

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: P437708

Luminaire Tested: **ISS-SA1E-750-U-SL4-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437708
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-19)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISS-SA1E-750-U-SL4-HSS
Description: IMPACT ELITE LED QUARTER SPHERE LUMINAIRE
(1) 70 CRI, 5000K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5863 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

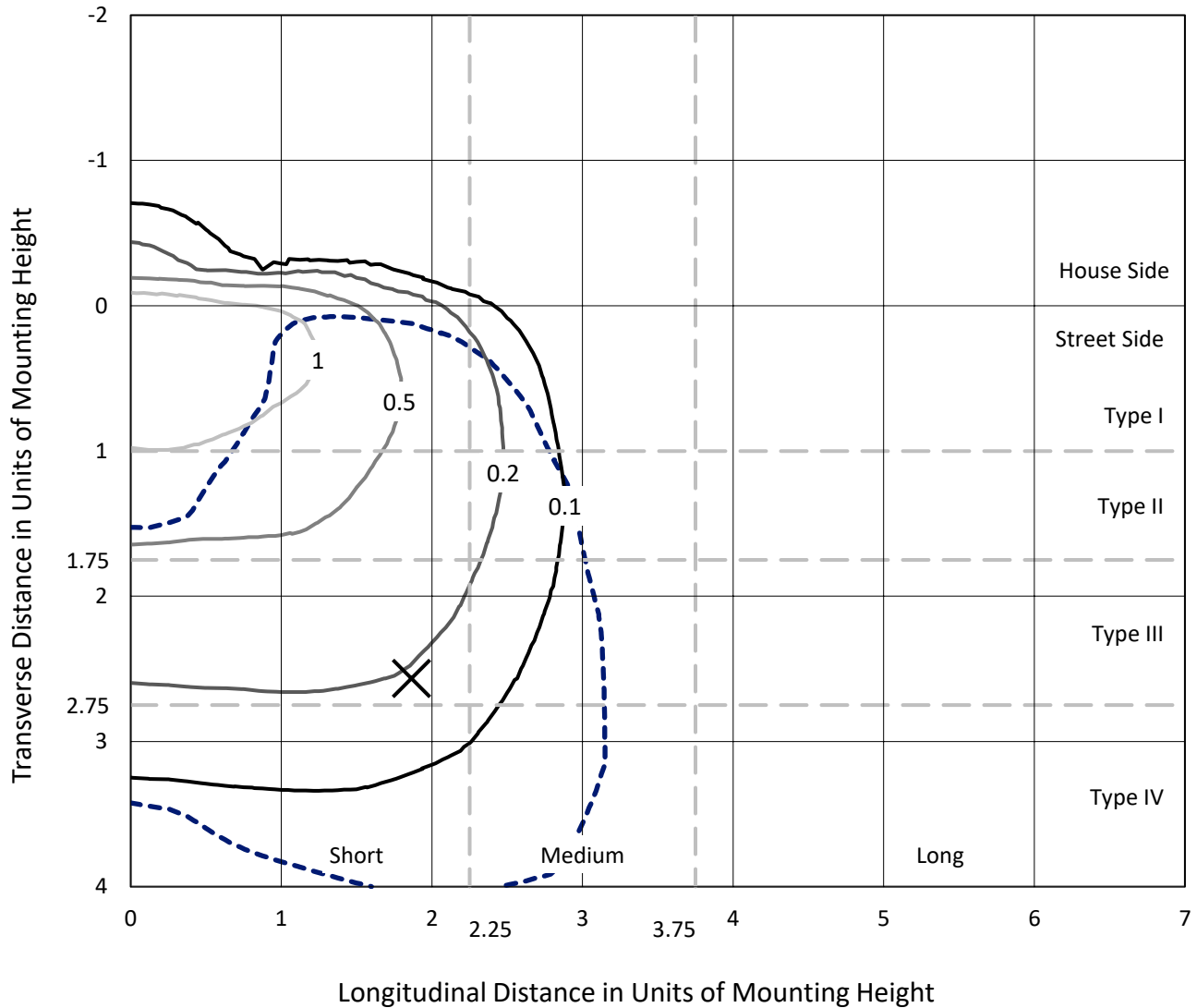
Input Watts (W): 58.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

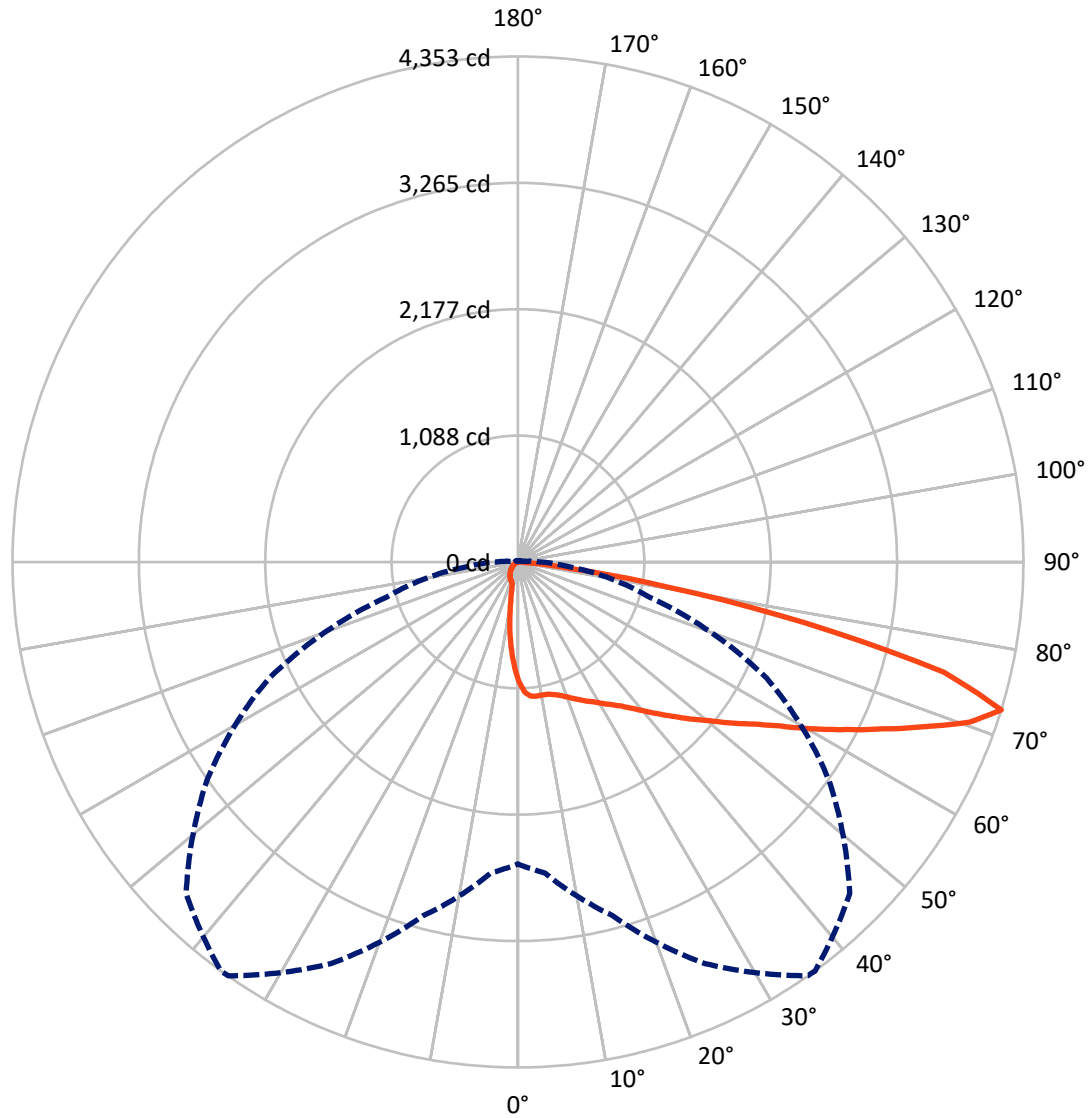
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.8 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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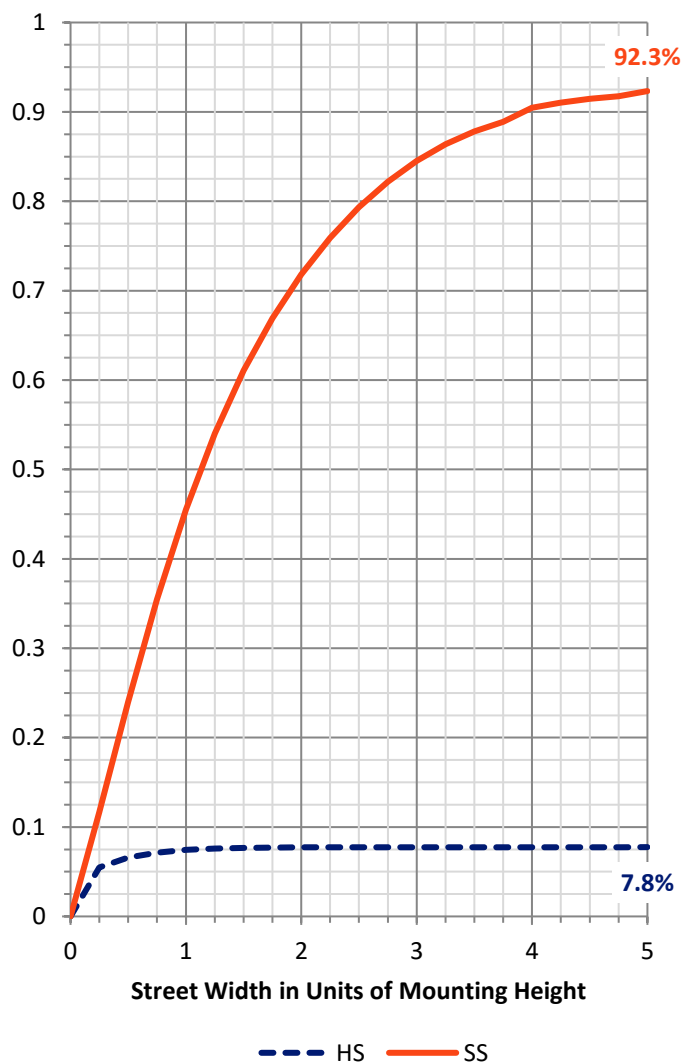
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 457.4 | 0.0 | 457.4 |
| | % Fixture | 7.8 | 0.0 | 7.8 |
| Street Side | Lumens | 5405.6 | 0.0 | 5405.6 |
| | % Fixture | 92.2 | 0.0 | 92.2 |
| Total | Lumens | 5863.0 | 0.0 | 5863.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 88.0 | 1.5 |
| 10°-20° | 220.8 | 3.8 |
| 20°-30° | 360.5 | 6.1 |
| 30°-40° | 548.1 | 9.3 |
| 40°-50° | 838.2 | 14.3 |
| 50°-60° | 1191.9 | 20.3 |
| 60°-70° | 1511.4 | 25.8 |
| 70°-80° | 1034.9 | 17.7 |
