

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: P640966

Luminaire Tested: GWS-SA5E-830-U-T2-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640966
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-19)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5E-830-U-T2-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: (80) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 29587.7 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B3 - U0 - G4

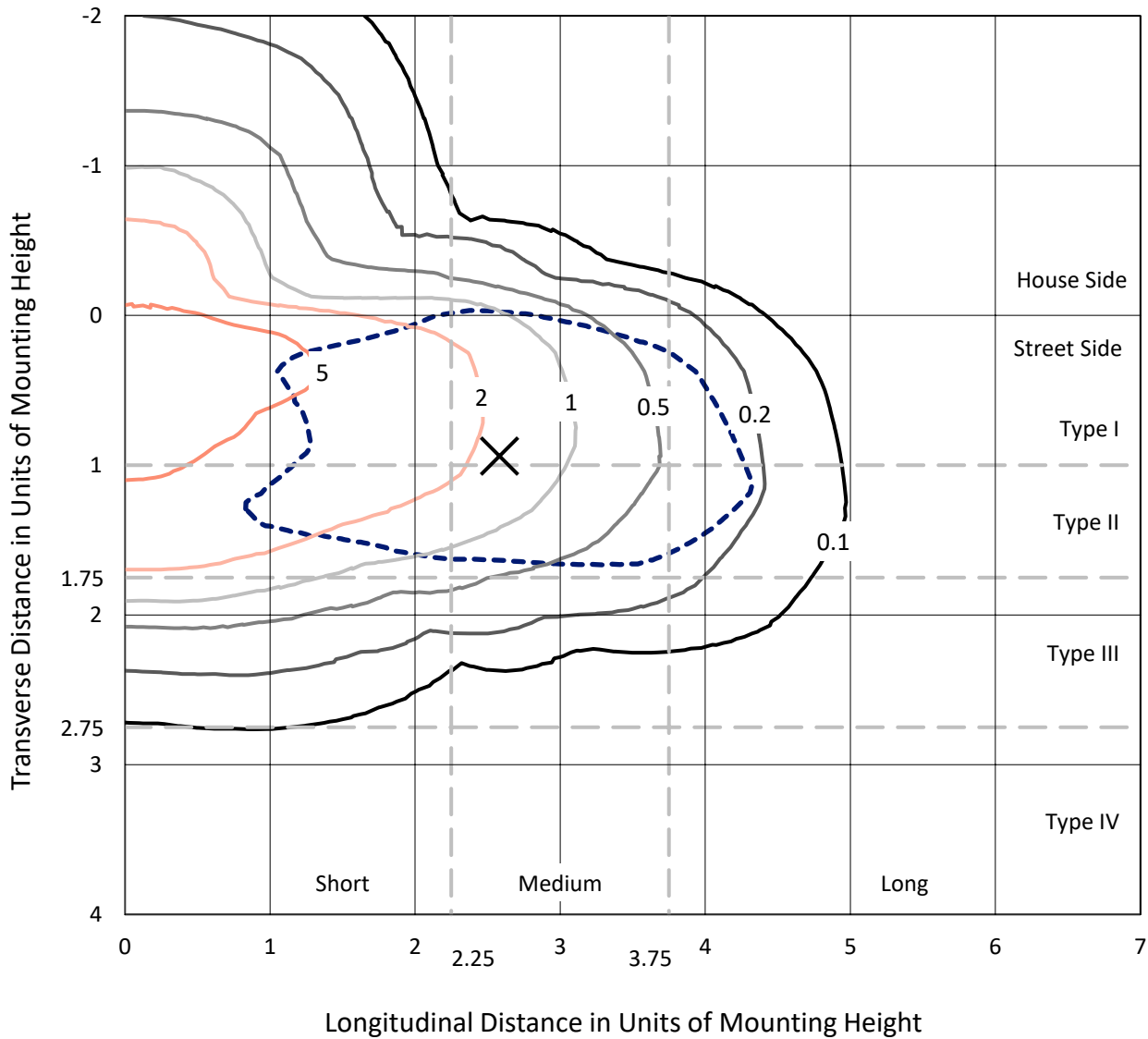
Input Watts (W): 269.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

