

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: P643437

Luminaire Tested: GWS-SA6E-830-U-T1-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P643437
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SAGE-830-U-T1-W
Description: GALLEON WALL SLIM LUMINAIRE. (6) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS
Light Source: (96) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 35495.4 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type I - Medium
BUG Rating: B5 - U0 - G5

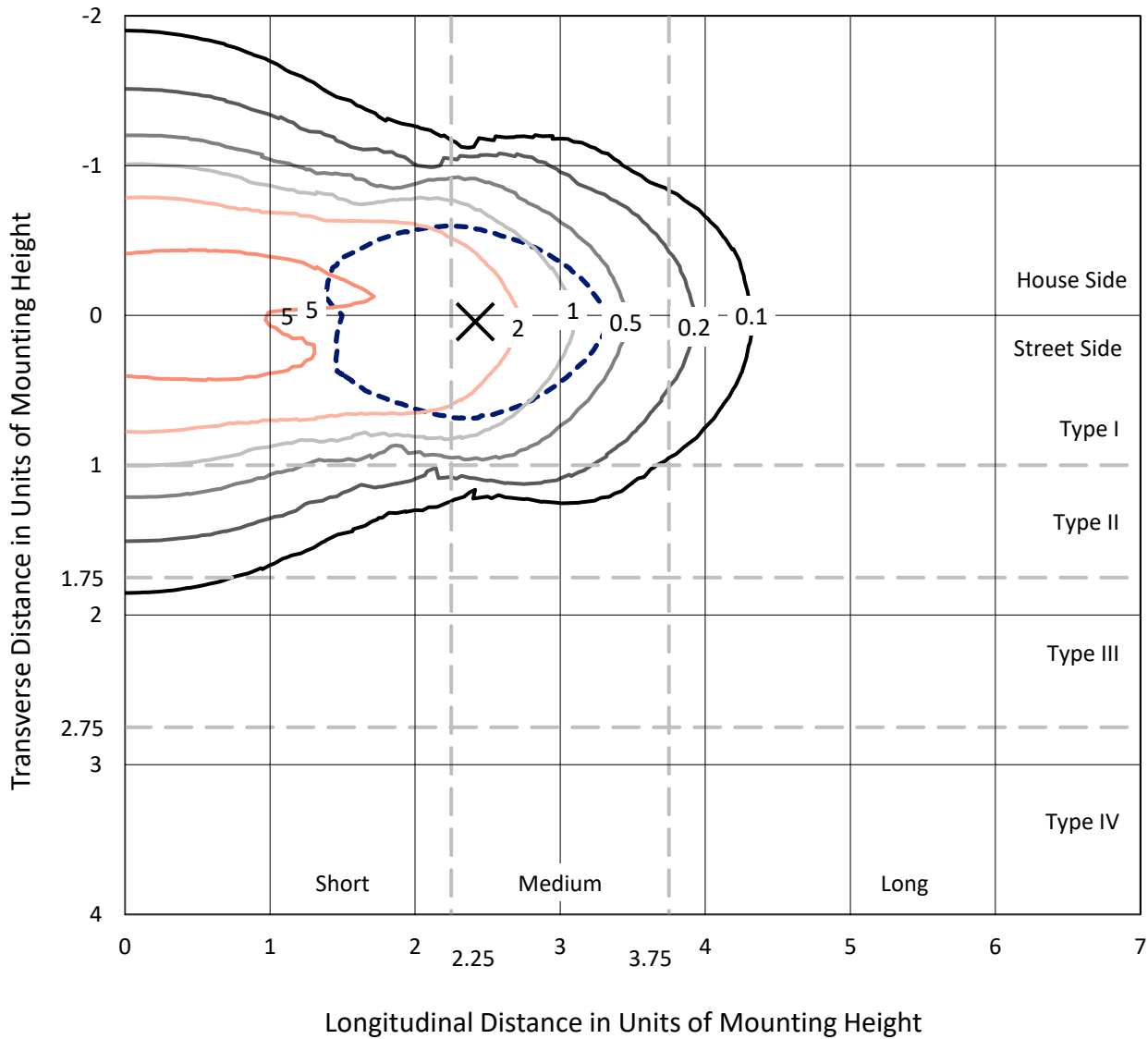
Input Watts (W): 323.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P643437
 CATALOG NUMBER: GWS-SA6E-830-U-T1-W