| 80°-90° | 69.3 | 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° | 5863.0 | 100.0 |
| 0°-180° | 5863.0 | 100.0 |

Coefficient of Utilization



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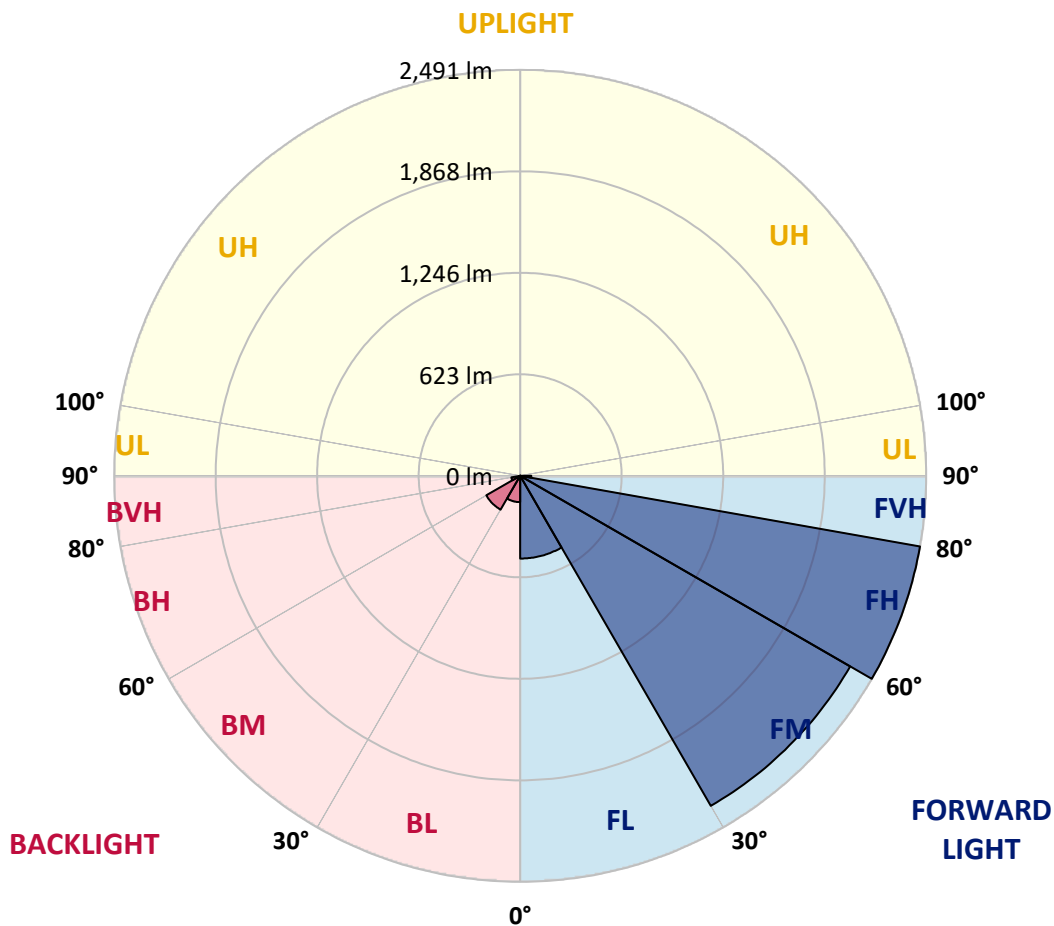
CATALOG NUMBER: ISS-SA1E-750-U-SL4-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 507.8 | 8.7 | | | |
| FM (30°-60°) | 2338.3 | 39.9 | | | |
| FH (60°-80°) | 2491.1 | 42.5 | | | G2/5000 |
| FVH (80°-90°) | 68.3 | 1.2 | | | G1/100 |
| BL (0°-30°) | 161.4 | 2.8 | B1/500 | | |
| BM (30°-60°) | 239.9 | 4.1 | B1/1000 | | |
| BH (60°-80°) | 55.1 | 0.9 | B0/110 | | G0/110 |
| BVH (80°-90°) | 1.0 | 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 IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 |
| 2.5° | 1153.5 | 1145.8 | 1140.6 | 1135.4 | 1119.9 | 1122.5 | 1107.0 | 1091.6 | 1068.3 | 1058.0 | 1042.5 |
| 5° | 1181.9 | 1179.3 | 1176.7 | 1169.0 | 1156.1 | 1161.2 | 1145.8 | 1130.3 | 1096.7 | 1065.8 | 1032.2 |
| 7.5° | 1176.7 | 1181.9 | 1179.3 | 1174.1 | 1163.8 | 1166.4 | 1153.5 | 1138.0 | 1109.6 | 1068.3 | 1021.9 |
| 10° | 1166.4 | 1169.0 | 1169.0 | 1166.4 | 1163.8 | 1163.8 | 1153.5 | 1140.6 | 1114.8 | 1078.7 | 1019.3 |
| 12.5° | 1145.8 | 1150.9 | 1158.7 | 1163.8 | 1166.4 | 1169.0 | 1161.2 | 1150.9 | 1127.7 | 1089.0 | 1027.0 |
