

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: P633764

Luminaire Tested: GWS-SA2F-735-U-T2R-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P633764
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA2F-735-U-T2R-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD
Light Source: (32) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12903.9 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G2

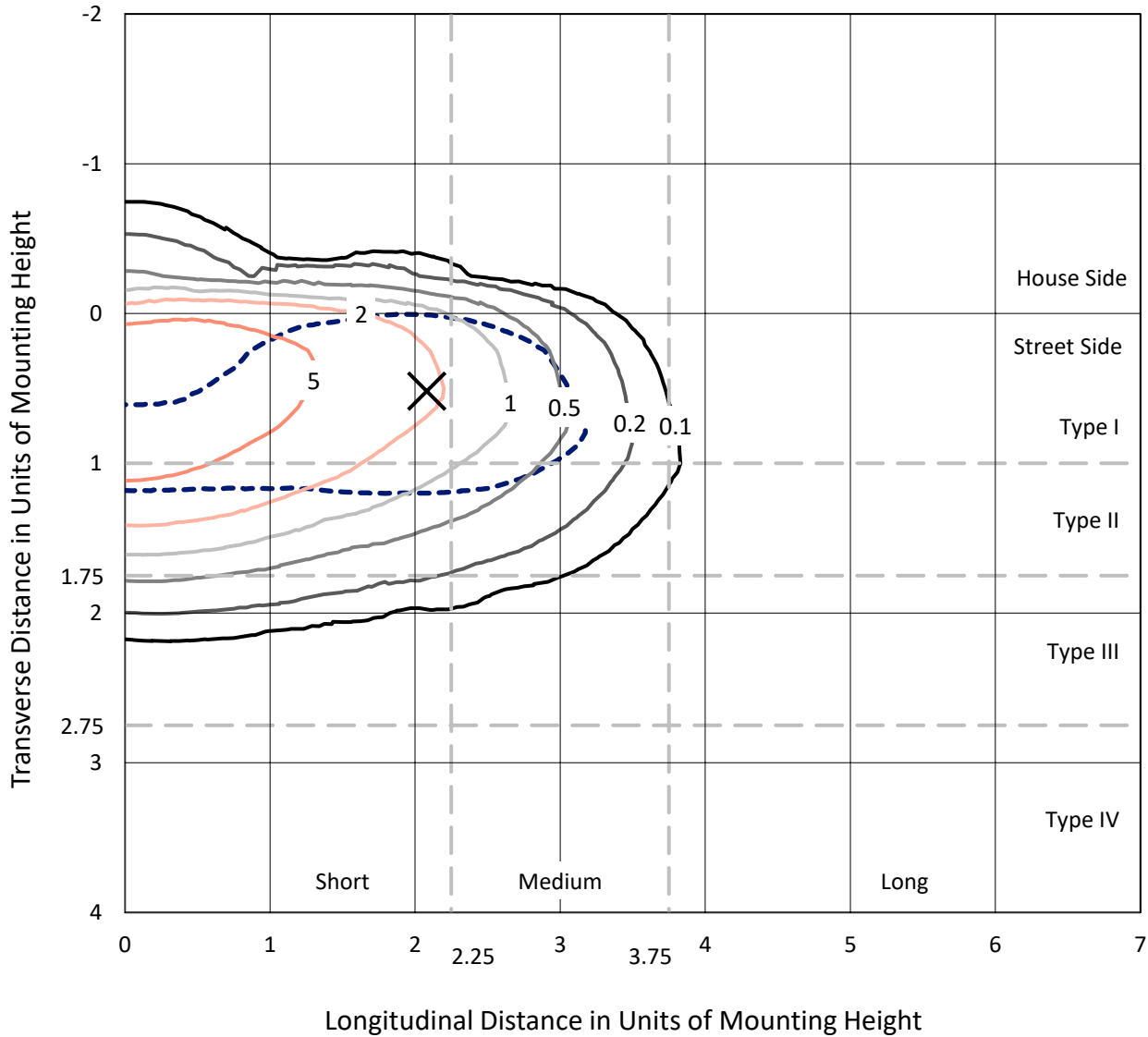
Input Watts (W): 124.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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 CATALOG NUMBER: GWS-SA2F-735-U-T2R-W-HSS

