

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: P867773

Luminaire Tested: **MEM2-HTN-SA-70-750-U-T5R**

Issue Date: 08/21/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P867773  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: MEM2-HTN-SA-70-750-U-T5R  
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 70W 70CRI 5000K  
FIXTURE w/ TYPE V ROUND DISTRIBUTION OPTIC  
Light Source: (20) 5000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

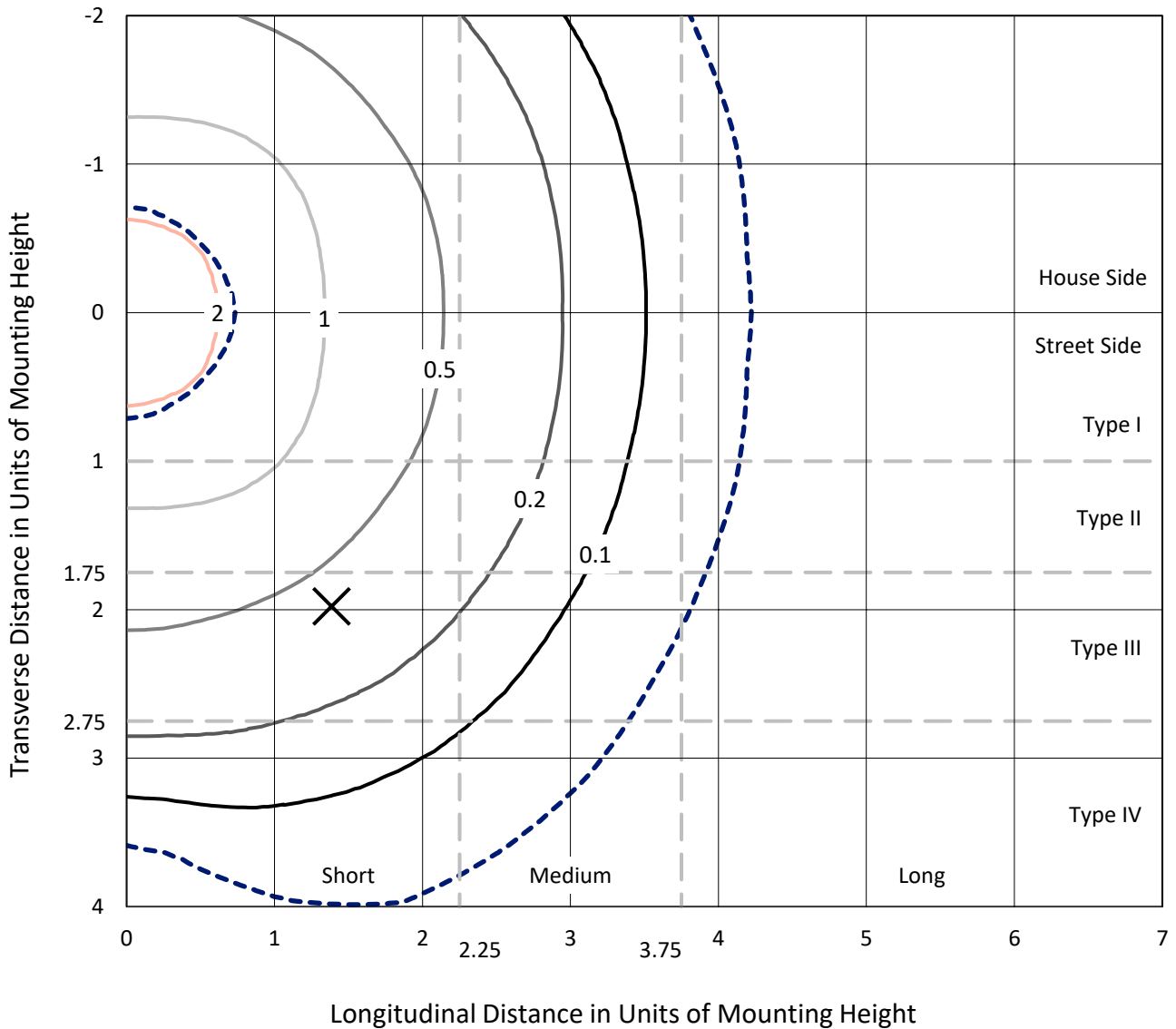
Lumens per Lamp: N/A  
Luminaire Lumens: 9443.8 lumens  
Efficiency: N/A  
Efficacy: 154.8 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B3 - U0 - G2