| 15° | 1138.0 | 1143.2 | 1158.7 | 1174.1 | 1181.9 | 1184.5 | 1176.7 | 1163.8 | 1143.2 | 1109.6 | 1040.0 |
| 17.5° | 1138.0 | 1143.2 | 1169.0 | 1192.2 | 1207.7 | 1210.3 | 1199.9 | 1187.0 | 1161.2 | 1127.7 | 1055.4 |
| 20° | 1153.5 | 1158.7 | 1189.6 | 1230.9 | 1238.7 | 1243.8 | 1228.3 | 1210.3 | 1181.9 | 1148.3 | 1073.5 |
| 22.5° | 1179.3 | 1187.0 | 1225.8 | 1264.5 | 1279.9 | 1282.5 | 1264.5 | 1230.9 | 1205.1 | 1171.6 | 1089.0 |
| 25° | 1223.2 | 1241.2 | 1277.4 | 1318.6 | 1321.2 | 1323.8 | 1295.4 | 1261.9 | 1230.9 | 1197.4 | 1107.0 |
| 27.5° | 1285.1 | 1300.6 | 1331.6 | 1378.0 | 1362.5 | 1362.5 | 1339.3 | 1295.4 | 1264.5 | 1233.5 | 1138.0 |
| 30° | 1365.1 | 1375.4 | 1411.5 | 1429.6 | 1409.0 | 1411.5 | 1383.2 | 1341.9 | 1316.1 | 1285.1 | 1184.5 |
| 32.5° | 1439.9 | 1447.7 | 1486.4 | 1489.0 | 1465.7 | 1463.2 | 1442.5 | 1393.5 | 1372.8 | 1362.5 | 1249.0 |
| 35° | 1509.6 | 1519.9 | 1550.9 | 1548.3 | 1525.1 | 1522.5 | 1512.2 | 1468.3 | 1468.3 | 1478.6 | 1344.5 |
| 37.5° | 1561.2 | 1587.0 | 1625.7 | 1615.4 | 1599.9 | 1599.9 | 1592.2 | 1558.6 | 1584.4 | 1623.2 | 1470.9 |
| 40° | 1628.3 | 1643.8 | 1695.4 | 1687.7 | 1690.2 | 1690.2 | 1692.8 | 1672.2 | 1718.6 | 1783.1 | 1618.0 |
| 42.5° | 1664.4 | 1695.4 | 1757.3 | 1767.7 | 1790.9 | 1790.9 | 1811.5 | 1806.4 | 1894.1 | 1976.7 | 1788.3 |
| 45° | 1721.2 | 1754.8 | 1821.9 | 1860.6 | 1888.9 | 1901.8 | 1938.0 | 1966.4 | 2090.2 | 2193.4 | 1968.9 |