Iso-Footcandle Lines of Horizontal Illumination

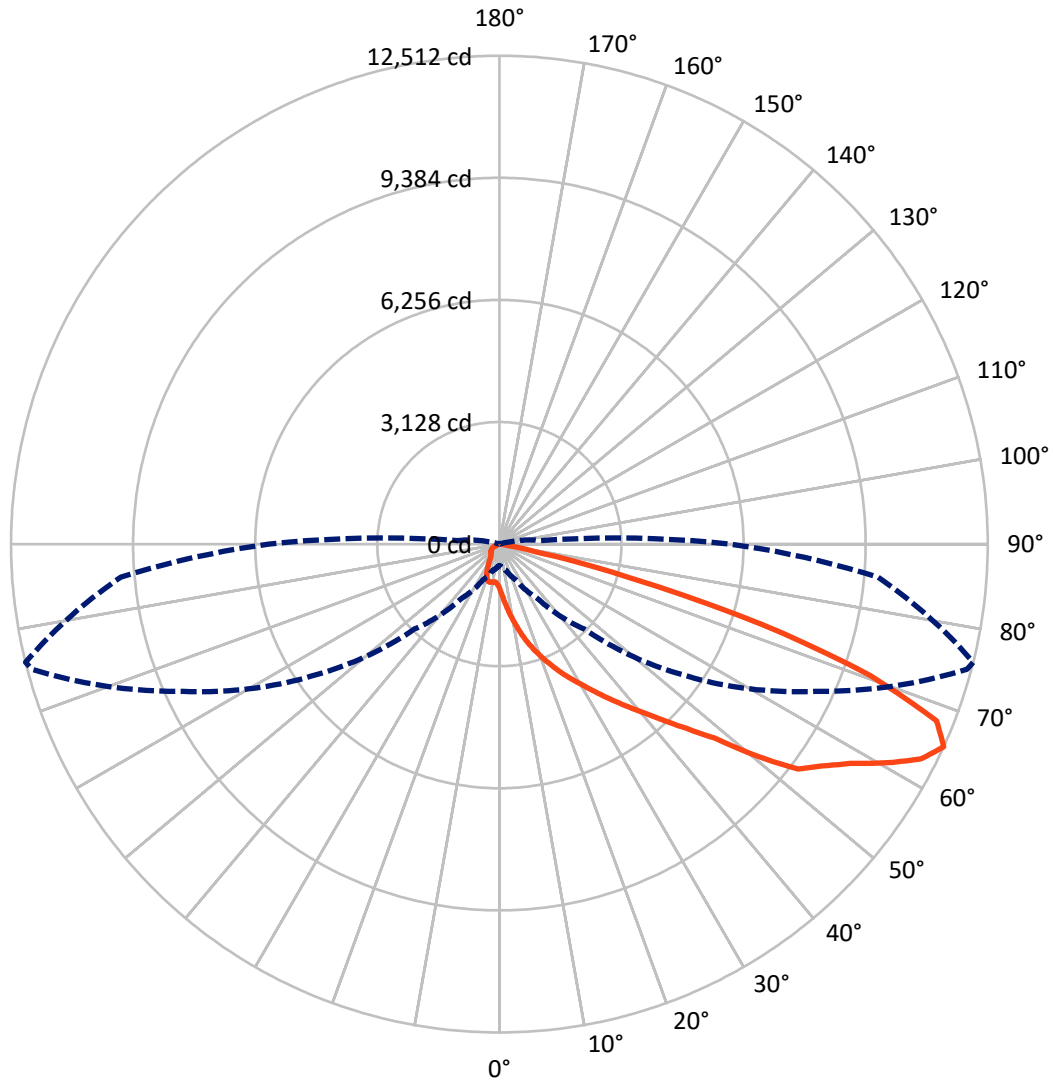
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.7 fc
 Type II - Short - N/A

