

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: P867509

Luminaire Tested: **MEM2-HTN-SA-120-727-U-T2R-HSS**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867509
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-120-727-U-T2R-HSS
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 120W 70CRI 2700K
FIXTURE w/ TYPE II ROADWAY DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD
Light Source: (20) 2700K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

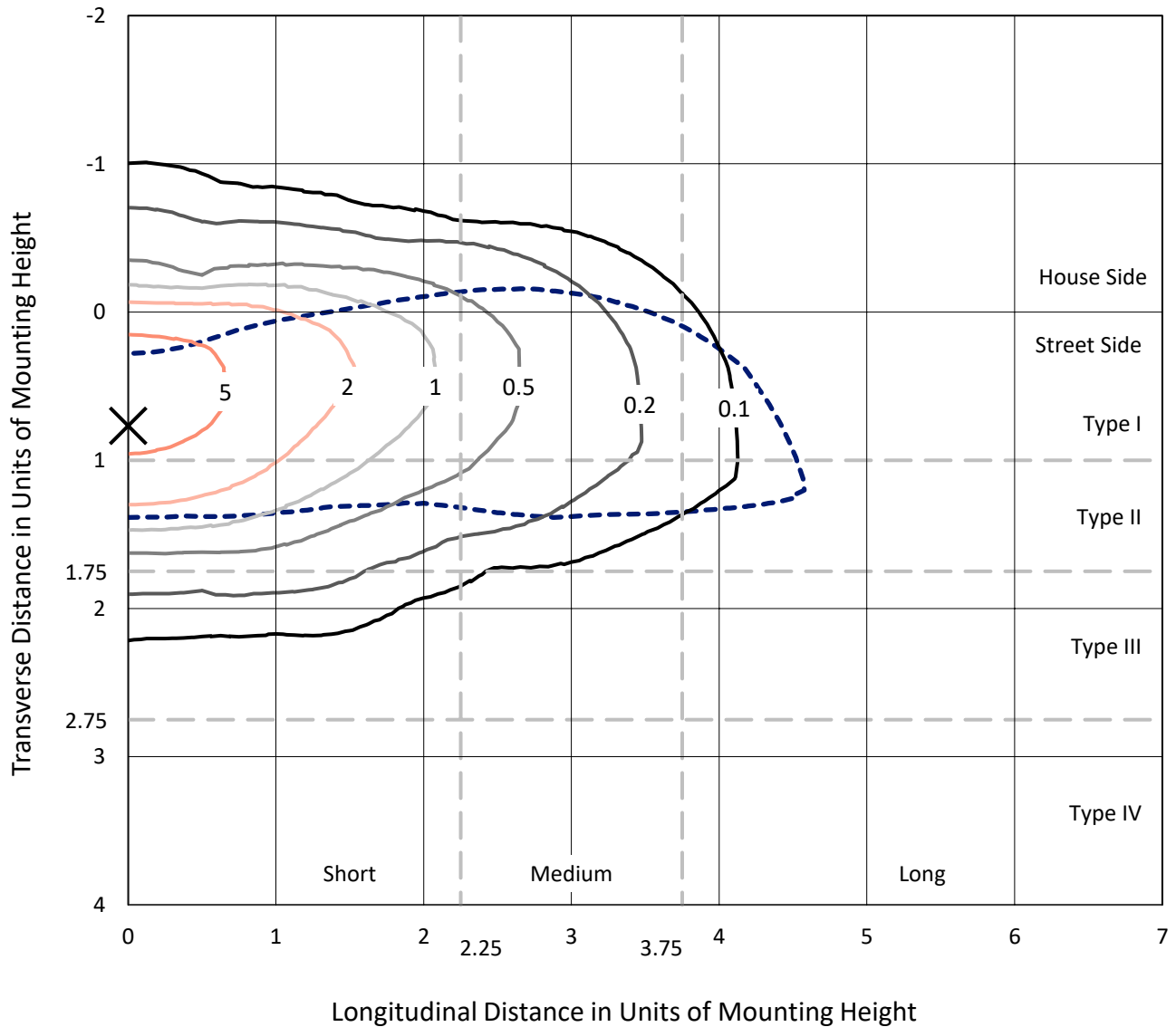
Lumens per Lamp: N/A
Luminaire Lumens: 9071 lumens
Efficiency: N/A
Efficacy: 89.8 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

Input Watts (W): 101
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.45%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Iso-Footcandle Lines of Horizontal Illumination

