

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: P324625

Luminaire Tested: **GLEON-SA1A-830-U-SLR-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P324625  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-28)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: GLEON-SA1A-830-U-SLR-HSS  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(1) 80 CRI, 3000K, 615mA LIGHTSQUARE WITH 16 LEDS AND SPILL LIGHT  
ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2874 lumens  
Efficiency: N/A  
Efficacy: 84.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Medium  
BUG Rating: B0 - U0 - G1

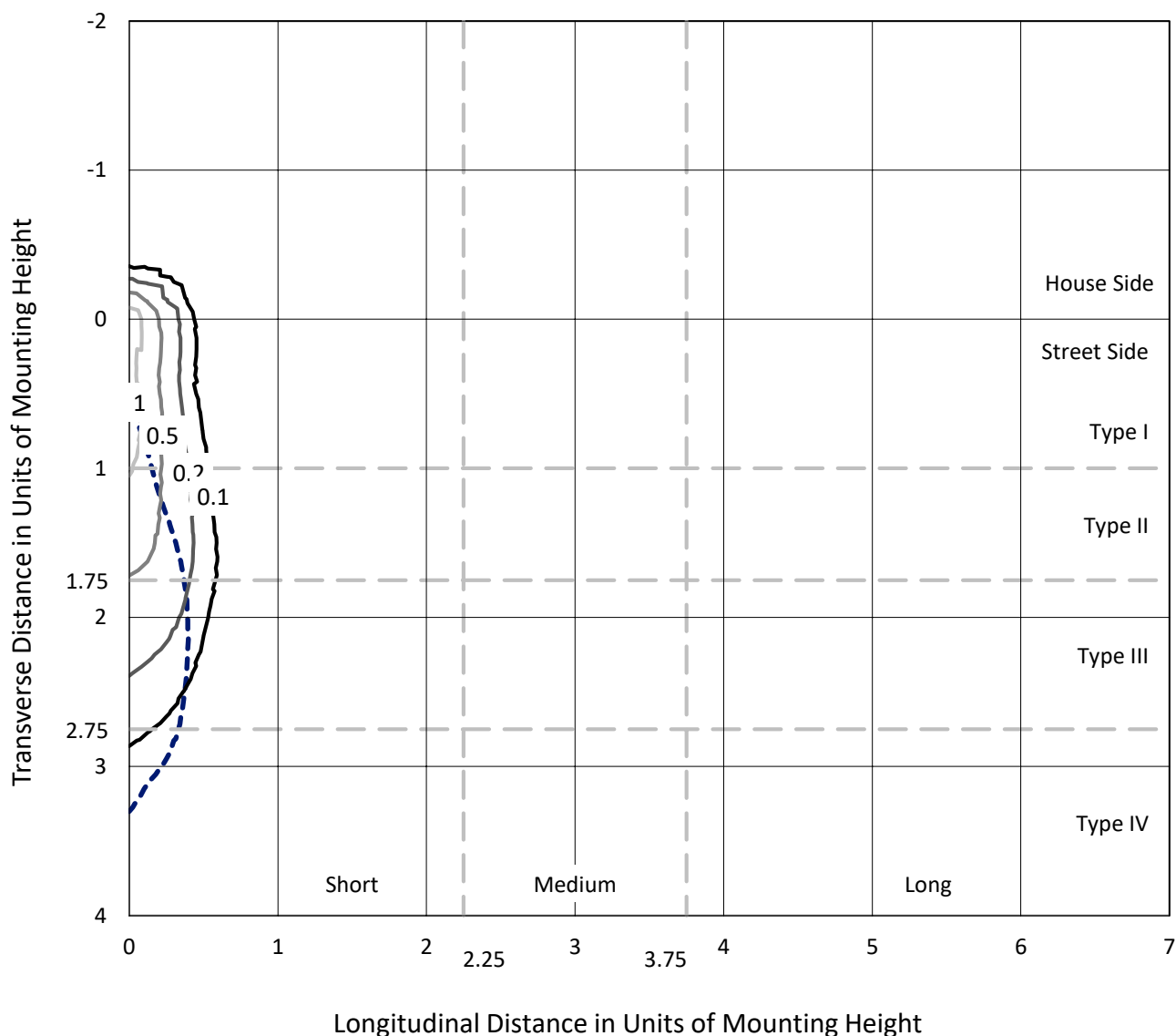
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

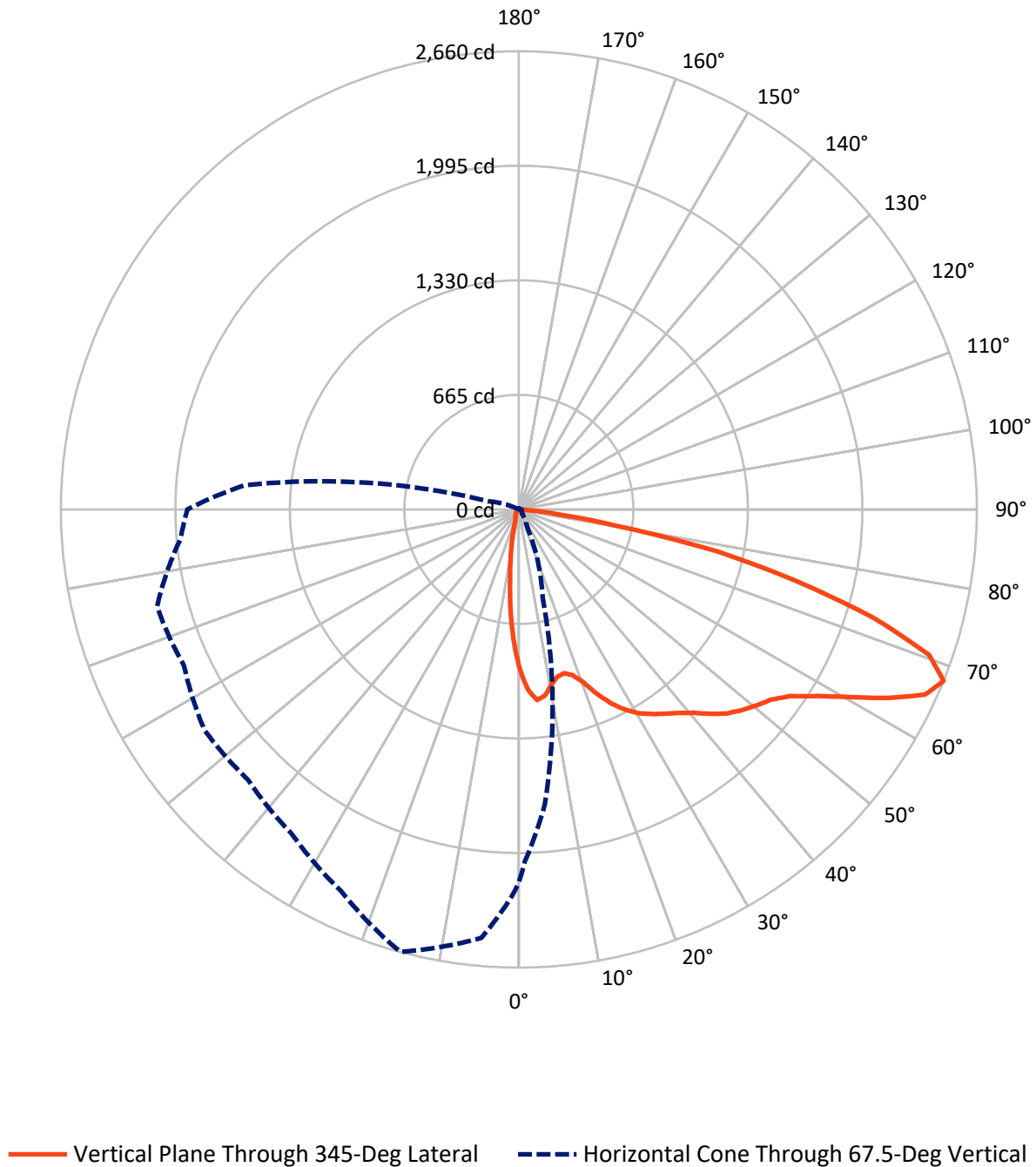
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.5 fc  
 Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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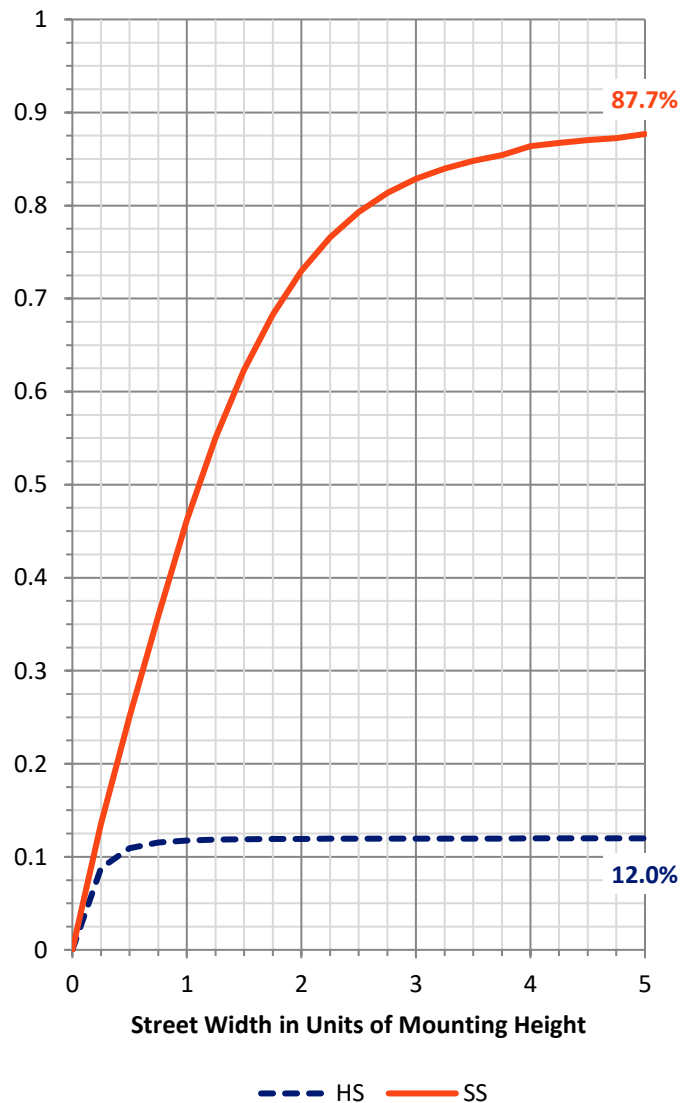
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 347.8    | 0.0    | 347.8  |
|                    | % Fixture | 12.1     | 0.0    | 12.1   |
| <b>Street Side</b> | Lumens    | 2526.2   | 0.0    | 2526.2 |
|                    | % Fixture | 87.9     | 0.0    | 87.9   |
| <b>Total</b>       | Lumens    | 2874.0   | 0.0    | 2874.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 71.9   | 2.5       |
| 10°-20°   | 143.0  | 5.0       |
| 20°-30°   | 203.1  | 7.1       |
| 30°-40°   | 300.0  | 10.4      |
| 40°-50°   | 432.6  | 15.1      |
| 50°-60°   | 607.3  | 21.1      |
| 60°-70°   | 708.0  | 24.6      |
| 70°-80°   | 361.9  | 12.6      |
| 80°-90°   | 46.2   | 1.6       |
| 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°    | 2874.0 | 100.0     |
| 0°-180°   | 2874.0 | 100.0     |

