

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: P642850

Luminaire Tested: GWS-SA6D-760-U-T4FT-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P642850
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-54)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA6D-760-U-T4FT-W
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: (96) 5700K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 34908.4 lumens
Efficiency: N/A
Efficacy: 142.1 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

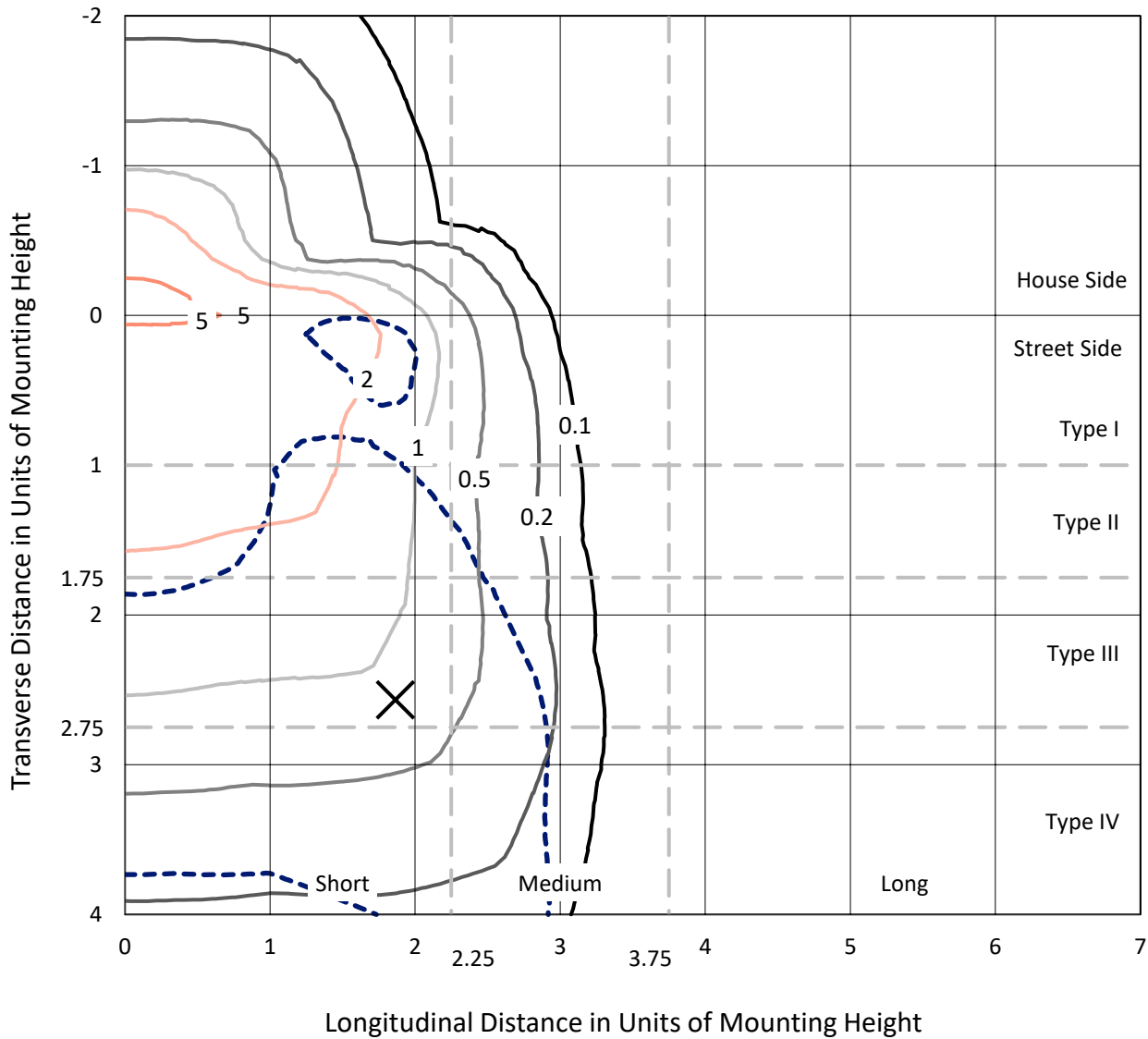
Input Watts (W): 245.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P642850
 CATALOG NUMBER: GWS-SA6D-760-U-T4FT-W