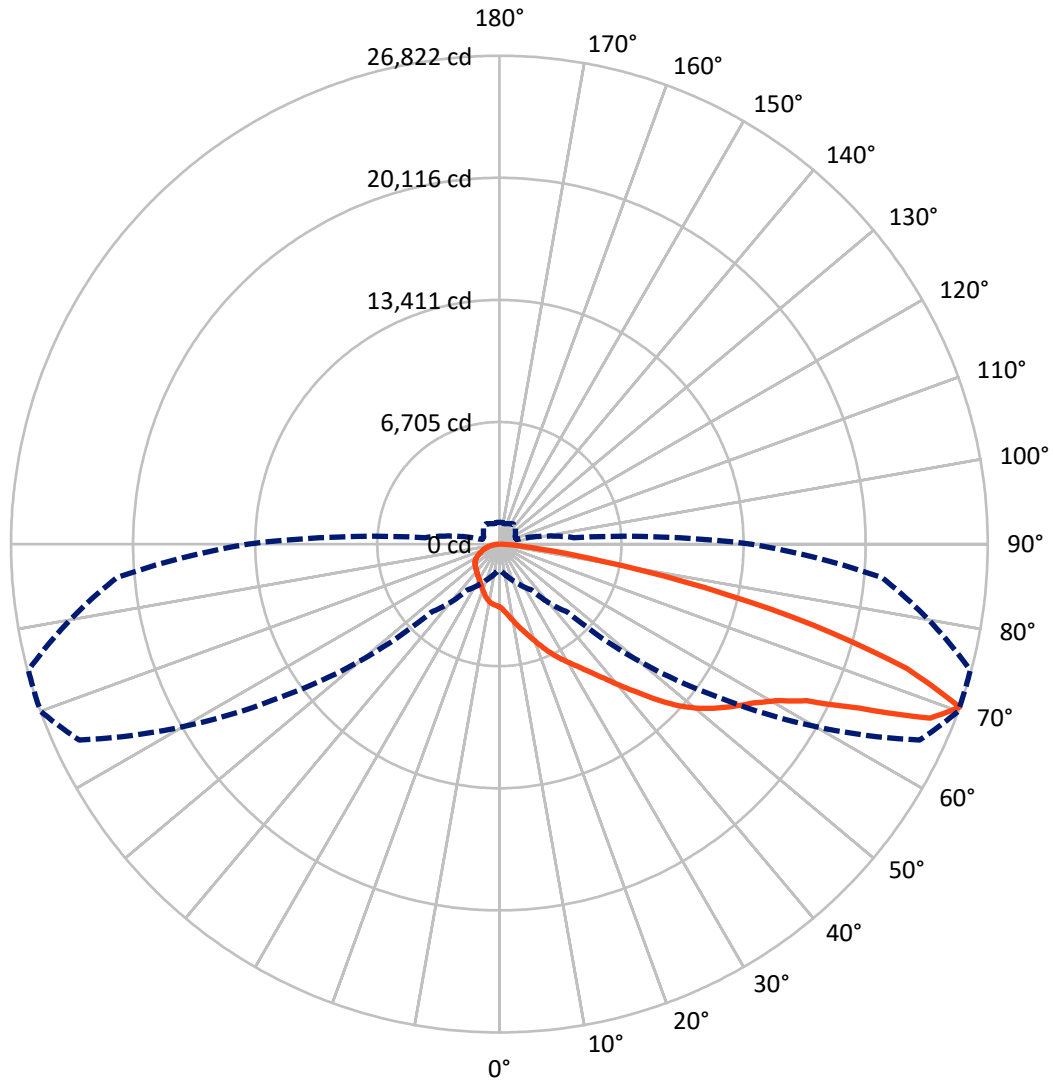
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8 fc
 Type II - Medium - N/A

REPORT NUMBER: P640966
CATALOG NUMBER: GWS-SA5E-830-U-T2-W

Luminous Intensity Polar Plot



— Vertical Plane Through 70-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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CATALOG NUMBER: GWS-SA5E-830-U-T2-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5302.2 | 0.0 | 5302.2 |
| | % Fixture | 17.9 | 0.0 | 17.9 |
| Street Side | Lumens | 24285.5 | 0.0 | 24285.5 |
| | % Fixture | 82.1 | 0.0 | 82.1 |
| Total | Lumens | 29587.7 | 0.0 | 29587.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 350.7 | 1.2 |
| 10°-20° | 1140.9 | 3.9 |
| 20°-30° | 2021.1 | 6.8 |
| 30°-40° | 3041.7 | 10.3 |
| 40°-50° | 4601.8 | 15.6 |
| 50°-60° | 6592.3 | 22.3 |
| 60°-70° | 7287.1 | 24.6 |
| 70°-80° | 4112.3 | 13.9 |
| 80°-90° | 439.9 | 1.5 |
| 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° | 29587.7 | 100.0 |
| 0°-180° | 29587.7 | 100.0 |