Iso-Footcandle Lines of Horizontal Illumination

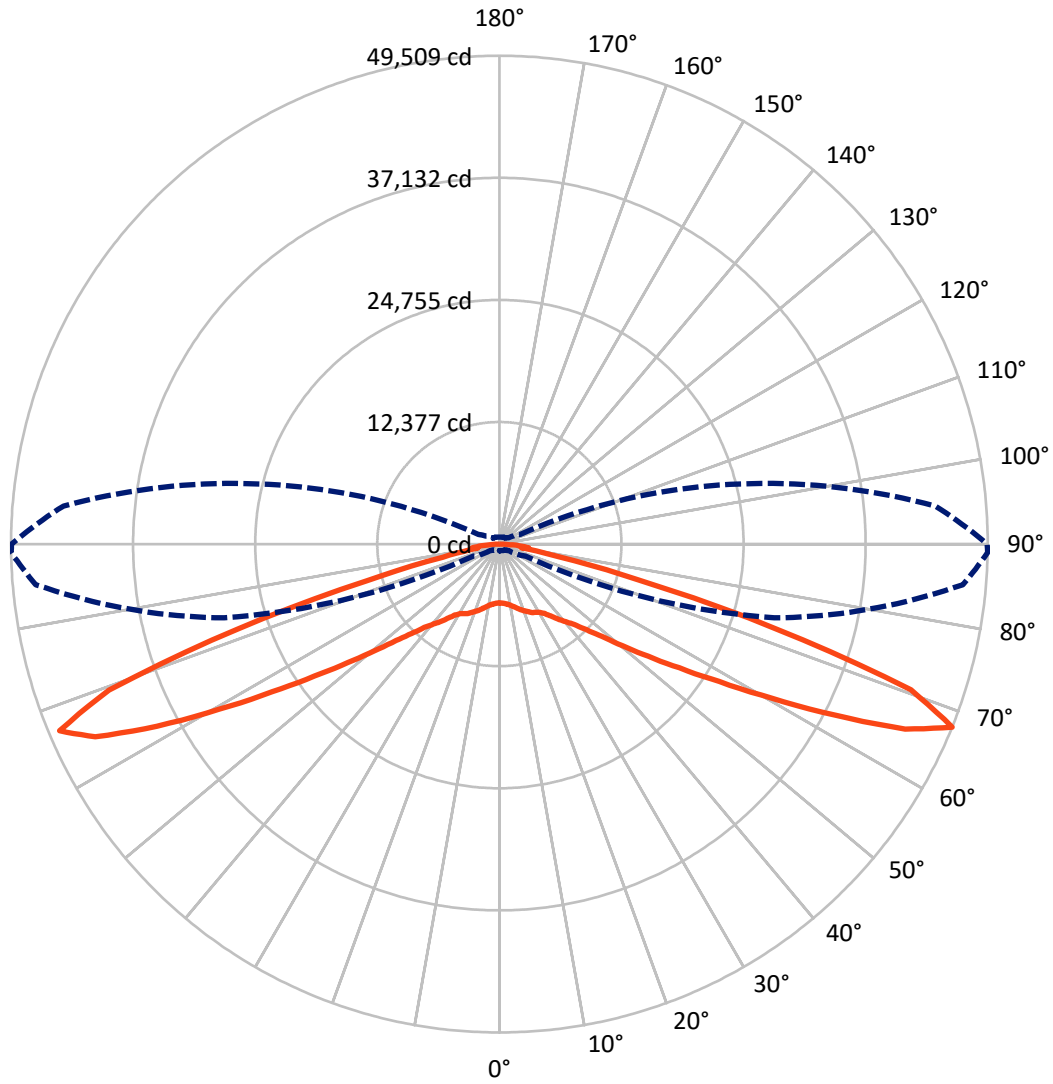
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 7.2 fc
 Type I - Medium - N/A