| 47.5° | 1793.5 | 1821.9 | 1878.6 | 1950.9 | 2002.5 | 2023.1 | 2095.4 | 2141.8 | 2307.0 | 2412.8 | 2139.3 |
| 50° | 1891.5 | 1896.7 | 1938.0 | 2046.4 | 2136.7 | 2149.6 | 2263.1 | 2340.5 | 2526.3 | 2624.4 | 2260.5 |
| 52.5° | 1997.3 | 1987.0 | 2010.2 | 2157.3 | 2283.8 | 2307.0 | 2436.0 | 2554.7 | 2740.5 | 2761.2 | 2309.6 |
| 55° | 2079.9 | 2079.9 | 2098.0 | 2278.6 | 2448.9 | 2461.8 | 2642.5 | 2768.9 | 2936.6 | 2841.2 | 2340.5 |
| 57.5° | 2185.7 | 2175.4 | 2203.8 | 2402.5 | 2655.4 | 2665.7 | 2874.7 | 2972.8 | 3045.0 | 2892.8 | 2335.4 |
| 60° | 2263.1 | 2276.0 | 2319.9 | 2562.5 | 2869.5 | 2916.0 | 3091.5 | 3122.4 | 3158.6 | 2910.8 | 2319.9 |
| 62.5° | 2371.5 | 2368.9 | 2454.1 | 2740.5 | 3148.2 | 3179.2 | 3300.5 | 3248.9 | 3246.3 | 2941.8 | 2299.2 |
| 65° | 2461.8 | 2482.5 | 2611.5 | 2954.7 | 3445.0 | 3465.6 | 3506.9 | 3439.8 | 3367.6 | 2975.3 | 2118.6 |
| 67.5° | 2601.2 | 2642.5 | 2805.0 | 3236.0 | 3762.4 | 3785.6 | 3821.8 | 3674.7 | 3401.1 | 2737.9 | 1765.1 |
| 70° | 2758.6 | 2812.8 | 3076.0 | 3610.2 | 4103.0 | 4128.8 | 4136.6 | 3697.9 | 3081.1 | 2149.6 | 1197.4 |
| 72.5° | 2601.2 | 2688.9 | 3153.4 | 3816.6 | 4350.8 | 4353.3 | 4041.1 | 3266.9 | 2361.2 | 1174.1 | 423.2 |
| 75° | 1674.8 | 1785.7 | 2611.5 | 3385.7 | 3746.9 | 3788.2 | 3168.9 | 2283.8 | 1101.9 | 263.2 | 118.7 |