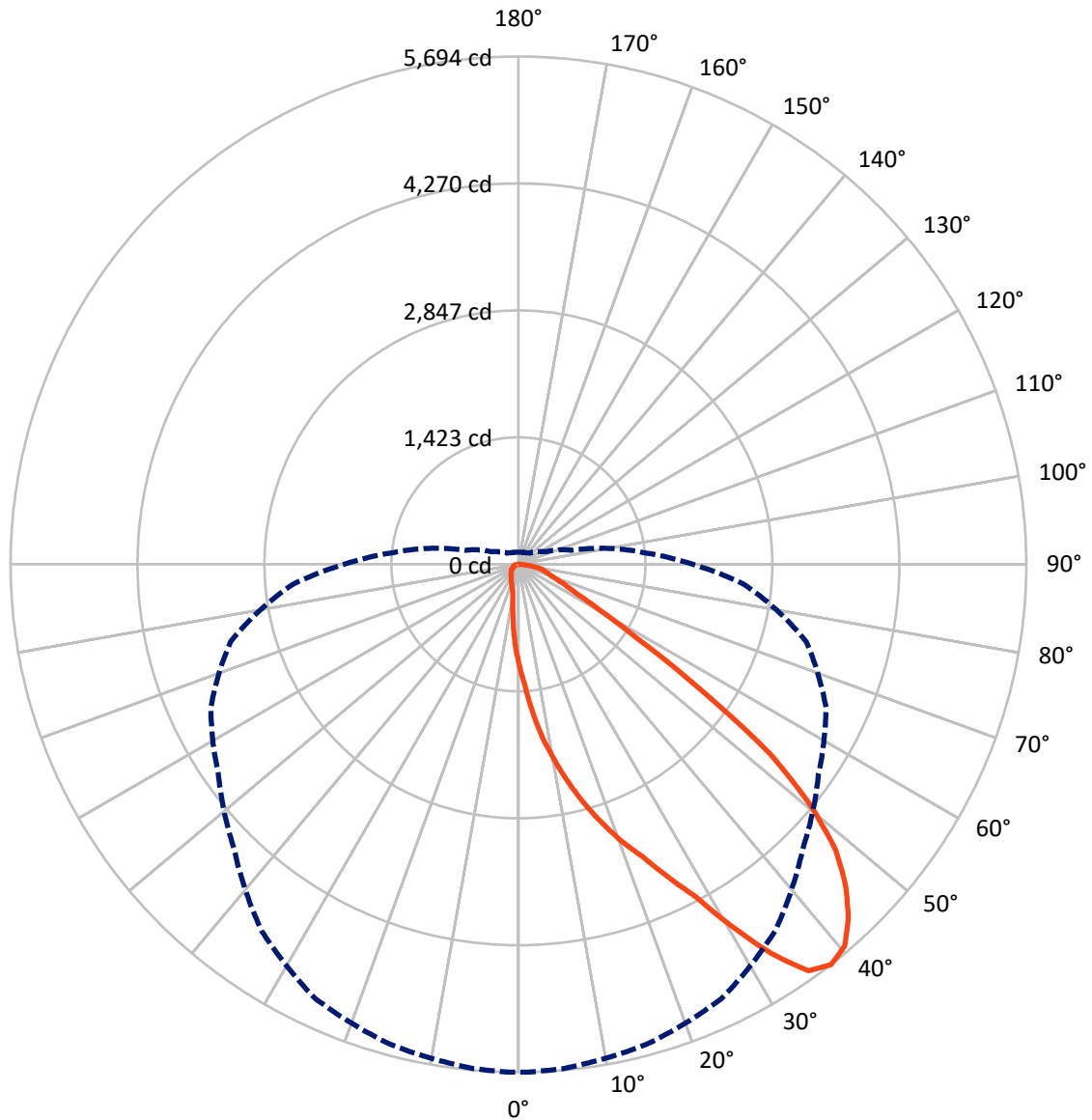
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.8 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 37.5-Deg Vertical

