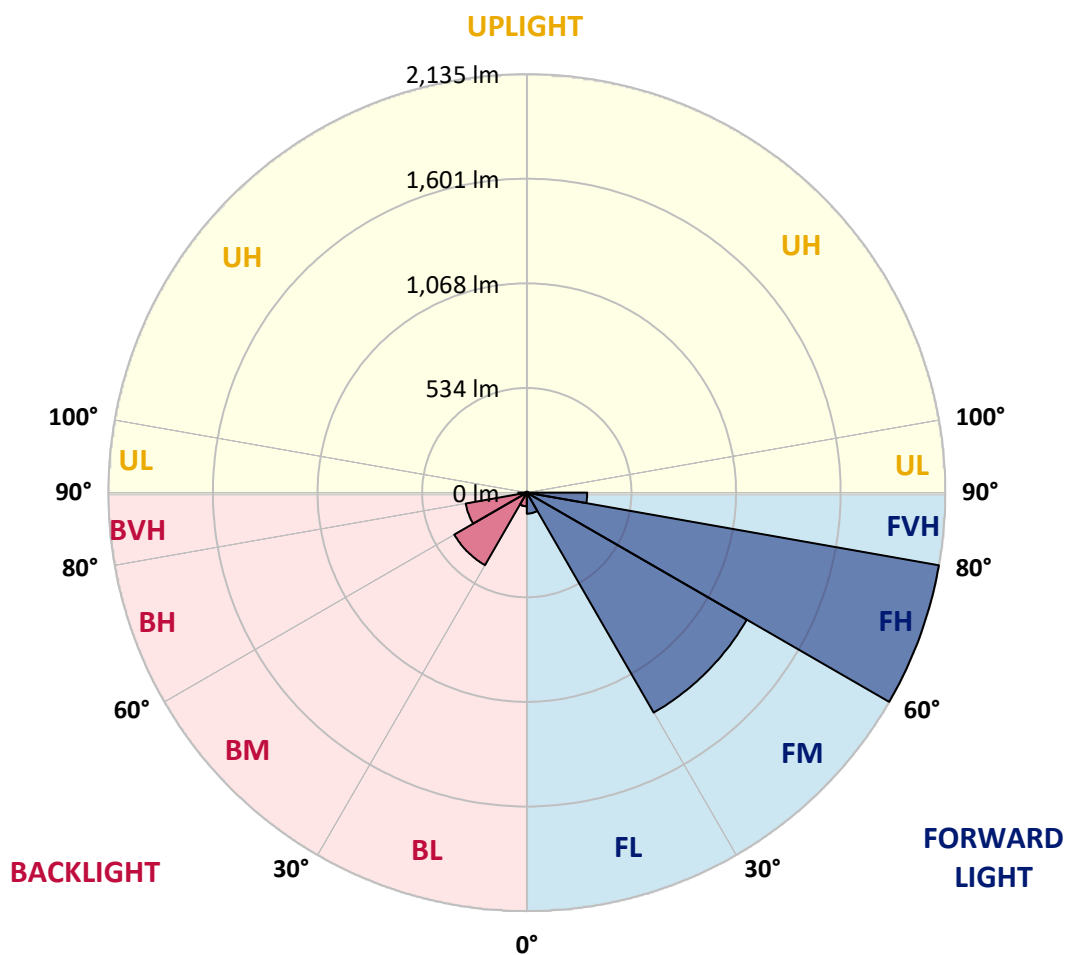
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |       |         |
|------|-------------|--------|-----------|-------------------------|-------|---------|
|      |             |        |           | B                       | U     | G       |
| FL   | (0°-30°)    | 107.5  | 2.3       |                         |       |         |
| FM   | (30°-60°)   | 1295.8 | 27.5      |                         |       |         |
| FH   | (60°-80°)   | 2135.2 | 45.3      |                         |       | G2/5000 |
| FVH  | (80°-90°)   | 308.4  | 6.5       |                         |       | G3/500  |
| BL   | (0°-30°)    | 69.8   | 1.5       | B0/110                  |       |         |
| BM   | (30°-60°)   | 427.3  | 9.1       | B1/1000                 |       |         |
| BH   | (60°-80°)   | 316.4  | 6.7       | B1/500                  |       | G1/500  |
| BVH  | (80°-90°)   | 43.1   | 0.9       |                         |       | G1/100  |
| UL   | (90°-100°)  | 7.4    | 0.2       |                         | U1/10 |         |
| UH   | (100°-180°) | 4.0    | 0.1       |                         | U1/10 |         |

