

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



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P321769

Luminaire Tested: **GLEON-SA5C-830-U-T3R-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P321769
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-11)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA5C-830-U-T3R-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(5) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21606 lumens
Efficiency: N/A
Efficacy: 77.4 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G4

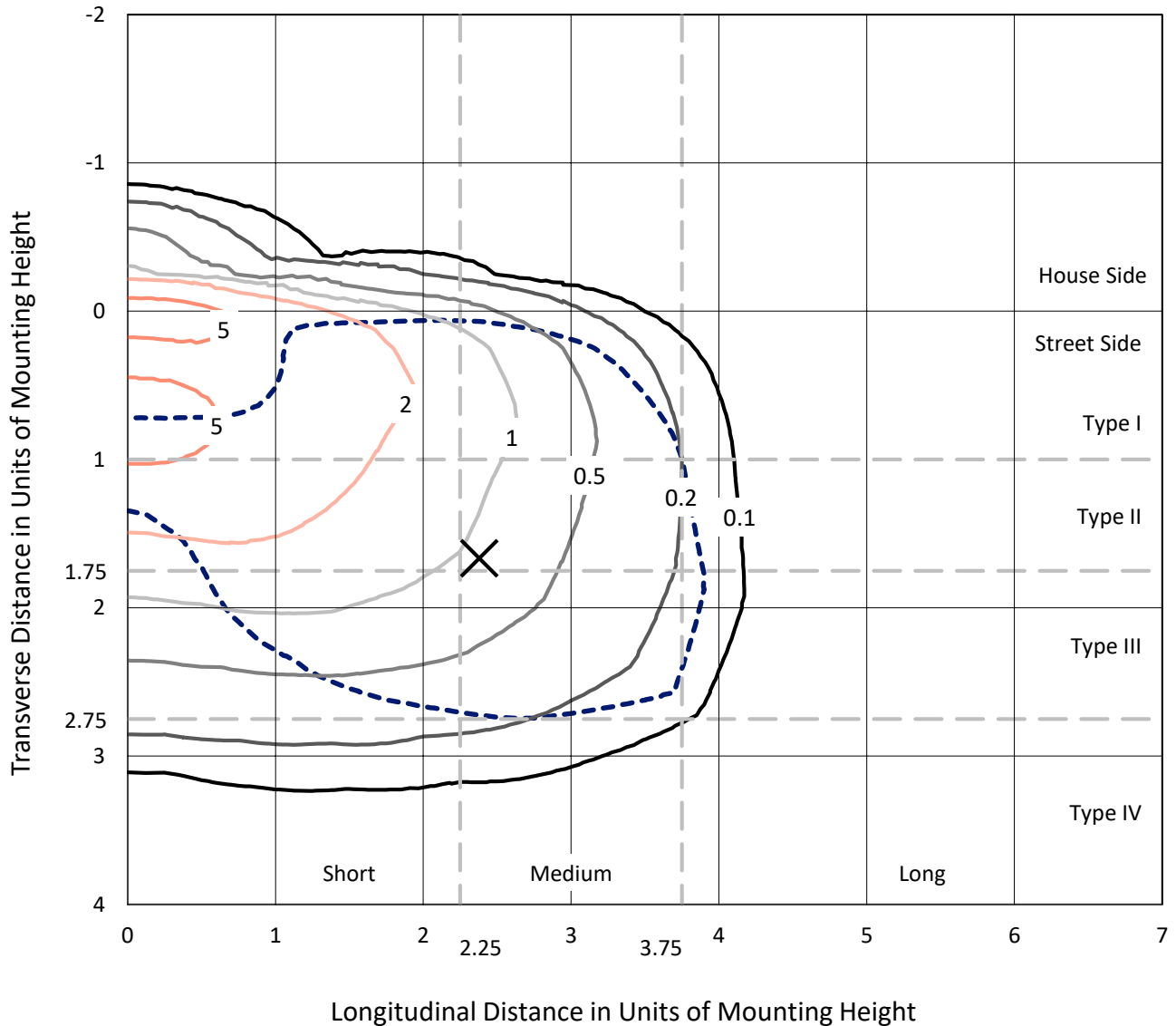
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P321769
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Iso-Footcandle Lines of Horizontal Illumination

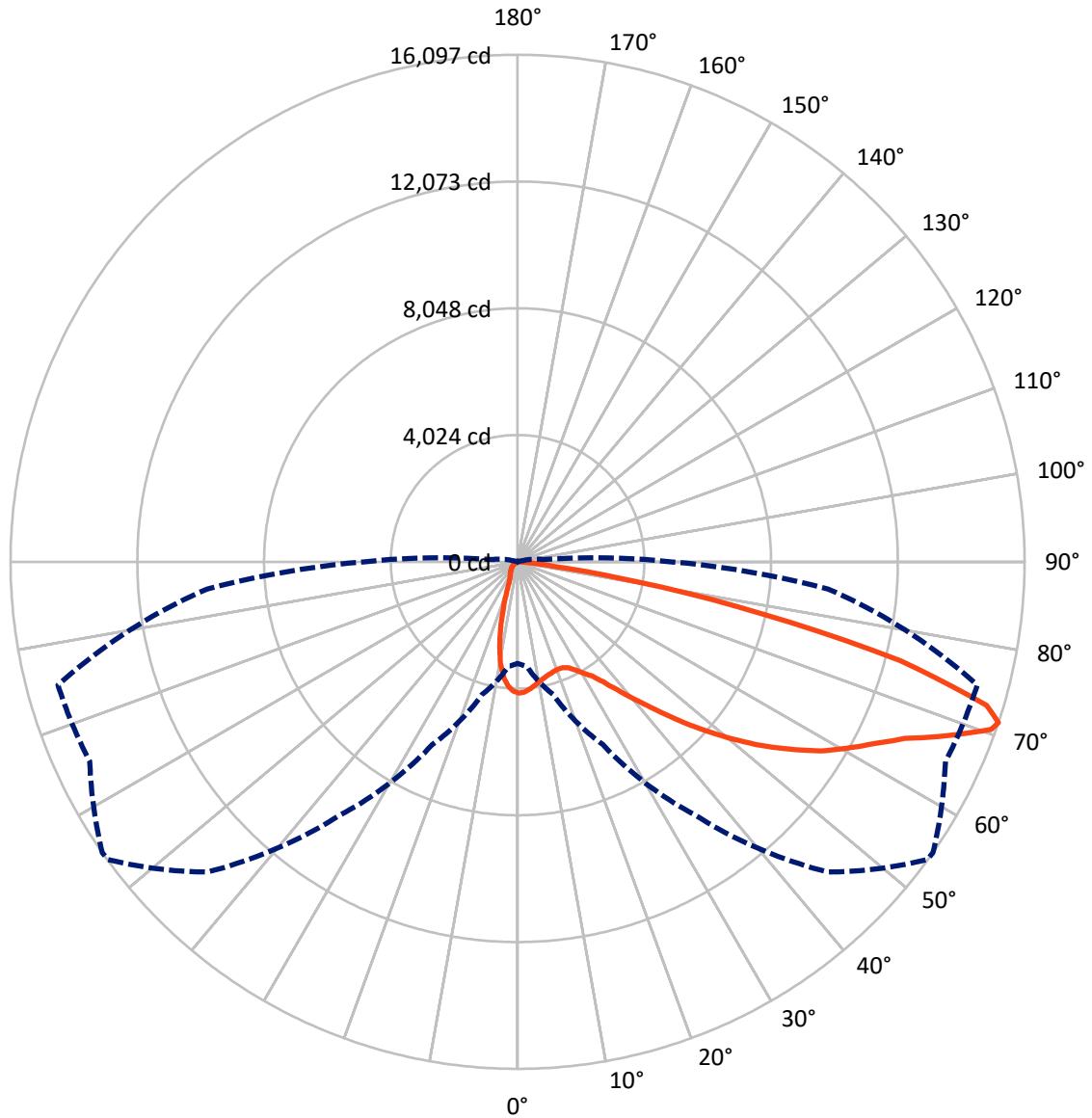
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.8 fc
 Type III - Medium - N/A

REPORT NUMBER: P321769
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Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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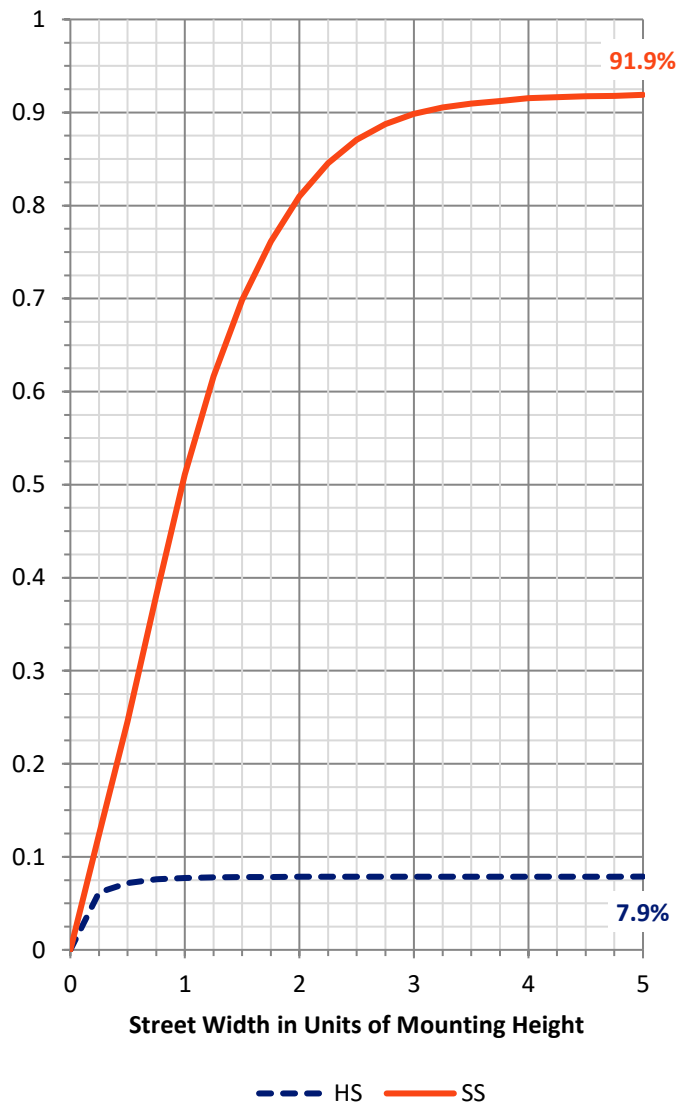
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1710.6 | 0.0 | 1710.6 |
| | % Fixture | 7.9 | 0.0 | 7.9 |
| Street Side | Lumens | 19895.4 | 0.0 | 19895.4 |
