

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P640777

Luminaire Tested: GWS-SA5E-750-U-RW-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640777
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-51)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5E-750-U-RW-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (80) 5000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 33851.8 lumens
Efficiency: N/A
Efficacy: 125.6 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type V - Short
BUG Rating: B5 - U0 - G2

Input Watts (W): 269.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

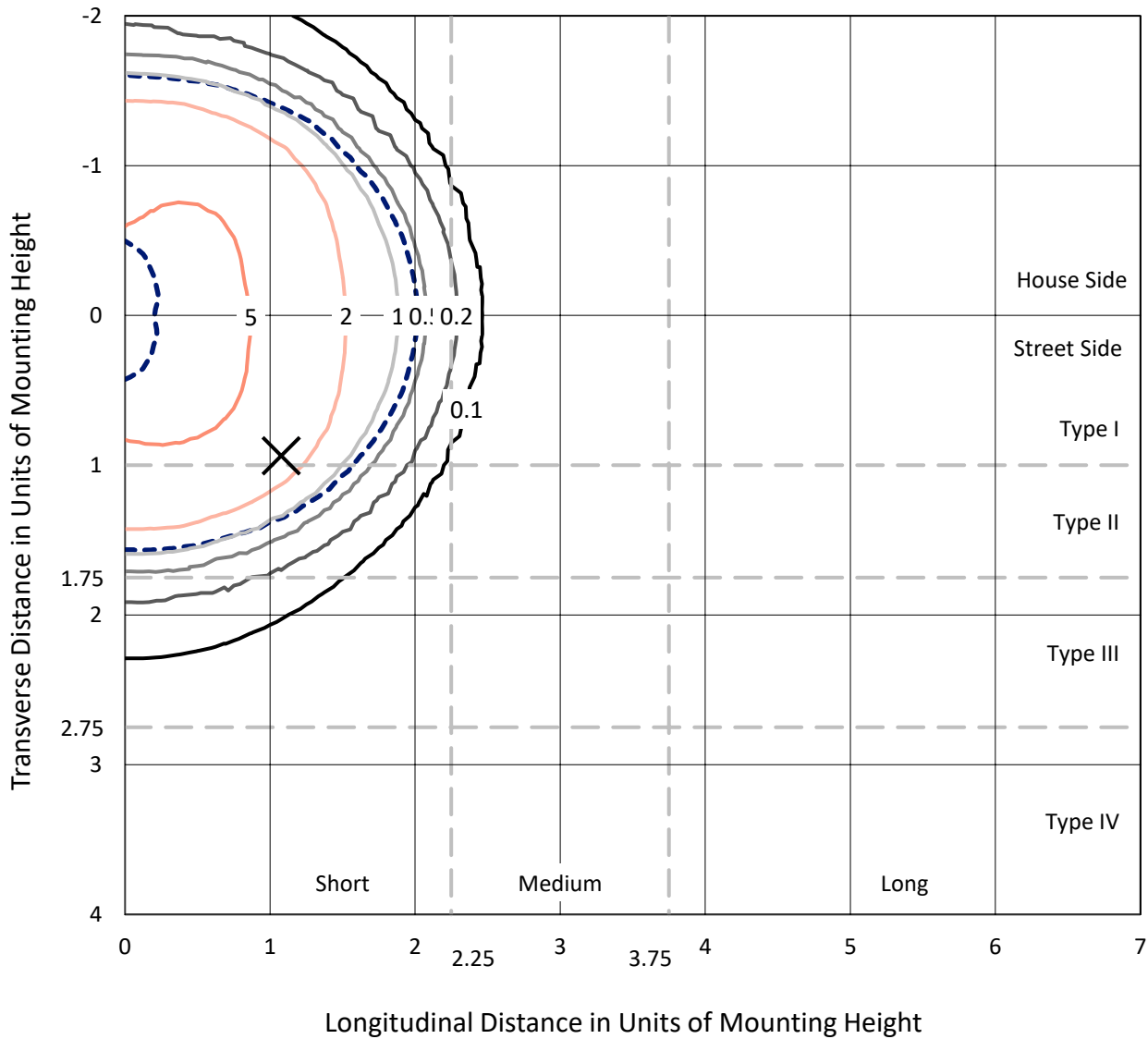


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Iso-Footcandle Lines of Horizontal Illumination