**Coefficient of Utilization**



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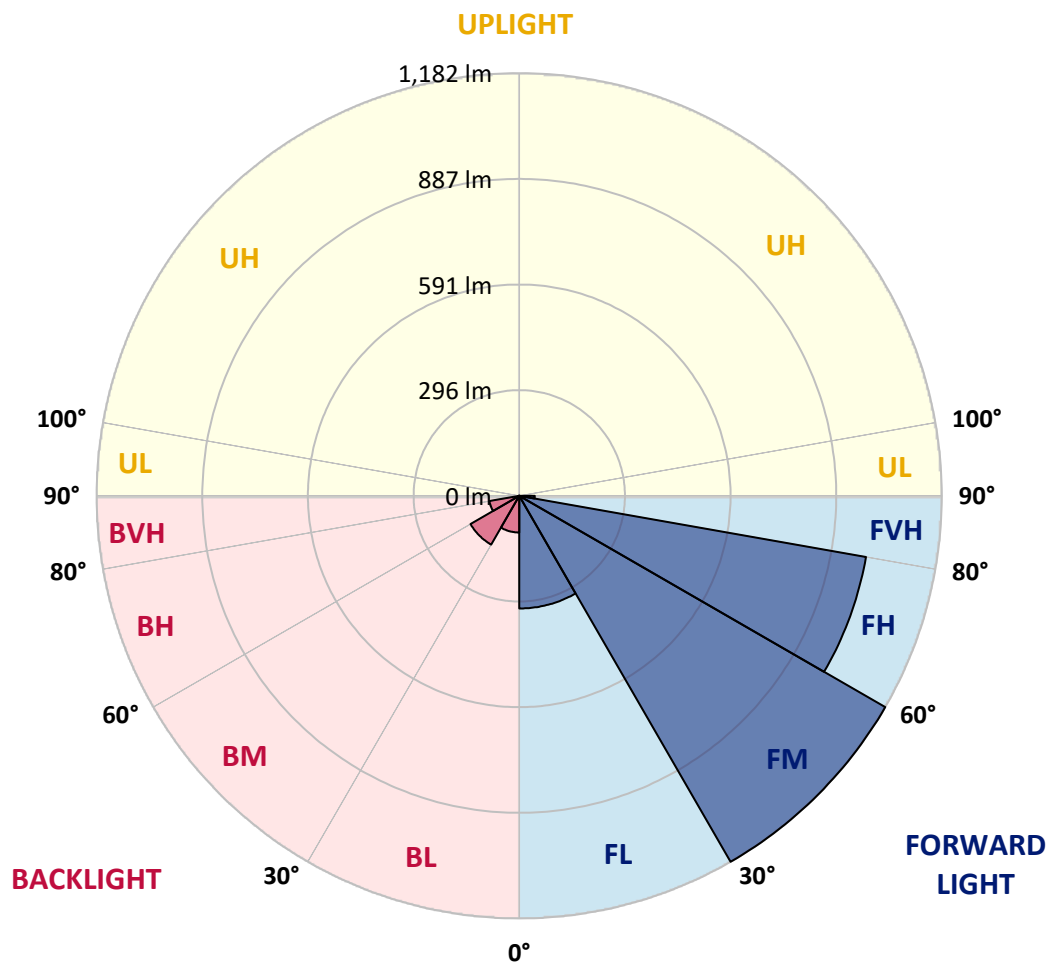
CATALOG NUMBER: GLEON-SA1A-830-U-SLR-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 315.2  | 11.0      |                         |      |         |
| FM   | (30°-60°)   | 1182.4 | 41.1      |                         |      |         |
| FH   | (60°-80°)   | 985.1  | 34.3      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 43.4   | 1.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 102.7  | 3.6       | B0/110                  |      |         |
| BM   | (30°-60°)   | 157.5  | 5.5       | B0/220                  |      |         |
| BH   | (60°-80°)   | 84.8   | 2.9       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 2.8    | 0.1       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G1**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°   | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 936.2  | 936.2  | 936.2  | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 |
| 2.5°  | 1025.1 | 1017.2 | 1008.5 | 980.0 | 953.6 | 923.4 | 898.8 | 881.6 | 860.1 | 832.2 | 825.1 |
| 5°    | 1017.8 | 1009.3 | 981.9  | 918.6 | 863.2 | 809.3 | 757.3 | 726.8 | 688.9 | 650.5 | 641.0 |
| 7.5°  | 943.8  | 935.0  | 895.5  | 808.8 | 734.1 | 656.3 | 588.7 | 546.9 | 504.2 | 469.1 | 450.4 |
| 10°   | 866.9  | 857.2  | 812.8  | 707.6 | 615.7 | 545.3 | 495.7 | 455.8 | 415.4 | 377.8 | 347.9 |
| 12.5° | 813.9  | 801.3  | 753.1  | 633.8 | 553.7 | 506.0 | 459.7 | 411.9 | 357.1 | 316.8 | 283.9 |
| 15°   | 791.7  | 777.3  | 726.4  | 605.3 | 531.8 | 475.7 | 415.4 | 356.7 | 292.6 | 246.4 | 216.2 |
| 17.5° | 808.9  | 790.1  | 735.5  | 603.4 | 504.3 | 427.9 | 351.7 | 282.8 | 213.2 | 166.5 | 145.0 |
| 20°   | 867.2  | 842.5  | 773.2  | 602.9 | 471.0 | 371.2 | 274.5 | 196.6 | 140.5 | 113.0 | 101.7 |
| 22.5° | 958.9  | 926.4  | 827.4  | 607.3 | 436.5 | 311.5 | 198.2 | 133.6 | 105.5 | 91.2  | 84.6  |
| 25°   | 1069.8 | 1032.1 | 905.4  | 622.6 | 406.3 | 253.5 | 144.1 | 105.5 | 89.0  | 78.6  | 73.0  |
| 27.5° | 1175.2 | 1144.5 | 1004.0 | 644.8 | 382.9 | 206.7 | 117.0 | 89.5  | 76.1  | 69.2  | 64.7  |
| 30°   | 1280.4 | 1241.9 | 1105.2 | 671.2 | 354.7 | 175.0 | 102.8 | 81.6  | 68.2  | 60.9  | 58.0  |
| 32.5° | 1356.9 | 1324.9 | 1184.4 | 690.3 | 324.6 | 154.3 | 91.9  | 74.6  | 63.7  | 56.2  | 52.0  |
| 35°   | 1446.9 | 1410.7 | 1252.4 | 694.5 | 305.3 | 141.2 | 82.6  | 67.1  | 55.3  | 48.6  | 44.1  |
| 37.5° | 1544.1 | 1499.1 | 1330.8 | 685.3 | 290.1 | 134.8 | 75.7  | 63.7  | 51.6  | 44.8  | 40.0  |
| 40°   | 1651.7 | 1600.8 | 1406.1 | 671.9 | 275.3 | 132.6 | 70.4  | 61.1  | 48.7  | 41.8  | 36.9  |
| 42.5° | 1765.0 | 1704.9 | 1471.3 | 657.9 | 265.9 | 125.1 | 69.8  | 58.5  | 46.6  | 39.1  | 34.2  |
| 45°   | 1860.1 | 1799.3 | 1538.3 | 653.3 | 259.2 | 117.0 | 72.2  | 56.8  | 45.1  | 36.9  | 32.1  |
| 47.5° | 1936.0 | 1878.4 | 1606.9 | 663.6 | 255.4 | 109.5 | 65.8  | 59.1  | 44.3  | 35.0  | 30.4  |
| 50°   | 2026.5 | 1961.3 | 1703.6 | 694.5 | 249.8 | 102.0 | 59.5  | 67.7  | 44.3  | 33.8  | 28.9  |
| 52.5° | 2140.1 | 2075.5 | 1811.4 | 742.5 | 238.7 | 91.6  | 53.5  | 67.8  | 44.7  | 32.1  | 27.0  |
| 55°   | 2282.9 | 2236.1 | 1965.4 | 795.0 | 220.8 | 76.4  | 46.3  | 58.3  | 43.0  | 29.1  | 25.2  |
| 57.5° | 2419.9 | 2381.6 | 2105.8 | 831.0 | 197.0 | 59.6  | 40.3  | 47.0  | 39.3  | 25.6  | 22.5  |
| 59°   | 2457.3 | 2415.5 | 2157.2 | 832.6 | 179.2 | 52.0  | 37.3  | 38.8  | 38.5  | 24.0  | 20.8  |
| 60°   | 2457.3 | 2412.9 | 2172.1 | 823.9 | 166.2 | 47.8  | 35.4  | 34.6  | 40.2  | 22.9  | 19.9  |
| 62.5° | 2412.8 | 2350.4 | 2123.9 | 764.9 | 135.6 | 40.7  | 30.9  | 28.6  | 36.1  | 20.6  | 17.6  |
| 65°   | 2320.2 | 2229.4 | 1959.7 | 658.3 | 120.9 | 37.3  | 26.7  | 23.4  | 25.1  | 18.1  | 15.4  |
| 67.5° | 2165.8 | 2042.7 | 1722.9 | 531.8 | 115.1 | 36.4  | 23.0  | 19.9  | 18.9  | 15.5  | 13.5  |
| 70°   | 1893.9 | 1757.3 | 1435.5 | 418.1 | 110.0 | 35.9  | 19.3  | 16.7  | 15.2  | 13.1  | 11.4  |
| 72.5° | 1378.4 | 1236.0 | 1019.1 | 326.9 | 107.0 | 36.8  | 15.5  | 14.0  | 12.5  | 10.2  | 8.9   |
| 75°   | 788.5  | 695.2  | 572.8  | 215.9 | 91.2  | 35.1  | 12.0  | 11.7  | 9.0   | 7.4   | 6.1   |
| 77.5° | 407.4  | 395.0  | 343.2  | 82.9  | 43.7  | 15.4  | 7.9   | 6.8   | 5.3   | 4.5   | 3.7   |
| 80°   | 175.8  | 173.9  | 150.5  | 24.0  | 11.6  | 8.6   | 4.5   | 2.9   | 2.5   | 1.9   | 1.5   |
| 82.5° | 60.7   | 60.7   | 53.5   | 8.0   | 5.2   | 4.2   | 0.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 12.3   | 13.8   | 9.7    | 0.0   | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0    | 0.0    | 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   |