Input Watts (W): 61  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 9.89%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

REPORT NUMBER: P867773  
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### Iso-Footcandle Lines of Horizontal Illumination

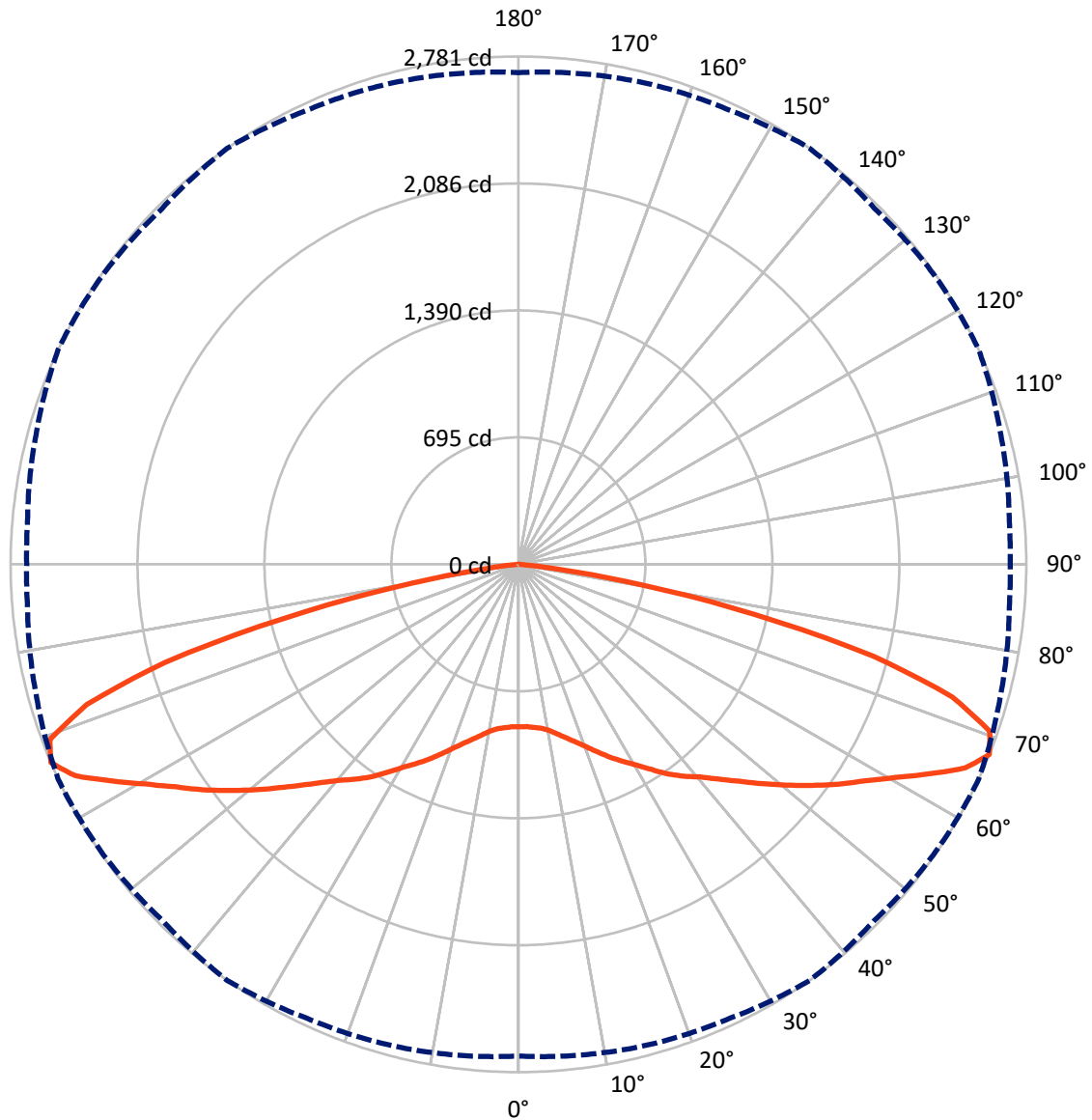
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.2 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 4721.9   | 0.0    | 4721.9 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 4721.9   | 0.0    | 4721.9 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 9443.8   | 0.0    | 9443.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 86.5   | 0.9       |
| 10°-20°   | 283.5  | 3.0       |
| 20°-30°   | 541.9  | 5.7       |
| 30°-40°   | 875.7  | 9.3       |
| 40°-50°   | 1281.7 | 13.6      |
| 50°-60°   | 1837.9 | 19.5      |
| 60°-70°   | 2576.0 | 27.3      |
| 70°-80°   | 1817.6 | 19.2      |
| 80°-90°   | 143.1  | 1.5       |
| 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°    | 9443.8 | 100.0     |
| 0°-180°   | 9443.8 | 100.0     |