REPORT NUMBER: P633764
CATALOG NUMBER: GWS-SA2F-735-U-T2R-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 713.5 | 0.0 | 713.5 |
| | % Fixture | 5.5 | 0.0 | 5.5 |
| Street Side | Lumens | 12190.4 | 0.0 | 12190.4 |
| | % Fixture | 94.5 | 0.0 | 94.5 |
| Total | Lumens | 12903.9 | 0.0 | 12903.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 139.0 | 1.1 |
| 10°-20° | 527.4 | 4.1 |
| 20°-30° | 1075.9 | 8.3 |
| 30°-40° | 1913.6 | 14.8 |
| 40°-50° | 2828.7 | 21.9 |
| 50°-60° | 3238.7 | 25.1 |
| 60°-70° | 2471.0 | 19.1 |
| 70°-80° | 692.2 | 5.4 |
| 80°-90° | 17.4 | 0.1 |
| 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° | 12903.9 | 100.0 |
| 0°-180° | 12903.9 | 100.0 |

Coefficient of Utilization



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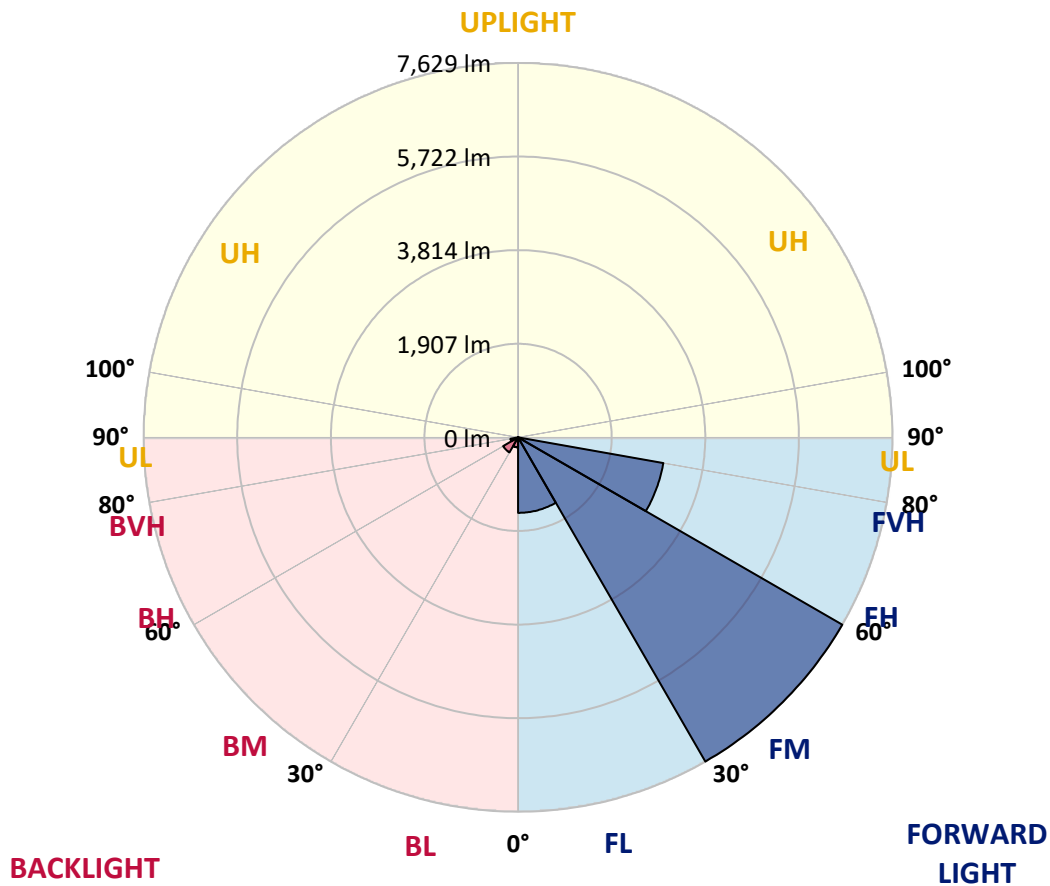
CATALOG NUMBER: GWS-SA2F-735-U-T2R-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1538.7 | 11.9 | | | |
| FM (30°-60°) | 7629.0 | 59.1 | | | |
| FH (60°-80°) | 3006.3 | 23.3 | | | G2/5000 |
| FVH (80°-90°) | 16.4 | 0.1 | | | G1/100 |
| BL (0°-30°) | 203.6 | 1.6 | B1/500 | | |
| BM (30°-60°) | 352.0 | 2.7 | B1/1000 | | |
| BH (60°-80°) | 156.8 | 1.2 | B1/500 | | G1/500 |
| 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 II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| 0° | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 |
| 2.5° | 1760.7 | 1787.1 | 1766.5 | 1732.1 | 1665.5 | 1601.3 | 1518.7 | 1405.1 | 1314.5 | 1303.1 | 1218.2 |
| 5° | 2377.8 | 2375.5 | 2330.8 | 2286.1 | 2216.1 | 2106.0 | 1939.7 | 1728.6 | 1525.6 | 1508.4 | 1318.0 |
| 7.5° | 2744.9 | 2748.3 | 2723.1 | 2688.7 | 2619.9 | 2506.3 | 2333.1 | 2078.5 | 1781.4 | 1747.0 | 1454.5 |
| 10° | 3053.5 | 3052.3 | 3034.0 | 3017.9 | 2956.0 | 2880.3 | 2694.4 | 2414.5 | 2056.7 | 2002.8 | 1607.0 |
| 12.5° | 3285.2 | 3293.2 | 3302.4 | 3318.4 | 3292.0 | 3217.5 | 3042.0 | 2736.9 | 2335.4 | 2275.8 | 1781.4 |
| 15° | 3468.7 | 3471.0 | 3505.4 | 3567.3 | 3589.1 | 3550.1 | 3390.7 | 3048.9 | 2610.7 | 2559.1 | 1982.1 |
| 17.5° | 3523.7 | 3528.3 | 3586.8 | 3700.4 | 3815.1 | 3836.9 | 3716.5 | 3363.2 | 2881.4 | 2826.3 | 2177.1 |