| 77.5° | 567.7 | 606.4 | 1282.5 | 2136.7 | 2513.4 | 2528.9 | 2085.1 | 1156.1 | 348.4 | 105.8 | 64.5 |
| 80° | 327.7 | 325.1 | 449.0 | 934.2 | 1254.1 | 1303.2 | 1050.3 | 461.9 | 162.6 | 54.2 | 43.9 |
| 82.5° | 77.4 | 80.0 | 234.8 | 340.6 | 498.0 | 449.0 | 221.9 | 278.7 | 74.8 | 31.0 | 38.7 |
| 85° | 0.0 | 0.0 | 38.7 | 82.6 | 59.4 | 69.7 | 20.6 | 85.2 | 12.9 | 12.9 | 25.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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: ISS-SA1E-750-U-SL4-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 | 1029.6 |
| 2.5° | 1027.0 | 1014.1 | 988.3 | 967.7 | 939.3 | 916.1 | 892.9 | 882.5 | 864.5 | 859.3 | 861.9 |
| 5° | 1011.6 | 990.9 | 941.9 | 892.9 | 838.7 | 787.1 | 732.9 | 701.9 | 689.0 | 665.8 | 660.6 |
| 7.5° | 993.5 | 962.5 | 892.9 | 812.9 | 720.0 | 645.1 | 570.3 | 518.7 | 472.2 | 454.2 | 446.4 |
| 10° | 985.8 | 947.1 | 849.0 | 727.7 | 601.3 | 480.0 | 387.1 | 320.0 | 278.7 | 263.2 | 258.1 |
| 12.5° | 985.8 | 939.3 | 807.7 | 645.1 | 477.4 | 338.0 | 252.9 | 214.2 | 201.3 | 198.7 | 196.1 |
| 15° | 996.1 | 936.7 | 769.0 | 557.4 | 361.3 | 234.8 | 193.5 | 188.4 | 185.8 | 185.8 | 188.4 |
| 17.5° | 1001.2 | 931.6 | 727.7 | 472.2 | 265.8 | 188.4 | 180.6 | 180.6 | 180.6 | 180.6 | 180.6 |
| 20° | 1014.1 | 929.0 | 681.3 | 381.9 | 201.3 | 175.5 | 172.9 | 172.9 | 172.9 | 172.9 | 175.5 |