**Coefficient of Utilization**



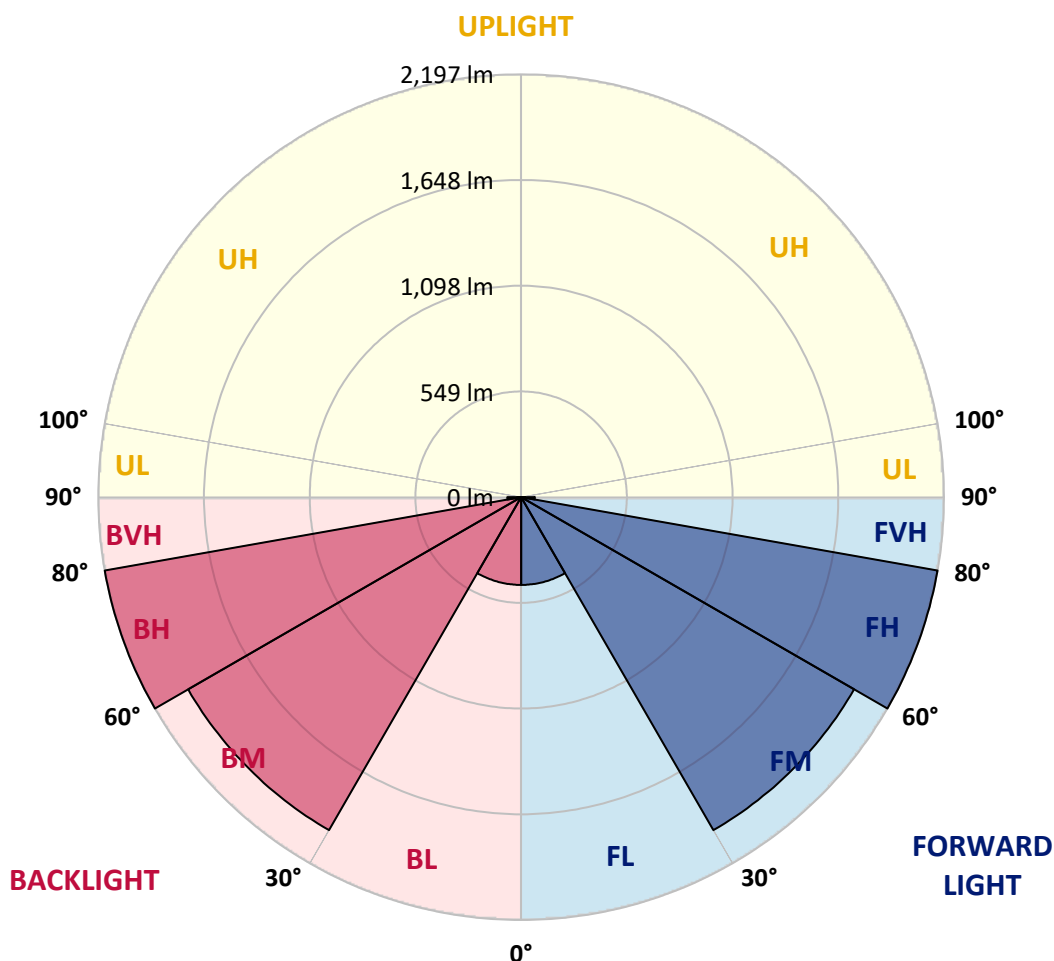
REPORT NUMBER: P867773  
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 455.9  | 4.8       |                         |      |         |
| FM (30°-60°)   | 1997.6 | 21.2      |                         |      |         |
| FH (60°-80°)   | 2196.8 | 23.3      |                         |      | G2/5000 |
| FVH (80°-90°)  | 71.5   | 0.8       |                         |      | G1/100  |
| BL (0°-30°)    | 455.9  | 4.8       | B1/500                  |      |         |
| BM (30°-60°)   | 1997.6 | 21.2      | B2/2500                 |      |         |
| BH (60°-80°)   | 2196.8 | 23.3      | B3/2500                 |      | G2/5000 |
| BVH (80°-90°)  | 71.5   | 0.8       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**