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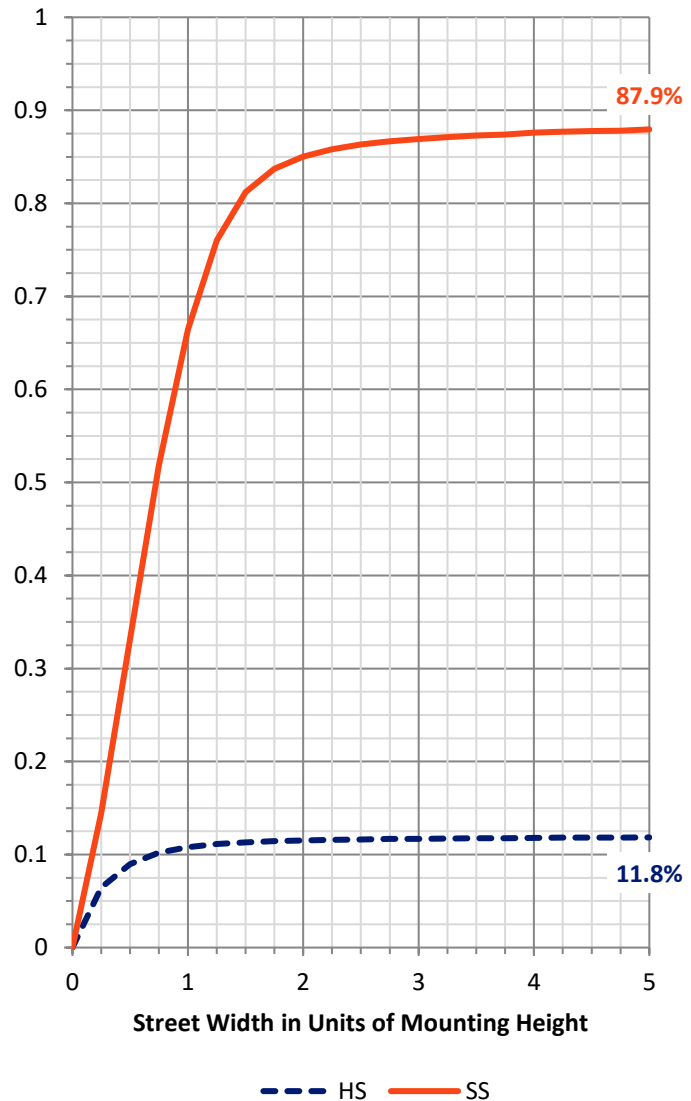
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1081.9 | 0.0 | 1081.9 |
| | % Fixture | 11.9 | 0.0 | 11.9 |
| Street Side | Lumens | 7989.1 | 0.0 | 7989.1 |
| | % Fixture | 88.1 | 0.0 | 88.1 |
| Total | Lumens | 9071.0 | 0.0 | 9071.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 112.8 | 1.2 |
| 10°-20° | 394.2 | 4.3 |
| 20°-30° | 813.3 | 9.0 |
| 30°-40° | 1431.0 | 15.8 |
| 40°-50° | 1943.0 | 21.4 |
| 50°-60° | 1925.1 | 21.2 |
| 60°-70° | 1482.0 | 16.3 |
| 70°-80° | 860.2 | 9.5 |
| 80°-90° | 109.4 | 1.2 |
| 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° | 9071.0 | 100.0 |
| 0°-180° | 9071.0 | 100.0 |