REPORT NUMBER: P643437
CATALOG NUMBER: GWS-SA6E-830-U-T1-W

Luminous Intensity Polar Plot



— Vertical Plane Through 89-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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CATALOG NUMBER: GWS-SA6E-830-U-T1-W

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 17592.1 | 0.0 | 17592.1 |
| | % Fixture | 49.6 | 0.0 | 49.6 |
| Street Side | Lumens | 17903.3 | 0.0 | 17903.3 |
| | % Fixture | 50.4 | 0.0 | 50.4 |
| Total | Lumens | 35495.4 | 0.0 | 35495.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 597.6 | 1.7 |
| 10°-20° | 1945.9 | 5.5 |
| 20°-30° | 3289.4 | 9.3 |
| 30°-40° | 4514.3 | 12.7 |
| 40°-50° | 5756.7 | 16.2 |
| 50°-60° | 7222.6 | 20.3 |
| 60°-70° | 8711.1 | 24.5 |
| 70°-80° | 3151.4 | 8.9 |
| 80°-90° | 306.5 | 0.9 |
| 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° | 35495.4 | 100.0 |
| 0°-180° | 35495.4 | 100.0 |

Coefficient of Utilization



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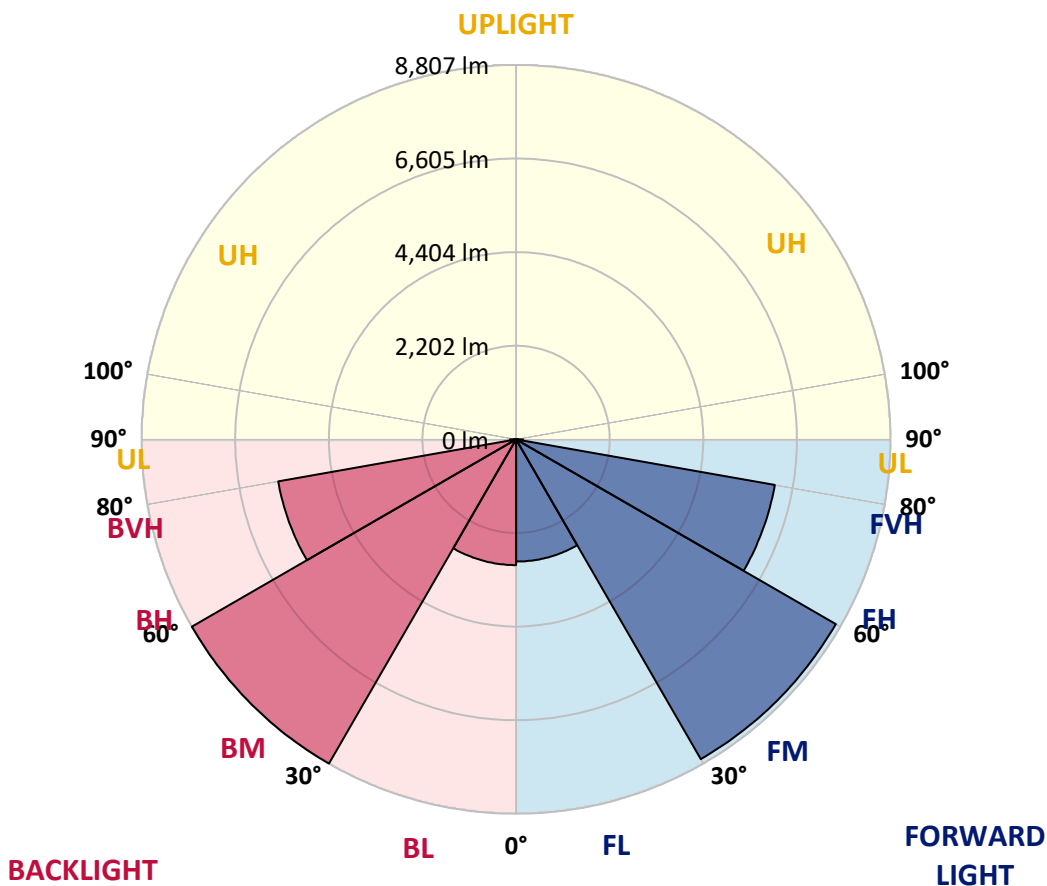
CATALOG NUMBER: GWS-SA6E-830-U-T1-W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2874.9 | 8.1 | | | |
| FM (30°-60°) | 8686.4 | 24.5 | | | |
| FH (60°-80°) | 6180.3 | 17.4 | | | G3/7500 |
| FVH (80°-90°) | 161.7 | 0.5 | | | G2/225 |
| BL (0°-30°) | 2958.0 | 8.3 | B4/5000 | | |
| BM (30°-60°) | 8807.2 | 24.8 | B5 | | |
| BH (60°-80°) | 5682.3 | 16.0 | B5 | | G5 |
| BVH (80°-90°) | 144.8 | 0.4 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G5