| 22.5° | 1016.7 | 929.0 | 624.5 | 294.2 | 178.1 | 167.7 | 165.2 | 165.2 | 165.2 | 167.7 | 167.7 |
| 25° | 1032.2 | 923.8 | 570.3 | 224.5 | 167.7 | 157.4 | 157.4 | 154.8 | 157.4 | 157.4 | 157.4 |
| 27.5° | 1052.9 | 926.4 | 503.2 | 185.8 | 157.4 | 149.7 | 147.1 | 147.1 | 147.1 | 147.1 | 147.1 |
| 30° | 1076.1 | 931.6 | 433.5 | 165.2 | 147.1 | 141.9 | 139.3 | 136.8 | 136.8 | 136.8 | 136.8 |
| 32.5° | 1119.9 | 936.7 | 358.7 | 149.7 | 136.8 | 131.6 | 129.0 | 126.4 | 126.4 | 126.4 | 126.4 |
| 35° | 1187.0 | 965.1 | 294.2 | 139.3 | 126.4 | 121.3 | 118.7 | 116.1 | 116.1 | 116.1 | 113.5 |
| 37.5° | 1277.4 | 1009.0 | 232.2 | 129.0 | 116.1 | 111.0 | 108.4 | 105.8 | 103.2 | 103.2 | 103.2 |
| 40° | 1385.7 | 1055.4 | 193.5 | 116.1 | 105.8 | 100.6 | 98.1 | 95.5 | 92.9 | 90.3 | 90.3 |
| 42.5° | 1514.8 | 1112.2 | 154.8 | 105.8 | 95.5 | 90.3 | 87.7 | 85.2 | 80.0 | 77.4 | 80.0 |
| 45° | 1659.3 | 1166.4 | 131.6 | 98.1 | 87.7 | 82.6 | 80.0 | 74.8 | 69.7 | 67.1 | 67.1 |
| 47.5° | 1785.7 | 1179.3 | 116.1 | 87.7 | 80.0 | 74.8 | 72.3 | 64.5 | 59.4 | 54.2 | 54.2 |
| 50° | 1870.9 | 1156.1 | 103.2 | 80.0 | 72.3 | 69.7 | 64.5 | 54.2 | 46.4 | 43.9 | 41.3 |
| 52.5° | 1881.2 | 1094.1 | 90.3 | 72.3 | 67.1 | 61.9 | 54.2 | 46.4 | 38.7 | 33.5 | 33.5 |
| 55° | 1870.9 | 990.9 | 80.0 | 67.1 | 59.4 | 54.2 | 46.4 | 36.1 | 28.4 | 25.8 | 23.2 |