Coefficient of Utilization



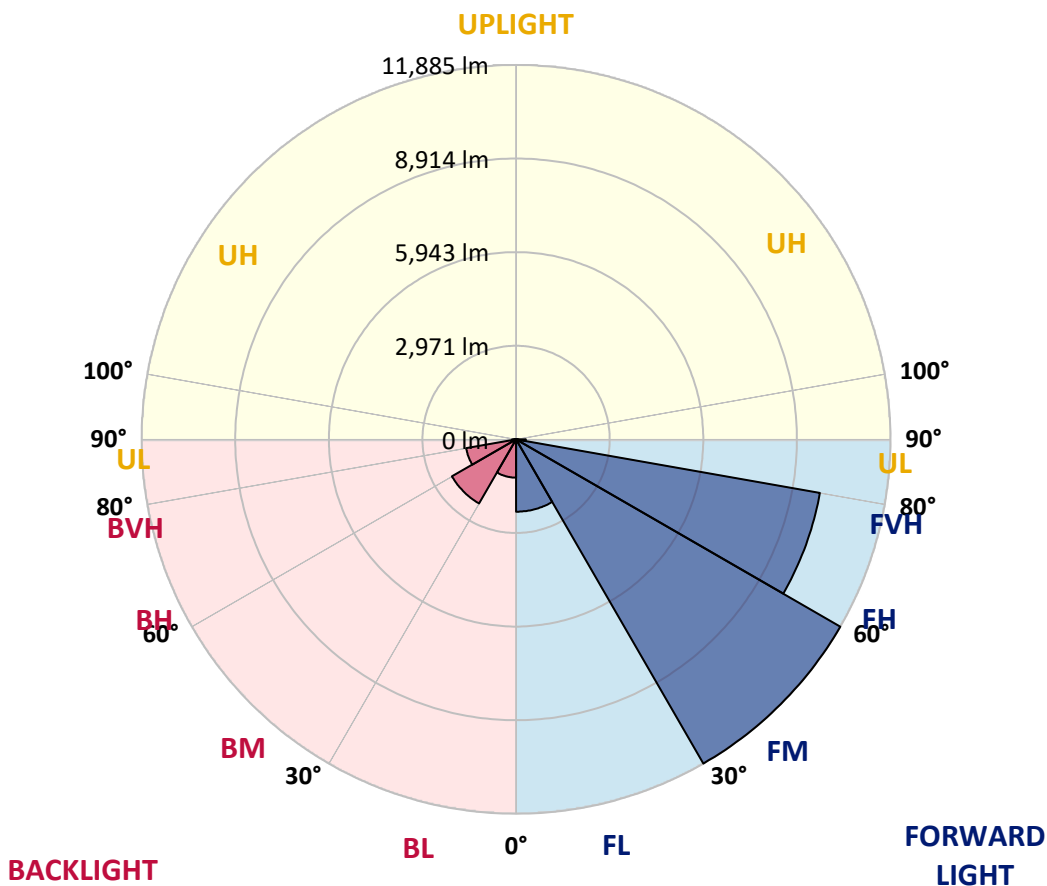
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 2296.9 | 7.8 | | | |
| FM (30°-60°) | 11885.4 | 40.2 | | | |
| FH (60°-80°) | 9792.3 | 33.1 | | | G4/12000 |
| FVH (80°-90°) | 310.9 | 1.1 | | | G3/500 |
| BL (0°-30°) | 1215.7 | 4.1 | B3/2500 | | |
| BM (30°-60°) | 2350.5 | 7.9 | B2/2500 | | |
| BH (60°-80°) | 1607.1 | 5.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 128.9 | 0.4 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G4
 Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 70° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 |
| 2.5° | 3822.5 | 3816.1 | 3820.4 | 3816.1 | 3792.6 | 3734.9 | 3687.8 | 3628.0 | 3587.4 | 3563.8 | 3508.3 |
| 5° | 4271.5 | 4265.1 | 4250.1 | 4228.7 | 4186.0 | 4106.9 | 3989.3 | 3858.9 | 3779.8 | 3719.9 | 3602.3 |
| 7.5° | 4594.3 | 4594.3 | 4592.2 | 4566.5 | 4536.6 | 4453.2 | 4314.2 | 4143.2 | 4027.8 | 3925.1 | 3732.7 |
| 10° | 4758.9 | 4769.6 | 4784.6 | 4820.9 | 4814.5 | 4769.6 | 4639.2 | 4455.3 | 4310.0 | 4190.2 | 3903.8 |
| 12.5° | 4848.7 | 4855.1 | 4880.8 | 4955.6 | 5032.6 | 5043.3 | 4966.3 | 4773.9 | 4615.7 | 4455.3 | 4094.0 |
| 15° | 4964.2 | 4966.3 | 5000.5 | 5090.3 | 5203.6 | 5316.9 | 5297.7 | 5105.3 | 4942.8 | 4765.3 | 4305.7 |
| 17.5° | 5053.9 | 5068.9 | 5130.9 | 5235.7 | 5376.8 | 5532.8 | 5626.9 | 5507.2 | 5306.2 | 5103.1 | 4536.6 |
| 20° | 5086.0 | 5096.7 | 5177.9 | 5338.3 | 5530.7 | 5750.9 | 5960.4 | 5928.3 | 5725.2 | 5485.8 | 4797.4 |
| 22.5° | 5201.5 | 5201.5 | 5261.3 | 5396.0 | 5622.6 | 5943.3 | 6283.2 | 6366.6 | 6187.0 | 5907.0 | 5077.5 |
| 25° | 5455.9 | 5447.3 | 5475.1 | 5530.7 | 5701.7 | 6097.2 | 6601.8 | 6851.9 | 6650.9 | 6336.7 | 5357.5 |
| 27.5° | 5804.3 | 5800.1 | 5797.9 | 5806.5 | 5864.2 | 6231.9 | 6871.1 | 7305.1 | 7104.2 | 6749.3 | 5607.7 |
| 30° | 6182.7 | 6169.9 | 6197.7 | 6172.1 | 6159.2 | 6392.3 | 7099.9 | 7711.3 | 7555.3 | 7157.6 | 5815.0 |
| 32.5° | 6698.0 | 6674.5 | 6668.0 | 6584.7 | 6533.4 | 6642.4 | 7283.8 | 8173.1 | 8049.1 | 7598.0 | 6048.1 |
| 35° | 7377.8 | 7356.4 | 7247.4 | 7114.9 | 6963.1 | 7014.4 | 7512.5 | 8624.2 | 8632.8 | 8149.6 | 6353.8 |
| 37.5° | 8064.1 | 8068.4 | 7982.8 | 7670.7 | 7514.6 | 7484.7 | 7861.0 | 9173.6 | 9357.5 | 8808.1 | 6749.3 |
