

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: P437877

Luminaire Tested: **ISC-SA1F-750-U-SL3-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437877
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-17)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISC-SA1F-750-U-SL3-HSS
Description: IMPACT ELITE LED CYLINDER LUMINAIRE
(1) 70 CRI, 5000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND TYPE III SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6545 lumens
Efficiency: N/A
Efficacy: 99.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

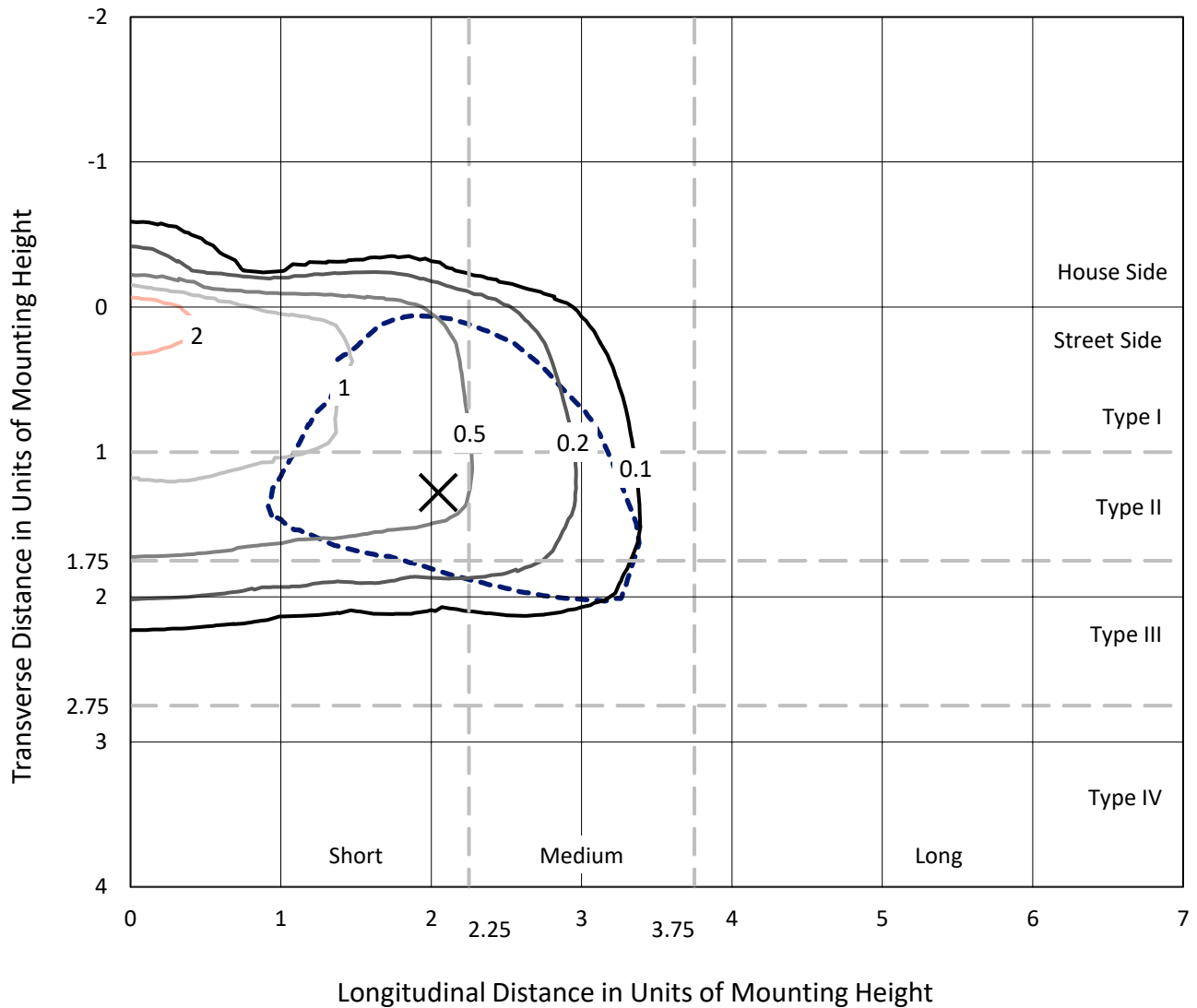
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

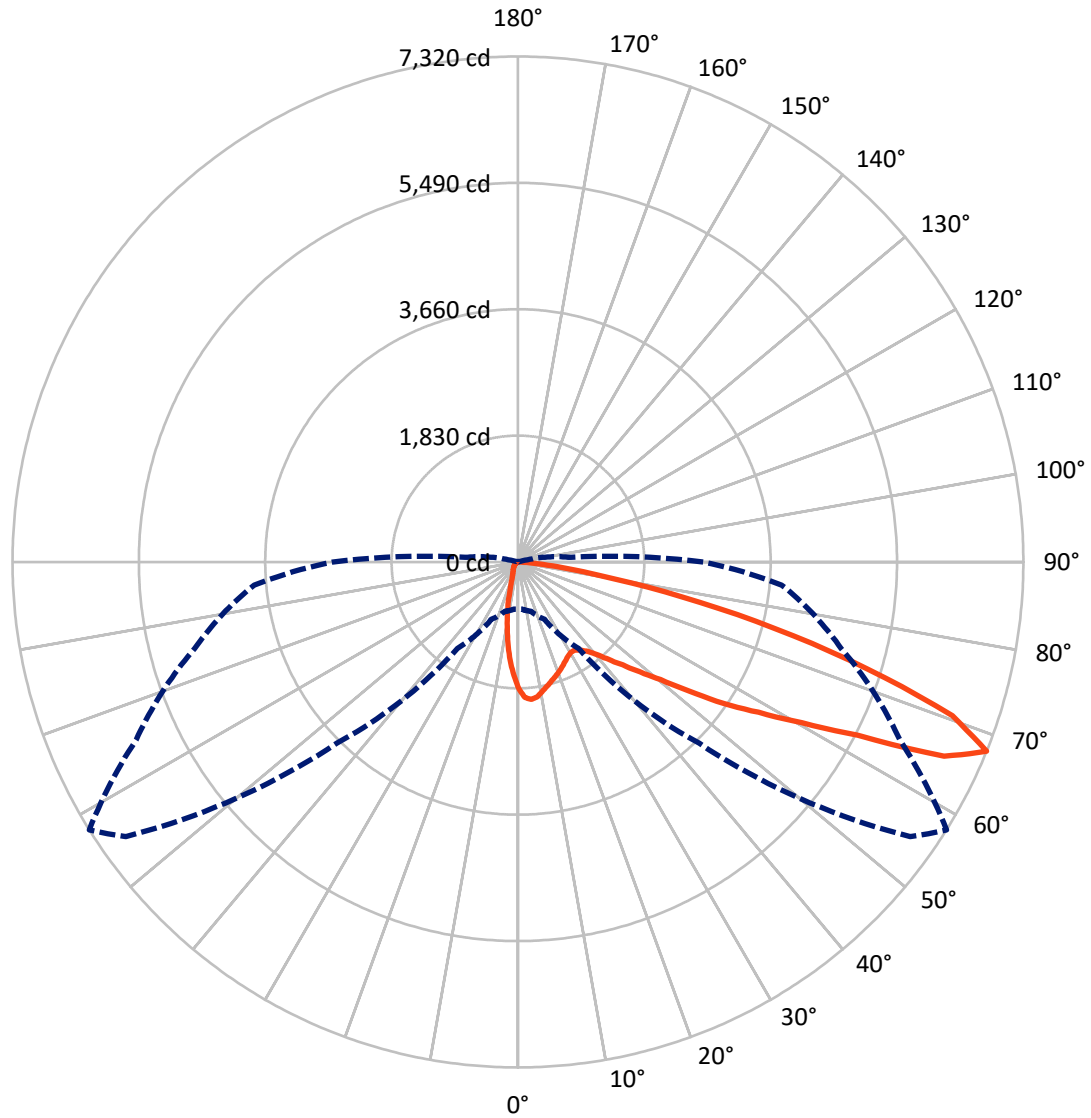
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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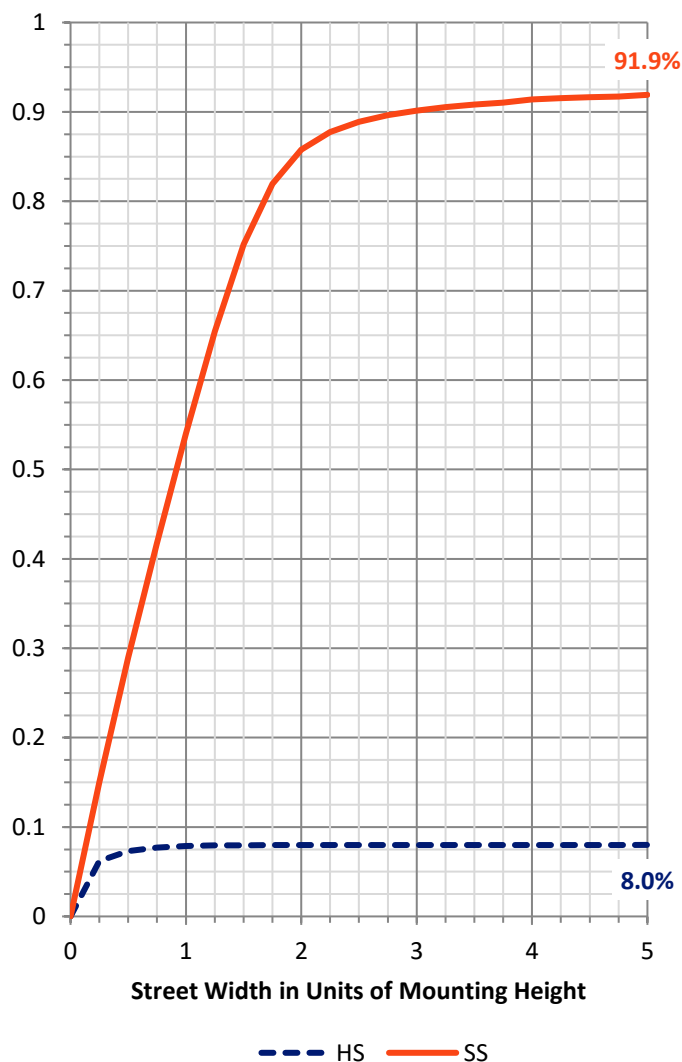
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 527.7 | 0.0 | 527.7 |
| | % Fixture | 8.1 | 0.0 | 8.1 |
| Street Side | Lumens | 6017.3 | 0.0 | 6017.3 |
| | % Fixture | 91.9 | 0.0 | 91.9 |
| Total | Lumens | 6545.0 | 0.0 | 6545.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 147.5 | 2.3 |
| 10°-20° | 310.9 | 4.8 |
| 20°-30° | 420.7 | 6.4 |
| 30°-40° | 578.6 | 8.8 |
| 40°-50° | 905.9 | 13.8 |
| 50°-60° | 1526.0 | 23.3 |
| 60°-70° | 1811.0 | 27.7 |
| 70°-80° | 786.4 | 12.0 |
| 80°-90° | 57.8 | 0.9 |
| 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° | 6545.0 | 100.0 |