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CATALOG NUMBER: GLEON-SA1A-830-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 |
| 2.5°  | 816.5 | 800.0 | 799.0 | 788.6 | 775.7 | 769.8 | 766.4 | 772.4 | 779.8 | 780.6 | 791.6 |
| 5°    | 633.8 | 616.5 | 623.7 | 605.3 | 609.0 | 605.3 | 599.4 | 600.4 | 603.7 | 593.5 | 606.2 |
| 7.5°  | 445.1 | 432.0 | 440.3 | 435.4 | 442.0 | 444.5 | 440.9 | 435.4 | 419.4 | 417.5 | 428.5 |
| 10°   | 335.5 | 320.6 | 311.8 | 302.5 | 304.6 | 308.8 | 307.4 | 303.5 | 293.3 | 293.8 | 304.4 |
| 12.5° | 269.6 | 253.0 | 235.4 | 212.7 | 207.1 | 210.2 | 207.1 | 204.8 | 195.0 | 195.8 | 205.2 |
| 15°   | 204.5 | 190.9 | 172.5 | 154.3 | 144.3 | 145.3 | 136.6 | 130.4 | 124.3 | 117.0 | 122.7 |
| 17.5° | 138.1 | 129.8 | 124.3 | 118.9 | 107.0 | 104.3 | 93.3  | 81.4  | 76.8  | 73.4  | 75.8  |
| 20°   | 97.8  | 93.3  | 91.1  | 90.8  | 84.0  | 80.6  | 69.8  | 62.5  | 60.2  | 59.5  | 61.0  |
| 22.5° | 81.7  | 78.4  | 75.3  | 73.5  | 70.1  | 66.2  | 58.0  | 54.3  | 52.7  | 51.9  | 53.0  |
| 25°   | 71.1  | 68.6  | 65.4  | 62.4  | 61.0  | 56.8  | 50.9  | 48.2  | 47.1  | 46.3  | 46.8  |
| 27.5° | 63.2  | 61.0  | 57.2  | 55.3  | 54.2  | 50.5  | 45.5  | 43.3  | 42.3  | 42.1  | 41.9  |
| 30°   | 56.9  | 54.9  | 51.3  | 49.2  | 47.2  | 44.0  | 41.0  | 38.8  | 37.9  | 37.6  | 37.3  |
| 32.5° | 50.6  | 49.0  | 46.7  | 44.5  | 42.5  | 39.5  | 36.9  | 35.1  | 33.6  | 33.4  | 33.2  |
| 35°   | 42.8  | 41.1  | 39.9  | 39.8  | 37.9  | 35.0  | 33.1  | 30.8  | 29.5  | 29.1  | 29.3  |
| 37.5° | 38.0  | 35.8  | 33.1  | 34.0  | 33.5  | 31.5  | 28.9  | 26.6  | 25.3  | 25.1  | 25.1  |
| 40°   | 35.0  | 32.7  | 29.5  | 27.9  | 29.5  | 29.1  | 25.1  | 22.7  | 21.5  | 21.4  | 21.1  |
| 42.5° | 32.1  | 29.8  | 26.3  | 23.6  | 24.4  | 25.6  | 21.6  | 19.5  | 18.2  | 18.0  | 17.6  |
| 45°   | 30.1  | 27.6  | 23.7  | 20.6  | 18.9  | 21.5  | 18.5  | 15.8  | 15.1  | 14.6  | 14.3  |
| 47.5° | 28.2  | 25.9  | 21.4  | 17.8  | 15.1  | 15.5  | 14.8  | 12.9  | 12.1  | 11.6  | 11.4  |
| 50°   | 26.6  | 24.1  | 19.3  | 15.2  | 12.5  | 11.4  | 12.0  | 10.2  | 9.5   | 9.0   | 8.7   |
| 52.5° | 24.6  | 22.3  | 17.2  | 13.2  | 10.5  | 9.0   | 9.1   | 8.0   | 7.4   | 6.9   | 6.8   |
| 55°   | 23.1  | 20.8  | 15.4  | 11.6  | 9.3   | 7.4   | 6.5   | 6.3   | 5.9   | 5.6   | 5.4   |
| 57.5° | 21.1  | 18.9  | 13.6  | 9.8   | 7.9   | 6.0   | 5.0   | 5.0   | 4.9   | 4.6   | 4.5   |
| 59°   | 19.9  | 18.0  | 12.5  | 8.9   | 7.2   | 5.2   | 4.5   | 4.6   | 4.5   | 4.2   | 4.1   |
| 60°   | 18.9  | 17.2  | 11.7  | 8.2   | 6.8   | 4.8   | 4.1   | 4.4   | 4.2   | 3.9   | 3.8   |
| 62.5° | 16.7  | 15.5  | 10.1  | 6.8   | 6.0   | 3.8   | 3.4   | 3.7   | 3.7   | 3.5   | 3.4   |
| 65°   | 14.7  | 13.3  | 8.6   | 5.7   | 5.6   | 3.3   | 2.7   | 3.3   | 3.4   | 3.1   | 2.9   |
| 67.5° | 12.8  | 11.4  | 7.5   | 4.6   | 5.2   | 2.6   | 2.0   | 2.7   | 3.7   | 2.9   | 2.6   |
| 70°   | 10.9  | 9.5   | 5.9   | 3.7   | 5.4   | 1.8   | 1.6   | 2.5   | 4.4   | 3.1   | 2.5   |
| 72.5° | 8.4   | 7.4   | 4.1   | 2.7   | 5.9   | 1.2   | 1.2   | 2.0   | 4.9   | 3.4   | 2.3   |
| 75°   | 5.9   | 4.8   | 2.5   | 1.6   | 4.8   | 0.8   | 0.8   | 1.9   | 4.6   | 3.1   | 2.2   |
| 77.5° | 3.4   | 2.6   | 0.8   | 0.1   | 2.5   | 0.0   | 0.1   | 1.4   | 3.3   | 1.9   | 1.0   |
| 80°   | 1.2   | 0.5   | 0.0   | 0.0   | 1.5   | 0.0   | 0.0   | 0.0   | 0.3   | 0.0   | 0.0   |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 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   |