| 40° | 8634.9 | 8660.6 | 8660.6 | 8331.3 | 8098.3 | 8070.5 | 8350.6 | 9825.7 | 10191.3 | 9616.2 | 7249.6 |
| 42.5° | 9068.9 | 9092.4 | 9167.2 | 8929.9 | 8684.1 | 8780.3 | 8944.9 | 10479.9 | 11136.2 | 10614.6 | 7882.4 |
| 45° | 9545.6 | 9564.9 | 9605.5 | 9468.7 | 9325.4 | 9582.0 | 9618.3 | 11262.4 | 12218.0 | 11734.8 | 8617.8 |
| 47.5° | 10178.4 | 10161.3 | 10165.6 | 10065.1 | 9954.0 | 10368.7 | 10360.2 | 11920.8 | 13263.4 | 12962.0 | 9415.2 |
| 50° | 10965.2 | 10997.3 | 10967.3 | 10768.5 | 10638.1 | 11016.5 | 11065.7 | 12649.8 | 14182.7 | 14176.3 | 10219.1 |
| 52.5° | 11722.0 | 11734.8 | 11893.0 | 11901.6 | 11634.3 | 11555.2 | 11683.5 | 13385.3 | 14958.7 | 15288.0 | 10990.8 |
| 55° | 11760.5 | 11809.6 | 12284.3 | 12626.3 | 13058.2 | 12423.2 | 12307.8 | 14086.5 | 15709.1 | 16376.2 | 11792.5 |
| 57.5° | 10941.7 | 11020.8 | 11826.8 | 12564.3 | 13765.8 | 13913.3 | 13376.7 | 14993.0 | 16459.5 | 17447.2 | 12720.4 |
| 60° | 9192.9 | 9357.5 | 10452.1 | 11580.9 | 13447.3 | 14984.4 | 15563.8 | 16224.4 | 17445.1 | 18541.8 | 13847.0 |
| 62.5° | 5870.6 | 5934.8 | 7469.8 | 9359.6 | 12012.7 | 14879.6 | 17945.4 | 18394.3 | 18945.9 | 19967.8 | 15583.0 |
| 65° | 2939.6 | 3144.8 | 4044.9 | 5586.3 | 8662.7 | 13111.6 | 19149.0 | 22368.6 | 21693.1 | 22409.3 | 18396.5 |
| 67.5° | 1994.6 | 2060.9 | 2516.3 | 3356.5 | 5079.6 | 9289.1 | 18402.9 | 25716.6 | 25517.7 | 25635.3 | 21395.9 |
| 70° | 1470.9 | 1513.6 | 1872.8 | 2377.3 | 3072.1 | 5274.2 | 14650.9 | 25464.3 | 26821.8 | 26779.1 | 21081.6 |
| 72.5° | 1073.2 | 1094.6 | 1366.1 | 1815.1 | 2276.8 | 2727.9 | 8947.0 | 20570.7 | 23414.1 | 24647.6 | 18437.1 |
| 75° | 780.3 | 806.0 | 949.2 | 1357.6 | 1770.2 | 1701.8 | 4416.9 | 14858.3 | 17855.6 | 20228.6 | 15020.7 |
| 77.5° | 581.5 | 613.6 | 679.8 | 850.9 | 1240.0 | 1218.6 | 1909.1 | 9648.3 | 11548.8 | 13212.1 | 9124.5 |
| 80° | 419.0 | 425.4 | 463.9 | 545.2 | 786.7 | 714.1 | 908.6 | 5030.4 | 5768.0 | 6319.6 | 3576.7 |
| 82.5° | 254.4 | 260.8 | 310.0 | 335.6 | 487.4 | 449.0 | 472.5 | 1629.1 | 2334.6 | 2477.8 | 1336.2 |
| 85° | 74.8 | 79.1 | 141.1 | 153.9 | 203.1 | 192.4 | 190.3 | 662.7 | 791.0 | 1011.2 | 525.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 12.8 | 23.5 | 117.6 | 177.4 | 245.9 | 128.3 |
| 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: P640966