| 20° | 3639.6 | 3649.9 | 3693.5 | 3793.3 | 3937.8 | 4054.8 | 4007.8 | 3680.9 | 3152.1 | 3079.8 | 2376.7 |
| 22.5° | 4004.4 | 4010.1 | 3995.2 | 4007.8 | 4082.4 | 4217.7 | 4246.4 | 3988.3 | 3429.7 | 3352.8 | 2592.3 |
| 25° | 4631.8 | 4634.1 | 4529.7 | 4431.1 | 4374.9 | 4400.1 | 4463.2 | 4271.6 | 3705.0 | 3629.3 | 2793.1 |
| 27.5° | 5283.3 | 5291.4 | 5166.3 | 4998.9 | 4798.1 | 4683.4 | 4665.1 | 4530.9 | 3982.6 | 3898.8 | 2991.5 |
| 30° | 5897.0 | 5897.0 | 5765.1 | 5560.9 | 5292.5 | 5068.8 | 4936.9 | 4792.4 | 4279.7 | 4187.9 | 3194.5 |
| 32.5° | 6448.7 | 6444.1 | 6275.5 | 6054.2 | 5789.2 | 5543.7 | 5266.1 | 5065.4 | 4610.0 | 4507.9 | 3428.5 |
| 35° | 6904.1 | 6892.6 | 6701.1 | 6488.9 | 6205.6 | 6023.2 | 5713.5 | 5359.0 | 4967.9 | 4865.8 | 3669.4 |
| 37.5° | 7248.2 | 7235.6 | 7060.1 | 6835.3 | 6572.6 | 6454.5 | 6195.2 | 5711.2 | 5345.3 | 5252.4 | 3936.7 |
| 40° | 7435.2 | 7410.0 | 7288.4 | 7120.9 | 6900.7 | 6797.4 | 6689.6 | 6148.2 | 5789.2 | 5673.3 | 4252.1 |
| 42.5° | 7490.3 | 7460.4 | 7380.1 | 7302.1 | 7169.1 | 7087.6 | 7203.5 | 6641.4 | 6276.7 | 6176.9 | 4612.3 |
| 45° | 7327.4 | 7310.2 | 7303.3 | 7359.5 | 7383.6 | 7406.5 | 7692.1 | 7187.4 | 6814.6 | 6738.9 | 5065.4 |
| 47.5° | 6935.1 | 6930.5 | 6991.3 | 7225.3 | 7479.9 | 7722.0 | 8223.2 | 7860.8 | 7512.1 | 7430.6 | 5698.6 |
| 50° | 6210.2 | 6257.2 | 6426.9 | 6837.6 | 7346.9 | 7900.9 | 8719.9 | 8794.5 | 8640.8 | 8521.5 | 6524.4 |
| 52.5° | 5076.9 | 5167.5 | 5548.3 | 6172.3 | 6904.1 | 7850.4 | 8949.3 | 9542.3 | 9699.5 | 9575.6 | 7116.3 |
| 55° | 3983.7 | 4068.6 | 4408.1 | 5199.6 | 6175.7 | 7466.2 | 8959.6 | 9800.4 | 10143.4 | 10028.7 | 7516.6 |
| 57.5° | 2967.4 | 3045.4 | 3354.0 | 4111.0 | 5184.7 | 6710.3 | 8714.2 | 9943.8 | 10669.9 | 10596.5 | 8148.7 |
| 60° | 1939.7 | 2016.5 | 2295.3 | 2957.1 | 4021.6 | 5609.1 | 8109.7 | 9914.0 | 11386.8 | 11379.9 | 8925.2 |
| 62.5° | 1075.9 | 1136.7 | 1338.6 | 1854.8 | 2806.8 | 4343.9 | 7159.9 | 9614.6 | 12080.8 | 12124.4 | 9565.3 |
| 65° | 550.6 | 589.6 | 712.3 | 1019.7 | 1698.8 | 3079.8 | 5910.8 | 8928.7 | 12401.9 | 12512.1 | 9733.9 |
| 67.5° | 360.2 | 372.8 | 402.6 | 529.9 | 909.6 | 1937.4 | 4448.3 | 7828.6 | 11950.0 | 12078.5 | 9168.4 |