| | % Fixture | 92.1 | 0.0 | 92.1 |
| Total | Lumens | 21606.0 | 0.0 | 21606.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 355.3 | 1.6 |
| 10°-20° | 802.1 | 3.7 |
| 20°-30° | 1288.9 | 6.0 |
| 30°-40° | 2190.0 | 10.1 |
| 40°-50° | 3399.1 | 15.7 |
| 50°-60° | 4570.0 | 21.2 |
| 60°-70° | 5590.6 | 25.9 |
| 70°-80° | 3268.7 | 15.1 |
| 80°-90° | 141.3 | 0.7 |
| 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° | 21606.0 | 100.0 |
| 0°-180° | 21606.0 | 100.0 |

Coefficient of Utilization

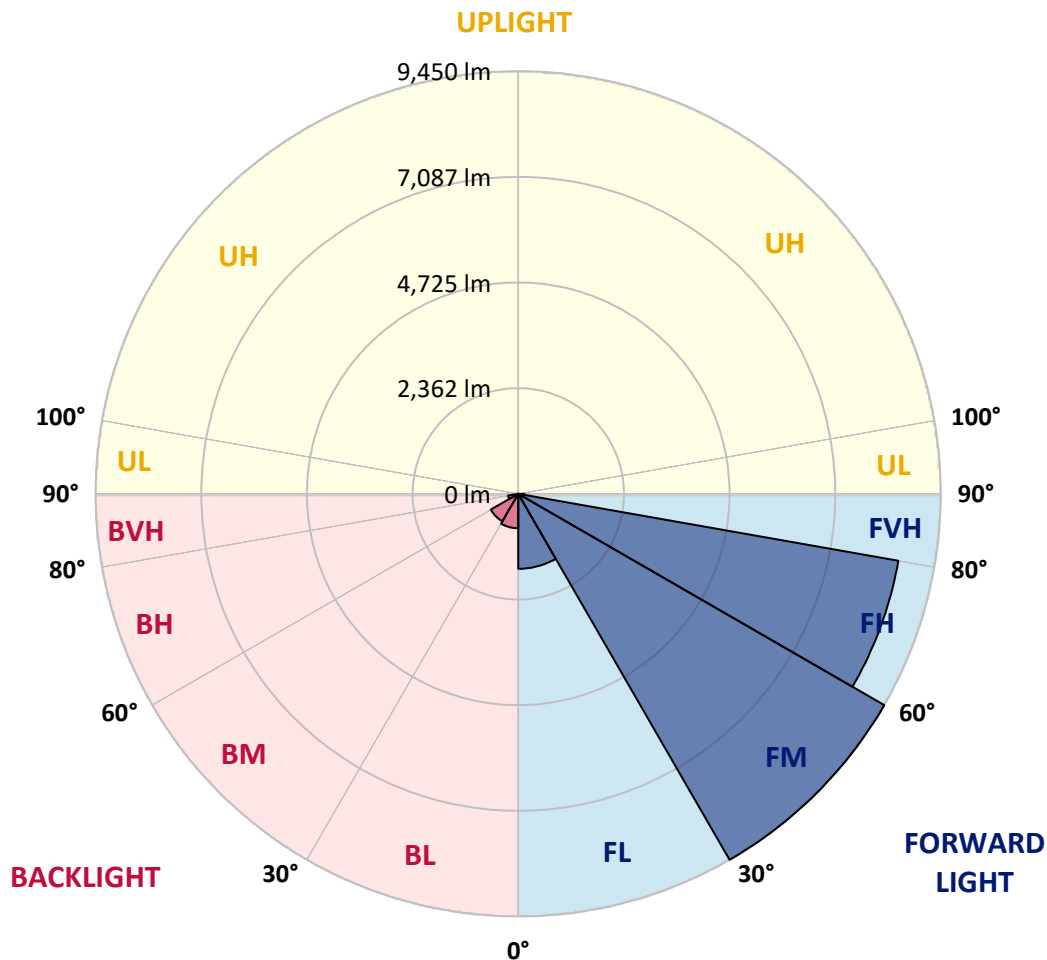


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 1676.3 | 7.8 | | | |
| FM (30°-60°) | 9449.8 | 43.7 | | | |
| FH (60°-80°) | 8630.2 | 39.9 | | | G4/12000 |
| FVH (80°-90°) | 139.1 | 0.6 | | | G2/225 |
| BL (0°-30°) | 769.9 | 3.6 | B2/1000 | | |
| BM (30°-60°) | 709.2 | 3.3 | B1/1000 | | |
| BH (60°-80°) | 229.2 | 1.1 | B1/500 | | G1/500 |
| BVH (80°-90°) | 2.2 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G4
 Type III Medium





REPORT NUMBER: P321769

CATALOG NUMBER: GLEON-SA5C-830-U-T3R-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 54° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 |
| 2.5° | 4044.6 | 4049.4 | 4066.9 | 4074.6 | 4093.1 | 4124.1 | 4139.6 | 4140.6 | 4165.8 | 4175.5 | 4183.3 |