| 0°-180° | 6545.0 | 100.0 |

Coefficient of Utilization



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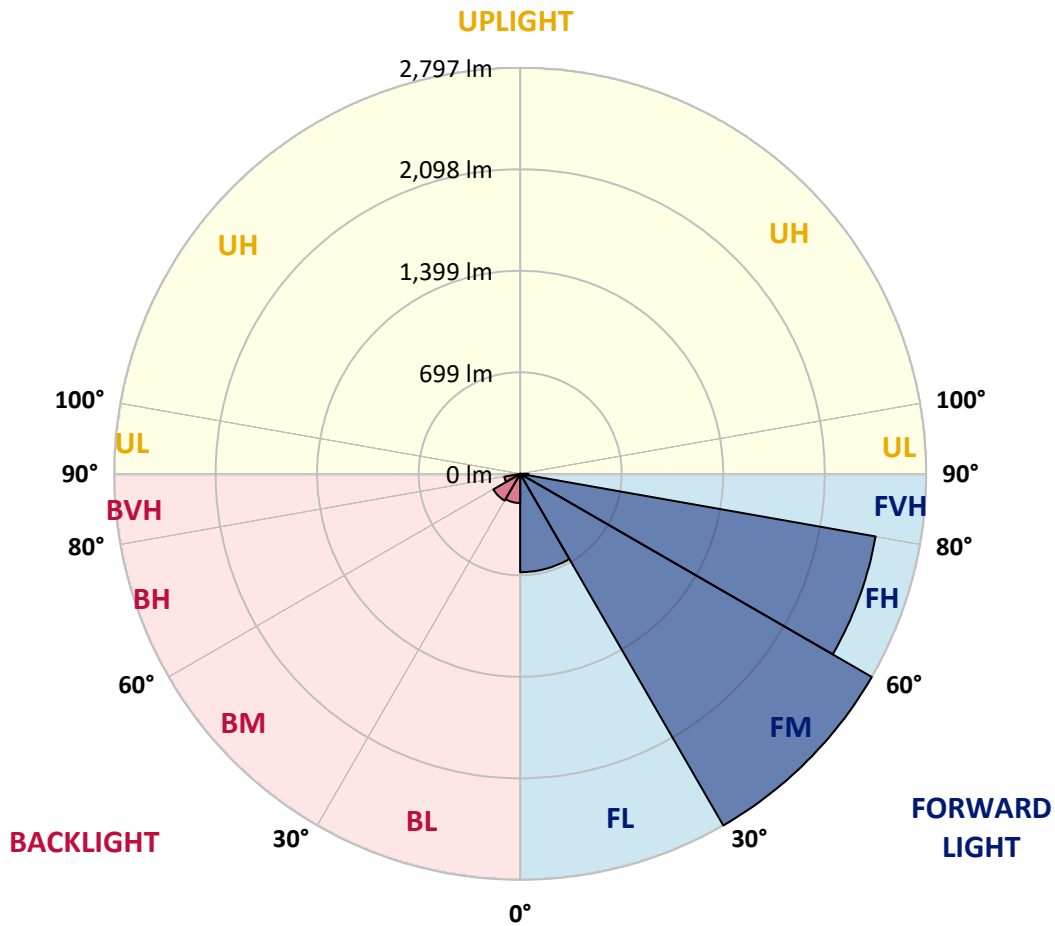
CATALOG NUMBER: ISC-SA1F-750-U-SL3-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 677.8 | 10.4 | | | |
| FM (30°-60°) | 2797.1 | 42.7 | | | |
| FH (60°-80°) | 2486.4 | 38.0 | | | G2/5000 |
| FVH (80°-90°) | 56.0 | 0.9 | | | G1/100 |
| BL (0°-30°) | 201.4 | 3.1 | B1/500 | | |
| BM (30°-60°) | 213.4 | 3.3 | B0/220 | | |
| BH (60°-80°) | 111.0 | 1.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.8 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 |
| 2.5° | 2056.9 | 2045.6 | 2040.0 | 2037.2 | 2017.4 | 2000.5 | 1966.7 | 1963.9 | 1941.4 | 1899.1 | 1856.8 |
| 5° | 2011.8 | 2020.3 | 2023.1 | 2031.5 | 2028.7 | 2028.7 | 2006.2 | 2000.5 | 1969.5 | 1910.4 | 1828.7 |
| 7.5° | 1913.2 | 1910.4 | 1916.0 | 1938.5 | 1949.8 | 1972.4 | 1969.5 | 1975.2 | 1961.1 | 1896.3 | 1780.8 |
| 10° | 1769.5 | 1775.1 | 1792.0 | 1811.7 | 1842.7 | 1882.2 | 1907.5 | 1913.2 | 1924.5 | 1870.9 | 1735.7 |
| 12.5° | 1637.1 | 1645.5 | 1656.8 | 1696.2 | 1730.0 | 1792.0 | 1839.9 | 1851.2 | 1873.7 | 1845.6 | 1696.2 |
| 15° | 1527.2 | 1530.0 | 1538.4 | 1575.1 | 1631.4 | 1710.3 | 1780.8 | 1797.7 | 1834.3 | 1823.0 | 1665.2 |
| 17.5° | 1439.8 | 1442.6 | 1453.9 | 1484.9 | 1530.0 | 1623.0 | 1718.8 | 1746.9 | 1800.5 | 1808.9 | 1631.4 |
| 20° | 1391.9 | 1391.9 | 1391.9 | 1411.6 | 1456.7 | 1544.1 | 1656.8 | 1696.2 | 1772.3 | 1786.4 | 1603.2 |