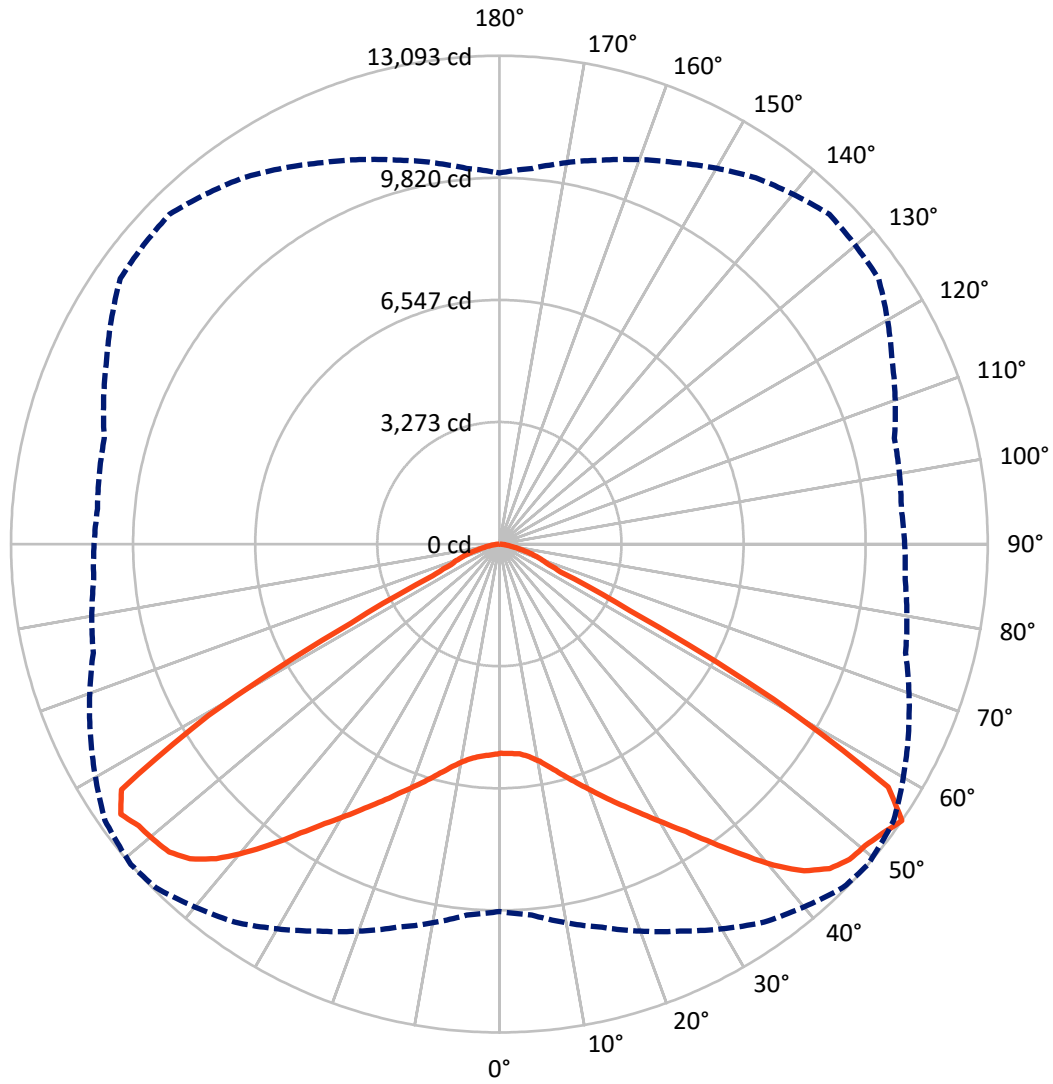
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.9 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 49-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