| 5° | 3758.4 | 3787.5 | 3816.6 | 3847.6 | 3903.9 | 3978.6 | 4052.3 | 4059.1 | 4140.6 | 4200.7 | 4232.8 |
| 7.5° | 3511.9 | 3538.1 | 3573.1 | 3622.5 | 3702.1 | 3819.5 | 3942.7 | 3957.2 | 4111.5 | 4248.3 | 4320.1 |
| 10° | 3258.7 | 3280.1 | 3330.5 | 3403.3 | 3512.9 | 3670.1 | 3836.0 | 3860.2 | 4085.3 | 4312.3 | 4438.4 |
| 12.5° | 2988.1 | 3000.7 | 3061.8 | 3166.6 | 3327.6 | 3527.5 | 3745.7 | 3777.8 | 4068.8 | 4386.0 | 4578.1 |
| 15° | 2782.4 | 2788.2 | 2846.4 | 2955.1 | 3139.4 | 3399.4 | 3675.9 | 3714.7 | 4072.7 | 4474.3 | 4730.5 |
| 17.5° | 2730.0 | 2732.9 | 2764.0 | 2838.7 | 3001.6 | 3284.9 | 3620.6 | 3668.1 | 4084.3 | 4560.7 | 4883.7 |
| 20° | 2942.5 | 2922.1 | 2890.1 | 2878.4 | 2948.3 | 3216.0 | 3587.6 | 3641.0 | 4099.9 | 4637.3 | 5021.5 |
| 22.5° | 3525.5 | 3465.4 | 3332.5 | 3154.9 | 3047.2 | 3220.9 | 3596.3 | 3649.7 | 4149.3 | 4731.4 | 5180.6 |
| 25° | 4390.9 | 4307.5 | 4081.4 | 3732.2 | 3396.5 | 3360.6 | 3669.1 | 3723.4 | 4245.4 | 4844.0 | 5332.9 |
| 27.5° | 5375.6 | 5293.1 | 5016.6 | 4518.0 | 3945.6 | 3637.1 | 3836.0 | 3886.4 | 4388.0 | 4943.9 | 5449.3 |
| 30° | 6318.6 | 6295.3 | 5969.3 | 5402.8 | 4636.3 | 4085.3 | 4051.3 | 4094.0 | 4493.7 | 5004.0 | 5541.5 |
| 32.5° | 7118.0 | 7081.1 | 6819.2 | 6268.1 | 5427.0 | 4623.7 | 4304.6 | 4317.2 | 4573.3 | 5081.6 | 5661.8 |