| 22.5° | 1377.8 | 1377.8 | 1372.2 | 1377.8 | 1406.0 | 1479.3 | 1594.8 | 1642.7 | 1738.5 | 1777.9 | 1569.4 |
| 25° | 1397.6 | 1389.1 | 1389.1 | 1375.0 | 1377.8 | 1425.7 | 1538.4 | 1592.0 | 1718.8 | 1772.3 | 1552.5 |
| 27.5° | 1434.2 | 1431.4 | 1420.1 | 1408.8 | 1391.9 | 1403.2 | 1490.5 | 1544.1 | 1699.0 | 1780.8 | 1538.4 |
| 30° | 1476.4 | 1476.4 | 1470.8 | 1465.2 | 1437.0 | 1414.5 | 1468.0 | 1515.9 | 1690.6 | 1794.8 | 1530.0 |
| 32.5° | 1524.3 | 1521.5 | 1535.6 | 1541.3 | 1507.4 | 1465.2 | 1473.6 | 1518.7 | 1696.2 | 1837.1 | 1535.6 |
| 35° | 1580.7 | 1580.7 | 1606.1 | 1639.9 | 1611.7 | 1546.9 | 1527.2 | 1566.6 | 1724.4 | 1882.2 | 1558.2 |
| 37.5° | 1642.7 | 1645.5 | 1690.6 | 1738.5 | 1718.8 | 1662.4 | 1628.6 | 1642.7 | 1783.6 | 1966.7 | 1608.9 |
| 40° | 1715.9 | 1715.9 | 1783.6 | 1862.5 | 1862.5 | 1797.7 | 1752.6 | 1763.8 | 1868.1 | 2087.9 | 1699.0 |
| 42.5° | 1794.8 | 1803.3 | 1899.1 | 1994.9 | 2023.1 | 1963.9 | 1916.0 | 1930.1 | 2003.3 | 2245.7 | 1831.5 |
| 45° | 1907.5 | 1932.9 | 2056.9 | 2149.9 | 2206.2 | 2178.0 | 2116.1 | 2127.3 | 2180.9 | 2473.9 | 2031.5 |
| 47.5° | 2107.6 | 2130.1 | 2237.2 | 2330.2 | 2400.6 | 2414.7 | 2386.5 | 2380.9 | 2403.5 | 2741.6 | 2285.1 |
| 50° | 2347.1 | 2366.8 | 2440.1 | 2519.0 | 2617.6 | 2702.1 | 2685.2 | 2676.8 | 2685.2 | 3034.6 | 2595.1 |
| 52.5° | 2583.8 | 2575.3 | 2662.7 | 2704.9 | 2843.0 | 3029.0 | 3102.2 | 3102.2 | 3057.1 | 3341.7 | 2899.4 |