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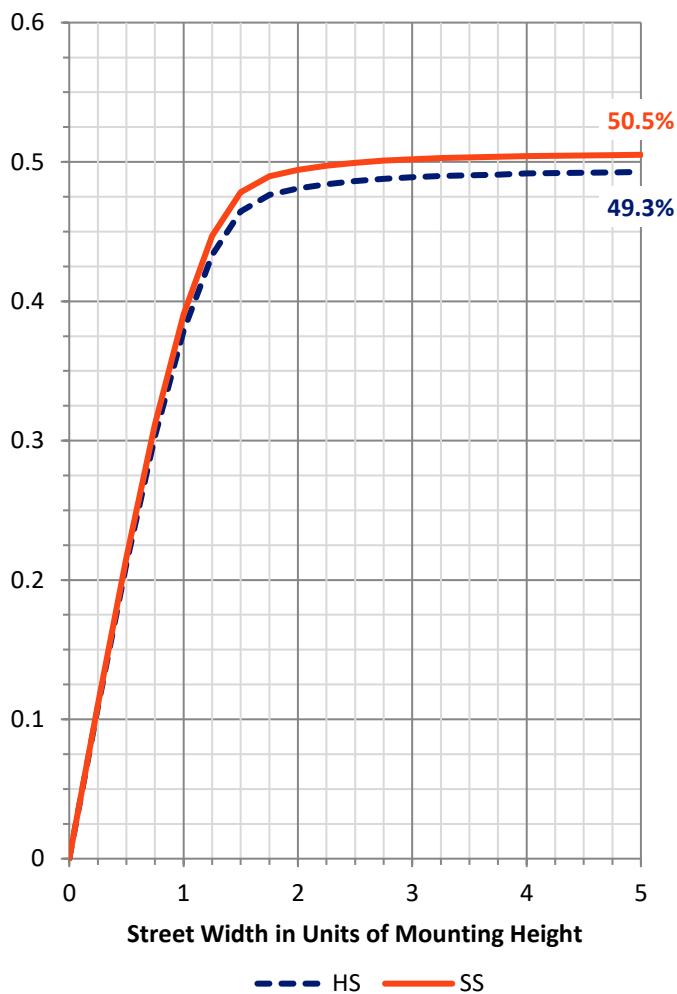
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 16759.8 | 0.0 | 16759.8 |
| | % Fixture | 49.5 | 0.0 | 49.5 |
| Street Side | Lumens | 17092.0 | 0.0 | 17092.0 |
| | % Fixture | 50.5 | 0.0 | 50.5 |
| Total | Lumens | 33851.8 | 0.0 | 33851.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 547.0 | 1.6 |
| 10°-20° | 1804.4 | 5.3 |
| 20°-30° | 3436.8 | 10.2 |
| 30°-40° | 5826.1 | 17.2 |
| 40°-50° | 8767.9 | 25.9 |
| 50°-60° | 9597.3 | 28.4 |
| 60°-70° | 3034.7 | 9.0 |
| 70°-80° | 728.3 | 2.2 |
| 80°-90° | 109.3 | 0.3 |
| 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° | 33851.8 | 100.0 |
| 0°-180° | 33851.8 | 100.0 |