Iso-Footcandle Lines of Horizontal Illumination

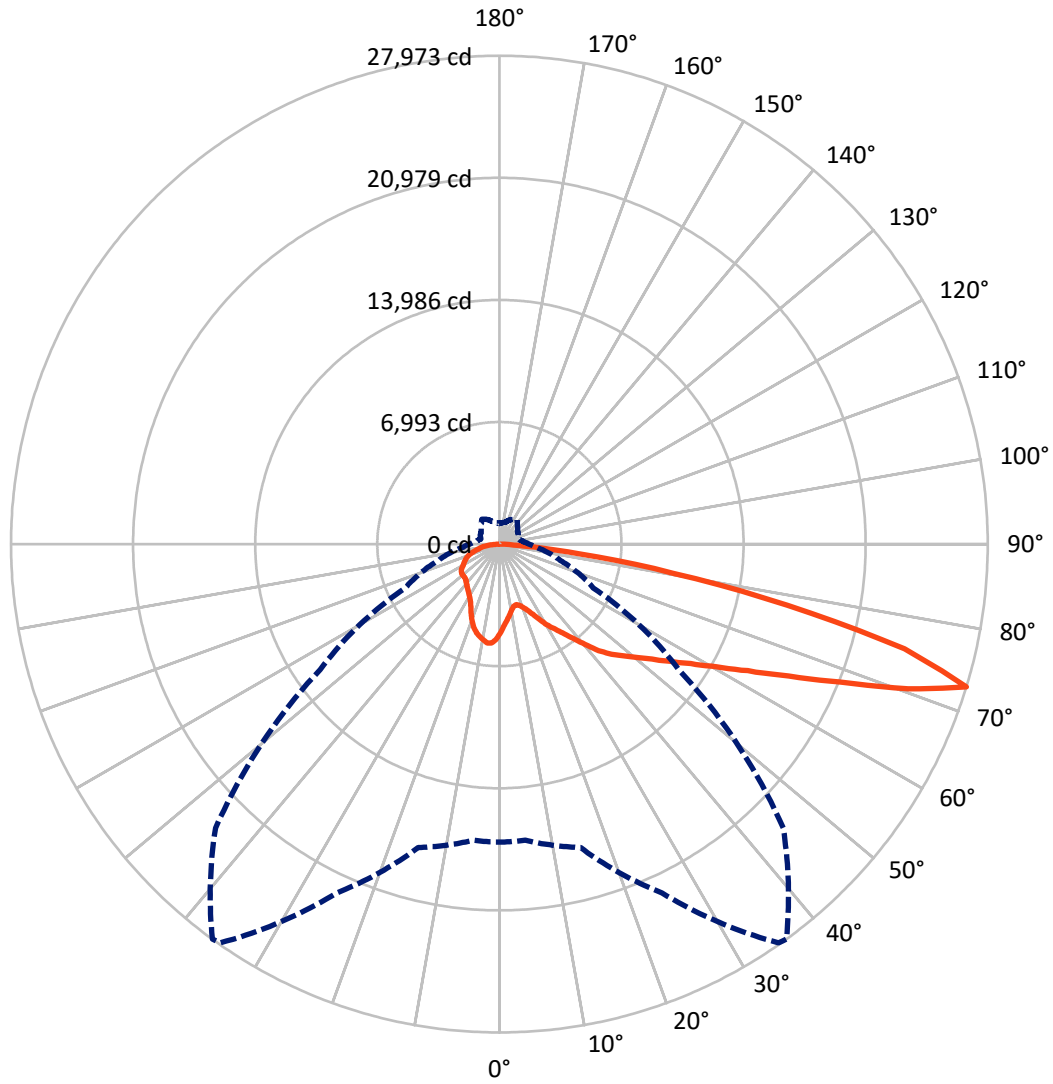
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6 fc
 Type IV - Short - N/A