| 55° | 2795.1 | 2831.7 | 2924.7 | 3000.8 | 3116.3 | 3338.9 | 3586.9 | 3617.9 | 3462.9 | 3646.0 | 3152.9 |
| 57.5° | 2769.7 | 2806.4 | 2978.2 | 3217.7 | 3558.7 | 3860.2 | 4102.5 | 4108.1 | 3882.7 | 3879.9 | 3465.7 |
| 60° | 2473.9 | 2476.7 | 2707.8 | 3071.2 | 3753.1 | 4612.5 | 4753.4 | 4725.2 | 4249.0 | 4206.7 | 3896.8 |
| 62.5° | 1741.3 | 1730.0 | 2028.7 | 2490.8 | 3462.9 | 5023.9 | 5739.5 | 5525.4 | 4857.6 | 4719.6 | 4299.7 |
| 65° | 1014.4 | 1008.7 | 1124.2 | 1487.7 | 2623.2 | 4733.6 | 6748.3 | 6782.1 | 5657.8 | 4981.6 | 4215.2 |
| 67.5° | 681.9 | 687.5 | 741.0 | 918.6 | 1530.0 | 3713.7 | 6934.2 | 7320.2 | 6103.0 | 4846.3 | 3834.8 |
| 70° | 501.5 | 501.5 | 543.8 | 676.2 | 907.3 | 2327.4 | 6057.9 | 6675.0 | 6190.4 | 4508.2 | 3209.3 |
| 72.5° | 357.8 | 357.8 | 417.0 | 546.6 | 741.0 | 1200.3 | 4502.6 | 5291.5 | 5226.7 | 3741.8 | 2220.3 |
| 75° | 228.2 | 233.9 | 298.7 | 448.0 | 676.2 | 769.2 | 3054.3 | 3834.8 | 3646.0 | 2093.5 | 946.7 |
| 77.5° | 87.3 | 98.6 | 160.6 | 329.7 | 591.7 | 639.6 | 1741.3 | 2417.5 | 1924.5 | 732.6 | 253.6 |
| 80° | 31.0 | 31.0 | 53.5 | 169.1 | 417.0 | 526.9 | 910.1 | 1200.3 | 625.5 | 177.5 | 95.8 |
| 82.5° | 5.6 | 5.6 | 19.7 | 70.4 | 205.7 | 366.3 | 529.7 | 591.7 | 245.1 | 59.2 | 56.4 |
| 85° | 0.0 | 0.0 | 2.8 | 14.1 | 47.9 | 36.6 | 211.3 | 200.1 | 76.1 | 25.4 | 36.6 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 2.8 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| 90° | 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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 CATALOG NUMBER: ISC-SA1F-750-U-SL3-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 | 1842.7 |