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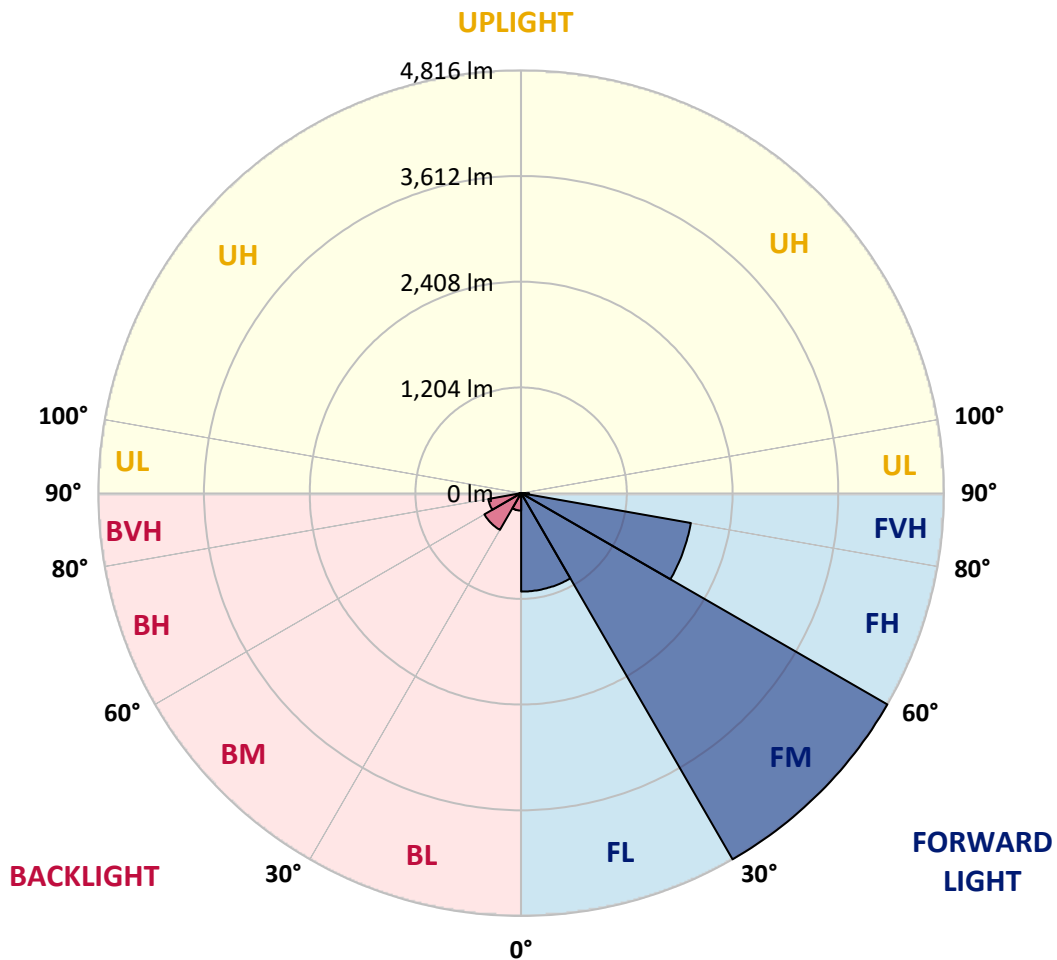
CATALOG NUMBER: MEM2-HTN-SA-120-727-U-T2R-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1121.3 | 12.4 | | | |
| FM (30°-60°) | 4815.9 | 53.1 | | | |
| FH (60°-80°) | 1962.6 | 21.6 | | | G2/5000 |
| FVH (80°-90°) | 89.2 | 1.0 | | | G1/100 |
| BL (0°-30°) | 198.9 | 2.2 | B1/500 | | |
| BM (30°-60°) | 483.2 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 379.6 | 4.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 20.2 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 1° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 |
| 2.5° | 1354.4 | 1374.6 | 1359.5 | 1346.8 | 1329.1 | 1311.4 | 1286.0 | 1258.2 | 1222.7 | 1179.7 | 1141.7 |
| 5° | 1660.7 | 1670.8 | 1665.8 | 1658.2 | 1602.5 | 1549.3 | 1496.2 | 1430.3 | 1339.2 | 1258.2 | 1172.1 |
| 7.5° | 1967.0 | 1962.0 | 1949.3 | 1926.5 | 1875.9 | 1815.1 | 1718.9 | 1610.1 | 1481.0 | 1339.2 | 1205.0 |
| 10° | 2235.4 | 2243.0 | 2232.8 | 2197.4 | 2134.1 | 2050.6 | 1934.1 | 1810.1 | 1635.4 | 1437.9 | 1250.6 |
| 12.5° | 2516.4 | 2521.4 | 2521.4 | 2445.5 | 2402.5 | 2273.3 | 2149.3 | 1982.2 | 1787.3 | 1559.4 | 1303.8 |
| 15° | 2792.3 | 2782.2 | 2782.2 | 2731.6 | 2655.6 | 2511.3 | 2372.1 | 2169.6 | 1949.3 | 1673.4 | 1364.5 |
| 17.5° | 3055.6 | 3060.7 | 3037.9 | 2982.2 | 2908.8 | 2769.5 | 2597.4 | 2374.6 | 2108.8 | 1810.1 | 1427.8 |
| 20° | 3316.4 | 3301.2 | 3291.0 | 3235.3 | 3156.9 | 2992.3 | 2827.8 | 2574.6 | 2296.1 | 1964.5 | 1516.4 |
| 22.5° | 3559.4 | 3567.0 | 3541.7 | 3453.1 | 3379.6 | 3230.3 | 3042.9 | 2810.0 | 2493.6 | 2118.9 | 1612.6 |
| 25° | 3873.3 | 3848.0 | 3870.8 | 3764.4 | 3650.5 | 3473.3 | 3260.7 | 3030.3 | 2708.8 | 2308.8 | 1731.6 |
| 27.5° | 4207.5 | 4222.7 | 4210.0 | 4093.5 | 3939.1 | 3701.2 | 3478.4 | 3232.8 | 2926.5 | 2488.5 | 1865.8 |
| 30° | 4706.2 | 4698.6 | 4701.1 | 4526.4 | 4270.8 | 3987.2 | 3713.8 | 3445.5 | 3144.2 | 2708.8 | 2022.7 |
| 32.5° | 5199.8 | 5227.7 | 5159.3 | 5004.9 | 4711.3 | 4283.4 | 3949.2 | 3650.5 | 3354.3 | 2898.6 | 2182.2 |
| 35° | 5597.3 | 5589.7 | 5561.9 | 5389.7 | 5098.6 | 4683.4 | 4217.6 | 3878.4 | 3577.1 | 3131.6 | 2359.4 |