REPORT NUMBER: P642850
CATALOG NUMBER: GWS-SA6D-760-U-T4FT-W

Luminous Intensity Polar Plot



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

REPORT NUMBER: P642850

CATALOG NUMBER: GWS-SA6D-760-U-T4FT-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8047.9 | 0.0 | 8047.9 |
| | % Fixture | 23.1 | 0.0 | 23.1 |
| Street Side | Lumens | 26860.5 | 0.0 | 26860.5 |
| | % Fixture | 76.9 | 0.0 | 76.9 |
| Total | Lumens | 34908.4 | 0.0 | 34908.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 477.5 | 1.4 |
| 10°-20° | 1347.4 | 3.9 |
| 20°-30° | 2231.4 | 6.4 |
| 30°-40° | 3341.7 | 9.6 |
| 40°-50° | 4875.3 | 14.0 |
| 50°-60° | 6939.0 | 19.9 |
| 60°-70° | 8766.9 | 25.1 |
| 70°-80° | 6247.2 | 17.9 |
| 80°-90° | 682.0 | 2.0 |
| 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° | 34908.4 | 100.0 |
| 0°-180° | 34908.4 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P642850

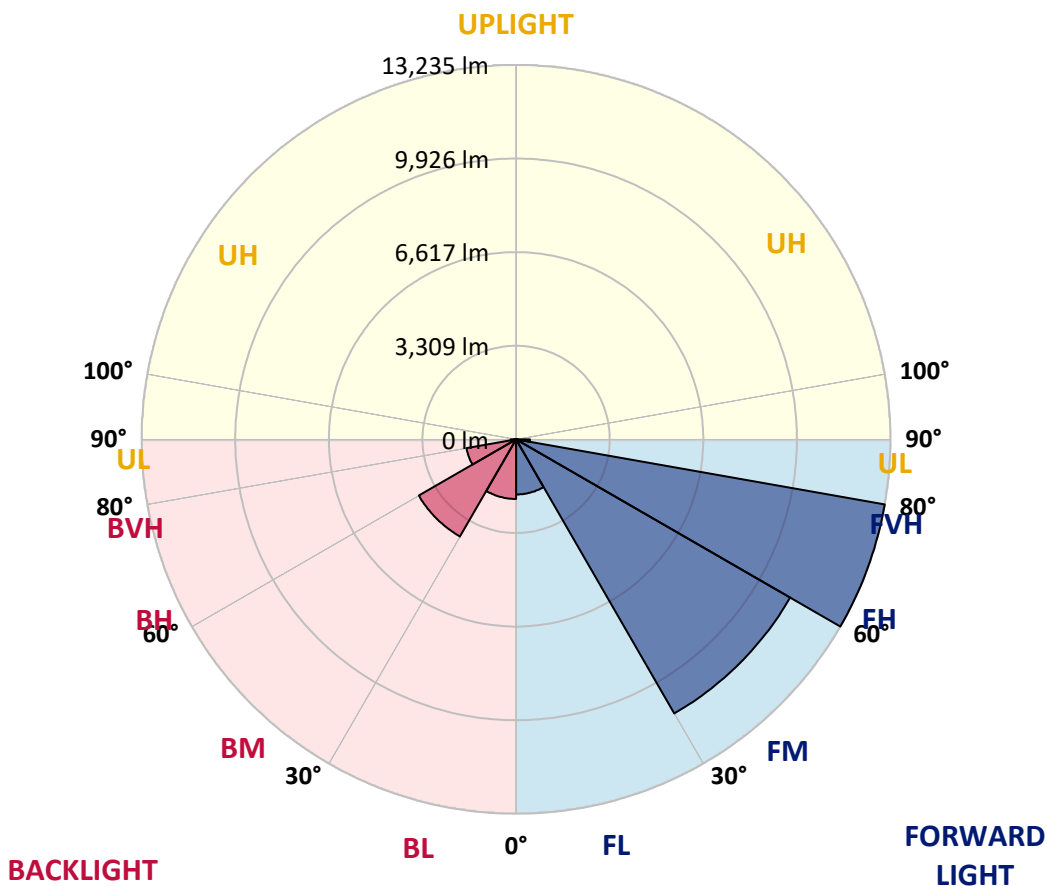
CATALOG NUMBER: GWS-SA6D-760-U-T4FT-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1948.8 | 5.6 | | | |
| FM (30°-60°) | 11187.3 | 32.0 | | | |
| FH (60°-80°) | 13234.9 | 37.9 | | | G5 |
| FVH (80°-90°) | 489.5 | 1.4 | | | G3/500 |
| BL (0°-30°) | 2107.5 | 6.0 | B3/2500 | | |
| BM (30°-60°) | 3968.8 | 11.4 | B3/5000 | | |
| BH (60°-80°) | 1779.2 | 5.1 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 192.5 | 0.6 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 36° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 |
| 2.5° | 4660.8 | 4653.0 | 4637.5 | 4684.1 | 4730.7 | 4725.6 | 4790.3 | 4852.5 | 4919.9 | 4989.8 | 5083.1 |
| 5° | 4287.7 | 4282.5 | 4269.6 | 4339.5 | 4409.5 | 4406.9 | 4513.1 | 4614.2 | 4751.5 | 4901.7 | 5088.3 |
| 7.5° | 3914.7 | 3901.7 | 3919.8 | 4007.9 | 4106.4 | 4116.7 | 4261.8 | 4427.6 | 4627.1 | 4852.5 | 5116.8 |
| 10° | 3585.6 | 3583.0 | 3590.8 | 3689.3 | 3836.9 | 3847.3 | 4033.8 | 4264.4 | 4528.7 | 4829.2 | 5181.5 |
| 12.5° | 3500.1 | 3495.0 | 3474.2 | 3523.4 | 3634.9 | 3650.4 | 3855.1 | 4137.5 | 4461.3 | 4842.2 | 5269.6 |
| 15° | 3640.0 | 3627.1 | 3554.5 | 3531.2 | 3585.6 | 3598.6 | 3772.2 | 4062.3 | 4422.4 | 4865.5 | 5381.0 |
| 17.5° | 3881.0 | 3873.2 | 3735.9 | 3640.0 | 3676.3 | 3686.7 | 3816.2 | 4049.4 | 4412.1 | 4912.1 | 5518.3 |
| 20° | 4233.3 | 4199.6 | 3984.6 | 3839.5 | 3839.5 | 3855.1 | 3932.8 | 4106.4 | 4425.0 | 4969.1 | 5673.8 |