| 35° | 7859.2 | 7813.6 | 7583.7 | 7062.7 | 6238.1 | 5281.5 | 4694.6 | 4676.1 | 4746.9 | 5237.8 | 5836.4 |
| 37.5° | 8506.3 | 8548.0 | 8292.8 | 7797.1 | 6965.7 | 5965.5 | 5220.4 | 5165.1 | 5018.6 | 5492.0 | 6089.6 |
| 40° | 9047.6 | 9047.6 | 8914.7 | 8501.4 | 7751.5 | 6672.7 | 5815.1 | 5742.3 | 5427.0 | 5884.0 | 6410.8 |
| 42.5° | 9242.6 | 9284.3 | 9333.8 | 9100.0 | 8454.9 | 7408.1 | 6477.7 | 6402.0 | 6002.3 | 6439.9 | 6816.3 |
| 45° | 9254.3 | 9320.2 | 9573.4 | 9572.5 | 9090.3 | 8138.6 | 7224.7 | 7188.8 | 6739.6 | 7153.9 | 7318.8 |
| 47.5° | 9090.3 | 9172.8 | 9589.9 | 9826.7 | 9593.8 | 8818.7 | 8041.6 | 7996.9 | 7606.0 | 8029.0 | 7844.6 |
| 50° | 8837.1 | 8928.3 | 9413.4 | 9926.6 | 9936.3 | 9410.5 | 8902.1 | 8835.2 | 8559.6 | 9029.2 | 8387.9 |
| 52.5° | 8384.0 | 8560.6 | 9255.2 | 9949.9 | 10161.4 | 9921.7 | 9720.9 | 9691.8 | 9626.8 | 9992.5 | 8820.6 |
| 55° | 7414.9 | 7610.8 | 8858.4 | 9957.6 | 10369.9 | 10374.8 | 10488.3 | 10496.1 | 10627.0 | 10892.8 | 9142.7 |
| 57.5° | 6956.9 | 7067.5 | 8165.8 | 9994.5 | 10679.4 | 10889.0 | 11270.2 | 11330.4 | 11533.1 | 11747.5 | 9510.4 |
| 60° | 6668.8 | 6799.8 | 7824.3 | 9944.0 | 11165.5 | 11563.2 | 11994.9 | 12015.3 | 12232.6 | 12629.4 | 10008.1 |