**BUG Rating: B1-U1-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 5°     | 15°    | 25°    | 35°    | 41°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  | 129.0  |
| 2.5°   | 140.0  | 139.0  | 139.0  | 138.0  | 138.0  | 136.0  | 136.0  | 135.0  | 134.0  | 133.0  | 131.0  |
| 5°     | 150.0  | 149.0  | 149.0  | 148.0  | 147.0  | 145.0  | 144.0  | 142.0  | 140.0  | 138.0  | 136.0  |
| 7.5°   | 162.0  | 161.0  | 161.0  | 160.0  | 158.0  | 155.0  | 154.0  | 151.0  | 148.0  | 145.0  | 142.0  |
| 10°    | 177.0  | 176.0  | 176.0  | 174.0  | 172.0  | 169.0  | 167.0  | 163.0  | 160.0  | 155.0  | 150.0  |
| 12.5°  | 193.0  | 192.0  | 192.0  | 190.0  | 186.0  | 184.0  | 182.0  | 177.0  | 172.0  | 166.0  | 160.0  |
| 15°    | 211.0  | 211.0  | 211.0  | 210.0  | 206.0  | 202.0  | 200.0  | 194.0  | 188.0  | 179.0  | 171.0  |
| 17.5°  | 234.0  | 233.0  | 233.0  | 231.0  | 226.0  | 224.0  | 221.0  | 214.0  | 205.0  | 195.0  | 185.0  |
| 20°    | 262.0  | 261.0  | 259.0  | 258.0  | 253.0  | 251.0  | 247.0  | 239.0  | 227.0  | 214.0  | 200.0  |
| 22.5°  | 290.0  | 290.0  | 289.0  | 290.0  | 286.0  | 284.0  | 279.0  | 268.0  | 254.0  | 235.0  | 218.0  |
| 25°    | 322.0  | 323.0  | 325.0  | 328.0  | 323.0  | 321.0  | 317.0  | 303.0  | 286.0  | 262.0  | 238.0  |
| 27.5°  | 362.0  | 362.0  | 367.0  | 372.0  | 368.0  | 367.0  | 361.0  | 346.0  | 322.0  | 293.0  | 265.0  |
| 30°    | 405.0  | 406.0  | 414.0  | 423.0  | 421.0  | 421.0  | 416.0  | 399.0  | 370.0  | 336.0  | 297.0  |
| 32.5°  | 455.0  | 459.0  | 467.0  | 477.0  | 484.0  | 484.0  | 482.0  | 464.0  | 430.0  | 384.0  | 336.0  |
| 35°    | 521.1  | 514.1  | 529.1  | 544.1  | 559.1  | 562.1  | 563.1  | 546.1  | 507.0  | 449.0  | 384.0  |
| 37.5°  | 578.1  | 577.1  | 600.1  | 626.1  | 651.1  | 661.1  | 664.1  | 648.1  | 598.1  | 522.1  | 436.0  |
| 40°    | 644.1  | 650.1  | 681.1  | 720.1  | 762.1  | 779.1  | 787.1  | 769.1  | 707.1  | 609.1  | 496.0  |
| 42.5°  | 713.1  | 731.1  | 770.1  | 829.1  | 893.1  | 918.1  | 927.1  | 910.1  | 837.1  | 718.1  | 572.1  |
| 45°    | 794.1  | 819.1  | 871.1  | 955.1  | 1039.1 | 1076.1 | 1096.1 | 1090.1 | 1015.1 | 867.1  | 670.1  |
| 47.5°  | 894.1  | 912.1  | 983.1  | 1096.1 | 1215.1 | 1276.1 | 1304.1 | 1321.1 | 1214.1 | 1021.1 | 756.1  |
| 50°    | 1007.1 | 1010.1 | 1108.1 | 1251.1 | 1425.1 | 1506.1 | 1555.2 | 1547.2 | 1420.1 | 1198.1 | 865.1  |
| 52.5°  | 1121.1 | 1118.1 | 1246.1 | 1440.1 | 1668.2 | 1774.2 | 1807.2 | 1840.2 | 1715.2 | 1468.1 | 1040.1 |
| 55°    | 1251.1 | 1245.1 | 1406.1 | 1652.2 | 1935.2 | 2075.2 | 2168.2 | 2214.2 | 2017.2 | 1646.2 | 1116.1 |
| 57.5°  | 1359.1 | 1378.1 | 1580.2 | 1876.2 | 2271.2 | 2447.2 | 2508.2 | 2483.2 | 2183.2 | 1736.2 | 1153.1 |
| 60°    | 1496.1 | 1524.2 | 1754.2 | 2169.2 | 2562.3 | 2693.3 | 2749.3 | 2635.3 | 2289.2 | 1804.2 | 1179.1 |
| 62.5°  | 1625.2 | 1661.2 | 1945.2 | 2407.2 | 2744.3 | 2864.3 | 2878.3 | 2754.3 | 2438.2 | 1938.2 | 1255.1 |
| 65°    | 1746.2 | 1787.2 | 2135.2 | 2548.3 | 2903.3 | 3003.3 | 3027.3 | 2929.3 | 2596.3 | 2017.2 | 1285.1 |
| 67.5°  | 1857.2 | 1900.2 | 2233.2 | 2661.3 | 2974.3 | 3051.3 | 3056.3 | 2907.3 | 2547.3 | 1976.2 | 1237.1 |
| 70°    | 1942.2 | 1961.2 | 2280.2 | 2658.3 | 2890.3 | 2920.3 | 2900.3 | 2750.3 | 2432.2 | 1892.2 | 1168.1 |
| 72.5°  | 1959.2 | 1973.2 | 2215.2 | 2510.2 | 2657.3 | 2685.3 | 2669.3 | 2537.3 | 2251.2 | 1742.2 | 1056.1 |
| 75°    | 1873.2 | 1876.2 | 2040.2 | 2244.2 | 2351.2 | 2385.2 | 2364.2 | 2242.2 | 1979.2 | 1530.2 | 909.1  |
| 77.5°  | 1648.2 | 1654.2 | 1753.2 | 1890.2 | 1980.2 | 2009.2 | 1993.2 | 1881.2 | 1658.2 | 1285.1 | 752.1  |
| 80°    | 1306.1 | 1318.1 | 1389.1 | 1484.1 | 1566.2 | 1596.2 | 1577.2 | 1487.1 | 1305.1 | 1010.1 | 587.1  |
| 82.5°  | 890.1  | 905.1  | 970.1  | 1049.1 | 1121.1 | 1150.1 | 1134.1 | 1077.1 | 941.1  | 728.1  | 419.0  |
| 85°    | 450.0  | 466.0  | 533.1  | 607.1  | 670.1  | 701.1  | 696.1  | 672.1  | 579.1  | 449.0  | 253.0  |
| 87.5°  | 71.0   | 78.0   | 106.0  | 141.0  | 180.0  | 209.0  | 191.0  | 189.0  | 150.0  | 120.0  | 61.0   |
| 90°    | 29.0   | 29.0   | 28.0   | 27.0   | 24.0   | 22.0   | 21.0   | 17.0   | 13.0   | 8.0    | 3.0    |
| 92.5°  | 26.0   | 26.0   | 25.0   | 23.0   | 21.0   | 20.0   | 18.0   | 15.0   | 11.0   | 7.0    | 3.0    |
| 95°    | 21.0   | 21.0   | 20.0   | 19.0   | 17.0   | 16.0   | 14.0   | 12.0   | 9.0    | 6.0    | 3.0    |
| 97.5°  | 16.0   | 16.0   | 15.0   | 14.0   | 13.0   | 11.0   | 11.0   | 9.0    | 6.0    | 4.0    | 2.0    |
| 100°   | 12.0   | 12.0   | 11.0   | 10.0   | 9.0    | 8.0    | 8.0    | 6.0    | 4.0    | 3.0    | 2.0    |
| 102.5° | 8.0    | 8.0    | 8.0    | 7.0    | 6.0    | 6.0    | 5.0    | 4.0    | 3.0    | 2.0    | 2.0    |
| 105°   | 5.0    | 5.0    | 5.0    | 5.0    | 4.0    | 3.0    | 3.0    | 2.0    | 2.0    | 2.0    | 2.0    |
| 107.5° | 3.0    | 3.0    | 3.0    | 3.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    |
| 110°   | 2.0    | 2.0    | 2.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 2.0    | 1.0    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 41° | 45° | 55° | 65° | 75° | 85° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 112.5° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 115°   | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 117.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 120°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 125°   | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 127.5° | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 130°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 135°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 140°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 142.5° | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 145°   | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 147.5° | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 150°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 155°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 160°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 165°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 170°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 175°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 180°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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**CANDELA DISTRIBUTION (continued):**