| 70° | 292.5 | 302.8 | 320.0 | 353.3 | 469.1 | 1028.9 | 2921.5 | 6252.6 | 9985.1 | 10072.3 | 7301.0 |
| 72.5° | 214.5 | 228.3 | 261.5 | 283.3 | 338.4 | 564.4 | 1519.8 | 4104.2 | 6857.1 | 7010.8 | 4588.2 |
| 75° | 158.3 | 166.3 | 193.9 | 223.7 | 276.4 | 356.7 | 581.6 | 2157.6 | 3541.0 | 3451.5 | 1927.1 |
| 77.5° | 95.2 | 100.9 | 123.9 | 143.4 | 197.3 | 222.5 | 203.0 | 797.2 | 1077.1 | 1012.8 | 465.7 |
| 80° | 47.0 | 52.8 | 81.4 | 107.8 | 126.2 | 89.5 | 84.9 | 222.5 | 239.7 | 239.7 | 117.0 |
| 82.5° | 16.1 | 20.6 | 43.6 | 71.1 | 61.9 | 34.4 | 40.1 | 57.4 | 64.2 | 67.7 | 34.4 |
| 85° | 0.0 | 0.0 | 10.3 | 20.6 | 9.2 | 4.6 | 10.3 | 12.6 | 16.1 | 17.2 | 11.5 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 3.4 | 4.6 | 4.6 |
| 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: GWS-SA2F-735-U-T2R-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 | 1142.5 |
| 2.5° | 1172.3 | 1118.4 | 1036.9 | 963.5 | 907.3 | 854.6 | 814.4 | 782.3 | 776.6 | 758.2 | 760.5 |
| 5° | 1225.1 | 1127.6 | 977.3 | 861.4 | 780.0 | 724.9 | 679.1 | 644.6 | 629.7 | 614.8 | 603.4 |
| 7.5° | 1306.5 | 1165.4 | 954.3 | 813.3 | 718.1 | 633.2 | 562.1 | 504.7 | 477.2 | 460.0 | 448.5 |
| 10° | 1406.3 | 1218.2 | 955.5 | 784.6 | 643.5 | 513.9 | 416.4 | 353.3 | 323.5 | 314.3 | 313.1 |
| 12.5° | 1525.6 | 1284.7 | 964.7 | 737.6 | 535.7 | 382.0 | 308.6 | 279.9 | 270.7 | 262.7 | 262.7 |
| 15° | 1651.8 | 1359.3 | 964.7 | 651.5 | 408.4 | 298.2 | 267.3 | 248.9 | 237.4 | 232.9 | 230.6 |
| 17.5° | 1784.8 | 1429.2 | 941.7 | 533.4 | 313.1 | 262.7 | 237.4 | 220.2 | 211.1 | 204.2 | 201.9 |
| 20° | 1927.1 | 1495.8 | 884.4 | 408.4 | 268.4 | 235.1 | 211.1 | 193.9 | 184.7 | 177.8 | 177.8 |
| 22.5° | 2071.6 | 1557.7 | 791.5 | 314.3 | 237.4 | 208.8 | 185.8 | 169.8 | 160.6 | 153.7 | 153.7 |
| 25° | 2205.8 | 1599.0 | 672.2 | 259.2 | 214.5 | 185.8 | 165.2 | 149.1 | 138.8 | 134.2 | 131.9 |
| 27.5° | 2330.8 | 1625.4 | 540.3 | 228.3 | 192.7 | 166.3 | 144.5 | 129.6 | 121.6 | 118.1 | 115.9 |
| 30° | 2460.4 | 1632.3 | 412.9 | 207.6 | 174.4 | 146.8 | 126.2 | 114.7 | 107.8 | 103.2 | 103.2 |
| 32.5° | 2586.6 | 1624.2 | 315.4 | 190.4 | 158.3 | 129.6 | 112.4 | 102.1 | 96.4 | 92.9 | 91.8 |