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**CANDELA DISTRIBUTION (continued):**

|       | 185°  | 195°  | 205°  | 215°  | 225°  | 235°  | 245°  | 255°  | 265°   | 270°   | 275°   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 0°    | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2 | 936.2  | 936.2  | 936.2  |
| 2.5°  | 794.5 | 812.8 | 829.3 | 854.2 | 883.8 | 917.8 | 947.1 | 978.5 | 1008.1 | 1020.3 | 1028.8 |
| 5°    | 608.7 | 631.5 | 658.0 | 694.7 | 743.4 | 803.4 | 859.7 | 923.3 | 991.6  | 1025.8 | 1057.9 |
| 7.5°  | 430.4 | 453.5 | 486.5 | 525.4 | 584.4 | 655.9 | 729.4 | 817.2 | 909.8  | 963.8  | 1017.1 |
| 10°   | 309.5 | 337.9 | 368.7 | 421.9 | 481.9 | 549.7 | 625.4 | 723.4 | 826.6  | 886.5  | 950.6  |
| 12.5° | 210.6 | 243.0 | 289.6 | 349.2 | 419.6 | 486.1 | 551.8 | 645.4 | 765.2  | 824.6  | 893.3  |
| 15°   | 126.4 | 144.3 | 193.6 | 262.6 | 349.0 | 431.7 | 503.8 | 597.6 | 725.3  | 798.0  | 869.5  |
| 17.5° | 77.9  | 86.2  | 113.0 | 169.6 | 260.3 | 365.0 | 463.7 | 581.4 | 731.0  | 819.5  | 896.0  |
| 20°   | 62.1  | 65.4  | 73.9  | 100.2 | 172.5 | 291.5 | 418.7 | 578.1 | 777.7  | 886.6  | 968.7  |
| 22.5° | 53.9  | 57.0  | 62.8  | 72.8  | 108.5 | 218.3 | 375.9 | 581.1 | 844.7  | 987.3  | 1083.1 |
| 25°   | 47.5  | 50.2  | 55.7  | 64.0  | 79.5  | 153.7 | 330.2 | 594.5 | 932.0  | 1112.1 | 1214.0 |
| 27.5° | 42.5  | 44.8  | 49.8  | 57.5  | 68.2  | 107.3 | 278.3 | 610.7 | 1035.5 | 1239.8 | 1340.3 |
| 30°   | 37.9  | 39.9  | 44.4  | 51.5  | 59.2  | 82.5  | 221.4 | 621.7 | 1139.1 | 1340.3 | 1430.6 |
| 32.5° | 33.9  | 35.4  | 39.5  | 45.5  | 51.5  | 65.8  | 168.3 | 619.9 | 1216.0 | 1423.9 | 1495.5 |
| 35°   | 29.8  | 31.3  | 34.9  | 40.0  | 44.8  | 54.3  | 132.3 | 586.8 | 1283.0 | 1510.6 | 1569.9 |
| 37.5° | 25.3  | 27.2  | 30.6  | 35.3  | 38.5  | 47.8  | 107.0 | 546.9 | 1350.9 | 1609.8 | 1652.8 |
| 40°   | 21.5  | 23.4  | 26.4  | 31.5  | 33.5  | 45.3  | 82.2  | 498.3 | 1427.3 | 1720.6 | 1743.7 |
| 42.5° | 17.8  | 19.6  | 22.7  | 27.1  | 31.6  | 39.1  | 60.9  | 442.8 | 1500.7 | 1815.4 | 1826.7 |
| 45°   | 14.4  | 16.2  | 19.5  | 23.8  | 33.8  | 32.4  | 47.1  | 383.3 | 1559.9 | 1894.2 | 1897.9 |
| 47.5° | 11.4  | 13.1  | 16.5  | 22.5  | 31.5  | 25.9  | 33.6  | 336.6 | 1609.6 | 1955.7 | 1946.1 |
| 50°   | 8.9   | 10.2  | 13.8  | 25.7  | 27.5  | 21.4  | 25.5  | 321.1 | 1654.1 | 1993.9 | 1968.8 |
| 52.5° | 6.9   | 8.2   | 11.3  | 24.1  | 21.4  | 17.7  | 21.4  | 335.6 | 1715.1 | 2025.4 | 1981.6 |
| 55°   | 5.6   | 6.8   | 8.9   | 13.8  | 14.6  | 15.0  | 18.2  | 349.2 | 1820.4 | 2099.5 | 2057.2 |
| 57.5° | 4.6   | 5.9   | 7.2   | 9.7   | 11.0  | 12.7  | 16.2  | 350.7 | 1944.4 | 2222.6 | 2182.6 |
| 59°   | 4.2   | 5.3   | 6.5   | 8.6   | 9.7   | 11.6  | 15.2  | 342.6 | 1988.1 | 2267.4 | 2247.4 |
| 60°   | 3.9   | 5.0   | 6.1   | 7.9   | 9.0   | 10.9  | 14.7  | 334.8 | 1990.0 | 2265.8 | 2275.0 |
| 62.5° | 3.4   | 4.5   | 5.4   | 6.7   | 7.6   | 9.3   | 13.2  | 306.1 | 1909.4 | 2191.5 | 2258.4 |
| 65°   | 3.0   | 3.9   | 4.9   | 5.7   | 6.5   | 8.3   | 12.0  | 253.7 | 1771.8 | 2071.9 | 2144.7 |
| 67.5° | 2.7   | 3.4   | 4.5   | 5.0   | 5.9   | 7.4   | 10.6  | 180.8 | 1599.8 | 1925.5 | 1972.7 |
| 70°   | 2.5   | 3.3   | 4.1   | 4.6   | 5.3   | 6.4   | 9.1   | 103.9 | 1350.9 | 1711.2 | 1744.8 |
| 72.5° | 2.3   | 3.1   | 3.7   | 4.4   | 4.8   | 5.7   | 8.3   | 48.9  | 989.2  | 1370.8 | 1458.6 |
| 75°   | 2.0   | 2.9   | 3.4   | 4.1   | 4.5   | 5.2   | 7.1   | 23.4  | 657.9  | 992.0  | 1091.8 |
| 77.5° | 1.2   | 2.3   | 3.1   | 3.7   | 3.9   | 4.5   | 5.9   | 13.5  | 419.9  | 686.6  | 808.8  |
| 80°   | 0.0   | 0.8   | 2.3   | 3.1   | 3.4   | 3.8   | 4.5   | 10.6  | 224.7  | 392.3  | 470.8  |
| 82.5° | 0.0   | 0.0   | 1.6   | 2.5   | 2.3   | 2.6   | 3.4   | 6.7   | 101.3  | 256.4  | 288.9  |
| 85°   | 0.0   | 0.0   | 0.5   | 1.9   | 1.6   | 1.2   | 2.3   | 2.3   | 22.2   | 129.8  | 161.9  |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.1   | 0.8   | 0.5   | 1.0   | 0.3   | 0.1    | 9.7    | 39.2   |
| 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: P324625