|        | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°     | 129.0  | 129.0 | 129.0 | 129.0 | 129.0 | 129.0 | 129.0 | 129.0 | 129.0 | 129.0 | 129.0 |
| 2.5°   | 131.0  | 130.0 | 128.0 | 127.0 | 125.0 | 125.0 | 124.0 | 123.0 | 123.0 | 123.0 | 123.0 |
| 5°     | 134.0  | 133.0 | 131.0 | 129.0 | 127.0 | 125.0 | 124.0 | 123.0 | 123.0 | 123.0 | 122.0 |
| 7.5°   | 140.0  | 138.0 | 135.0 | 132.0 | 129.0 | 127.0 | 126.0 | 125.0 | 124.0 | 124.0 | 124.0 |
| 10°    | 147.0  | 145.0 | 140.0 | 137.0 | 133.0 | 130.0 | 129.0 | 128.0 | 127.0 | 127.0 | 127.0 |
| 12.5°  | 156.0  | 153.0 | 147.0 | 142.0 | 138.0 | 135.0 | 133.0 | 132.0 | 132.0 | 131.0 | 132.0 |
| 15°    | 167.0  | 163.0 | 155.0 | 149.0 | 144.0 | 141.0 | 139.0 | 138.0 | 138.0 | 138.0 | 137.0 |
| 17.5°  | 179.0  | 174.0 | 164.0 | 157.0 | 151.0 | 148.0 | 146.0 | 145.0 | 145.0 | 145.0 | 145.0 |
| 20°    | 193.0  | 186.0 | 175.0 | 166.0 | 160.0 | 156.0 | 154.0 | 154.0 | 153.0 | 154.0 | 154.0 |
| 22.5°  | 208.0  | 200.0 | 186.0 | 176.0 | 168.0 | 164.0 | 162.0 | 162.0 | 162.0 | 163.0 | 164.0 |
| 25°    | 226.0  | 216.0 | 199.0 | 186.0 | 177.0 | 173.0 | 171.0 | 172.0 | 172.0 | 173.0 | 173.0 |
| 27.5°  | 250.0  | 235.0 | 214.0 | 198.0 | 188.0 | 183.0 | 181.0 | 182.0 | 183.0 | 183.0 | 183.0 |
| 30°    | 277.0  | 259.0 | 230.0 | 213.0 | 201.0 | 195.0 | 193.0 | 194.0 | 195.0 | 197.0 | 196.0 |
| 32.5°  | 310.0  | 288.0 | 254.0 | 230.0 | 217.0 | 210.0 | 208.0 | 207.0 | 209.0 | 211.0 | 211.0 |
| 35°    | 350.0  | 322.0 | 282.0 | 254.0 | 235.0 | 226.0 | 224.0 | 223.0 | 224.0 | 226.0 | 228.0 |
| 37.5°  | 393.0  | 359.0 | 310.0 | 281.0 | 260.0 | 250.0 | 245.0 | 241.0 | 242.0 | 243.0 | 246.0 |
| 40°    | 442.0  | 400.0 | 342.0 | 307.0 | 288.0 | 276.0 | 269.0 | 263.0 | 265.0 | 265.0 | 266.0 |
| 42.5°  | 504.0  | 451.0 | 382.0 | 338.0 | 318.0 | 305.0 | 294.0 | 287.0 | 283.0 | 284.0 | 280.0 |
| 45°    | 585.1  | 519.1 | 432.0 | 382.0 | 354.0 | 334.0 | 321.0 | 307.0 | 297.0 | 299.0 | 293.0 |
| 47.5°  | 652.1  | 573.1 | 479.0 | 424.0 | 394.0 | 369.0 | 342.0 | 322.0 | 308.0 | 306.0 | 302.0 |
| 50°    | 734.1  | 639.1 | 533.1 | 470.0 | 438.0 | 400.0 | 368.0 | 334.0 | 311.0 | 305.0 | 306.0 |
| 52.5°  | 872.1  | 755.1 | 610.1 | 532.1 | 476.0 | 431.0 | 382.0 | 335.0 | 304.0 | 295.0 | 298.0 |
| 55°    | 922.1  | 794.1 | 650.1 | 583.1 | 528.1 | 458.0 | 388.0 | 324.0 | 284.0 | 276.0 | 277.0 |
| 57.5°  | 933.1  | 794.1 | 653.1 | 599.1 | 553.1 | 480.0 | 385.0 | 299.0 | 246.0 | 239.0 | 238.0 |
| 60°    | 939.1  | 789.1 | 642.1 | 587.1 | 537.1 | 459.0 | 346.0 | 241.0 | 189.0 | 184.0 | 181.0 |
| 62.5°  | 995.1  | 831.1 | 653.1 | 578.1 | 507.0 | 403.0 | 263.0 | 154.0 | 105.0 | 104.0 | 102.0 |
| 65°    | 1012.1 | 846.1 | 667.1 | 584.1 | 474.0 | 313.0 | 156.0 | 52.0  | 11.0  | 12.0  | 10.0  |
| 67.5°  | 970.1  | 812.1 | 647.1 | 575.1 | 464.0 | 305.0 | 150.0 | 44.0  | 0.0   | 0.0   | 0.0   |
| 70°    | 912.1  | 763.1 | 612.1 | 544.1 | 443.0 | 293.0 | 147.0 | 44.0  | 0.0   | 0.0   | 0.0   |
| 72.5°  | 820.1  | 693.1 | 556.1 | 502.0 | 407.0 | 269.0 | 137.0 | 42.0  | 0.0   | 0.0   | 0.0   |
| 75°    | 712.1  | 603.1 | 487.0 | 445.0 | 361.0 | 236.0 | 123.0 | 38.0  | 0.0   | 0.0   | 0.0   |
| 77.5°  | 596.1  | 503.0 | 407.0 | 375.0 | 305.0 | 201.0 | 104.0 | 32.0  | 0.0   | 0.0   | 0.0   |
| 80°    | 468.0  | 398.0 | 321.0 | 299.0 | 241.0 | 160.0 | 83.0  | 25.0  | 0.0   | 0.0   | 0.0   |
| 82.5°  | 337.0  | 289.0 | 237.0 | 219.0 | 177.0 | 116.0 | 60.0  | 17.0  | 0.0   | 0.0   | 0.0   |
| 85°    | 208.0  | 181.0 | 153.0 | 142.0 | 112.0 | 72.0  | 36.0  | 9.0   | 0.0   | 0.0   | 0.0   |
| 87.5°  | 62.0   | 60.0  | 54.0  | 53.0  | 38.0  | 22.0  | 8.0   | 1.0   | 0.0   | 0.0   | 0.0   |
| 90°    | 1.0    | 1.0   | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 92.5°  | 1.0    | 1.0   | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 95°    | 1.0    | 1.0   | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 97.5°  | 1.0    | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 100°   | 1.0    | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 102.5° | 1.0    | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 105°   | 1.0    | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 107.5° | 1.0    | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 110°   | 1.0    | 1.0   | 1.0   | 1.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