| 22.5° | 4699.7 | 4632.3 | 4329.2 | 4132.3 | 4080.5 | 4101.2 | 4134.9 | 4248.9 | 4479.4 | 5065.0 | 5868.1 |
| 25° | 5223.0 | 5160.8 | 4800.7 | 4523.5 | 4450.9 | 4458.7 | 4430.2 | 4450.9 | 4598.6 | 5197.1 | 6109.0 |
| 27.5° | 5780.0 | 5738.6 | 5355.1 | 5002.8 | 4888.8 | 4888.8 | 4787.7 | 4738.5 | 4764.4 | 5347.4 | 6378.5 |
| 30° | 6277.4 | 6220.4 | 5896.6 | 5510.6 | 5360.3 | 5360.3 | 5168.6 | 5062.4 | 5000.2 | 5531.3 | 6738.6 |
| 32.5° | 6539.1 | 6505.4 | 6290.4 | 5995.0 | 5811.1 | 5782.6 | 5616.8 | 5492.4 | 5347.4 | 5803.3 | 7225.7 |
| 35° | 6881.1 | 6873.3 | 6743.8 | 6513.2 | 6280.0 | 6238.6 | 6124.6 | 6026.1 | 5774.8 | 6142.7 | 7873.4 |
| 37.5° | 7311.2 | 7298.2 | 7277.5 | 7140.2 | 6860.4 | 6852.6 | 6751.5 | 6632.4 | 6305.9 | 6632.4 | 8658.4 |
| 40° | 7793.0 | 7769.7 | 7743.8 | 7741.2 | 7572.8 | 7544.3 | 7536.6 | 7401.8 | 6945.9 | 7223.1 | 9477.0 |
| 42.5° | 8456.3 | 8376.0 | 8132.4 | 8241.2 | 8365.6 | 8339.7 | 8438.1 | 8236.1 | 7743.8 | 7925.2 | 10251.7 |
| 45° | 9272.4 | 9075.5 | 8593.6 | 8624.7 | 8938.2 | 8990.0 | 9332.0 | 9282.7 | 8622.1 | 8736.1 | 11067.8 |
| 47.5° | 9762.0 | 9591.0 | 9142.8 | 9116.9 | 9508.1 | 9572.9 | 10316.5 | 10409.7 | 9567.7 | 9712.8 | 12075.6 |
| 50° | 10163.6 | 10044.4 | 9676.5 | 9712.8 | 10127.3 | 10192.1 | 11293.2 | 11492.7 | 10458.9 | 10712.8 | 13246.6 |
| 52.5° | 10648.1 | 10477.1 | 10192.1 | 10363.1 | 10870.9 | 10948.6 | 12378.7 | 12593.7 | 11262.1 | 11811.3 | 14459.1 |
| 55° | 10920.1 | 10850.1 | 10855.3 | 11117.0 | 11754.3 | 11860.6 | 13516.1 | 13479.8 | 11997.9 | 12751.8 | 15371.0 |
| 57.5° | 11547.1 | 11521.2 | 11759.5 | 11858.0 | 12785.5 | 12922.8 | 14653.4 | 14342.5 | 12666.3 | 13479.8 | 15808.9 |
| 60° | 12653.3 | 12588.6 | 12795.8 | 12946.1 | 14060.1 | 14254.4 | 15922.9 | 15187.1 | 13119.7 | 14021.3 | 15661.2 |
| 62.5° | 14207.8 | 14127.5 | 14135.2 | 14373.6 | 15767.4 | 15972.1 | 17334.8 | 15891.8 | 13259.6 | 14104.2 | 14725.9 |
| 65° | 16140.5 | 16023.9 | 15891.8 | 16215.6 | 18034.4 | 18205.3 | 18871.2 | 16404.8 | 12925.4 | 13306.2 | 12772.5 |
| 67.5° | 18179.4 | 18083.6 | 17928.1 | 18606.9 | 20969.7 | 21073.3 | 20594.0 | 16360.7 | 11865.7 | 11171.4 | 8958.9 |
| 70° | 18298.6 | 18321.9 | 19057.7 | 21513.8 | 24801.5 | 24827.4 | 22223.6 | 15474.7 | 9609.2 | 7241.2 | 4463.9 |
| 72.5° | 17070.6 | 17031.7 | 17990.3 | 22044.9 | 27884.5 | 27972.6 | 22993.1 | 12536.7 | 5938.0 | 3611.5 | 2093.3 |