| 35° | 2715.1 | 1587.5 | 255.8 | 175.5 | 142.2 | 113.6 | 99.8 | 91.8 | 88.3 | 83.7 | 83.7 |
| 37.5° | 2855.0 | 1538.2 | 222.5 | 160.6 | 126.2 | 102.1 | 89.5 | 83.7 | 79.1 | 75.7 | 74.6 |
| 40° | 3029.4 | 1480.8 | 204.2 | 148.0 | 111.3 | 91.8 | 80.3 | 74.6 | 71.1 | 67.7 | 66.5 |
| 42.5° | 3235.8 | 1424.6 | 195.0 | 134.2 | 99.8 | 81.4 | 72.3 | 65.4 | 61.9 | 57.4 | 56.2 |
| 45° | 3528.3 | 1412.0 | 184.7 | 119.3 | 89.5 | 73.4 | 63.1 | 56.2 | 51.6 | 48.2 | 47.0 |
| 47.5° | 3998.6 | 1447.6 | 167.5 | 103.2 | 79.1 | 64.2 | 53.9 | 48.2 | 42.4 | 39.0 | 36.7 |
| 50° | 4465.5 | 1438.4 | 150.3 | 89.5 | 70.0 | 55.1 | 45.9 | 40.1 | 34.4 | 31.0 | 29.8 |
| 52.5° | 4720.1 | 1394.8 | 134.2 | 79.1 | 60.8 | 47.0 | 39.0 | 32.1 | 28.7 | 25.2 | 24.1 |
| 55° | 4950.7 | 1377.6 | 118.1 | 68.8 | 51.6 | 41.3 | 32.1 | 26.4 | 24.1 | 20.6 | 19.5 |
| 57.5° | 5402.6 | 1417.8 | 104.4 | 59.6 | 44.7 | 35.6 | 27.5 | 21.8 | 19.5 | 16.1 | 14.9 |
| 60° | 5875.2 | 1422.3 | 89.5 | 51.6 | 39.0 | 29.8 | 21.8 | 17.2 | 14.9 | 11.5 | 10.3 |
| 62.5° | 6121.8 | 1306.5 | 73.4 | 43.6 | 32.1 | 25.2 | 18.4 | 13.8 | 11.5 | 6.9 | 6.9 |
| 65° | 5915.4 | 1056.4 | 61.9 | 35.6 | 25.2 | 19.5 | 13.8 | 10.3 | 6.9 | 3.4 | 1.1 |
| 67.5° | 5235.2 | 751.3 | 51.6 | 28.7 | 18.4 | 13.8 | 10.3 | 6.9 | 1.1 | 0.0 | 0.0 |
| 70° | 3833.5 | 429.0 | 40.1 | 20.6 | 13.8 | 9.2 | 6.9 | 3.4 | 0.0 | 0.0 | 0.0 |
| 72.5° | 2356.0 | 229.4 | 29.8 | 13.8 | 10.3 | 6.9 | 5.7 | 2.3 | 0.0 | 0.0 | 0.0 |
| 75° | 893.6 | 110.1 | 18.4 | 9.2 | 8.0 | 5.7 | 3.4 | 1.1 | 0.0 | 0.0 | 0.0 |
| 77.5° | 242.0 | 53.9 | 10.3 | 6.9 | 5.7 | 3.4 | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 63.1 | 25.2 | 6.9 | 4.6 | 3.4 | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 21.8 | 11.5 | 3.4 | 3.4 | 2.3 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 9.2 | 4.6 | 2.3 | 2.3 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.4 | 1.1 | 1.1 | 1.1 | 1.1 | 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-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-7
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/04/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-735-U-T2**
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