Type V Short





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 CATALOG NUMBER: MEM2-HTN-SA-70-750-U-T5R

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  | 889.6  |
| 2.5°  | 895.1  | 893.3  | 891.4  | 891.4  | 889.6  | 891.4  | 889.6  | 891.4  | 889.6  | 889.6  | 889.6  |
| 5°    | 900.6  | 898.8  | 898.8  | 898.8  | 896.9  | 896.9  | 896.9  | 896.9  | 895.1  | 893.3  | 895.1  |
| 7.5°  | 906.1  | 906.1  | 904.3  | 908.0  | 906.1  | 908.0  | 908.0  | 909.8  | 906.1  | 904.3  | 906.1  |
| 10°   | 920.8  | 920.8  | 920.8  | 924.5  | 924.5  | 930.0  | 930.0  | 931.9  | 930.0  | 926.3  | 926.3  |
| 12.5° | 952.1  | 950.2  | 950.2  | 950.2  | 953.9  | 957.6  | 961.3  | 961.3  | 959.4  | 953.9  | 953.9  |
| 15°   | 987.0  | 990.7  | 987.0  | 985.2  | 987.0  | 990.7  | 994.3  | 994.3  | 992.5  | 990.7  | 990.7  |
| 17.5° | 1029.3 | 1031.1 | 1027.4 | 1023.8 | 1023.8 | 1029.3 | 1031.1 | 1031.1 | 1029.3 | 1025.6 | 1025.6 |
| 20°   | 1066.0 | 1067.9 | 1067.9 | 1066.0 | 1067.9 | 1071.5 | 1073.4 | 1075.2 | 1069.7 | 1064.2 | 1064.2 |
| 22.5° | 1097.3 | 1099.1 | 1102.8 | 1110.1 | 1117.5 | 1121.2 | 1119.3 | 1119.3 | 1110.1 | 1104.6 | 1102.8 |
| 25°   | 1135.9 | 1141.4 | 1148.7 | 1157.9 | 1170.8 | 1180.0 | 1176.3 | 1169.0 | 1161.6 | 1150.6 | 1148.7 |
| 27.5° | 1211.2 | 1211.2 | 1203.9 | 1207.6 | 1222.3 | 1231.4 | 1227.8 | 1222.3 | 1207.6 | 1200.2 | 1198.4 |
| 30°   | 1270.0 | 1270.0 | 1270.0 | 1266.4 | 1275.6 | 1286.6 | 1282.9 | 1273.7 | 1266.4 | 1262.7 | 1262.7 |
| 32.5° | 1327.0 | 1323.3 | 1328.9 | 1336.2 | 1339.9 | 1343.6 | 1343.6 | 1336.2 | 1323.3 | 1317.8 | 1317.8 |
| 35°   | 1380.3 | 1384.0 | 1389.5 | 1400.5 | 1409.7 | 1404.2 | 1395.0 | 1389.5 | 1376.6 | 1365.6 | 1365.6 |
| 37.5° | 1431.8 | 1435.5 | 1441.0 | 1457.5 | 1472.2 | 1470.4 | 1459.4 | 1444.7 | 1428.1 | 1418.9 | 1413.4 |
| 40°   | 1468.5 | 1470.4 | 1485.1 | 1510.8 | 1531.0 | 1538.4 | 1529.2 | 1509.0 | 1483.3 | 1464.9 | 1466.7 |
| 42.5° | 1512.7 | 1516.3 | 1540.2 | 1577.0 | 1606.4 | 1617.4 | 1604.6 | 1577.0 | 1540.2 | 1516.3 | 1516.3 |