REPORT NUMBER: P436804

CATALOG NUMBER: TT-D3-740-U-DL-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|-----|------|------|------|------|------|------|------|------|------|
| 112.5° | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 115°   | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 117.5° | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 120°   | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 122.5° | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 125°   | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 127.5° | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 130°   | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 132.5° | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 135°   | 1.0 | 1.0 | 1.0  | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 137.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 140°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 142.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 145°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 147.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 150°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 152.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 155°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 157.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 160°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 162.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 165°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 167.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 170°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 172.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 175°   | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 177.5° | 1.0 | 1.0 | 1.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 180°   | 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: SP1-2407-176-5

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-740-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-740-U-WQ

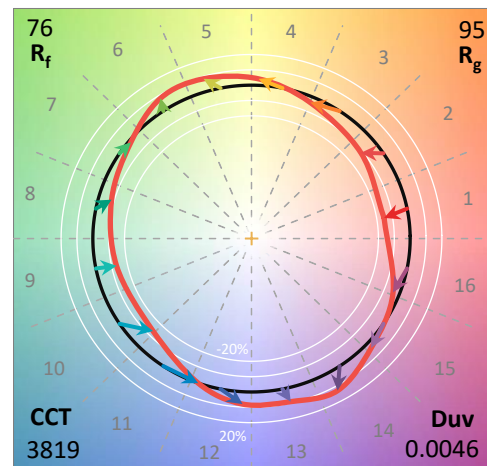
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-176-5  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 09/27/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Streetworks  
 Catalog Number: **MEM2-HTN-VA-30-740-U-WQ**  
 Description: EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

### Spectral Parameters

CCT (K): 3819  
 CIE  $u'$ : 0.2261  
 CIE  $v'$ : 0.5108  
 Duv: 0.0046  
 CIE x: 0.3926  
 CIE y: 0.3942  
 CIE z: 0.2132  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 577  
 Purity: 36.15483  
 R<sub>f</sub>: 75.6  
 R<sub>g</sub>: 94.8

CRI (Ra): 72.9  
 R1: 70.1  
 R2: 78.4  
 R3: 85.0  
 R4: 72.9  
 R5: 69.1  
 R6: 69.2  
 R7: 82.8  
 R8: 55.4  
 R9: -21.5  
 R10: 48.5  
 R11: 68.4  
 R12: 39.0  
 R13: 71.1  
 R14: 91.3  
 R15: 63.2



### Test Conditions

Stabilization Time: 30M  
 Operation Time: 1H 30M  
 Sphere Temperature (°C): 25.2