Type I Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 89° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0° | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 |
| 2.5° | 5975.5 | 5970.4 | 5957.6 | 5995.9 | 5988.2 | 5990.8 | 6006.1 | 5995.9 | 5978.0 | 5947.4 | 5990.8 |
| 5° | 6143.7 | 6141.2 | 6113.1 | 6136.1 | 6110.6 | 6092.7 | 6090.2 | 6064.7 | 6044.3 | 6011.2 | 6057.0 |
| 7.5° | 6306.9 | 6304.3 | 6281.4 | 6322.2 | 6301.8 | 6281.4 | 6258.4 | 6207.4 | 6159.0 | 6110.6 | 6161.6 |
| 10° | 6431.8 | 6429.2 | 6424.1 | 6482.8 | 6487.9 | 6495.5 | 6485.3 | 6398.6 | 6314.5 | 6255.9 | 6306.9 |
| 12.5° | 6503.2 | 6510.8 | 6523.6 | 6630.6 | 6684.2 | 6735.1 | 6747.9 | 6676.5 | 6536.3 | 6452.2 | 6513.4 |
| 15° | 6454.7 | 6470.0 | 6533.7 | 6727.5 | 6875.3 | 6990.1 | 7038.5 | 6979.9 | 6798.9 | 6658.7 | 6727.5 |
| 17.5° | 6222.7 | 6235.5 | 6360.4 | 6656.1 | 6982.4 | 7247.5 | 7326.6 | 7290.9 | 7089.5 | 6918.7 | 6985.0 |
| 20° | 5901.5 | 5929.6 | 6064.7 | 6477.7 | 6964.6 | 7426.0 | 7637.6 | 7624.8 | 7405.6 | 7143.0 | 7222.0 |
| 22.5° | 5610.9 | 5644.1 | 5786.8 | 6243.1 | 6844.8 | 7471.9 | 7951.1 | 7984.3 | 7693.7 | 7367.4 | 7431.1 |
| 25° | 5284.6 | 5315.2 | 5498.8 | 5965.3 | 6638.3 | 7436.2 | 8218.8 | 8369.2 | 8020.0 | 7624.8 | 7683.5 |
| 27.5° | 4950.7 | 4973.6 | 5154.6 | 5651.7 | 6368.0 | 7369.9 | 8430.4 | 8792.4 | 8341.2 | 7803.3 | 7844.1 |
| 30° | 4657.5 | 4688.1 | 4853.8 | 5338.1 | 6072.3 | 7237.3 | 8603.7 | 9243.6 | 8710.8 | 8004.7 | 8037.8 |
| 32.5° | 4374.5 | 4400.0 | 4581.0 | 5029.7 | 5758.8 | 7033.4 | 8759.3 | 9773.9 | 9258.9 | 8379.4 | 8379.4 |
| 35° | 4017.6 | 4063.5 | 4267.5 | 4734.0 | 5463.1 | 6763.2 | 8871.4 | 10390.8 | 10008.4 | 8932.6 | 8935.2 |
| 37.5° | 3688.8 | 3714.3 | 3928.4 | 4400.0 | 5152.1 | 6457.3 | 8881.6 | 11030.6 | 10956.7 | 9636.2 | 9641.3 |
| 40° | 3314.0 | 3347.2 | 3576.6 | 4043.1 | 4795.2 | 6136.1 | 8784.7 | 11627.2 | 11950.9 | 10360.2 | 10332.1 |
| 42.5° | 2934.2 | 2982.6 | 3201.9 | 3658.2 | 4410.2 | 5743.5 | 8527.3 | 12195.7 | 13212.8 | 11198.9 | 11130.1 |