| 37.5° | 5693.5 | 5693.5 | 5675.8 | 5569.5 | 5377.1 | 5017.6 | 4508.7 | 4106.2 | 3804.9 | 3339.1 | 2531.6 |
| 40° | 5630.2 | 5617.6 | 5607.4 | 5536.5 | 5432.7 | 5220.1 | 4815.0 | 4341.6 | 4048.0 | 3607.5 | 2721.4 |
| 42.5° | 5422.6 | 5425.2 | 5412.5 | 5372.0 | 5316.3 | 5235.3 | 5004.9 | 4592.3 | 4285.9 | 3860.6 | 2908.8 |
| 45° | 5144.1 | 5149.2 | 5134.0 | 5129.0 | 5101.1 | 5101.1 | 5047.9 | 4789.7 | 4511.3 | 4118.9 | 3113.8 |
| 47.5° | 4787.2 | 4784.7 | 4777.1 | 4764.4 | 4820.1 | 4880.9 | 4929.0 | 4901.1 | 4711.3 | 4397.3 | 3298.6 |
| 50° | 4242.9 | 4237.8 | 4260.6 | 4323.9 | 4460.6 | 4594.8 | 4736.6 | 4868.2 | 4855.6 | 4655.6 | 3521.4 |
| 52.5° | 3536.6 | 3503.7 | 3529.0 | 3723.9 | 4004.9 | 4303.7 | 4503.7 | 4711.3 | 4929.0 | 4929.0 | 3741.7 |
| 55° | 2473.3 | 2501.2 | 2516.4 | 2802.4 | 3356.9 | 3870.8 | 4222.7 | 4491.0 | 4901.1 | 5146.7 | 3984.7 |
| 57.5° | 1574.6 | 1584.8 | 1630.3 | 1939.2 | 2589.8 | 3232.8 | 3855.6 | 4296.1 | 4797.3 | 5329.0 | 4227.7 |
| 60° | 1060.7 | 1025.3 | 1060.7 | 1237.9 | 1863.2 | 2536.6 | 3316.4 | 4050.5 | 4648.0 | 5460.6 | 4496.1 |
| 62.5° | 749.3 | 746.8 | 756.9 | 860.7 | 1329.1 | 1906.3 | 2640.4 | 3718.9 | 4529.0 | 5468.2 | 4696.1 |
| 65° | 605.0 | 587.3 | 594.9 | 653.1 | 891.1 | 1397.4 | 1936.7 | 3118.9 | 4422.7 | 5334.0 | 4794.8 |
| 67.5° | 486.1 | 478.5 | 483.5 | 521.5 | 668.3 | 1050.6 | 1364.5 | 2372.1 | 4197.3 | 5106.2 | 4739.1 |
| 70° | 397.5 | 400.0 | 402.5 | 440.5 | 531.6 | 794.9 | 974.7 | 1627.8 | 3716.3 | 4848.0 | 4488.5 |
| 72.5° | 344.3 | 344.3 | 346.8 | 372.1 | 445.6 | 630.4 | 736.7 | 1058.2 | 3007.5 | 4569.5 | 4027.7 |
| 75° | 303.8 | 303.8 | 303.8 | 326.6 | 379.7 | 506.3 | 572.1 | 724.0 | 2159.4 | 4053.0 | 3331.5 |
| 77.5° | 263.3 | 265.8 | 265.8 | 286.1 | 326.6 | 394.9 | 440.5 | 501.3 | 1377.2 | 3131.6 | 2521.4 |
| 80° | 202.5 | 202.5 | 205.1 | 227.8 | 278.5 | 308.9 | 324.0 | 354.4 | 724.0 | 1967.0 | 1600.0 |
| 82.5° | 141.8 | 144.3 | 144.3 | 146.8 | 187.3 | 189.9 | 174.7 | 177.2 | 263.3 | 653.1 | 607.6 |
| 85° | 15.2 | 17.7 | 20.3 | 20.3 | 32.9 | 40.5 | 43.0 | 40.5 | 43.0 | 75.9 | 75.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 5.1 | 5.1 | 7.6 | 7.6 | 7.6 | 7.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P867509