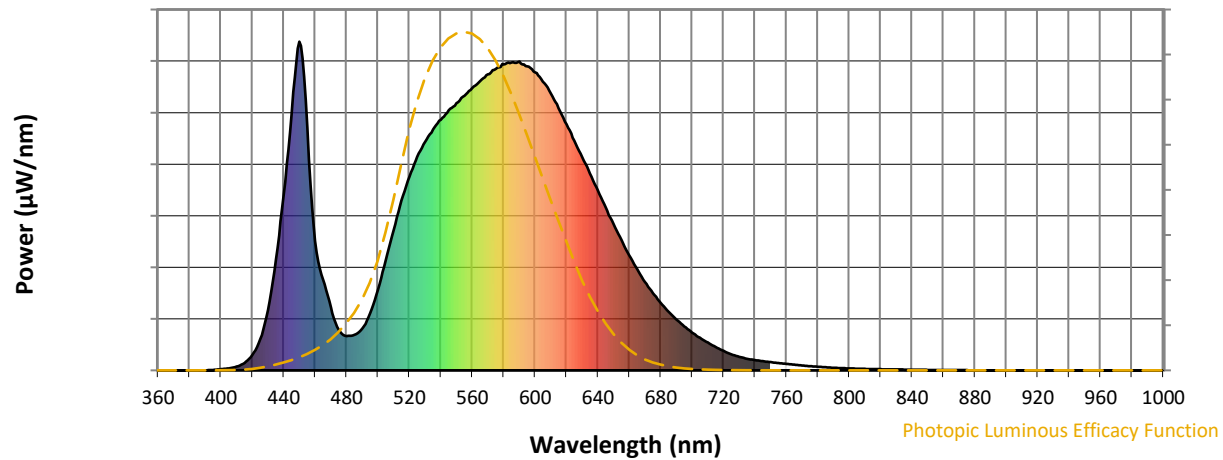
REPORT NUMBER: SP1-2407-176-5

| 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: SP1-2407-176-5

### Photopic Flux vs. Wavelength

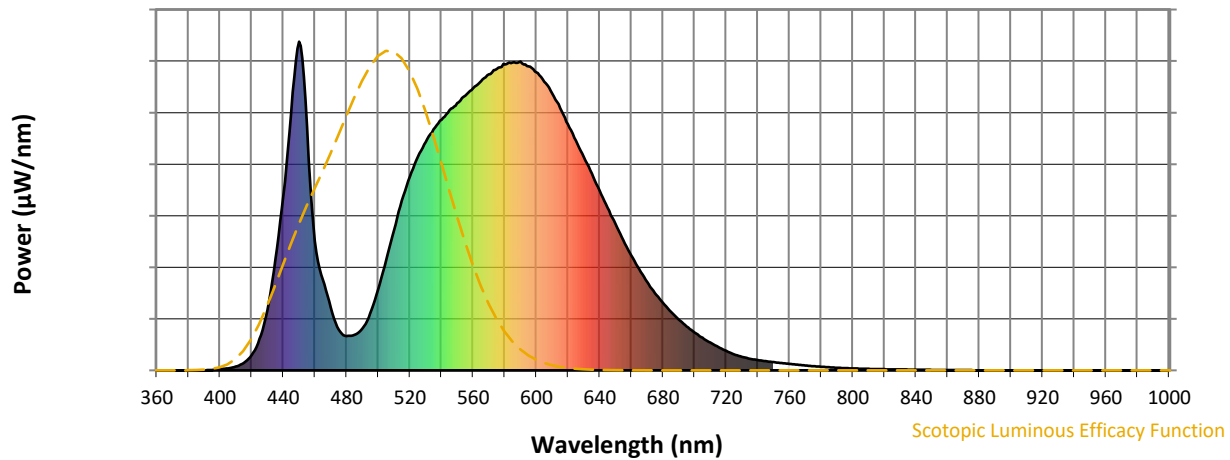


### Photopic Lumens: NR

| $\lambda$<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               | 127                                    | NR                             | 620               | 748                                    | NR                             | 750               | 25                                     | NR                             | 880               | 0                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 173                                    | NR                             | 625               | 699                                    | NR                             | 755               | 22                                     | NR                             | 885               | 0                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 246                                    | NR                             | 630               | 648                                    | NR                             | 760               | 20                                     | NR                             | 890               | 0                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 335                                    | NR                             | 635               | 599                                    | NR                             | 765               | 17                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 427                                    | NR                             | 640               | 547                                    | NR                             | 770               | 15                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 517                                    | NR                             | 645               | 495                                    | NR                             | 775               | 13                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 589                                    | NR                             | 650               | 445                                    | NR                             | 780               | 11                                     | NR                             | 910               | 0                                      | NR                             |
| 395               | 1                                      | NR                             | 525               | 649                                    | NR                             | 655               | 396                                    | NR                             | 785               | 9                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 4                                      | NR                             | 530               | 695                                    | NR                             | 660               | 349                                    | NR                             | 790               | 8                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 6                                      | NR                             | 535               | 733                                    | NR                             | 665               | 308                                    | NR                             | 795               | 7                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 11                                     | NR                             | 540               | 763                                    | NR                             | 670               | 269                                    | NR                             | 800               | 6                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 23                                     | NR                             | 545               | 792                                    | NR                             | 675               | 235                                    | NR                             | 805               | 5                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 46                                     | NR                             | 550               | 813                                    | NR                             | 680               | 205                                    | NR                             | 810               | 5                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 95                                     | NR                             | 555               | 835                                    | NR                             | 685               | 178                                    | NR                             | 815               | 4                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 183                                    | NR                             | 560               | 859                                    | NR                             | 690               | 155                                    | NR                             | 820               | 3                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 338                                    | NR                             | 565               | 880                                    | NR                             | 695               | 134                                    | NR                             | 825               | 3                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 534                                    | NR                             | 570               | 900                                    | NR                             | 700               | 115                                    | NR                             | 830               | 3                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 782                                    | NR                             | 575               | 918                                    | NR                             | 705               | 99                                     | NR                             | 835               | 2                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 1000                                   | NR                             | 580               | 931                                    | NR                             | 710               | 84                                     | NR                             | 840               | 2                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 739                                    | NR                             | 585               | 937                                    | NR                             | 715               | 71                                     | NR                             | 845               | 2                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 393                                    | NR                             | 590               | 939                                    | NR                             | 720               | 59                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 276                                    | NR                             | 595               | 925                                    | NR                             | 725               | 49                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 190                                    | NR                             | 600               | 907                                    | NR                             | 730               | 41                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 123                                    | NR                             | 605               | 878                                    | NR                             | 735               | 35                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 105                                    | NR                             | 610               | 842                                    | NR                             | 740               | 31                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 108                                    | NR                             | 615               | 797                                    | NR                             | 745               | 28                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

REPORT NUMBER: SP1-2407-176-5

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

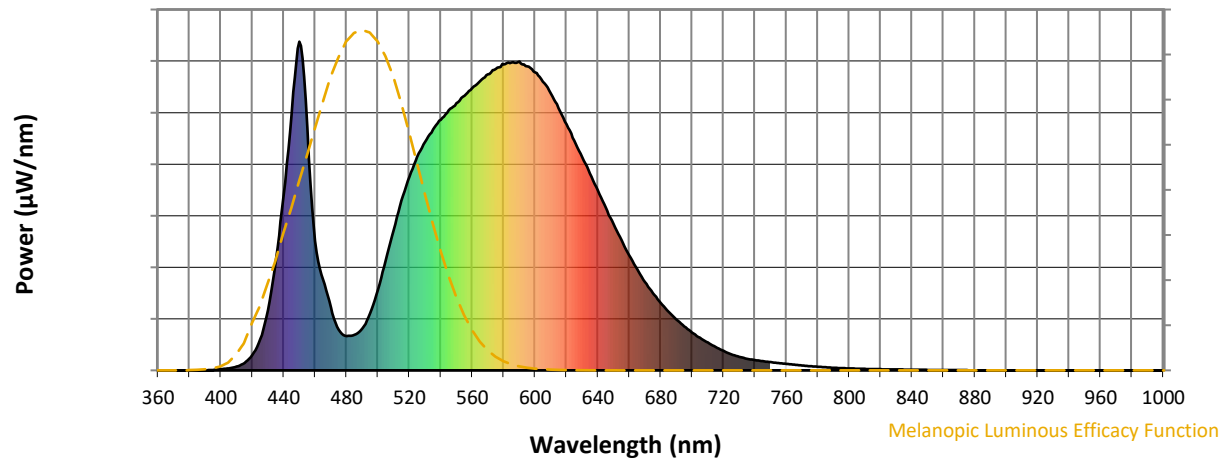
S/P: 1.45

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 127                         | NR               | 620       | 748                         | NR               | 750       | 25                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 173                         | NR               | 625       | 699                         | NR               | 755       | 22                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 246                         | NR               | 630       | 648                         | NR               | 760       | 20                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 335                         | NR               | 635       | 599                         | NR               | 765       | 17                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 427                         | NR               | 640       | 547                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 517                         | NR               | 645       | 495                         | NR               | 775       | 13                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 589                         | NR               | 650       | 445                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 649                         | NR               | 655       | 396                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 4                           | NR               | 530       | 695                         | NR               | 660       | 349                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 6                           | NR               | 535       | 733                         | NR               | 665       | 308                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 11                          | NR               | 540       | 763                         | NR               | 670       | 269                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 23                          | NR               | 545       | 792                         | NR               | 675       | 235                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 46                          | NR               | 550       | 813                         | NR               | 680       | 205                         | NR               | 810       | 5                           | NR               | 940       | 0                           | NR               |
| 425       | 95                          | NR               | 555       | 835                         | NR               | 685       | 178                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 183                         | NR               | 560       | 859                         | NR               | 690       | 155                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 338                         | NR               | 565       | 880                         | NR               | 695       | 134                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 534                         | NR               | 570       | 900                         | NR               | 700       | 115                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 782                         | NR               | 575       | 918                         | NR               | 705       | 99                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 1000                        | NR               | 580       | 931                         | NR               | 710       | 84                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 739                         | NR               | 585       | 937                         | NR               | 715       | 71                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 393                         | NR               | 590       | 939                         | NR               | 720       | 59                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 276                         | NR               | 595       | 925                         | NR               | 725       | 49                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 190                         | NR               | 600       | 907                         | NR               | 730       | 41                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 123                         | NR               | 605       | 878                         | NR               | 735       | 35                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 105                         | NR               | 610       | 842                         | NR               | 740       | 31                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 108                         | NR               | 615       | 797                         | NR               | 745       | 28                          | NR               | 875       | 1                           | NR               |           |                             |                  |