Coefficient of Utilization



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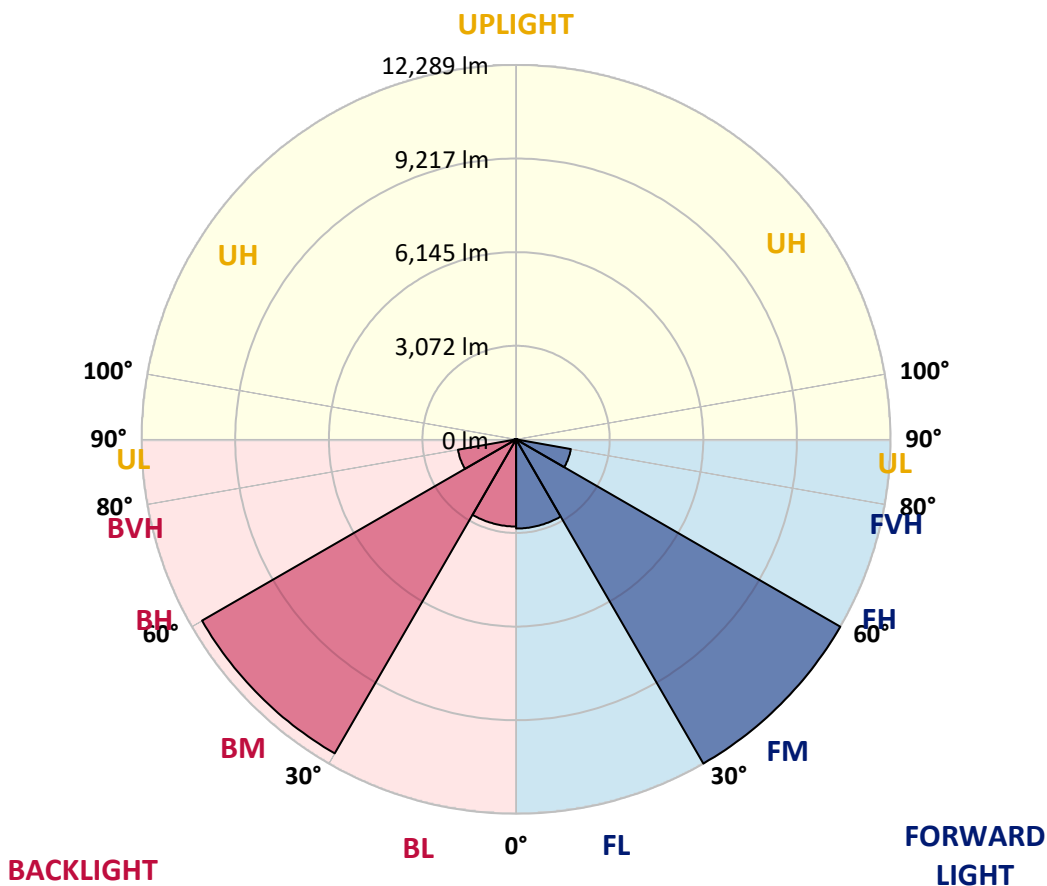
CATALOG NUMBER: GWS-SA5E-750-U-RW-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2926.8 | 8.6 | | | |
| FM (30°-60°) | 12289.1 | 36.3 | | | |
| FH (60°-80°) | 1825.4 | 5.4 | | | G2/5000 |
| FVH (80°-90°) | 50.6 | 0.1 | | | G1/100 |
| BL (0°-30°) | 2861.4 | 8.5 | B4/5000 | | |
| BM (30°-60°) | 11902.1 | 35.2 | B5 | | |
| BH (60°-80°) | 1937.6 | 5.7 | B3/2500 | | G2/5000 |
| BVH (80°-90°) | 58.7 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G2

Type V Short





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CATALOG NUMBER: GWS-SA5E-750-U-RW-W-GRSWH