CATALOG NUMBER: GWS-SA5E-830-U-T2-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 | 3450.5 |
| 2.5° | 3486.9 | 3437.7 | 3412.1 | 3367.2 | 3335.1 | 3303.0 | 3271.0 | 3241.0 | 3228.2 | 3209.0 | 3213.2 |
| 5° | 3548.9 | 3471.9 | 3395.0 | 3307.3 | 3232.5 | 3170.5 | 3114.9 | 3065.7 | 3044.3 | 3025.1 | 3033.7 |
| 7.5° | 3642.9 | 3527.5 | 3380.0 | 3219.6 | 3102.1 | 3016.5 | 2958.8 | 2924.6 | 2913.9 | 2899.0 | 2899.0 |
| 10° | 3762.7 | 3589.5 | 3330.8 | 3102.1 | 2961.0 | 2892.6 | 2866.9 | 2864.8 | 2875.4 | 2877.6 | 2873.3 |
| 12.5° | 3895.2 | 3649.4 | 3258.1 | 2963.1 | 2843.4 | 2822.0 | 2841.2 | 2877.6 | 2913.9 | 2933.2 | 2928.9 |
| 15° | 4032.0 | 3687.8 | 3134.1 | 2830.6 | 2757.9 | 2785.7 | 2847.7 | 2920.3 | 2990.9 | 3027.2 | 3025.1 |
| 17.5° | 4160.3 | 3696.4 | 2973.8 | 2702.3 | 2683.0 | 2753.6 | 2860.5 | 2973.8 | 3070.0 | 3121.3 | 3123.4 |
| 20° | 4303.6 | 3681.4 | 2809.2 | 2586.8 | 2608.2 | 2723.7 | 2864.8 | 3001.6 | 3114.9 | 3166.2 | 3179.0 |
| 22.5° | 4434.0 | 3630.1 | 2648.8 | 2477.8 | 2544.1 | 2687.3 | 2830.6 | 2958.8 | 3059.3 | 3108.5 | 3125.6 |
| 25° | 4551.5 | 3531.8 | 2473.5 | 2385.9 | 2494.9 | 2636.0 | 2745.0 | 2834.8 | 2905.4 | 2935.3 | 2958.8 |
| 27.5° | 4615.7 | 3384.3 | 2341.0 | 2313.2 | 2447.9 | 2563.3 | 2623.2 | 2651.0 | 2674.5 | 2665.9 | 2683.0 |
| 30° | 4628.5 | 3200.4 | 2225.5 | 2255.5 | 2377.3 | 2462.8 | 2475.7 | 2447.9 | 2407.3 | 2341.0 | 2355.9 |
| 32.5° | 4615.7 | 2988.8 | 2129.3 | 2193.5 | 2298.2 | 2349.5 | 2332.4 | 2259.7 | 2161.4 | 2058.8 | 2065.2 |
| 35° | 4620.0 | 2775.0 | 2050.2 | 2125.1 | 2206.3 | 2234.1 | 2191.3 | 2090.8 | 1986.1 | 1892.0 | 1887.7 |
| 37.5° | 4667.0 | 2595.4 | 1984.0 | 2058.8 | 2116.5 | 2120.8 | 2073.7 | 1969.0 | 1915.5 | 1845.0 | 1836.4 |
| 40° | 4797.4 | 2462.8 | 1924.1 | 1992.5 | 2028.8 | 2026.7 | 1973.3 | 1898.4 | 1934.8 | 1911.3 | 1904.9 |
| 42.5° | 5011.2 | 2381.6 | 1874.9 | 1922.0 | 1947.6 | 1951.9 | 1909.1 | 1862.1 | 1941.2 | 1911.3 | 1900.6 |
| 45° | 5355.4 | 2377.3 | 1840.7 | 1851.4 | 1892.0 | 1922.0 | 1892.0 | 1838.6 | 1868.5 | 1723.1 | 1695.3 |