| 45°   | 1577.0 | 1578.8 | 1610.1 | 1656.0 | 1694.6 | 1713.0 | 1694.6 | 1656.0 | 1608.2 | 1584.3 | 1582.5 |
| 47.5° | 1641.3 | 1646.8 | 1681.8 | 1736.9 | 1793.9 | 1815.9 | 1795.7 | 1746.1 | 1689.1 | 1659.7 | 1656.0 |
| 50°   | 1714.8 | 1718.5 | 1760.8 | 1836.1 | 1900.5 | 1929.9 | 1904.2 | 1841.7 | 1779.2 | 1742.4 | 1744.2 |
| 52.5° | 1786.5 | 1797.5 | 1854.5 | 1933.6 | 2010.8 | 2043.8 | 2007.1 | 1939.1 | 1872.9 | 1838.0 | 1836.1 |
| 55°   | 1893.1 | 1906.0 | 1955.6 | 2043.8 | 2124.7 | 2161.5 | 2126.5 | 2051.2 | 1979.5 | 1940.9 | 1933.6 |
| 57.5° | 2027.3 | 2034.6 | 2078.8 | 2168.8 | 2236.8 | 2271.7 | 2251.5 | 2181.7 | 2113.7 | 2065.9 | 2056.7 |
| 60°   | 2179.8 | 2187.2 | 2222.1 | 2314.0 | 2369.2 | 2394.9 | 2387.5 | 2347.1 | 2301.2 | 2279.1 | 2273.6 |
| 62.5° | 2396.7 | 2398.6 | 2416.9 | 2470.3 | 2525.4 | 2536.4 | 2518.0 | 2508.8 | 2523.6 | 2499.7 | 2505.2 |
| 65°   | 2644.9 | 2644.9 | 2639.3 | 2646.7 | 2689.0 | 2676.1 | 2663.2 | 2703.7 | 2696.3 | 2655.9 | 2648.5 |
| 67.5° | 2692.6 | 2703.7 | 2725.7 | 2742.3 | 2780.9 | 2757.0 | 2773.5 | 2780.9 | 2734.9 | 2698.2 | 2692.6 |
| 70°   | 2409.6 | 2422.5 | 2545.6 | 2621.0 | 2738.6 | 2760.7 | 2707.4 | 2679.8 | 2628.3 | 2560.3 | 2541.9 |
| 72.5° | 1643.2 | 1707.5 | 2062.2 | 2304.8 | 2485.0 | 2512.5 | 2483.1 | 2448.2 | 2345.3 | 2292.0 | 2255.2 |
| 75°   | 1312.3 | 1347.2 | 1663.4 | 1902.3 | 2008.9 | 2007.1 | 1889.4 | 1850.8 | 1770.0 | 1762.6 | 1770.0 |
| 77.5° | 801.4  | 808.7  | 1119.3 | 1306.8 | 1319.7 | 1312.3 | 1264.5 | 1235.1 | 1246.2 | 1191.0 | 1200.2 |
| 80°   | 244.5  | 266.5  | 422.7  | 637.8  | 685.6  | 663.5  | 654.3  | 665.4  | 676.4  | 692.9  | 718.7  |
| 82.5° | 49.6   | 62.5   | 84.5   | 183.8  | 209.5  | 207.7  | 205.9  | 227.9  | 248.1  | 257.3  | 312.5  |
| 85°   | 5.5    | 5.5    | 7.4    | 14.7   | 31.2   | 49.6   | 51.5   | 45.9   | 69.8   | 68.0   | 47.8   |
| 87.5° | 1.8    | 1.8    | 1.8    | 1.8    | 1.8    | 3.7    | 3.7    | 3.7    | 3.7    | 3.7    | 3.7    |
| 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: SP1-2407-157-6