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 49° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 |
| 2.5° | 5525.2 | 5530.7 | 5541.7 | 5561.0 | 5580.2 | 5607.8 | 5618.8 | 5632.5 | 5629.8 | 5646.3 | 5646.3 |
| 5° | 5497.6 | 5505.9 | 5522.4 | 5549.9 | 5583.0 | 5635.3 | 5649.1 | 5682.1 | 5715.1 | 5756.4 | 5770.2 |
| 7.5° | 5530.7 | 5541.7 | 5561.0 | 5605.0 | 5654.6 | 5723.4 | 5750.9 | 5806.0 | 5869.3 | 5943.6 | 5973.9 |
| 10° | 5594.0 | 5607.8 | 5640.8 | 5712.4 | 5792.2 | 5896.8 | 5921.6 | 5990.4 | 6092.3 | 6194.1 | 6254.7 |
| 12.5° | 5665.6 | 5687.6 | 5748.2 | 5861.0 | 5979.4 | 6117.1 | 6155.6 | 6240.9 | 6351.1 | 6483.2 | 6565.8 |
| 15° | 5748.2 | 5767.4 | 5861.0 | 6020.7 | 6205.1 | 6386.8 | 6430.9 | 6513.5 | 6637.4 | 6766.7 | 6882.4 |
| 17.5° | 5921.6 | 5954.6 | 6064.7 | 6249.2 | 6463.9 | 6678.7 | 6728.2 | 6821.8 | 6920.9 | 7022.8 | 7132.9 |
| 20° | 6158.3 | 6185.9 | 6326.3 | 6554.8 | 6808.0 | 7003.5 | 7053.1 | 7135.6 | 7182.4 | 7234.7 | 7328.3 |
| 22.5° | 6395.1 | 6433.6 | 6593.3 | 6863.1 | 7160.4 | 7372.4 | 7410.9 | 7488.0 | 7455.0 | 7438.5 | 7499.0 |
| 25° | 6689.7 | 6742.0 | 6898.9 | 7193.5 | 7496.3 | 7757.8 | 7788.1 | 7854.2 | 7799.1 | 7713.8 | 7711.0 |
| 27.5° | 7055.8 | 7102.6 | 7265.0 | 7567.9 | 7867.9 | 8140.5 | 8198.3 | 8286.4 | 8165.2 | 8060.6 | 7986.3 |
| 30° | 7490.8 | 7521.1 | 7700.0 | 8022.1 | 8330.4 | 8589.2 | 8663.5 | 8751.6 | 8660.8 | 8487.3 | 8413.0 |
| 32.5° | 7997.3 | 8038.6 | 8245.1 | 8583.7 | 8859.0 | 9117.8 | 9192.1 | 9302.2 | 9203.1 | 9007.6 | 8914.0 |
| 35° | 8605.7 | 8647.0 | 8864.5 | 9233.4 | 9514.2 | 9781.2 | 9833.5 | 9924.4 | 9800.5 | 9574.8 | 9500.4 |
| 37.5° | 9266.4 | 9318.7 | 9594.0 | 9943.6 | 10238.2 | 10549.3 | 10552.1 | 10579.6 | 10403.4 | 10122.6 | 10040.0 |
| 40° | 10009.7 | 10078.5 | 10353.8 | 10717.2 | 11072.4 | 11325.6 | 11322.9 | 11245.8 | 10948.5 | 10513.5 | 10386.9 |
| 42.5° | 10744.8 | 10799.8 | 11077.9 | 11452.3 | 11807.4 | 12046.9 | 11975.3 | 11788.1 | 11358.7 | 10766.8 | 10598.9 |
| 45° | 11276.1 | 11317.4 | 11609.2 | 12030.4 | 12391.0 | 12539.7 | 12410.3 | 12184.5 | 11603.7 | 10926.5 | 10678.7 |
| 47.5° | 11526.6 | 11581.7 | 11876.2 | 12294.7 | 12702.1 | 12787.4 | 12633.3 | 12421.3 | 11746.8 | 11075.1 | 10742.0 |
| 50° | 11391.7 | 11463.3 | 11796.4 | 12184.5 | 12644.3 | 12820.5 | 12710.4 | 12498.4 | 11898.2 | 11221.0 | 10854.9 |
| 52.5° | 11042.1 | 11110.9 | 11532.1 | 12002.9 | 12523.2 | 12872.8 | 12870.0 | 12696.6 | 12071.7 | 11262.3 | 10860.4 |
| 55° | 9847.3 | 9982.2 | 10637.4 | 11449.5 | 12374.5 | 13027.0 | 13093.0 | 12908.6 | 12099.2 | 11273.3 | 10918.2 |
| 57.5° | 6408.9 | 6645.6 | 7267.8 | 8324.9 | 10180.4 | 11848.7 | 12294.7 | 12338.7 | 11901.0 | 11226.5 | 10929.2 |
| 60° | 2675.9 | 2865.8 | 3358.6 | 4060.6 | 5594.0 | 7578.9 | 8443.3 | 9310.5 | 10356.6 | 10736.5 | 10827.3 |
| 62.5° | 1662.8 | 1679.3 | 1728.9 | 1888.5 | 2400.6 | 3369.6 | 3925.7 | 4737.8 | 6293.2 | 7617.4 | 8228.6 |
| 65° | 1500.4 | 1508.6 | 1519.6 | 1508.6 | 1533.4 | 1651.8 | 1800.4 | 2084.0 | 2717.2 | 3375.1 | 4157.0 |
| 67.5° | 1321.4 | 1332.4 | 1340.7 | 1332.4 | 1340.7 | 1346.2 | 1362.7 | 1387.5 | 1503.1 | 1596.7 | 1668.3 |
| 70° | 1068.1 | 1084.7 | 1098.4 | 1092.9 | 1126.0 | 1126.0 | 1142.5 | 1161.7 | 1219.6 | 1288.4 | 1337.9 |
| 72.5° | 814.9 | 801.1 | 817.6 | 823.1 | 853.4 | 869.9 | 894.7 | 916.7 | 982.8 | 1024.1 | 1087.4 |
| 75° | 528.6 | 514.8 | 539.6 | 553.3 | 594.6 | 616.7 | 638.7 | 660.7 | 707.5 | 735.0 | 795.6 |
| 77.5° | 286.3 | 283.6 | 308.3 | 327.6 | 371.6 | 399.2 | 415.7 | 432.2 | 470.8 | 479.0 | 517.6 |
| 80° | 165.2 | 165.2 | 181.7 | 195.5 | 223.0 | 253.3 | 269.8 | 283.6 | 311.1 | 319.3 | 335.9 |
| 82.5° | 90.8 | 90.8 | 99.1 | 107.4 | 129.4 | 145.9 | 159.7 | 170.7 | 195.5 | 203.7 | 212.0 |
| 85° | 44.0 | 41.3 | 46.8 | 52.3 | 60.6 | 68.8 | 77.1 | 82.6 | 101.9 | 107.4 | 118.4 |
| 87.5° | 5.5 | 5.5 | 5.5 | 8.3 | 11.0 | 16.5 | 19.3 | 19.3 | 30.3 | 35.8 | 41.3 |
| 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: P640777