CATALOG NUMBER: MEM2-HTN-SA-120-727-U-T2R-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 | 1124.0 |
| 2.5° | 1121.5 | 1103.8 | 1065.8 | 1032.9 | 1002.5 | 977.2 | 959.5 | 936.7 | 919.0 | 919.0 | 929.1 |
| 5° | 1129.1 | 1088.6 | 1010.1 | 936.7 | 878.5 | 822.8 | 772.1 | 739.2 | 713.9 | 698.7 | 698.7 |
| 7.5° | 1139.2 | 1078.4 | 959.5 | 848.1 | 756.9 | 668.3 | 589.9 | 551.9 | 513.9 | 501.3 | 503.8 |
| 10° | 1159.5 | 1073.4 | 913.9 | 769.6 | 632.9 | 521.5 | 445.6 | 405.1 | 384.8 | 374.7 | 374.7 |
| 12.5° | 1182.2 | 1073.4 | 865.8 | 681.0 | 521.5 | 407.6 | 362.0 | 331.6 | 321.5 | 316.4 | 311.4 |
| 15° | 1212.6 | 1078.4 | 825.3 | 587.3 | 425.3 | 344.3 | 311.4 | 293.7 | 283.5 | 278.5 | 278.5 |
| 17.5° | 1248.1 | 1083.5 | 782.3 | 511.4 | 362.0 | 303.8 | 278.5 | 265.8 | 255.7 | 250.6 | 250.6 |
| 20° | 1293.6 | 1096.2 | 739.2 | 443.0 | 316.4 | 278.5 | 255.7 | 243.0 | 232.9 | 230.4 | 227.8 |
| 22.5° | 1349.3 | 1116.4 | 696.2 | 387.3 | 286.1 | 253.2 | 232.9 | 222.8 | 215.2 | 210.1 | 210.1 |
| 25° | 1415.1 | 1141.7 | 663.3 | 346.8 | 263.3 | 235.4 | 217.7 | 205.1 | 197.5 | 194.9 | 194.9 |
| 27.5° | 1506.3 | 1184.8 | 630.4 | 316.4 | 245.6 | 217.7 | 200.0 | 189.9 | 182.3 | 179.7 | 177.2 |
| 30° | 1592.4 | 1237.9 | 615.2 | 308.9 | 232.9 | 202.5 | 189.9 | 177.2 | 169.6 | 167.1 | 164.6 |
| 32.5° | 1703.7 | 1298.7 | 605.0 | 308.9 | 227.8 | 192.4 | 177.2 | 167.1 | 159.5 | 157.0 | 154.4 |
| 35° | 1822.7 | 1369.6 | 605.0 | 319.0 | 230.4 | 184.8 | 167.1 | 157.0 | 149.4 | 144.3 | 144.3 |
| 37.5° | 1951.8 | 1440.5 | 610.1 | 334.2 | 238.0 | 179.7 | 157.0 | 146.8 | 139.2 | 136.7 | 136.7 |
| 40° | 2088.5 | 1536.7 | 620.2 | 346.8 | 245.6 | 177.2 | 146.8 | 139.2 | 131.6 | 126.6 | 126.6 |
| 42.5° | 2215.1 | 1612.6 | 638.0 | 362.0 | 250.6 | 174.7 | 139.2 | 131.6 | 124.0 | 121.5 | 121.5 |
| 45° | 2362.0 | 1696.2 | 653.1 | 372.1 | 250.6 | 167.1 | 131.6 | 124.0 | 119.0 | 116.5 | 113.9 |
| 47.5° | 2478.4 | 1764.5 | 660.7 | 377.2 | 245.6 | 159.5 | 124.0 | 119.0 | 113.9 | 108.9 | 111.4 |
| 50° | 2620.2 | 1837.9 | 673.4 | 379.7 | 235.4 | 149.4 | 119.0 | 111.4 | 106.3 | 103.8 | 103.8 |
| 52.5° | 2756.9 | 1911.3 | 683.5 | 374.7 | 222.8 | 136.7 | 111.4 | 106.3 | 101.3 | 96.2 | 96.2 |
| 55° | 2918.9 | 1992.3 | 698.7 | 367.1 | 202.5 | 124.0 | 103.8 | 98.7 | 91.1 | 88.6 | 86.1 |
| 57.5° | 3103.7 | 2098.7 | 711.4 | 351.9 | 177.2 | 111.4 | 98.7 | 91.1 | 81.0 | 75.9 | 75.9 |
| 60° | 3273.3 | 2220.2 | 721.5 | 313.9 | 154.4 | 103.8 | 91.1 | 83.5 | 73.4 | 70.9 | 70.9 |
| 62.5° | 3455.6 | 2346.8 | 721.5 | 248.1 | 131.6 | 93.7 | 86.1 | 78.5 | 68.4 | 65.8 | 65.8 |
| 65° | 3582.2 | 2460.7 | 698.7 | 184.8 | 111.4 | 88.6 | 83.5 | 73.4 | 63.3 | 60.8 | 60.8 |
| 67.5° | 3617.6 | 2531.6 | 635.4 | 131.6 | 96.2 | 83.5 | 78.5 | 68.4 | 60.8 | 55.7 | 55.7 |
| 70° | 3503.7 | 2475.9 | 519.0 | 101.3 | 83.5 | 75.9 | 70.9 | 63.3 | 55.7 | 53.2 | 53.2 |
| 72.5° | 3177.1 | 2263.2 | 387.3 | 86.1 | 73.4 | 70.9 | 65.8 | 58.2 | 53.2 | 50.6 | 50.6 |
| 75° | 2660.7 | 1881.0 | 273.4 | 75.9 | 68.4 | 63.3 | 58.2 | 53.2 | 48.1 | 48.1 | 48.1 |
| 77.5° | 2015.1 | 1359.5 | 169.6 | 68.4 | 58.2 | 58.2 | 53.2 | 48.1 | 45.6 | 43.0 | 43.0 |
| 80° | 1301.2 | 858.2 | 96.2 | 48.1 | 40.5 | 43.0 | 38.0 | 32.9 | 32.9 | 30.4 | 30.4 |
| 82.5° | 551.9 | 339.2 | 50.6 | 27.8 | 20.3 | 17.7 | 12.7 | 12.7 | 10.1 | 10.1 | 10.1 |
| 85° | 55.7 | 20.3 | 10.1 | 7.6 | 7.6 | 5.1 | 5.1 | 5.1 | 5.1 | 2.5 | 2.5 |
| 87.5° | 7.6 | 7.6 | 7.6 | 5.1 | 5.1 | 5.1 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 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: SP1-2407-157-3