| 62.5° | 6438.9 | 6567.9 | 7608.9 | 9750.0 | 11711.7 | 12374.3 | 12703.1 | 12705.1 | 12868.1 | 13680.1 | 10573.7 |
| 65° | 5871.3 | 5980.0 | 7173.3 | 9531.7 | 12072.5 | 13176.6 | 13525.8 | 13513.2 | 13646.1 | 14788.0 | 11230.5 |
| 67.5° | 5050.6 | 5134.0 | 6283.7 | 8704.2 | 11936.7 | 13906.1 | 14767.6 | 14725.9 | 14564.9 | 15745.5 | 11488.5 |
| 70° | 3904.9 | 3934.9 | 4952.6 | 7253.8 | 10663.9 | 14186.5 | 15967.7 | 15946.4 | 15128.5 | 15573.8 | 10542.6 |
| 71° | 3227.7 | 3326.6 | 4364.7 | 6402.0 | 9811.1 | 13927.5 | 16084.1 | 16096.7 | 14986.9 | 15106.2 | 9891.7 |
| 72.5° | 1874.3 | 1958.7 | 3163.7 | 4916.7 | 8329.7 | 12846.7 | 15480.7 | 15571.9 | 14325.2 | 13740.2 | 8449.0 |
| 75° | 401.6 | 429.8 | 1172.9 | 2379.8 | 4582.0 | 9004.0 | 12219.0 | 12544.0 | 11675.8 | 9347.4 | 5092.3 |
| 77.5° | 279.4 | 301.7 | 502.5 | 1079.8 | 1514.4 | 4449.1 | 7590.5 | 7957.2 | 6975.4 | 3512.9 | 1629.9 |
| 80° | 221.2 | 246.4 | 391.9 | 533.6 | 409.4 | 1434.9 | 3555.6 | 3779.7 | 2326.4 | 783.9 | 274.6 |
| 82.5° | 123.2 | 146.5 | 305.6 | 288.1 | 157.2 | 272.6 | 995.4 | 1125.4 | 465.7 | 158.1 | 65.0 |
| 85° | 35.9 | 43.7 | 196.9 | 209.6 | 66.9 | 52.4 | 169.8 | 210.5 | 88.3 | 41.7 | 29.1 |
| 87.5° | 0.0 | 0.0 | 95.1 | 80.5 | 19.4 | 7.8 | 15.5 | 17.5 | 17.5 | 17.5 | 19.4 |