CATALOG NUMBER: GLEON-SA1A-830-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 936.2  | 936.2  | 936.2  | 936.2  | 936.2  | 936.2  | 936.2  | 936.2  | 936.2  | 936.2  |
| 2.5°  | 1058.3 | 1068.4 | 1085.4 | 1093.5 | 1089.5 | 1072.8 | 1052.7 | 1032.3 | 1020.3 | 1025.1 |
| 5°    | 1123.4 | 1175.3 | 1205.2 | 1215.2 | 1198.6 | 1161.0 | 1111.8 | 1047.0 | 1024.0 | 1017.8 |
| 7.5°  | 1123.4 | 1221.0 | 1282.9 | 1293.7 | 1256.7 | 1183.0 | 1090.9 | 989.7  | 956.1  | 943.8  |
| 10°   | 1083.9 | 1216.8 | 1303.0 | 1320.3 | 1268.6 | 1158.4 | 1034.9 | 919.5  | 879.6  | 866.9  |
| 12.5° | 1039.4 | 1182.5 | 1273.3 | 1297.1 | 1254.7 | 1133.9 | 996.1  | 871.9  | 825.0  | 813.9  |
| 15°   | 1012.0 | 1140.3 | 1215.5 | 1232.7 | 1214.8 | 1119.6 | 986.8  | 857.6  | 802.4  | 791.7  |
| 17.5° | 1021.8 | 1107.6 | 1134.7 | 1144.8 | 1156.9 | 1114.6 | 1012.0 | 889.0  | 819.0  | 808.9  |
| 20°   | 1058.7 | 1073.2 | 1059.1 | 1071.8 | 1104.5 | 1119.5 | 1072.1 | 964.7  | 880.6  | 867.2  |
| 22.5° | 1121.4 | 1055.3 | 1016.0 | 1021.0 | 1060.8 | 1135.7 | 1163.9 | 1072.8 | 975.8  | 958.9  |
| 25°   | 1194.3 | 1069.8 | 992.0  | 987.5  | 1028.4 | 1157.0 | 1247.7 | 1190.4 | 1088.4 | 1069.8 |
| 27.5° | 1286.1 | 1102.2 | 987.1  | 982.6  | 1017.1 | 1177.1 | 1317.4 | 1306.7 | 1207.0 | 1175.2 |
| 30°   | 1356.9 | 1134.0 | 1001.7 | 991.3  | 1028.4 | 1190.9 | 1373.4 | 1405.4 | 1301.5 | 1280.4 |
| 32.5° | 1407.7 | 1171.6 | 1025.4 | 1010.4 | 1060.2 | 1214.9 | 1416.6 | 1495.8 | 1388.9 | 1356.9 |
| 35°   | 1446.4 | 1212.5 | 1063.6 | 1039.0 | 1104.1 | 1251.3 | 1457.0 | 1592.1 | 1481.9 | 1446.9 |
| 37.5° | 1482.6 | 1269.8 | 1123.4 | 1094.0 | 1172.8 | 1309.8 | 1499.7 | 1701.3 | 1585.9 | 1544.1 |
| 40°   | 1533.1 | 1334.7 | 1215.6 | 1189.4 | 1288.4 | 1389.6 | 1553.1 | 1815.1 | 1704.2 | 1651.7 |
| 42.5° | 1583.6 | 1404.4 | 1309.9 | 1317.0 | 1432.6 | 1486.5 | 1622.0 | 1935.4 | 1821.1 | 1765.0 |
| 45°   | 1629.8 | 1476.3 | 1444.3 | 1477.0 | 1566.5 | 1592.9 | 1690.5 | 2005.0 | 1914.3 | 1860.1 |
| 47.5° | 1670.9 | 1566.2 | 1577.9 | 1664.9 | 1718.7 | 1689.1 | 1741.7 | 2065.1 | 1983.8 | 1936.0 |
| 50°   | 1718.7 | 1682.5 | 1753.9 | 1877.0 | 1893.9 | 1776.3 | 1788.3 | 2136.1 | 2064.9 | 2026.5 |
| 52.5° | 1771.0 | 1805.0 | 1948.9 | 2057.4 | 2052.0 | 1870.9 | 1835.1 | 2215.8 | 2176.2 | 2140.1 |
| 55°   | 1830.3 | 1904.0 | 2120.6 | 2226.3 | 2221.6 | 1976.6 | 1912.7 | 2314.2 | 2315.6 | 2282.9 |
| 57.5° | 1918.4 | 1989.2 | 2237.2 | 2362.8 | 2370.6 | 2098.6 | 2044.2 | 2424.5 | 2441.7 | 2419.9 |
| 59°   | 1981.6 | 2044.5 | 2283.3 | 2419.9 | 2451.5 | 2192.9 | 2140.4 | 2488.5 | 2477.2 | 2457.3 |
| 60°   | 2028.4 | 2079.6 | 2306.2 | 2449.7 | 2498.4 | 2256.9 | 2211.3 | 2526.1 | 2481.4 | 2457.3 |
| 62.5° | 2144.3 | 2156.1 | 2347.4 | 2483.5 | 2552.5 | 2399.0 | 2410.9 | 2590.1 | 2452.1 | 2412.8 |
| 65°   | 2198.4 | 2204.5 | 2346.9 | 2423.0 | 2500.2 | 2509.7 | 2592.0 | 2592.0 | 2380.7 | 2320.2 |
| 67.5° | 2175.8 | 2146.2 | 2230.5 | 2222.6 | 2299.7 | 2444.0 | 2660.1 | 2496.9 | 2244.0 | 2165.8 |
| 70°   | 1991.9 | 1878.3 | 1840.8 | 1844.2 | 1903.2 | 2125.8 | 2525.3 | 2217.3 | 1985.3 | 1893.9 |
| 72.5° | 1657.4 | 1384.7 | 1292.2 | 1397.8 | 1413.2 | 1633.7 | 2152.1 | 1669.8 | 1464.1 | 1378.4 |
| 75°   | 1333.1 | 976.1  | 825.8  | 937.2  | 963.3  | 1195.6 | 1664.8 | 1040.0 | 855.2  | 788.5  |
| 77.5° | 957.7  | 700.7  | 592.5  | 584.8  | 618.6  | 758.2  | 1181.3 | 523.4  | 436.5  | 407.4  |
| 80°   | 544.1  | 461.2  | 496.6  | 468.5  | 485.5  | 474.1  | 561.2  | 229.6  | 188.0  | 175.8  |
| 82.5° | 328.4  | 272.6  | 295.2  | 245.8  | 311.0  | 270.8  | 216.2  | 73.5   | 63.9   | 60.7   |
| 85°   | 213.6  | 149.0  | 77.6   | 52.0   | 107.2  | 173.1  | 48.3   | 20.0   | 15.4   | 12.3   |
| 87.5° | 73.7   | 38.0   | 3.8    | 1.6    | 11.4   | 32.3   | 1.8    | 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    |

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.