REPORT NUMBER: SP1-2407-176-5

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.76

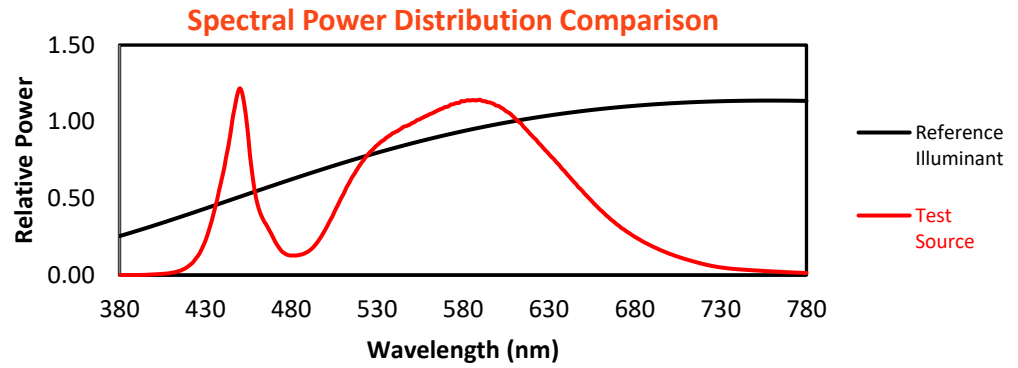
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 127                      | NR            | 620    | 748                      | NR            | 750    | 25                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 173                      | NR            | 625    | 699                      | NR            | 755    | 22                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 246                      | NR            | 630    | 648                      | NR            | 760    | 20                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 335                      | NR            | 635    | 599                      | NR            | 765    | 17                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 427                      | NR            | 640    | 547                      | NR            | 770    | 15                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 517                      | NR            | 645    | 495                      | NR            | 775    | 13                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 589                      | NR            | 650    | 445                      | NR            | 780    | 11                       | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 649                      | NR            | 655    | 396                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 4                        | NR            | 530    | 695                      | NR            | 660    | 349                      | NR            | 790    | 8                        | NR            | 920    | 0                        | NR            |
| 405    | 6                        | NR            | 535    | 733                      | NR            | 665    | 308                      | NR            | 795    | 7                        | NR            | 925    | 0                        | NR            |
| 410    | 11                       | NR            | 540    | 763                      | NR            | 670    | 269                      | NR            | 800    | 6                        | NR            | 930    | 0                        | NR            |
| 415    | 23                       | NR            | 545    | 792                      | NR            | 675    | 235                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 46                       | NR            | 550    | 813                      | NR            | 680    | 205                      | NR            | 810    | 5                        | NR            | 940    | 0                        | NR            |
| 425    | 95                       | NR            | 555    | 835                      | NR            | 685    | 178                      | NR            | 815    | 4                        | NR            | 945    | 0                        | NR            |
| 430    | 183                      | NR            | 560    | 859                      | NR            | 690    | 155                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 338                      | NR            | 565    | 880                      | NR            | 695    | 134                      | NR            | 825    | 3                        | NR            | 955    | 0                        | NR            |
| 440    | 534                      | NR            | 570    | 900                      | NR            | 700    | 115                      | NR            | 830    | 3                        | NR            | 960    | 0                        | NR            |
| 445    | 782                      | NR            | 575    | 918                      | NR            | 705    | 99                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 931                      | NR            | 710    | 84                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 739                      | NR            | 585    | 937                      | NR            | 715    | 71                       | NR            | 845    | 2                        | NR            | 975    | 0                        | NR            |
| 460    | 393                      | NR            | 590    | 939                      | NR            | 720    | 59                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 276                      | NR            | 595    | 925                      | NR            | 725    | 49                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 190                      | NR            | 600    | 907                      | NR            | 730    | 41                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 123                      | NR            | 605    | 878                      | NR            | 735    | 35                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 105                      | NR            | 610    | 842                      | NR            | 740    | 31                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 108                      | NR            | 615    | 797                      | NR            | 745    | 28                       | NR            | 875    | 1                        | NR            |        |                          |               |

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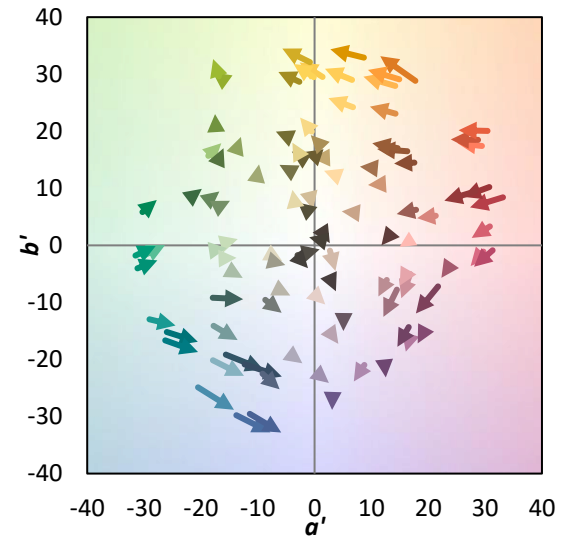
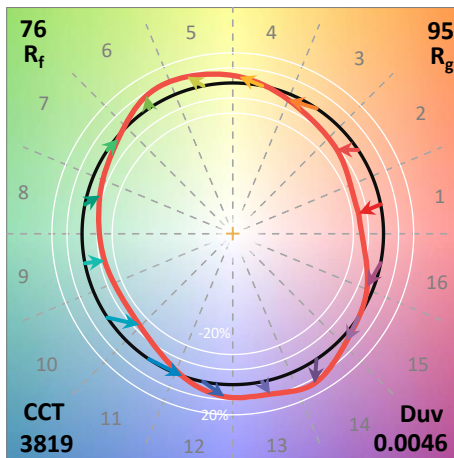
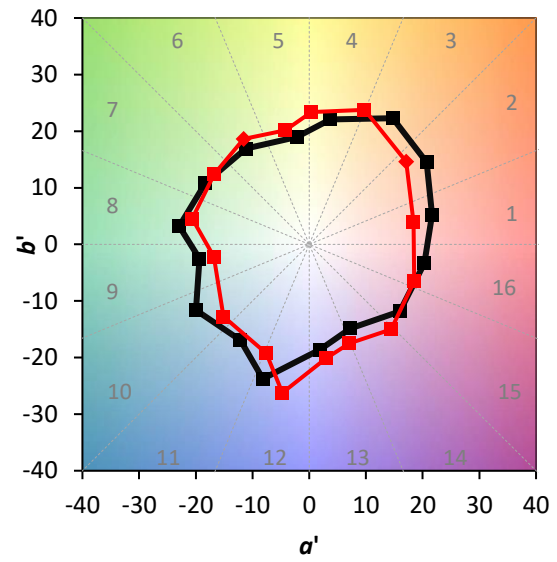
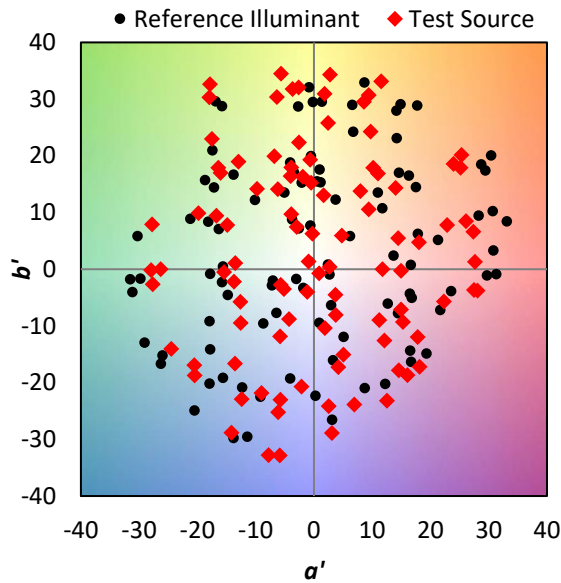
TM-30-18