| 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: P321769

CATALOG NUMBER: GLEON-SA5C-830-U-T3R-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 | 4166.8 |
| 2.5° | 4183.3 | 4190.1 | 4165.8 | 4133.8 | 4099.9 | 4058.1 | 4014.5 | 3980.5 | 3979.6 | 3963.1 | 3946.6 |
| 5° | 4234.7 | 4230.8 | 4163.9 | 4062.0 | 3941.7 | 3816.6 | 3697.2 | 3562.4 | 3517.8 | 3462.5 | 3444.0 |
| 7.5° | 4329.8 | 4302.6 | 4161.0 | 3937.8 | 3674.0 | 3412.0 | 3141.3 | 2868.7 | 2752.3 | 2647.5 | 2629.1 |
| 10° | 4449.1 | 4397.7 | 4142.5 | 3751.6 | 3267.5 | 2784.3 | 2375.9 | 2005.3 | 1842.3 | 1717.2 | 1711.3 |
| 12.5° | 4573.3 | 4494.7 | 4091.1 | 3470.2 | 2734.9 | 2055.7 | 1585.2 | 1220.4 | 1084.6 | 997.3 | 1005.1 |
| 15° | 4703.3 | 4585.9 | 3980.5 | 3090.9 | 2128.5 | 1395.1 | 974.0 | 759.6 | 705.3 | 683.0 | 688.8 |
| 17.5° | 4836.2 | 4649.0 | 3826.3 | 2634.0 | 1529.9 | 900.3 | 674.3 | 614.1 | 614.1 | 619.0 | 620.9 |
| 20° | 4951.6 | 4682.9 | 3599.3 | 2121.7 | 1037.1 | 655.8 | 589.9 | 581.1 | 586.0 | 593.7 | 594.7 |
| 22.5° | 5066.1 | 4684.9 | 3303.4 | 1602.7 | 725.7 | 574.3 | 561.7 | 557.8 | 560.7 | 569.5 | 570.4 |
| 25° | 5159.3 | 4661.6 | 2932.8 | 1139.9 | 579.2 | 541.3 | 535.5 | 533.6 | 535.5 | 546.2 | 546.2 |
| 27.5° | 5197.1 | 4577.2 | 2480.7 | 801.3 | 519.0 | 504.5 | 502.5 | 504.5 | 507.4 | 515.1 | 516.1 |