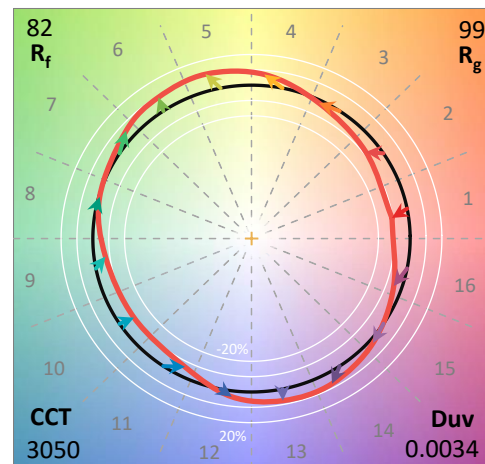
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2408-195-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 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  
 R<sub>f</sub>: 81.5  
 R<sub>g</sub>: 99.2

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



### Test Conditions

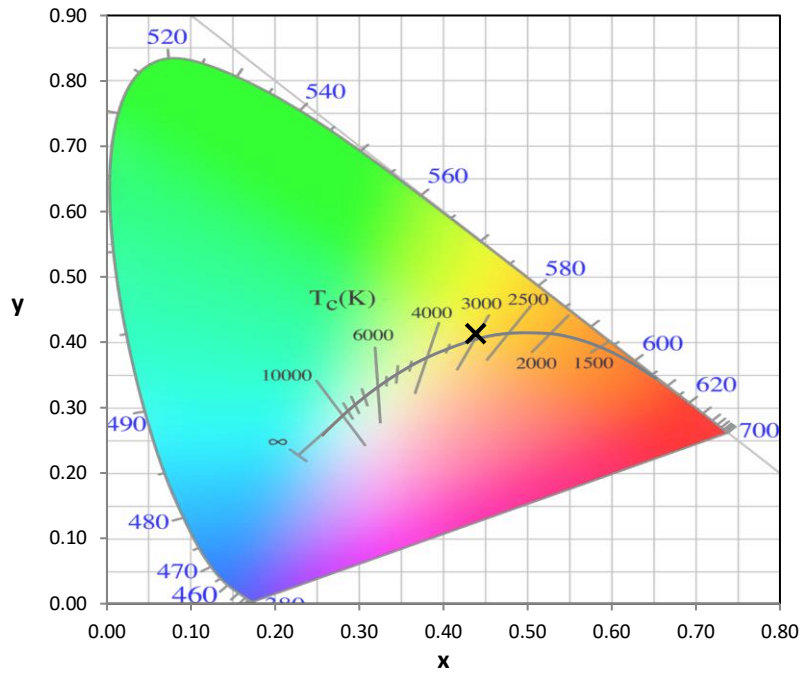
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

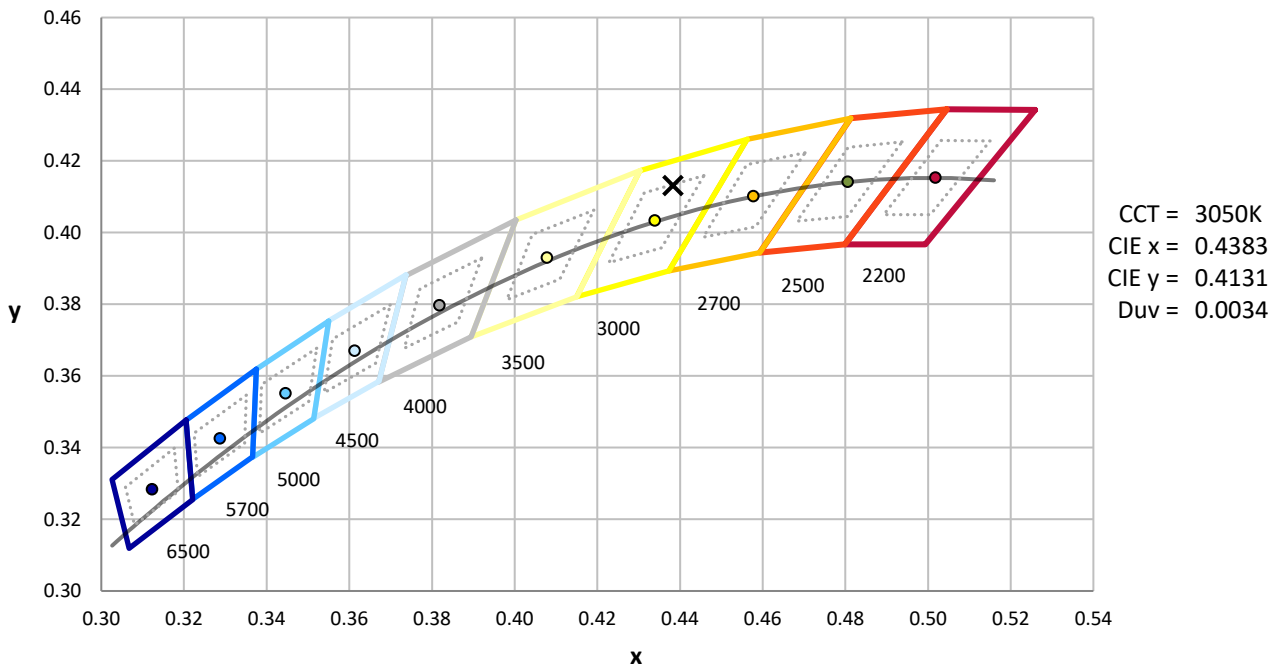
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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           |

REPORT NUMBER: SP1-2408-195-9

**CIE 1931 Chromaticity Diagram**



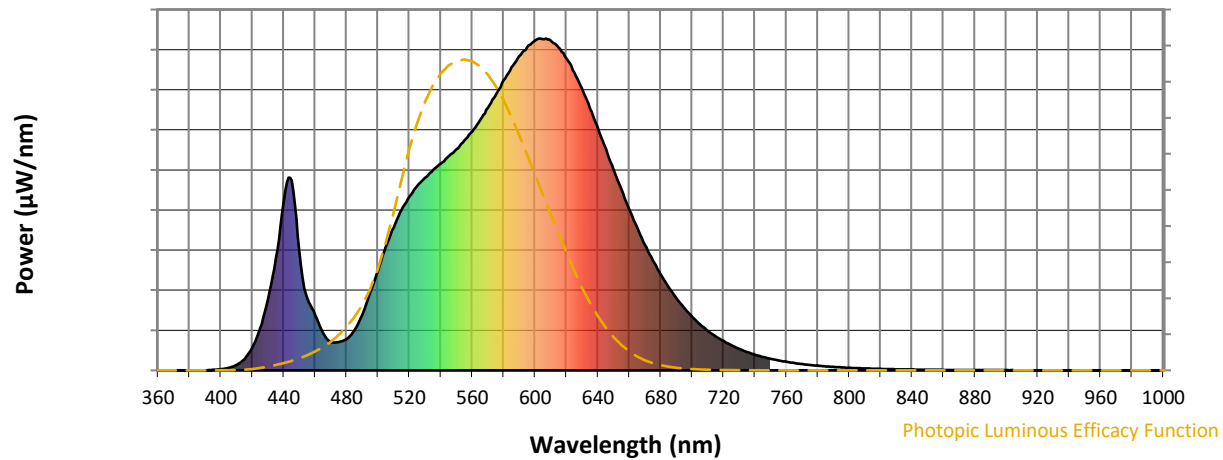
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

### Photopic Flux vs. Wavelength

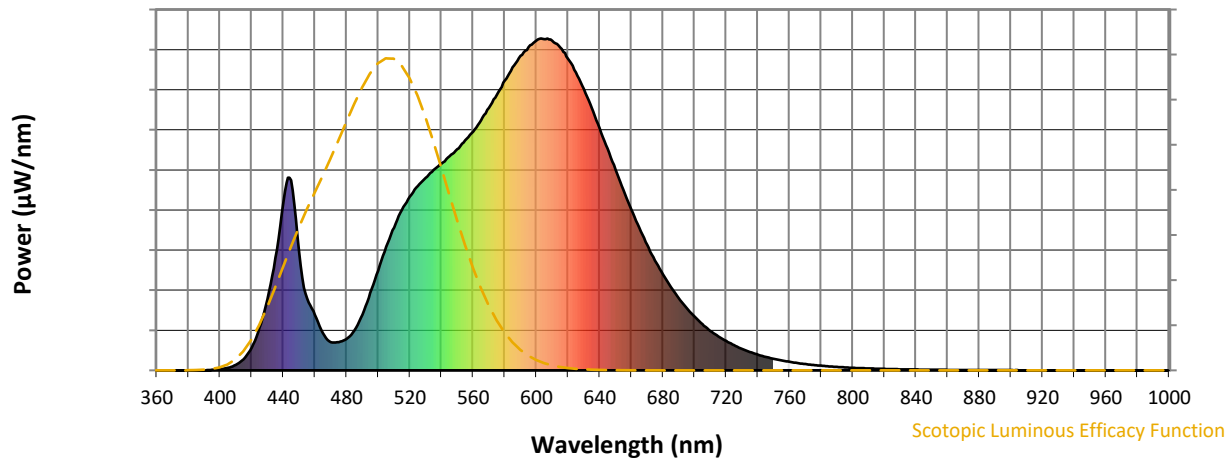


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 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