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-750-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-750-U-5WQ-2



**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-157-6  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 08/20/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Streetworks  
 Catalog Number: **MEM2-HTN-SA-40-750-U-5WQ-2**  
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

**Spectral Parameters**

CCT (K): 5094  
 CIE u': 0.2082  
 CIE v': 0.4867  
 Duv: 0.0032  
 CIE x: 0.3430  
 CIE y: 0.3564  
 CIE z: 0.3006  
 Peak Wavelength (nm): 451  
 Dominant Wavelength (nm): 568  
 Purity: 9.86439  
 Rf: 73.7  
 Rg: 93

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 |      |       |
| R1:       | 68.6 | R9:  | -39.6 |
| R2:       | 78.1 | R10: | 47.6  |
| R3:       | 84.6 | R11: | 68.2  |
| R4:       | 71.6 | R12: | 41.4  |
| R5:       | 69.6 | R13: | 70.4  |
| R6:       | 69.4 | R14: | 91.4  |
| R7:       | 80.9 | R15: | 61.4  |
| R8:       | 53.1 |      |       |



**Test Conditions**

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-6

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 5000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| 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    | 114                      | NR            | 620    | 361                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 145                      | NR            | 625    | 326                      | NR            | 755    | 8                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 197                      | NR            | 630    | 294                      | NR            | 760    | 7                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 259                      | NR            | 635    | 261                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 319                      | NR            | 640    | 232                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 373                      | NR            | 645    | 204                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 414                      | NR            | 650    | 179                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 445                      | NR            | 655    | 157                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 465                      | NR            | 660    | 136                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 5                        | NR            | 535    | 482                      | NR            | 665    | 118                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 9                        | NR            | 540    | 493                      | NR            | 670    | 102                      | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 18                       | NR            | 545    | 505                      | NR            | 675    | 87                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 515                      | NR            | 680    | 75                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 72                       | NR            | 555    | 527                      | NR            | 685    | 65                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 134                      | NR            | 560    | 540                      | NR            | 690    | 56                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 242                      | NR            | 565    | 550                      | NR            | 695    | 48                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 407                      | NR            | 570    | 557                      | NR            | 700    | 41                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 684                      | NR            | 575    | 561                      | NR            | 705    | 35                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 988                      | NR            | 580    | 559                      | NR            | 710    | 30                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 828                      | NR            | 585    | 551                      | NR            | 715    | 26                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 473                      | NR            | 590    | 537                      | NR            | 720    | 22                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 333                      | NR            | 595    | 516                      | NR            | 725    | 19                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 232                      | NR            | 600    | 491                      | NR            | 730    | 16                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 146                      | NR            | 605    | 461                      | NR            | 735    | 14                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 113                      | NR            | 610    | 429                      | NR            | 740    | 12                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 106                      | NR            | 615    | 395                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR S/P: 1.81**

| 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    | 114                      | NR            | 620    | 361                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 145                      | NR            | 625    | 326                      | NR            | 755    | 8                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 197                      | NR            | 630    | 294                      | NR            | 760    | 7                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 259                      | NR            | 635    | 261                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 319                      | NR            | 640    | 232                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 373                      | NR            | 645    | 204                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 414                      | NR            | 650    | 179                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 445                      | NR            | 655    | 157                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 465                      | NR            | 660    | 136                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 5                        | NR            | 535    | 482                      | NR            | 665    | 118                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 9                        | NR            | 540    | 493                      | NR            | 670    | 102                      | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 18                       | NR            | 545    | 505                      | NR            | 675    | 87                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 515                      | NR            | 680    | 75                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 72                       | NR            | 555    | 527                      | NR            | 685    | 65                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 134                      | NR            | 560    | 540                      | NR            | 690    | 56                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 242                      | NR            | 565    | 550                      | NR            | 695    | 48                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 407                      | NR            | 570    | 557                      | NR            | 700    | 41                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 684                      | NR            | 575    | 561                      | NR            | 705    | 35                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 988                      | NR            | 580    | 559                      | NR            | 710    | 30                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 828                      | NR            | 585    | 551                      | NR            | 715    | 26                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 473                      | NR            | 590    | 537                      | NR            | 720    | 22                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 333                      | NR            | 595    | 516                      | NR            | 725    | 19                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 232                      | NR            | 600    | 491                      | NR            | 730    | 16                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 146                      | NR            | 605    | 461                      | NR            | 735    | 14                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 113                      | NR            | 610    | 429                      | NR            | 740    | 12                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 106                      | NR            | 615    | 395                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2407-157-6