| 2.5° | 1823.0 | 1800.5 | 1735.7 | 1690.6 | 1628.6 | 1566.6 | 1527.2 | 1496.2 | 1482.1 | 1462.4 | 1470.8 |
| 5° | 1777.9 | 1727.2 | 1608.9 | 1501.8 | 1400.4 | 1293.3 | 1214.4 | 1144.0 | 1121.4 | 1082.0 | 1076.3 |
| 7.5° | 1710.3 | 1639.9 | 1465.2 | 1296.1 | 1132.7 | 997.4 | 876.3 | 783.3 | 698.8 | 662.1 | 684.7 |
| 10° | 1645.5 | 1549.7 | 1321.5 | 1096.1 | 879.1 | 690.3 | 546.6 | 433.9 | 369.1 | 340.9 | 346.6 |
| 12.5° | 1583.5 | 1462.4 | 1172.1 | 904.5 | 639.6 | 425.5 | 309.9 | 250.8 | 231.0 | 228.2 | 222.6 |
| 15° | 1530.0 | 1380.6 | 1039.7 | 701.6 | 425.5 | 267.7 | 219.8 | 205.7 | 202.9 | 202.9 | 202.9 |
| 17.5° | 1470.8 | 1296.1 | 896.0 | 515.6 | 278.9 | 208.5 | 194.4 | 191.6 | 188.8 | 188.8 | 188.8 |
| 20° | 1425.7 | 1222.9 | 763.6 | 360.7 | 214.1 | 186.0 | 180.3 | 180.3 | 177.5 | 177.5 | 177.5 |
| 22.5° | 1377.8 | 1146.8 | 634.0 | 264.9 | 183.1 | 171.9 | 166.2 | 163.4 | 163.4 | 160.6 | 160.6 |
| 25° | 1332.7 | 1076.3 | 510.0 | 202.9 | 163.4 | 155.0 | 149.3 | 146.5 | 146.5 | 143.7 | 140.9 |
| 27.5° | 1304.6 | 1020.0 | 400.1 | 171.9 | 146.5 | 140.9 | 135.2 | 129.6 | 124.0 | 121.2 | 121.2 |
| 30° | 1284.8 | 952.4 | 304.3 | 149.3 | 135.2 | 126.8 | 118.3 | 109.9 | 101.4 | 98.6 | 98.6 |
| 32.5° | 1256.7 | 898.8 | 233.9 | 135.2 | 121.2 | 112.7 | 101.4 | 93.0 | 84.5 | 78.9 | 78.9 |