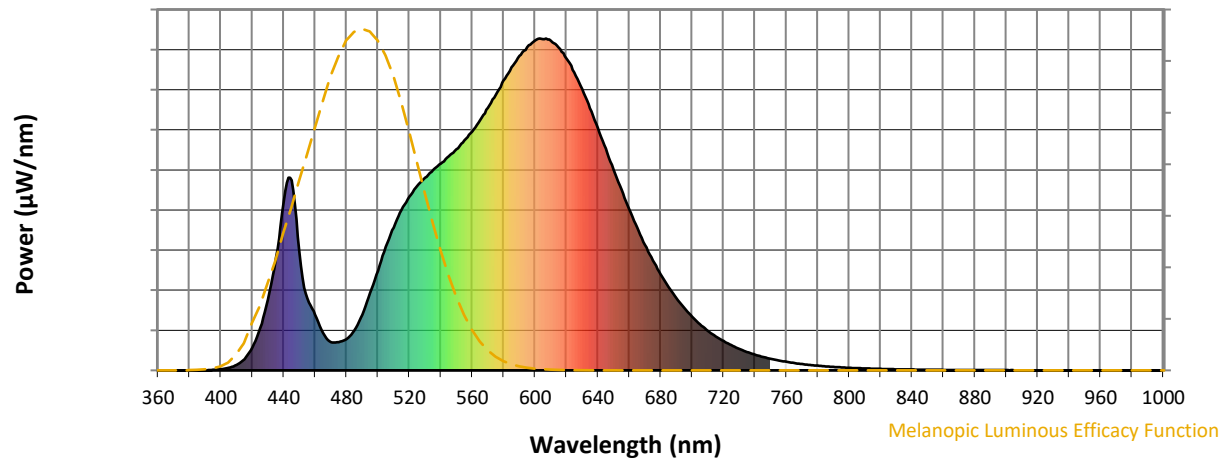
S/P: 1.27

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /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            |        |                          |               |



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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

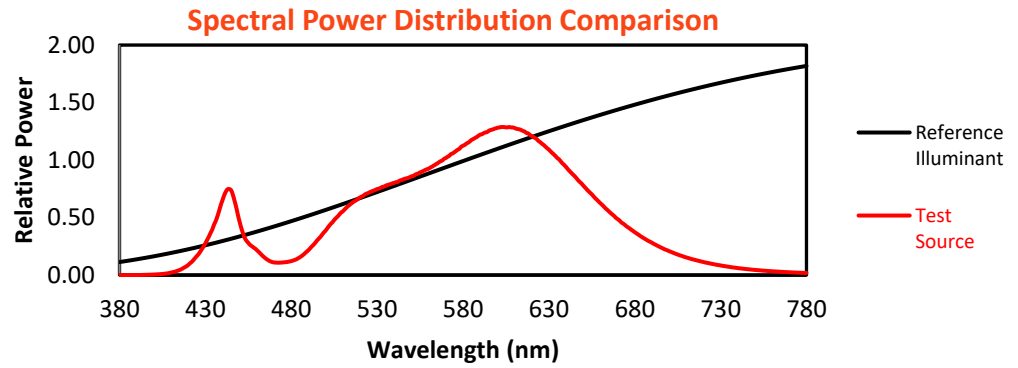
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|
| 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                             |                   |                                        |                                |

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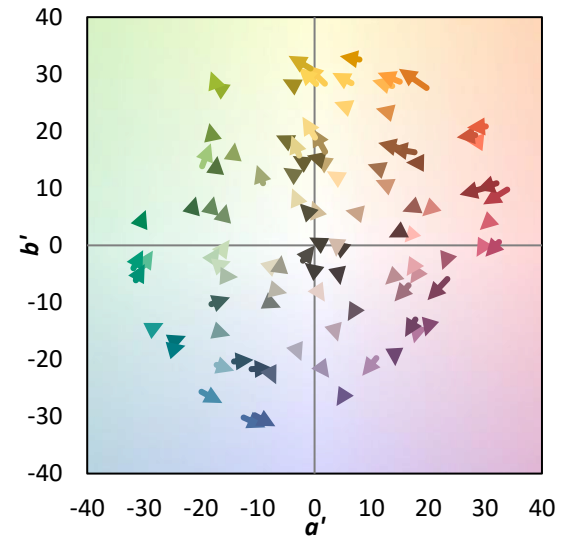
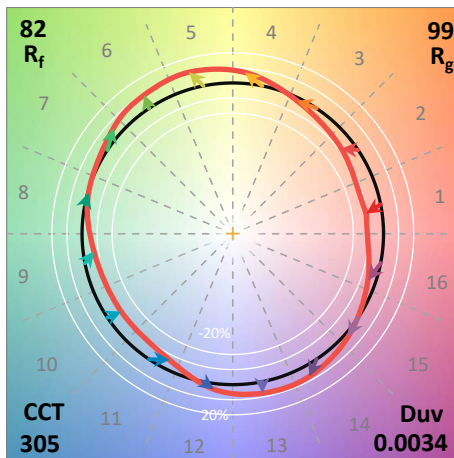
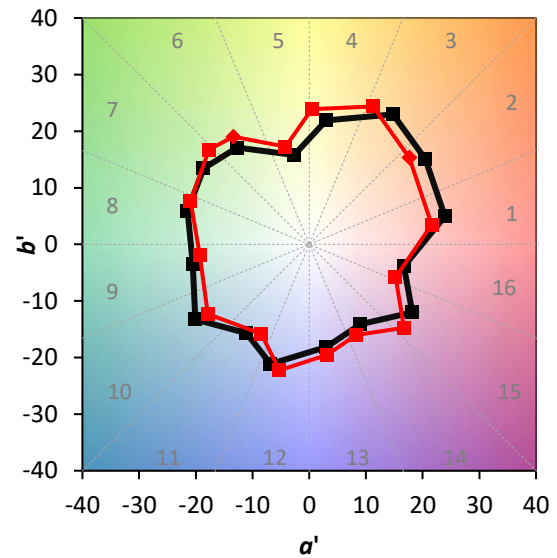
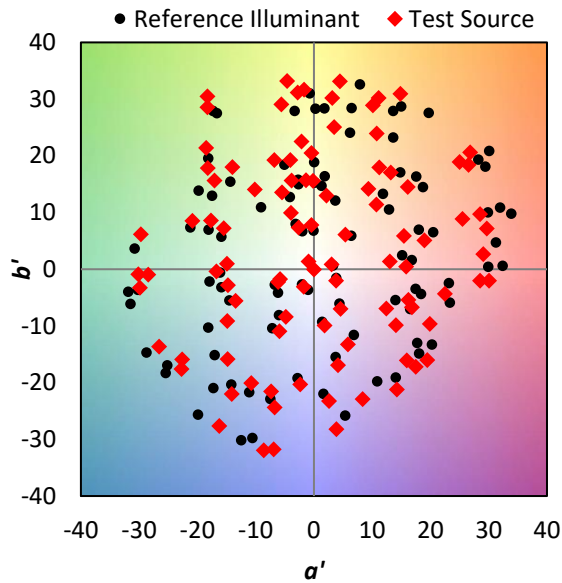
TM-30-18