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.73

| 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    | 114                      | NR            | 620    | 361                      | NR            | 750    | 9                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 145                      | NR            | 625    | 326                      | NR            | 755    | 8                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 197                      | NR            | 630    | 294                      | NR            | 760    | 7                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 259                      | NR            | 635    | 261                      | NR            | 765    | 6                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 319                      | NR            | 640    | 232                      | NR            | 770    | 5                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 373                      | NR            | 645    | 204                      | NR            | 775    | 4                        | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 414                      | NR            | 650    | 179                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 445                      | NR            | 655    | 157                      | NR            | 785    | 3                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 465                      | NR            | 660    | 136                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 5                        | NR            | 535    | 482                      | NR            | 665    | 118                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 9                        | NR            | 540    | 493                      | NR            | 670    | 102                      | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 18                       | NR            | 545    | 505                      | NR            | 675    | 87                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 36                       | NR            | 550    | 515                      | NR            | 680    | 75                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 72                       | NR            | 555    | 527                      | NR            | 685    | 65                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 134                      | NR            | 560    | 540                      | NR            | 690    | 56                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 242                      | NR            | 565    | 550                      | NR            | 695    | 48                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 407                      | NR            | 570    | 557                      | NR            | 700    | 41                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 684                      | NR            | 575    | 561                      | NR            | 705    | 35                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 988                      | NR            | 580    | 559                      | NR            | 710    | 30                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 828                      | NR            | 585    | 551                      | NR            | 715    | 26                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 473                      | NR            | 590    | 537                      | NR            | 720    | 22                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 333                      | NR            | 595    | 516                      | NR            | 725    | 19                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 232                      | NR            | 600    | 491                      | NR            | 730    | 16                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 146                      | NR            | 605    | 461                      | NR            | 735    | 14                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 113                      | NR            | 610    | 429                      | NR            | 740    | 12                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 106                      | NR            | 615    | 395                      | NR            | 745    | 10                       | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 73.7$   
 $R_g = 93$   
 $CIE R_a = 72.0$   
 $R_9 = -39.6$