| 30° | 5201.0 | 4429.7 | 1987.8 | 580.1 | 470.5 | 455.0 | 458.9 | 465.7 | 462.8 | 460.8 | 462.8 |
| 32.5° | 5210.7 | 4259.0 | 1507.6 | 477.3 | 429.8 | 405.5 | 400.7 | 400.7 | 389.0 | 382.2 | 378.4 |
| 35° | 5242.7 | 4058.1 | 1093.4 | 428.8 | 388.1 | 359.9 | 341.5 | 320.1 | 297.8 | 286.2 | 283.3 |
| 37.5° | 5293.1 | 3847.6 | 782.9 | 396.8 | 351.2 | 319.2 | 284.3 | 246.4 | 214.4 | 205.7 | 205.7 |
| 40° | 5385.3 | 3630.3 | 579.2 | 371.6 | 322.1 | 282.3 | 229.9 | 180.4 | 151.3 | 146.5 | 146.5 |
| 42.5° | 5530.8 | 3401.3 | 461.8 | 349.3 | 296.9 | 244.5 | 175.6 | 131.0 | 109.6 | 106.7 | 105.7 |
| 45° | 5682.2 | 3149.1 | 403.6 | 327.9 | 269.7 | 200.8 | 130.0 | 97.0 | 84.4 | 81.5 | 81.5 |
| 47.5° | 5833.5 | 2880.4 | 375.4 | 307.5 | 243.5 | 156.2 | 97.0 | 76.6 | 70.8 | 70.8 | 71.8 |
| 50° | 5961.6 | 2600.0 | 355.1 | 285.2 | 209.6 | 118.4 | 76.6 | 65.0 | 63.1 | 66.9 | 67.9 |
| 52.5° | 5993.6 | 2324.5 | 329.9 | 257.1 | 167.8 | 90.2 | 63.1 | 57.2 | 57.2 | 57.2 | 57.2 |
| 55° | 5974.2 | 2111.0 | 296.9 | 222.2 | 124.2 | 71.8 | 54.3 | 50.4 | 49.5 | 49.5 | 49.5 |
| 57.5° | 6040.2 | 1984.9 | 237.7 | 172.7 | 89.3 | 58.2 | 47.5 | 44.6 | 42.7 | 41.7 | 41.7 |
| 60° | 6173.1 | 1902.5 | 169.8 | 124.2 | 66.9 | 48.5 | 40.7 | 37.8 | 34.9 | 33.0 | 33.0 |