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-727-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-727-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-3
 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-40-727-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 2747
 CIE u': 0.2606
 CIE v': 0.5257
 Duv: -0.0005
 CIE x: 0.4552
 CIE y: 0.4082
 CIE z: 0.1366
 Peak Wavelength (nm): 597
 Dominant Wavelength (nm): 584
 Purity: 59.16856
 R_f: 75.5
 R_g: 93.6

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 68.1 | R9: | -35.3 |
| R2: | 83.9 | R10: | 64.2 |
| R3: | 94.7 | R11: | 61.7 |
| R4: | 66.3 | R12: | 53.9 |
| R5: | 67.4 | R13: | 71.2 |
| R6: | 78.7 | R14: | 97.6 |
| R7: | 75.0 | R15: | 59.3 |
| R8: | 39.4 | | |



Test Conditions

Stabilization Time: 22M
 Operation Time: 1H 22M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-3

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

REPORT NUMBER: SP1-2407-157-3

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2700K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 103 | NR | 620 | 846 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 130 | NR | 625 | 784 | NR | 755 | 17 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 171 | NR | 630 | 720 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 221 | NR | 635 | 652 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 587 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 313 | NR | 645 | 521 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 350 | NR | 650 | 461 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 381 | NR | 655 | 406 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 407 | NR | 660 | 353 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 435 | NR | 665 | 307 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 462 | NR | 670 | 264 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 496 | NR | 675 | 227 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 534 | NR | 680 | 196 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 582 | NR | 685 | 167 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 69 | NR | 560 | 638 | NR | 690 | 144 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 120 | NR | 565 | 700 | NR | 695 | 122 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 193 | NR | 570 | 767 | NR | 700 | 103 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 316 | NR | 575 | 836 | NR | 705 | 88 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 469 | NR | 580 | 898 | NR | 710 | 74 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 431 | NR | 585 | 947 | NR | 715 | 63 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 264 | NR | 590 | 982 | NR | 720 | 54 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 197 | NR | 595 | 997 | NR | 725 | 46 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 155 | NR | 600 | 997 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 108 | NR | 605 | 978 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 90 | NR | 610 | 947 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 92 | NR | 615 | 900 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-3