### Summary

$R_f = 75.6$   
 $R_g = 94.8$   
 $CIE R_a = 72.9$   
 $R_g = -21.5$

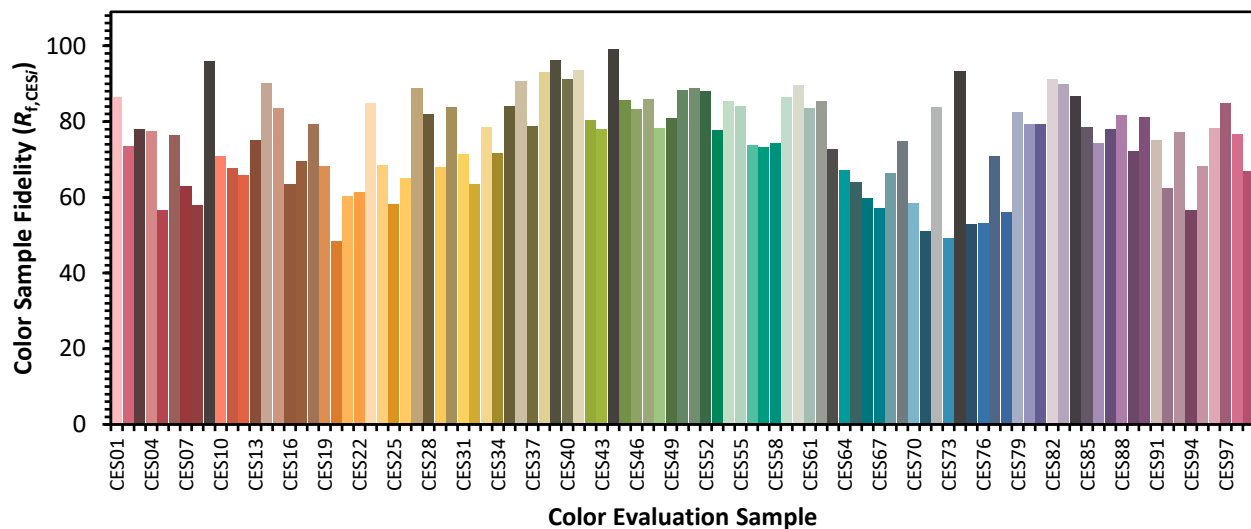


### Color Vector Graphics

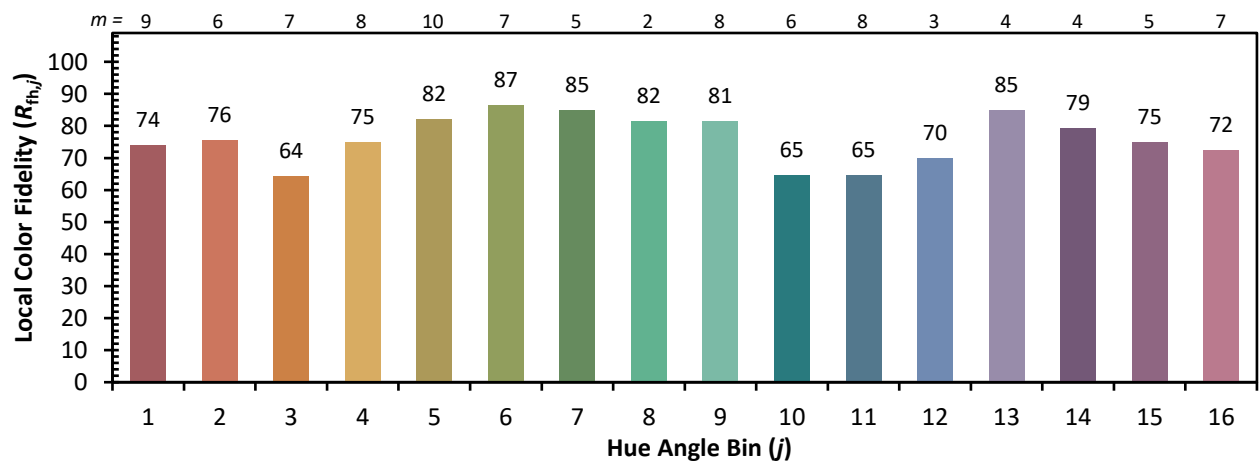
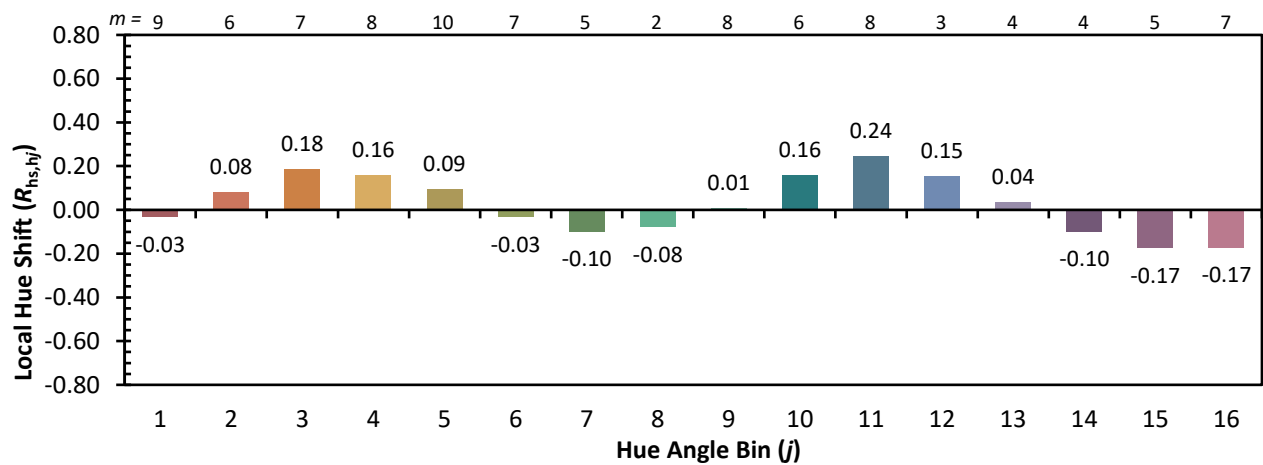
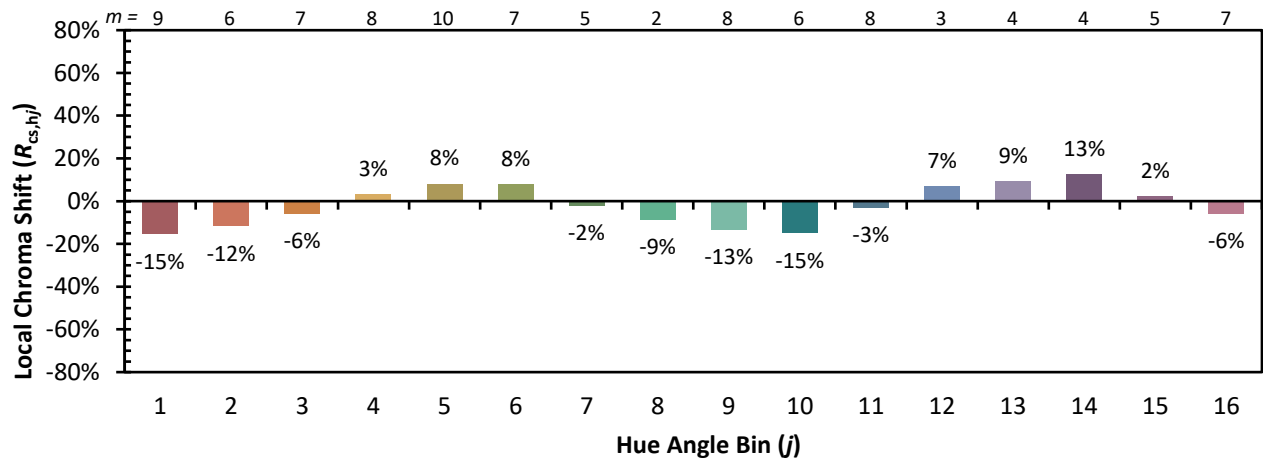