| 47.5° | 5763.7 | 2450.0 | 1815.1 | 1789.4 | 1860.0 | 1913.4 | 1866.4 | 1780.9 | 1718.9 | 1586.3 | 1567.1 |
| 50° | 6255.4 | 2597.5 | 1791.5 | 1723.1 | 1812.9 | 1881.3 | 1834.3 | 1716.7 | 1622.7 | 1552.1 | 1541.4 |
| 52.5° | 6839.1 | 2792.1 | 1761.6 | 1648.3 | 1742.4 | 1864.2 | 1834.3 | 1710.3 | 1586.3 | 1522.2 | 1511.5 |
| 55° | 7450.5 | 3016.5 | 1727.4 | 1558.5 | 1663.3 | 1868.5 | 1849.3 | 1665.4 | 1558.5 | 1524.3 | 1515.8 |
| 57.5° | 8209.5 | 3285.9 | 1665.4 | 1453.8 | 1592.7 | 1830.0 | 1789.4 | 1639.8 | 1539.3 | 1511.5 | 1502.9 |
| 60° | 9195.0 | 3685.7 | 1547.8 | 1346.9 | 1511.5 | 1761.6 | 1736.0 | 1597.0 | 1488.0 | 1464.4 | 1458.0 |
| 62.5° | 10755.7 | 4363.4 | 1404.6 | 1244.2 | 1415.3 | 1618.4 | 1656.9 | 1515.8 | 1423.8 | 1421.7 | 1419.6 |
| 65° | 13299.8 | 5177.9 | 1235.7 | 1152.3 | 1314.8 | 1500.8 | 1552.1 | 1432.4 | 1357.6 | 1381.1 | 1378.9 |
| 67.5° | 15082.7 | 5248.5 | 1096.7 | 1056.1 | 1197.2 | 1372.5 | 1447.3 | 1346.9 | 1265.6 | 1310.5 | 1308.4 |
| 70° | 13815.0 | 4094.0 | 977.0 | 955.6 | 1071.1 | 1233.6 | 1334.0 | 1240.0 | 1158.7 | 1201.5 | 1192.9 |
| 72.5° | 11651.4 | 3138.4 | 863.7 | 850.9 | 942.8 | 1088.2 | 1188.7 | 1133.1 | 1047.6 | 1047.6 | 1028.3 |
| 75° | 9363.9 | 2589.0 | 744.0 | 737.6 | 799.6 | 940.7 | 1054.0 | 959.9 | 880.8 | 876.5 | 863.7 |
| 77.5° | 5370.4 | 1697.5 | 624.3 | 620.0 | 639.2 | 786.7 | 818.8 | 799.6 | 739.7 | 711.9 | 703.4 |
| 80° | 2140.0 | 882.9 | 491.7 | 463.9 | 483.2 | 577.2 | 645.6 | 613.6 | 562.3 | 528.1 | 508.8 |
| 82.5° | 829.5 | 442.5 | 346.3 | 303.6 | 331.4 | 416.9 | 468.2 | 457.5 | 423.3 | 346.3 | 325.0 |
| 85° | 337.8 | 215.9 | 207.4 | 175.3 | 192.4 | 224.5 | 269.4 | 233.0 | 192.4 | 136.8 | 130.4 |
| 87.5° | 89.8 | 79.1 | 77.0 | 47.0 | 36.3 | 10.7 | 2.1 | 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 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2408-195-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **GALN-SB1A-830-U-5WQ**
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