Spectral Parameters

CCT (K): 3388
 CIE u': 0.2371
 CIE v': 0.5177
 Duv: 0.0032
 CIE x: 0.4153
 CIE y: 0.4030
 CIE z: 0.1817
 Peak Wavelength (nm): 590
 Dominant Wavelength (nm): 580
 Purity: 45.7
 Rf: 76.9
 Rg: 94.4

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 | | |
| R1: | 68.9 | R9: | -34.6 |
| R2: | 81.1 | R10: | 57.8 |
| R3: | 93.1 | R11: | 68.6 |
| R4: | 71.6 | R12: | 53.9 |
| R5: | 69.4 | R13: | 70.9 |
| R6: | 75.0 | R14: | 96.2 |
| R7: | 79.5 | | |
| R8: | 46.4 | | |

Test Conditions

Stabilization Time: 81M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0/30%
 Sphere Temperature (°C): 24.1



REPORT NUMBER: SP1-2101-121-7

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | IN0071 | 12/1/2020 | 12/1/2021 |
| AC Power Source | IN0063 | 12/1/2020 | 12/1/2021 |
| DC Power Source | IN0208 | 12/1/2020 | 12/1/2021 |
| Sphere Thermometer | IN0085 | 12/1/2020 | 12/1/2021 |
| Room Thermometer | IN0046 | 12/1/2020 | 12/1/2021 |