| 45° | 2567.1 | 2597.7 | 2816.9 | 3247.8 | 3969.2 | 5274.4 | 8114.3 | 12741.2 | 14711.8 | 12473.5 | 12374.1 |
| 47.5° | 2154.1 | 2166.9 | 2393.8 | 2806.7 | 3512.9 | 4751.8 | 7522.9 | 13228.1 | 16358.6 | 14161.1 | 13990.3 |
| 50° | 1787.0 | 1804.9 | 1983.3 | 2337.7 | 2954.6 | 4132.3 | 6786.1 | 13513.6 | 18456.6 | 16463.1 | 16167.4 |
| 52.5° | 1445.4 | 1463.3 | 1606.0 | 1889.0 | 2442.2 | 3426.2 | 5873.5 | 13447.3 | 20585.3 | 19320.8 | 18890.0 |
| 55° | 1167.6 | 1180.3 | 1277.2 | 1499.0 | 1922.1 | 2725.2 | 4795.2 | 12853.4 | 22948.4 | 23052.9 | 22125.0 |
| 57.5° | 986.6 | 991.7 | 1057.9 | 1193.1 | 1501.5 | 2100.6 | 3701.5 | 11451.3 | 25426.3 | 27815.0 | 26290.5 |
| 60° | 882.0 | 884.6 | 915.2 | 999.3 | 1185.4 | 1603.5 | 2712.4 | 9218.1 | 27993.4 | 33772.6 | 31682.2 |
| 62.5° | 815.8 | 815.8 | 841.3 | 889.7 | 984.0 | 1233.8 | 1993.5 | 6620.4 | 29836.5 | 40255.3 | 38177.7 |
| 65° | 752.0 | 752.0 | 769.9 | 810.7 | 861.6 | 1007.0 | 1496.4 | 4270.0 | 30741.5 | 45675.1 | 45213.6 |
| 67.5° | 670.5 | 673.0 | 685.8 | 729.1 | 775.0 | 841.3 | 1134.4 | 2888.3 | 28862.7 | 47174.0 | 49509.1 |
| 70° | 594.0 | 596.5 | 614.4 | 642.4 | 680.7 | 726.5 | 887.1 | 1991.0 | 21008.4 | 39289.2 | 44267.9 |
| 72.5° | 509.9 | 520.0 | 532.8 | 563.4 | 586.3 | 619.5 | 724.0 | 1289.9 | 12223.7 | 25273.3 | 29262.9 |
| 75° | 418.1 | 430.8 | 446.1 | 476.7 | 492.0 | 504.8 | 596.5 | 920.3 | 5881.1 | 12807.5 | 14584.3 |
| 77.5° | 323.8 | 336.5 | 354.3 | 382.4 | 392.6 | 407.9 | 456.3 | 665.4 | 2816.9 | 5677.2 | 6120.8 |
| 80° | 216.7 | 221.8 | 237.1 | 270.2 | 288.1 | 298.3 | 336.5 | 453.8 | 1223.6 | 2279.0 | 2258.6 |
| 82.5° | 132.6 | 135.1 | 140.2 | 160.6 | 168.3 | 178.4 | 219.2 | 277.9 | 583.8 | 2590.0 | 2969.9 |
| 85° | 48.4 | 45.9 | 43.3 | 56.1 | 66.3 | 76.5 | 102.0 | 140.2 | 254.9 | 1779.4 | 1991.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 2.5 | 5.1 | 5.1 | 10.2 | 20.4 | 61.2 | 665.4 | 456.3 |
| 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: P643437
 CATALOG NUMBER: GWS-SA6E-830-U-T1-W