| 75° | 13865.8 | 13933.2 | 14941.0 | 19288.3 | 23899.9 | 23977.6 | 18744.2 | 7391.5 | 2821.3 | 1766.9 | 1339.4 |
| 77.5° | 5969.1 | 6344.8 | 8331.9 | 13588.6 | 17117.2 | 16876.3 | 9661.0 | 2994.9 | 1505.2 | 1259.1 | 1025.9 |
| 80° | 1722.9 | 1870.5 | 2969.0 | 6461.4 | 10256.9 | 10075.5 | 3824.0 | 1121.8 | 1049.3 | 945.6 | 735.8 |
| 82.5° | 557.0 | 616.6 | 1088.1 | 2572.6 | 4596.0 | 4590.8 | 1450.8 | 663.2 | 686.6 | 642.5 | 474.1 |
| 85° | 155.4 | 178.8 | 334.2 | 779.8 | 1422.3 | 1393.8 | 419.7 | 313.5 | 365.3 | 370.5 | 235.8 |
| 87.5° | 0.0 | 0.0 | 2.6 | 5.2 | 5.2 | 5.2 | 10.4 | 46.6 | 106.2 | 134.7 | 95.9 |
| 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: P642850
 CATALOG NUMBER: GWS-SA6D-760-U-T4FT-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 | 5109.0 |
| 2.5° | 5140.1 | 5132.3 | 5238.5 | 5321.4 | 5399.2 | 5451.0 | 5466.5 | 5476.9 | 5497.6 | 5508.0 | 5497.6 |
| 5° | 5176.4 | 5215.2 | 5391.4 | 5520.9 | 5624.6 | 5686.7 | 5689.3 | 5684.2 | 5699.7 | 5686.7 | 5679.0 |
| 7.5° | 5254.1 | 5329.2 | 5552.0 | 5689.3 | 5756.7 | 5759.3 | 5697.1 | 5624.6 | 5588.3 | 5557.2 | 5546.8 |
| 10° | 5357.7 | 5469.1 | 5712.7 | 5803.3 | 5782.6 | 5686.7 | 5549.4 | 5435.4 | 5370.7 | 5324.0 | 5313.7 |
| 12.5° | 5500.2 | 5624.6 | 5855.1 | 5852.6 | 5723.0 | 5552.0 | 5391.4 | 5254.1 | 5160.8 | 5106.4 | 5088.3 |
| 15° | 5634.9 | 5793.0 | 5958.8 | 5837.0 | 5632.3 | 5425.1 | 5217.8 | 5033.9 | 4909.5 | 4824.0 | 4808.5 |
| 17.5° | 5800.7 | 5969.1 | 6033.9 | 5787.8 | 5518.3 | 5251.5 | 4974.3 | 4733.3 | 4564.9 | 4463.9 | 4456.1 |
| 20° | 5992.5 | 6142.7 | 6070.2 | 5702.3 | 5370.7 | 5020.9 | 4645.3 | 4375.8 | 4194.5 | 4096.0 | 4103.8 |
| 22.5° | 6215.3 | 6324.1 | 6080.5 | 5585.7 | 5166.0 | 4694.5 | 4274.8 | 4015.7 | 3893.9 | 3842.1 | 3844.7 |
| 25° | 6453.6 | 6523.6 | 6062.4 | 5427.7 | 4852.5 | 4295.5 | 3893.9 | 3774.8 | 3764.4 | 3751.4 | 3756.6 |
| 27.5° | 6736.0 | 6720.5 | 6008.0 | 5204.9 | 4430.2 | 3831.8 | 3627.1 | 3658.2 | 3699.6 | 3694.4 | 3699.6 |
| 30° | 7114.3 | 6966.6 | 5938.0 | 4896.6 | 3927.6 | 3443.1 | 3469.0 | 3557.1 | 3611.5 | 3616.7 | 3632.3 |
| 32.5° | 7546.9 | 7238.6 | 5826.6 | 4476.9 | 3448.3 | 3225.5 | 3321.4 | 3427.6 | 3492.4 | 3505.3 | 3526.0 |
| 35° | 8062.5 | 7549.5 | 5629.7 | 3953.5 | 3103.7 | 3096.0 | 3184.1 | 3256.6 | 3326.6 | 3331.7 | 3331.7 |
| 37.5° | 8655.8 | 7860.4 | 5316.3 | 3375.8 | 2891.3 | 2984.6 | 3067.5 | 3083.0 | 3101.2 | 3085.6 | 3093.4 |