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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 3500K 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 | 2672 | 0.0 | 490 | 34553 | 4.9 | 620 | 136720 | 35.6 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 8.0 | 625 | 126308 | 27.9 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 12.1 | 630 | 114625 | 20.7 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 18.1 | 635 | 103216 | 15.5 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 25.4 | 640 | 92605 | 11.1 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 33.9 | 645 | 83234 | 8.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 43.0 | 650 | 73263 | 5.4 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 50.1 | 655 | 64627 | 3.7 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 57.9 | 660 | 56614 | 2.4 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 64.0 | 665 | 49537 | 1.6 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.0 | 540 | 107316 | 69.9 | 670 | 42866 | 0.9 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.0 | 545 | 113101 | 75.3 | 675 | 36708 | 0.6 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 0.0 | 550 | 120690 | 82.0 | 680 | 31814 | 0.4 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 0.1 | 555 | 128583 | 87.8 | 685 | 27485 | 0.2 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 0.3 | 560 | 137796 | 93.6 | 690 | 23698 | 0.1 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 0.8 | 565 | 146577 | 97.5 | 695 | 20309 | 0.1 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 1.6 | 570 | 154581 | 100.5 | 700 | 17890 | 0.1 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 2.4 | 575 | 162633 | 101.2 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 2.5 | 580 | 168101 | 99.9 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 2.1 | 585 | 173145 | 96.2 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 1.8 | 590 | 174675 | 90.3 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 1.7 | 595 | 173724 | 82.3 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 1.5 | 600 | 171241 | 73.8 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 1.7 | 605 | 165134 | 64.0 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 2.2 | 610 | 156652 | 53.8 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 3.3 | 615 | 147879 | 44.6 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Scotopic Flux vs. Wavelength



Scotopic Lumens: 12126

S/P: 1.36

| 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 | 2672 | 0.0 | 490 | 34553 | 53.2 | 620 | 136720 | 1.7 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 71.7 | 625 | 126308 | 1.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 91.4 | 630 | 114625 | 0.6 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 110.0 | 635 | 103216 | 0.4 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 125.1 | 640 | 92605 | 0.2 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 135.7 | 645 | 83234 | 0.1 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 140.8 | 650 | 73263 | 0.1 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 139.6 | 655 | 64627 | 0.1 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 135.7 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.1 | 535 | 103269 | 128.7 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.2 | 540 | 107316 | 118.6 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.6 | 545 | 113101 | 108.4 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 2.0 | 550 | 120690 | 98.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 5.9 | 555 | 128583 | 87.9 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 14.3 | 560 | 137796 | 77.0 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 30.5 | 565 | 146577 | 65.8 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 55.5 | 570 | 154581 | 54.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 77.4 | 575 | 162633 | 44.3 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 73.6 | 580 | 168101 | 34.6 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 53.7 | 585 | 173145 | 26.5 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 41.9 | 590 | 174675 | 19.5 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 34.3 | 595 | 173724 | 13.9 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 27.9 | 600 | 171241 | 9.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 27.1 | 605 | 165134 | 6.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 31.3 | 610 | 156652 | 4.2 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 40.0 | 615 | 147879 | 2.7 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: 4490.7 M/P: 0.5

| 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 | 2672 | 0.0 | 490 | 34553 | 28.8 | 620 | 136720 | 0.1 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 36.6 | 625 | 126308 | 0.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 43.9 | 630 | 114625 | 0.0 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 49.6 | 635 | 103216 | 0.0 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 53.0 | 640 | 92605 | 0.0 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 53.5 | 645 | 83234 | 0.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 51.6 | 650 | 73263 | 0.0 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 47.3 | 655 | 64627 | 0.0 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 42.5 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 37.2 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.1 | 540 | 107316 | 31.4 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.4 | 545 | 113101 | 26.3 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 1.4 | 550 | 120690 | 21.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 3.7 | 555 | 128583 | 17.3 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 8.9 | 560 | 137796 | 13.6 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 18.2 | 565 | 146577 | 10.3 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 33.2 | 570 | 154581 | 7.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 45.6 | 575 | 162633 | 5.4 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 43.8 | 580 | 168101 | 3.8 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 32.2 | 585 | 173145 | 2.6 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 25.6 | 590 | 174675 | 1.7 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 21.2 | 595 | 173724 | 1.1 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 17.4 | 600 | 171241 | 0.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 16.6 | 605 | 165134 | 0.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 18.6 | 610 | 156652 | 0.3 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 22.7 | 615 | 147879 | 0.2 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

Summary

$R_f = 76.9$
 $R_g = 94.4$
 $CIE R_a = 73.1$
 $R_g = -34.6$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)