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 | 5957.6 |
| 2.5° | 5978.0 | 5950.0 | 5985.7 | 6011.2 | 6067.2 | 6087.6 | 6092.7 | 6074.9 | 6074.9 | 6044.3 | 6049.4 |
| 5° | 6046.8 | 6029.0 | 6087.6 | 6131.0 | 6212.5 | 6243.1 | 6263.5 | 6250.8 | 6258.4 | 6238.0 | 6243.1 |
| 7.5° | 6151.4 | 6136.1 | 6238.0 | 6322.2 | 6406.3 | 6442.0 | 6459.8 | 6449.6 | 6452.2 | 6426.7 | 6434.3 |
| 10° | 6296.7 | 6301.8 | 6424.1 | 6533.7 | 6645.9 | 6681.6 | 6689.3 | 6658.7 | 6633.2 | 6587.3 | 6589.8 |
| 12.5° | 6495.5 | 6521.0 | 6694.4 | 6816.7 | 6931.4 | 6982.4 | 6926.3 | 6814.2 | 6709.6 | 6630.6 | 6620.4 |
| 15° | 6712.2 | 6758.1 | 7007.9 | 7163.4 | 7288.3 | 7262.8 | 7097.1 | 6844.8 | 6638.3 | 6521.0 | 6498.1 |
| 17.5° | 6972.2 | 7041.1 | 7354.6 | 7540.7 | 7647.8 | 7484.6 | 7137.9 | 6760.6 | 6472.6 | 6314.5 | 6283.9 |
| 20° | 7217.0 | 7326.6 | 7721.7 | 7963.9 | 7976.6 | 7609.5 | 7120.1 | 6589.8 | 6227.8 | 6034.1 | 5993.3 |
| 22.5° | 7441.3 | 7581.5 | 8106.6 | 8415.1 | 8249.4 | 7665.6 | 7010.5 | 6347.7 | 5932.1 | 5705.2 | 5669.6 |
| 25° | 7686.0 | 7884.9 | 8555.3 | 8843.4 | 8522.2 | 7642.7 | 6781.0 | 6046.8 | 5575.2 | 5343.2 | 5317.8 |
| 27.5° | 7854.3 | 8104.1 | 9006.5 | 9281.8 | 8746.5 | 7512.7 | 6485.3 | 5718.0 | 5248.9 | 5029.7 | 4994.0 |
| 30° | 8048.0 | 8366.7 | 9503.6 | 9758.6 | 8884.2 | 7321.5 | 6169.2 | 5412.1 | 4945.6 | 4708.5 | 4683.0 |
| 32.5° | 8399.8 | 8800.0 | 10120.6 | 10263.3 | 8927.5 | 7084.4 | 5865.8 | 5116.4 | 4629.5 | 4392.4 | 4356.7 |
| 35° | 8965.7 | 9434.8 | 10987.3 | 10826.7 | 8894.4 | 6824.4 | 5577.8 | 4769.7 | 4305.7 | 4083.9 | 4048.2 |
| 37.5° | 9679.5 | 10263.3 | 11953.5 | 11334.0 | 8802.6 | 6538.8 | 5236.2 | 4479.0 | 4015.1 | 3790.7 | 3770.4 |
| 40° | 10344.9 | 11063.8 | 13036.9 | 11772.5 | 8616.5 | 6187.1 | 4907.3 | 4175.7 | 3701.5 | 3464.4 | 3418.6 |
| 42.5° | 11178.5 | 12134.5 | 14291.1 | 12152.3 | 8310.6 | 5766.4 | 4537.7 | 3800.9 | 3308.9 | 3094.8 | 3038.7 |