| 57.5° | 1837.3 | 882.5 | 72.3 | 59.4 | 54.2 | 46.4 | 36.1 | 28.4 | 20.6 | 18.1 | 15.5 |
| 60° | 1775.4 | 750.9 | 64.5 | 54.2 | 46.4 | 38.7 | 28.4 | 20.6 | 12.9 | 10.3 | 10.3 |
| 62.5° | 1659.3 | 606.4 | 56.8 | 46.4 | 38.7 | 31.0 | 23.2 | 12.9 | 7.7 | 5.2 | 5.2 |
| 65° | 1429.6 | 454.2 | 49.0 | 38.7 | 31.0 | 25.8 | 15.5 | 7.7 | 2.6 | 0.0 | 0.0 |
| 67.5° | 1112.2 | 307.1 | 38.7 | 31.0 | 25.8 | 20.6 | 12.9 | 2.6 | 0.0 | 0.0 | 0.0 |
| 70° | 655.5 | 162.6 | 31.0 | 23.2 | 20.6 | 15.5 | 7.7 | 2.6 | 0.0 | 0.0 | 0.0 |
| 72.5° | 188.4 | 64.5 | 23.2 | 18.1 | 15.5 | 10.3 | 5.2 | 2.6 | 0.0 | 0.0 | 0.0 |
| 75° | 77.4 | 38.7 | 15.5 | 12.9 | 12.9 | 7.7 | 2.6 | 2.6 | 0.0 | 0.0 | 0.0 |
| 77.5° | 51.6 | 28.4 | 10.3 | 7.7 | 7.7 | 5.2 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 41.3 | 15.5 | 5.2 | 5.2 | 5.2 | 2.6 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 36.1 | 10.3 | 2.6 | 2.6 | 2.6 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 18.1 | 5.2 | 2.6 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 2.6 | 2.6 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



Test Conditions

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

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| 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 ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | 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)