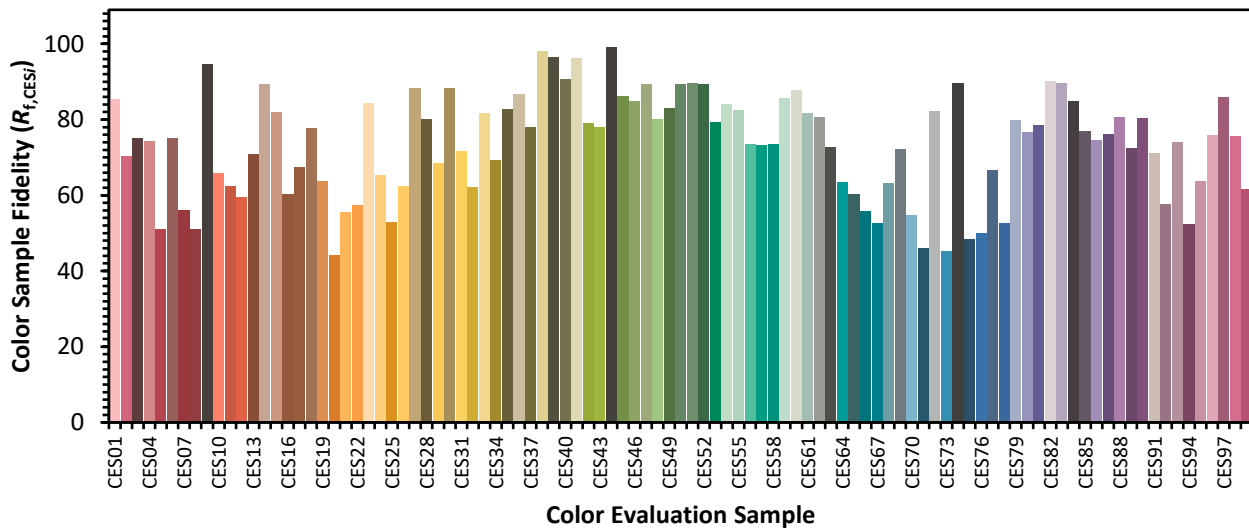


**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 62 | CES51 = 90 | CES76 = 50 |
| CES02 = 59 | CES27 = 88 | CES52 = 89 | CES77 = 67 |
| CES03 = 30 | CES28 = 80 | CES53 = 79 | CES78 = 53 |
| CES04 = 69 | CES29 = 69 | CES54 = 84 | CES79 = 80 |
| CES05 = 46 | CES30 = 88 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 72 | CES56 = 74 | CES81 = 78 |
| CES07 = 38 | CES32 = 62 | CES57 = 73 | CES82 = 90 |
| CES08 = 38 | CES33 = 82 | CES58 = 73 | CES83 = 90 |
| CES09 = 29 | CES34 = 69 | CES59 = 86 | CES84 = 85 |
| CES10 = 72 | CES35 = 83 | CES60 = 88 | CES85 = 77 |
| CES11 = 56 | CES36 = 87 | CES61 = 82 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 81 | CES87 = 76 |
| CES13 = 41 | CES38 = 98 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 96 | CES64 = 63 | CES89 = 72 |
| CES15 = 70 | CES40 = 91 | CES65 = 60 | CES90 = 80 |
| CES16 = 46 | CES41 = 96 | CES66 = 56 | CES91 = 71 |
| CES17 = 49 | CES42 = 79 | CES67 = 53 | CES92 = 58 |
| CES18 = 55 | CES43 = 78 | CES68 = 63 | CES93 = 74 |
| CES19 = 71 | CES44 = 99 | CES69 = 72 | CES94 = 52 |
| CES20 = 63 | CES45 = 86 | CES70 = 55 | CES95 = 64 |
| CES21 = 85 | CES46 = 85 | CES71 = 46 | CES96 = 76 |
| CES22 = 77 | CES47 = 89 | CES72 = 82 | CES97 = 86 |
| CES23 = 91 | CES48 = 80 | CES73 = 45 | CES98 = 76 |
| CES24 = 90 | CES49 = 83 | CES74 = 90 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 48 |            |

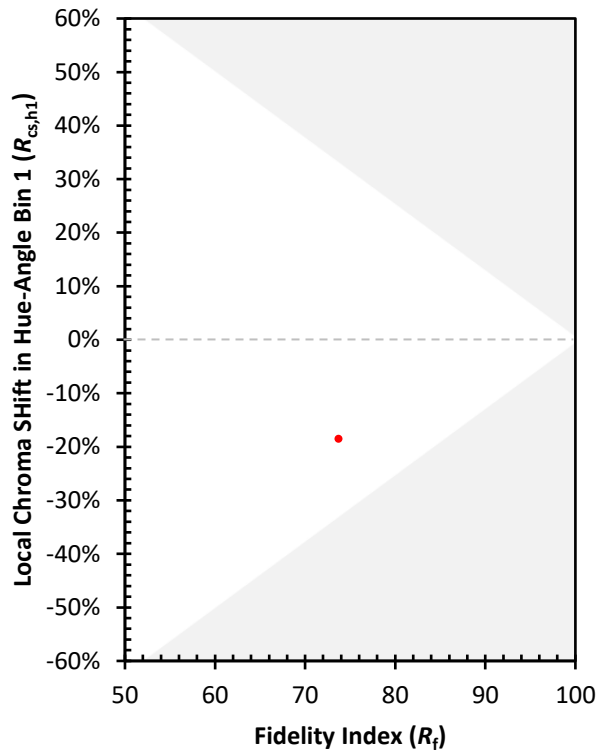
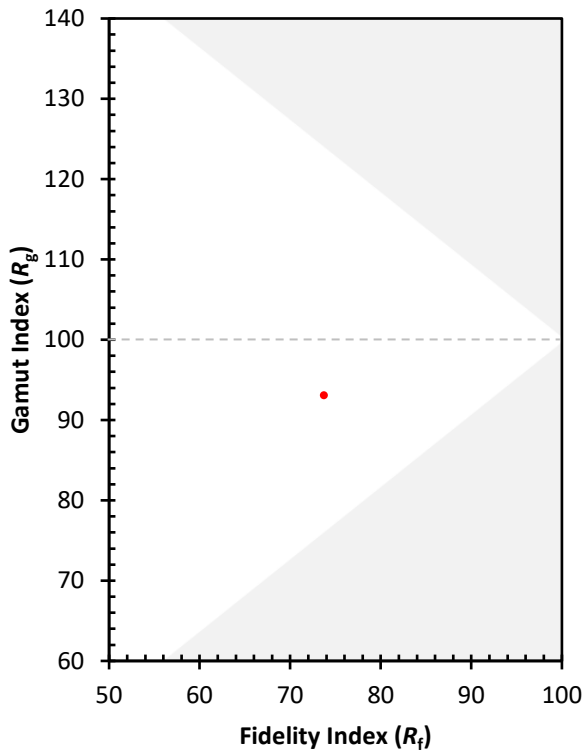




Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)