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

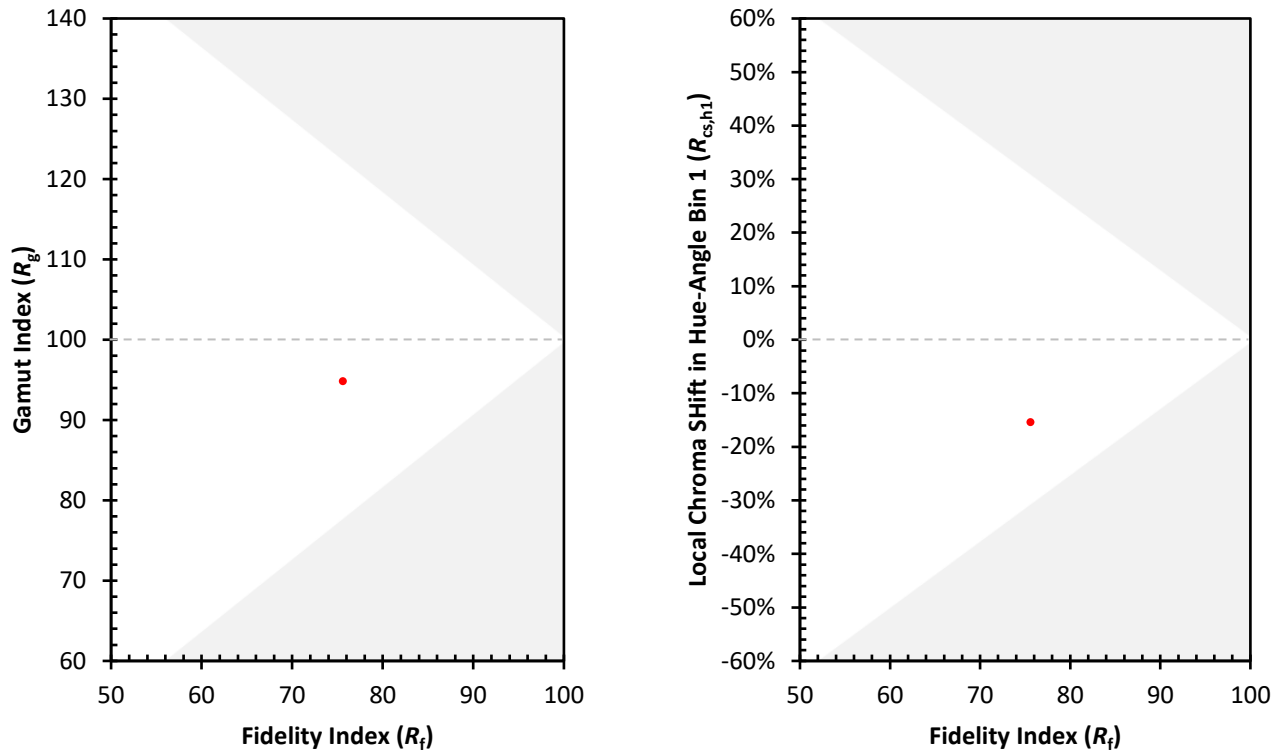
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|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 65 | CES51 = 89 | CES76 = 53 |
| CES02 = 61 | CES27 = 89 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 82 | CES53 = 78 | CES78 = 56 |
| CES04 = 70 | CES29 = 68 | CES54 = 85 | CES79 = 83 |
| CES05 = 48 | CES30 = 84 | CES55 = 84 | CES80 = 79 |
| CES06 = 50 | CES31 = 71 | CES56 = 74 | CES81 = 79 |
| CES07 = 40 | CES32 = 63 | CES57 = 73 | CES82 = 91 |
| CES08 = 39 | CES33 = 79 | CES58 = 74 | CES83 = 90 |
| CES09 = 29 | CES34 = 72 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 84 | CES60 = 90 | CES85 = 78 |
| CES11 = 57 | CES36 = 91 | CES61 = 84 | CES86 = 74 |
| CES12 = 63 | CES37 = 79 | CES62 = 85 | CES87 = 78 |
| CES13 = 42 | CES38 = 93 | CES63 = 73 | CES88 = 82 |
| CES14 = 74 | CES39 = 96 | CES64 = 67 | CES89 = 72 |
| CES15 = 71 | CES40 = 91 | CES65 = 64 | CES90 = 81 |
| CES16 = 47 | CES41 = 93 | CES66 = 60 | CES91 = 75 |
| CES17 = 49 | CES42 = 80 | CES67 = 57 | CES92 = 62 |
| CES18 = 56 | CES43 = 78 | CES68 = 66 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 75 | CES94 = 57 |
| CES20 = 65 | CES45 = 86 | CES70 = 58 | CES95 = 68 |
| CES21 = 86 | CES46 = 83 | CES71 = 51 | CES96 = 78 |
| CES22 = 78 | CES47 = 86 | CES72 = 84 | CES97 = 85 |
| CES23 = 92 | CES48 = 78 | CES73 = 49 | CES98 = 77 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 67 |
| CES25 = 72 | CES50 = 88 | CES75 = 53 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)