| 62.5° | 6349.6 | 1830.7 | 126.1 | 92.2 | 51.4 | 38.8 | 34.0 | 31.0 | 27.2 | 25.2 | 25.2 |
| 65° | 6485.5 | 1702.6 | 96.0 | 68.9 | 38.8 | 31.0 | 26.2 | 25.2 | 19.4 | 17.5 | 16.5 |
| 67.5° | 6277.8 | 1421.3 | 77.6 | 50.4 | 29.1 | 24.3 | 20.4 | 19.4 | 11.6 | 9.7 | 9.7 |
| 70° | 5384.3 | 989.6 | 62.1 | 36.9 | 21.3 | 19.4 | 16.5 | 12.6 | 8.7 | 7.8 | 7.8 |
| 71° | 4882.8 | 826.6 | 56.3 | 31.0 | 18.4 | 18.4 | 15.5 | 10.7 | 7.8 | 6.8 | 6.8 |
| 72.5° | 4056.2 | 586.9 | 47.5 | 24.3 | 16.5 | 19.4 | 16.5 | 9.7 | 7.8 | 6.8 | 5.8 |
| 75° | 2354.6 | 245.4 | 33.0 | 16.5 | 12.6 | 23.3 | 21.3 | 8.7 | 5.8 | 4.9 | 4.9 |
| 77.5° | 708.2 | 90.2 | 18.4 | 10.7 | 9.7 | 20.4 | 24.3 | 7.8 | 2.9 | 1.0 | 1.0 |
| 80° | 129.0 | 38.8 | 11.6 | 6.8 | 6.8 | 12.6 | 18.4 | 3.9 | 0.0 | 0.0 | 0.0 |
| 82.5° | 45.6 | 19.4 | 6.8 | 3.9 | 2.9 | 5.8 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 26.2 | 13.6 | 3.9 | 1.9 | 0.0 | 1.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 17.5 | 3.9 | 0.0 | 0.0 | 0.0 | 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 |

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

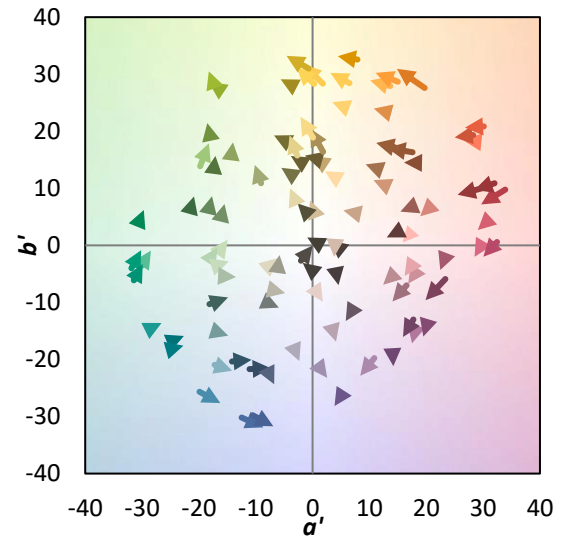
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 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)