CATALOG NUMBER: GWS-SA5E-750-U-RW-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 | 5607.8 |
| 2.5° | 5662.8 | 5627.0 | 5649.1 | 5657.3 | 5657.3 | 5649.1 | 5613.3 | 5602.3 | 5585.7 | 5561.0 | 5561.0 |
| 5° | 5789.5 | 5761.9 | 5767.4 | 5753.7 | 5720.6 | 5679.3 | 5613.3 | 5580.2 | 5552.7 | 5522.4 | 5519.7 |
| 7.5° | 6006.9 | 5971.1 | 5965.6 | 5913.3 | 5825.2 | 5737.1 | 5638.0 | 5577.5 | 5536.2 | 5497.6 | 5494.9 |
| 10° | 6290.5 | 6257.5 | 6216.2 | 6111.5 | 5982.2 | 5852.8 | 5717.9 | 5635.3 | 5574.7 | 5519.7 | 5516.9 |
| 12.5° | 6607.1 | 6568.5 | 6491.5 | 6337.3 | 6174.9 | 6048.2 | 5894.1 | 5767.4 | 5676.6 | 5602.3 | 5588.5 |
| 15° | 6951.2 | 6896.1 | 6764.0 | 6582.3 | 6422.6 | 6287.7 | 6122.6 | 5940.9 | 5803.2 | 5684.8 | 5671.1 |
| 17.5° | 7215.5 | 7143.9 | 7000.7 | 6830.1 | 6697.9 | 6563.0 | 6348.3 | 6119.8 | 5921.6 | 5772.9 | 5750.9 |
| 20° | 7397.2 | 7339.4 | 7176.9 | 7050.3 | 6973.2 | 6854.8 | 6604.3 | 6345.5 | 6122.6 | 5935.4 | 5924.3 |
| 22.5° | 7565.1 | 7496.3 | 7336.6 | 7262.3 | 7262.3 | 7182.4 | 6942.9 | 6637.4 | 6375.8 | 6158.3 | 6130.8 |
| 25° | 7755.1 | 7680.7 | 7559.6 | 7551.3 | 7589.9 | 7554.1 | 7265.0 | 6937.4 | 6631.9 | 6386.8 | 6342.8 |
| 27.5° | 8019.3 | 7936.8 | 7865.2 | 7914.7 | 7969.8 | 7931.2 | 7609.1 | 7229.2 | 6907.1 | 6659.4 | 6620.8 |
| 30° | 8440.5 | 8338.7 | 8272.6 | 8333.2 | 8440.5 | 8327.7 | 7978.0 | 7576.1 | 7251.3 | 6978.7 | 6959.5 |
| 32.5° | 8930.6 | 8814.9 | 8746.1 | 8842.5 | 8938.8 | 8762.6 | 8415.8 | 8030.4 | 7689.0 | 7402.7 | 7369.6 |
| 35° | 9519.7 | 9373.8 | 9271.9 | 9401.3 | 9500.4 | 9327.0 | 8982.9 | 8616.7 | 8236.8 | 7939.5 | 7895.5 |
| 37.5° | 10042.8 | 9866.6 | 9797.7 | 9979.4 | 10111.6 | 9998.7 | 9624.3 | 9280.2 | 8864.5 | 8539.6 | 8520.4 |
| 40° | 10422.7 | 10249.2 | 10199.7 | 10499.7 | 10731.0 | 10703.5 | 10367.6 | 9973.9 | 9583.0 | 9208.6 | 9172.8 |
| 42.5° | 10587.8 | 10466.7 | 10477.7 | 10882.4 | 11240.3 | 11416.5 | 11116.4 | 10695.2 | 10318.1 | 9929.9 | 9905.1 |
| 45° | 10623.6 | 10549.3 | 10637.4 | 11143.9 | 11614.7 | 11975.3 | 11719.3 | 11366.9 | 10940.2 | 10565.8 | 10554.8 |