| 40° | 9199.8 | 8160.9 | 4870.6 | 2849.8 | 2717.7 | 2886.1 | 2956.1 | 2904.3 | 2847.3 | 2808.4 | 2816.2 |
| 42.5° | 9655.8 | 8365.6 | 4280.0 | 2482.0 | 2541.5 | 2798.0 | 2852.4 | 2746.2 | 2634.8 | 2562.3 | 2572.6 |
| 45° | 10168.8 | 8554.7 | 3585.6 | 2233.2 | 2391.3 | 2735.9 | 2772.1 | 2634.8 | 2492.3 | 2383.5 | 2368.0 |
| 47.5° | 10876.1 | 8940.8 | 2969.0 | 2059.7 | 2285.1 | 2702.2 | 2761.8 | 2575.2 | 2388.7 | 2225.5 | 2207.3 |
| 50° | 11749.1 | 9487.4 | 2453.5 | 1945.7 | 2235.8 | 2684.0 | 2759.2 | 2510.5 | 2287.7 | 2095.9 | 2083.0 |
| 52.5° | 12702.6 | 10021.1 | 2072.6 | 1857.6 | 2186.6 | 2629.6 | 2746.2 | 2437.9 | 2181.4 | 1974.2 | 1958.6 |
| 55° | 13337.3 | 10231.0 | 1816.1 | 1774.7 | 2106.3 | 2544.1 | 2694.4 | 2368.0 | 2020.8 | 1831.7 | 1808.4 |
| 57.5° | 13523.8 | 9961.5 | 1637.4 | 1699.5 | 2002.7 | 2425.0 | 2596.0 | 2220.3 | 1922.4 | 1772.1 | 1754.0 |
| 60° | 13202.6 | 9282.7 | 1526.0 | 1637.4 | 1888.7 | 2272.1 | 2425.0 | 2134.8 | 1844.6 | 1709.9 | 1697.0 |
| 62.5° | 12295.8 | 8236.1 | 1440.5 | 1572.6 | 1772.1 | 2111.5 | 2316.1 | 2031.2 | 1759.1 | 1652.9 | 1634.8 |
| 65° | 10471.9 | 6754.1 | 1370.5 | 1505.2 | 1660.7 | 1958.6 | 2197.0 | 1927.5 | 1665.9 | 1585.6 | 1564.8 |
| 67.5° | 7324.1 | 4743.7 | 1295.4 | 1424.9 | 1549.3 | 1810.9 | 2072.6 | 1831.7 | 1570.0 | 1510.4 | 1489.7 |
| 70° | 3580.4 | 2515.6 | 1204.7 | 1331.7 | 1430.1 | 1660.7 | 1948.3 | 1715.1 | 1443.1 | 1409.4 | 1380.9 |
| 72.5° | 1704.7 | 1406.8 | 1098.5 | 1204.7 | 1266.9 | 1461.2 | 1741.0 | 1546.7 | 1292.8 | 1220.3 | 1171.0 |
| 75° | 1142.5 | 1000.0 | 958.6 | 1054.4 | 1070.0 | 1225.4 | 1492.3 | 1334.2 | 1139.9 | 1057.0 | 1015.6 |
| 77.5° | 865.3 | 764.3 | 805.7 | 891.2 | 860.1 | 1007.8 | 1228.0 | 1189.2 | 1028.5 | 953.4 | 932.7 |
| 80° | 608.8 | 557.0 | 639.9 | 691.7 | 668.4 | 857.5 | 1106.3 | 1018.2 | 847.2 | 764.3 | 748.7 |
| 82.5° | 383.4 | 373.1 | 471.5 | 479.3 | 487.1 | 678.8 | 909.4 | 800.5 | 658.1 | 541.5 | 502.6 |
| 85° | 191.7 | 212.4 | 282.4 | 282.4 | 279.8 | 349.8 | 518.2 | 450.8 | 354.9 | 282.4 | 274.6 |
| 87.5° | 64.8 | 90.7 | 121.8 | 98.4 | 75.1 | 59.6 | 67.4 | 82.9 | 88.1 | 85.5 | 85.5 |
| 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
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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: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