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.13

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 103 | NR | 620 | 846 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 130 | NR | 625 | 784 | NR | 755 | 17 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 171 | NR | 630 | 720 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 221 | NR | 635 | 652 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 587 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 313 | NR | 645 | 521 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 350 | NR | 650 | 461 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 381 | NR | 655 | 406 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 407 | NR | 660 | 353 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 435 | NR | 665 | 307 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 462 | NR | 670 | 264 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 496 | NR | 675 | 227 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 534 | NR | 680 | 196 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 582 | NR | 685 | 167 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 69 | NR | 560 | 638 | NR | 690 | 144 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 120 | NR | 565 | 700 | NR | 695 | 122 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 193 | NR | 570 | 767 | NR | 700 | 103 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 316 | NR | 575 | 836 | NR | 705 | 88 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 469 | NR | 580 | 898 | NR | 710 | 74 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 431 | NR | 585 | 947 | NR | 715 | 63 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 264 | NR | 590 | 982 | NR | 720 | 54 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 197 | NR | 595 | 997 | NR | 725 | 46 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 155 | NR | 600 | 997 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 108 | NR | 605 | 978 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 90 | NR | 610 | 947 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 92 | NR | 615 | 900 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR M/P: 2.04

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 103 | NR | 620 | 846 | NR | 750 | 20 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 130 | NR | 625 | 784 | NR | 755 | 17 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 171 | NR | 630 | 720 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 221 | NR | 635 | 652 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 587 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 313 | NR | 645 | 521 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 350 | NR | 650 | 461 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 381 | NR | 655 | 406 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 407 | NR | 660 | 353 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 435 | NR | 665 | 307 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 462 | NR | 670 | 264 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 496 | NR | 675 | 227 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 534 | NR | 680 | 196 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 38 | NR | 555 | 582 | NR | 685 | 167 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 69 | NR | 560 | 638 | NR | 690 | 144 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 120 | NR | 565 | 700 | NR | 695 | 122 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 193 | NR | 570 | 767 | NR | 700 | 103 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 316 | NR | 575 | 836 | NR | 705 | 88 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 469 | NR | 580 | 898 | NR | 710 | 74 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 431 | NR | 585 | 947 | NR | 715 | 63 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 264 | NR | 590 | 982 | NR | 720 | 54 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 197 | NR | 595 | 997 | NR | 725 | 46 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 155 | NR | 600 | 997 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 108 | NR | 605 | 978 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 90 | NR | 610 | 947 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 92 | NR | 615 | 900 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 75.5$
 $R_g = 93.6$
 $CIE R_a = 71.7$
 $R_9 = -35.3$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 90 | CES52 = 85 | CES77 = 79 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 66 |
| CES04 = 71 | CES29 = 71 | CES54 = 86 | CES79 = 87 |
| CES05 = 50 | CES30 = 85 | CES55 = 84 | CES80 = 85 |
| CES06 = 52 | CES31 = 74 | CES56 = 75 | CES81 = 67 |
| CES07 = 42 | CES32 = 66 | CES57 = 75 | CES82 = 93 |
| CES08 = 41 | CES33 = 80 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 77 | CES35 = 89 | CES60 = 90 | CES85 = 72 |
| CES11 = 60 | CES36 = 93 | CES61 = 81 | CES86 = 59 |
| CES12 = 66 | CES37 = 88 | CES62 = 91 | CES87 = 77 |
| CES13 = 43 | CES38 = 93 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 97 | CES64 = 67 | CES89 = 65 |
| CES15 = 72 | CES40 = 93 | CES65 = 66 | CES90 = 80 |
| CES16 = 48 | CES41 = 93 | CES66 = 63 | CES91 = 80 |
| CES17 = 51 | CES42 = 89 | CES67 = 61 | CES92 = 55 |
| CES18 = 57 | CES43 = 78 | CES68 = 68 | CES93 = 72 |
| CES19 = 73 | CES44 = 99 | CES69 = 78 | CES94 = 48 |
| CES20 = 67 | CES45 = 85 | CES70 = 63 | CES95 = 66 |
| CES21 = 88 | CES46 = 81 | CES71 = 61 | CES96 = 76 |
| CES22 = 80 | CES47 = 86 | CES72 = 86 | CES97 = 81 |
| CES23 = 92 | CES48 = 74 | CES73 = 56 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 93 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 66 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)