Spectral Parameters

CCT (K): 3050
 CIE u': 0.2476
 CIE v': 0.5251
 Duv: 0.0034
 CIE x: 0.4383
 CIE y: 0.4131
 CIE z: 0.1487
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 581
 Purity: 55.55201
 Rf: 81.5
 Rg: 99.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 81.0 | | |
| R1: | 79.6 | R9: | 7.1 |
| R2: | 85.6 | R10: | 67.0 |
| R3: | 92.0 | R11: | 82.7 |
| R4: | 82.6 | R12: | 63.2 |
| R5: | 78.9 | R13: | 80.3 |
| R6: | 81.7 | R14: | 95.0 |
| R7: | 85.2 | R15: | 71.7 |
| R8: | 62.0 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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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 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

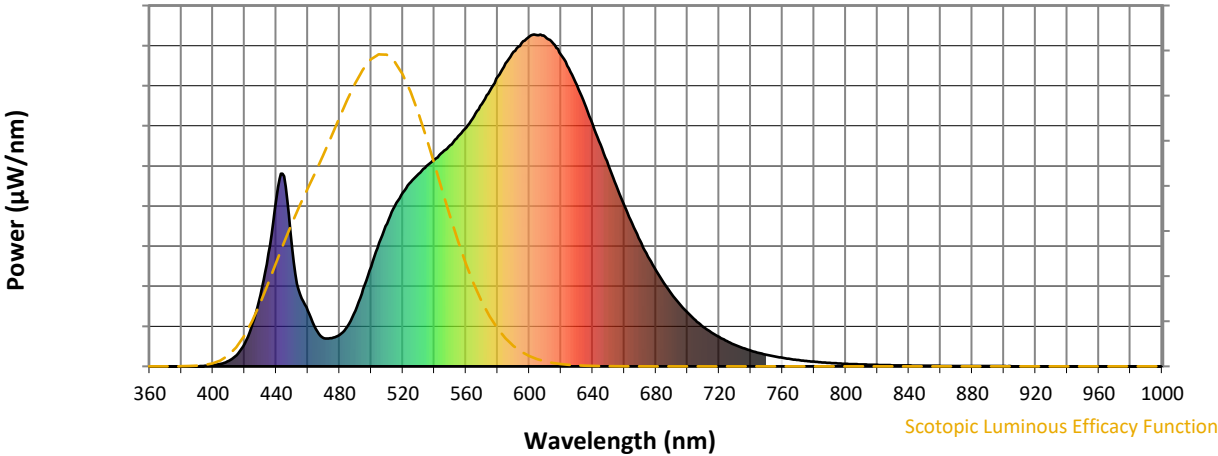


Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 81.5$
 $R_g = 99.2$
 $CIE R_a = 81.0$
 $R_9 = 7.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)