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

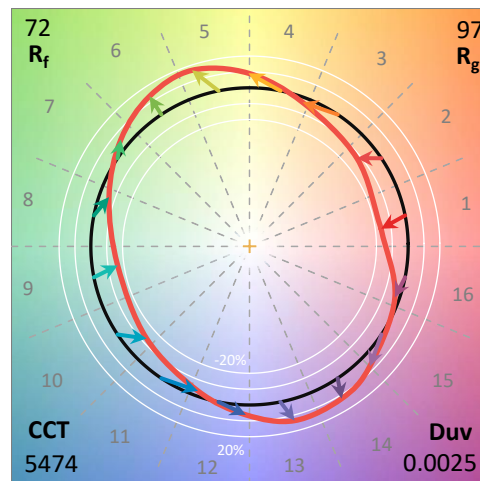
Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-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-760-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): | 5474 | CRI (Ra): | 71.7 | R9: | -27.1 |
| CIE u': | 0.2052 | R1: | 70.6 | R10: | 40.8 |
| CIE v': | 0.4804 | R2: | 74.6 | R11: | 74.6 |
| Duv: | 0.0025 | R3: | 78.3 | R12: | 50.4 |
| CIE x: | 0.3330 | R4: | 73.8 | R13: | 70.0 |
| CIE y: | 0.3466 | R5: | 72.4 | R14: | 87.8 |
| CIE z: | 0.3204 | R6: | 67.5 | | |
| Peak Wavelength (nm): | 442 | R7: | 77.5 | | |
| Dominant Wavelength (nm): | 554 | R8: | 58.9 | | |
| Purity: | 4.1 | | | | |
| Rf: | 72.1 | | | | |
| Rg: | 97.2 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-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 5700K 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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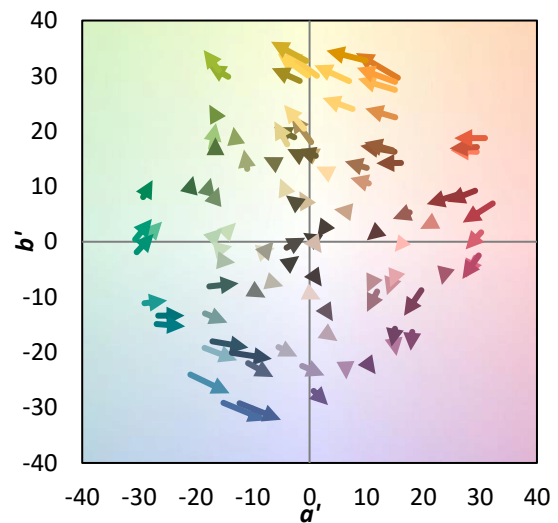
TM-30-18

Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)