| 35° | 1256.7 | 853.7 | 180.3 | 121.2 | 109.9 | 98.6 | 90.2 | 76.1 | 67.6 | 64.8 | 62.0 |
| 37.5° | 1276.4 | 803.0 | 149.3 | 112.7 | 101.4 | 90.2 | 78.9 | 64.8 | 56.4 | 53.5 | 53.5 |
| 40° | 1321.5 | 786.1 | 126.8 | 101.4 | 90.2 | 78.9 | 67.6 | 53.5 | 47.9 | 42.3 | 42.3 |
| 42.5° | 1414.5 | 791.8 | 112.7 | 95.8 | 81.7 | 70.4 | 56.4 | 45.1 | 39.4 | 36.6 | 36.6 |
| 45° | 1549.7 | 808.7 | 104.3 | 87.3 | 73.3 | 59.2 | 47.9 | 39.4 | 31.0 | 28.2 | 28.2 |
| 47.5° | 1738.5 | 862.2 | 93.0 | 78.9 | 64.8 | 50.7 | 39.4 | 31.0 | 25.4 | 22.5 | 22.5 |
| 50° | 1963.9 | 955.2 | 87.3 | 70.4 | 59.2 | 42.3 | 31.0 | 22.5 | 16.9 | 16.9 | 16.9 |
| 52.5° | 2228.8 | 1048.2 | 78.9 | 64.8 | 50.7 | 36.6 | 25.4 | 16.9 | 14.1 | 11.3 | 11.3 |
| 55° | 2451.4 | 1129.9 | 70.4 | 59.2 | 42.3 | 28.2 | 19.7 | 14.1 | 11.3 | 8.5 | 8.5 |
| 57.5° | 2741.6 | 1248.2 | 59.2 | 50.7 | 33.8 | 22.5 | 14.1 | 11.3 | 5.6 | 5.6 | 5.6 |
| 60° | 3130.4 | 1389.1 | 50.7 | 42.3 | 25.4 | 16.9 | 11.3 | 5.6 | 5.6 | 2.8 | 2.8 |
| 62.5° | 3296.6 | 1276.4 | 45.1 | 33.8 | 19.7 | 11.3 | 8.5 | 5.6 | 2.8 | 2.8 | 2.8 |
| 65° | 3113.5 | 1042.5 | 36.6 | 25.4 | 14.1 | 8.5 | 5.6 | 2.8 | 2.8 | 0.0 | 0.0 |
| 67.5° | 2685.2 | 769.2 | 31.0 | 16.9 | 11.3 | 5.6 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 2189.3 | 569.2 | 22.5 | 11.3 | 5.6 | 5.6 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1515.9 | 343.8 | 16.9 | 8.5 | 5.6 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 588.9 | 135.2 | 14.1 | 8.5 | 5.6 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 166.2 | 47.9 | 11.3 | 5.6 | 5.6 | 2.8 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 |
| 80° | 67.6 | 25.4 | 8.5 | 5.6 | 5.6 | 5.6 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 |
| 82.5° | 42.3 | 14.1 | 5.6 | 2.8 | 2.8 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 28.2 | 8.5 | 5.6 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 2.8 |
| 87.5° | 5.6 | 5.6 | 2.8 | 2.8 | 2.8 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW-EDISON
 Catalog Number: **SA1C-750-U-5WQ**
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 4884
 CIE u': 0.2101
 CIE v': 0.4904
 Duv: 0.0037
 CIE x: 0.3493
 CIE y: 0.3624
 CIE z: 0.2884
 Peak Wavelength (nm): 444
 Dominant Wavelength (nm): 571
 Purity: 13.7
 Rf: 74.9
 Rg: 96.3

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.5 | | |
| R1: | 70.5 | R9: | -28.4 |
| R2: | 77.7 | R10: | 48.6 |
| R3: | 84.6 | R11: | 73.2 |
| R4: | 74.7 | R12: | 50.7 |
| R5: | 71.9 | R13: | 71.2 |
| R6: | 70.7 | R14: | 91.4 |
| R7: | 81.2 | | |
| R8: | 56.9 | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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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



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

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TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)