| 45° | 12445.5 | 13633.4 | 15749.3 | 12516.9 | 7854.3 | 5248.9 | 4073.7 | 3344.6 | 2878.1 | 2658.9 | 2615.5 |
| 47.5° | 14026.0 | 15507.1 | 17329.9 | 12733.5 | 7160.9 | 4703.4 | 3548.6 | 2862.8 | 2396.3 | 2149.0 | 2128.6 |
| 50° | 16246.4 | 18232.3 | 19025.1 | 12695.3 | 6385.9 | 4055.9 | 2957.1 | 2289.2 | 1899.2 | 1720.7 | 1692.7 |
| 52.5° | 18951.2 | 21653.4 | 20858.0 | 12236.4 | 5562.5 | 3319.1 | 2304.5 | 1797.2 | 1506.6 | 1379.1 | 1356.2 |
| 55° | 22344.3 | 25750.1 | 22787.8 | 11252.4 | 4522.4 | 2541.6 | 1810.0 | 1417.4 | 1218.5 | 1142.1 | 1131.9 |
| 57.5° | 26545.4 | 31055.1 | 24646.2 | 9595.4 | 3400.7 | 1940.0 | 1394.4 | 1170.1 | 1075.8 | 1029.9 | 1027.4 |
| 60° | 32090.1 | 36686.4 | 26259.9 | 7456.6 | 2434.5 | 1483.7 | 1152.3 | 1045.2 | 971.3 | 940.7 | 938.1 |
| 62.5° | 38682.4 | 41800.2 | 27264.3 | 5078.1 | 1830.4 | 1182.9 | 1014.6 | 948.3 | 905.0 | 887.1 | 884.6 |
| 65° | 45458.4 | 45032.7 | 26785.1 | 3326.8 | 1389.3 | 1004.4 | 910.1 | 874.4 | 836.2 | 818.3 | 818.3 |
| 67.5° | 49460.7 | 44349.4 | 23106.5 | 2309.6 | 1101.3 | 882.0 | 820.9 | 787.7 | 724.0 | 708.7 | 708.7 |
| 70° | 43809.0 | 35936.9 | 15145.1 | 1690.2 | 892.2 | 772.4 | 713.8 | 667.9 | 642.4 | 627.1 | 624.6 |
| 72.5° | 28974.9 | 23384.3 | 8053.1 | 1172.7 | 744.4 | 657.7 | 604.2 | 586.3 | 555.7 | 540.4 | 537.9 |
| 75° | 14421.2 | 12282.3 | 4127.2 | 846.4 | 619.5 | 527.7 | 504.8 | 497.1 | 471.6 | 451.2 | 446.1 |
| 77.5° | 6011.2 | 5468.2 | 1924.7 | 614.4 | 471.6 | 425.7 | 405.3 | 405.3 | 377.3 | 354.3 | 344.1 |
| 80° | 2266.3 | 2019.0 | 910.1 | 420.6 | 349.2 | 316.1 | 303.4 | 293.2 | 270.2 | 242.2 | 226.9 |
| 82.5° | 3031.1 | 1980.8 | 446.1 | 262.6 | 229.4 | 203.9 | 186.1 | 178.4 | 165.7 | 153.0 | 142.8 |
| 85° | 1962.9 | 1407.2 | 201.4 | 135.1 | 114.7 | 86.7 | 76.5 | 71.4 | 63.7 | 56.1 | 51.0 |
| 87.5° | 400.2 | 471.6 | 61.2 | 25.5 | 15.3 | 7.6 | 7.6 | 2.5 | 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)