| 47.5° | 10662.2 | 10620.9 | 10755.8 | 11292.6 | 11851.4 | 12269.9 | 12126.7 | 11763.3 | 11331.1 | 10965.0 | 10937.5 |
| 50° | 10753.0 | 10736.5 | 10887.9 | 11397.2 | 11964.3 | 12349.7 | 12187.3 | 11826.7 | 11383.4 | 11022.8 | 10956.7 |
| 52.5° | 10780.5 | 10753.0 | 10970.5 | 11559.6 | 12151.5 | 12347.0 | 11997.3 | 11526.6 | 11080.6 | 10678.7 | 10609.9 |
| 55° | 10865.9 | 10816.3 | 10965.0 | 11620.2 | 12410.3 | 12506.6 | 11986.3 | 11281.6 | 10659.4 | 10111.6 | 9949.2 |
| 57.5° | 10887.9 | 10832.9 | 10929.2 | 11521.1 | 12129.5 | 12044.1 | 10535.5 | 9104.0 | 7931.2 | 7322.8 | 7391.7 |
| 60° | 10769.5 | 10786.1 | 10620.9 | 10554.8 | 9728.9 | 8589.2 | 6450.2 | 5156.3 | 4049.6 | 3581.6 | 3683.4 |
| 62.5° | 8198.3 | 8267.1 | 7702.7 | 6697.9 | 5150.8 | 4082.6 | 2700.6 | 2097.7 | 1775.7 | 1693.1 | 1706.8 |
| 65° | 4137.7 | 4231.3 | 3644.9 | 3014.5 | 2240.9 | 1811.4 | 1566.4 | 1516.9 | 1500.4 | 1481.1 | 1481.1 |
| 67.5° | 1638.0 | 1665.5 | 1643.5 | 1538.9 | 1431.5 | 1393.0 | 1382.0 | 1376.5 | 1357.2 | 1346.2 | 1348.9 |
| 70° | 1315.9 | 1337.9 | 1304.9 | 1238.8 | 1194.8 | 1192.0 | 1186.5 | 1175.5 | 1161.7 | 1161.7 | 1170.0 |
| 72.5° | 1073.6 | 1095.7 | 1048.9 | 1007.6 | 974.5 | 949.8 | 936.0 | 927.7 | 908.5 | 908.5 | 916.7 |
| 75° | 790.1 | 803.9 | 765.3 | 759.8 | 724.0 | 699.2 | 677.2 | 666.2 | 641.4 | 630.4 | 638.7 |
| 77.5° | 525.8 | 523.1 | 503.8 | 503.8 | 490.0 | 459.7 | 435.0 | 410.2 | 377.2 | 355.1 | 360.6 |
| 80° | 341.4 | 341.4 | 333.1 | 333.1 | 319.3 | 294.6 | 264.3 | 239.5 | 220.2 | 203.7 | 203.7 |
| 82.5° | 217.5 | 214.7 | 212.0 | 209.2 | 203.7 | 178.9 | 156.9 | 140.4 | 126.6 | 115.6 | 118.4 |
| 85° | 121.1 | 121.1 | 115.6 | 115.6 | 104.6 | 90.8 | 79.8 | 68.8 | 60.6 | 57.8 | 57.8 |
| 87.5° | 41.3 | 41.3 | 38.5 | 38.5 | 33.0 | 24.8 | 19.3 | 16.5 | 13.8 | 11.0 | 13.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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 (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 | | | |

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

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)