### Summary

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

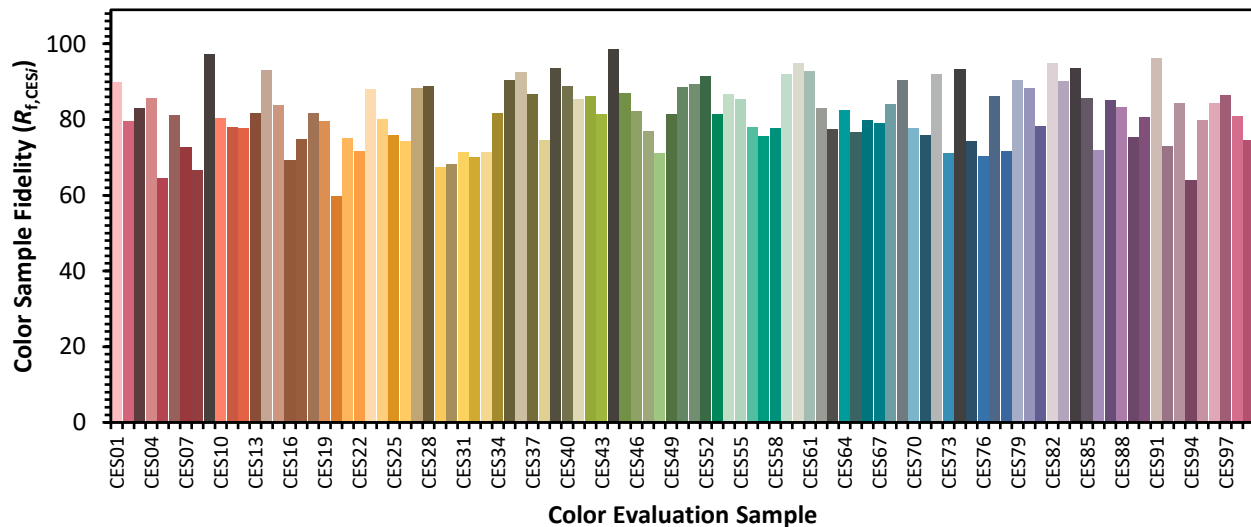


### Color Vector Graphics

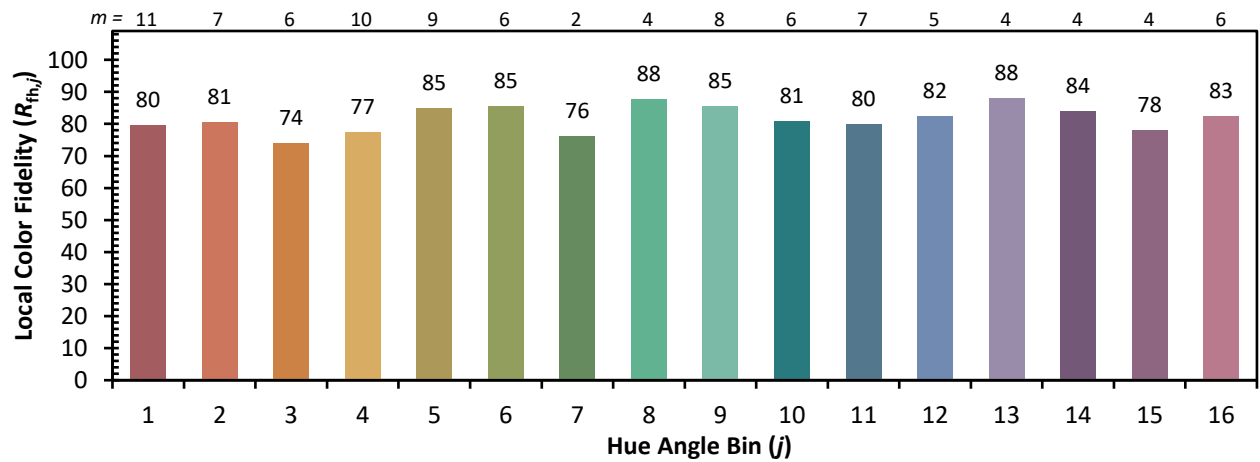
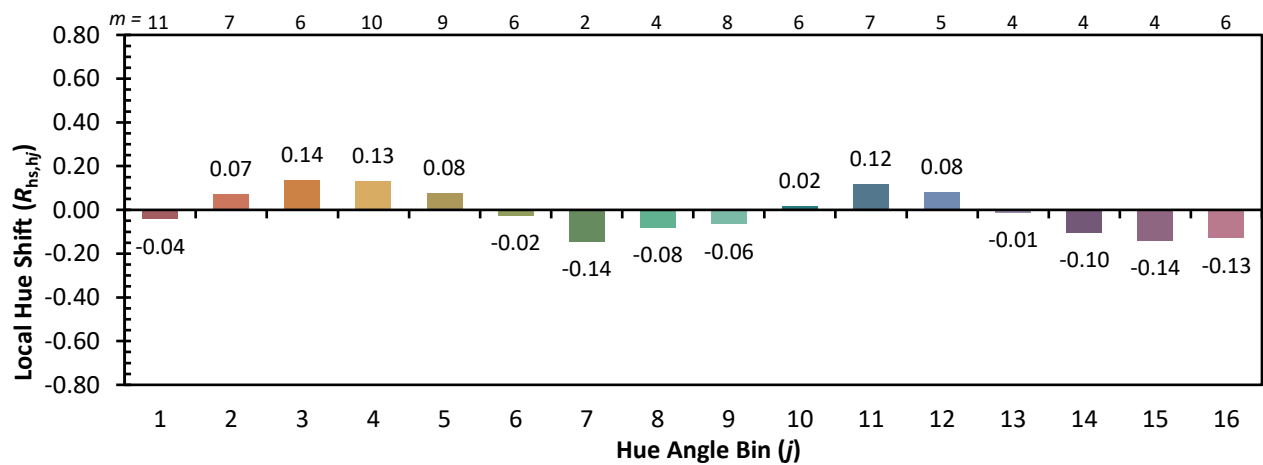
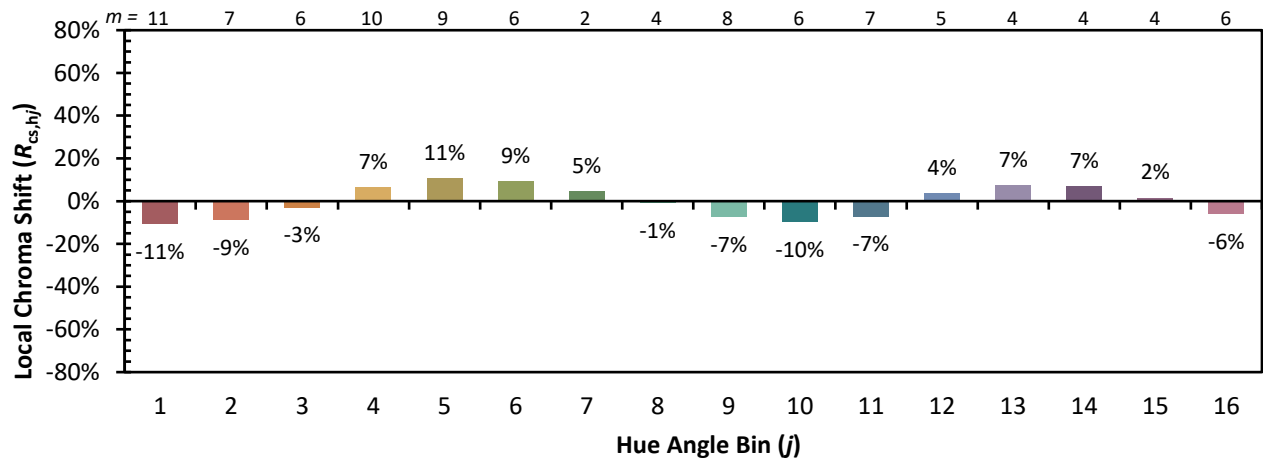


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

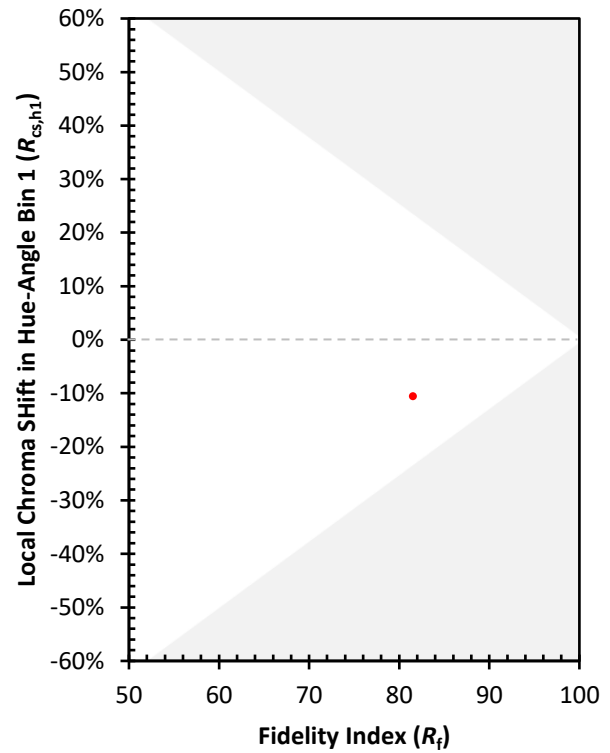
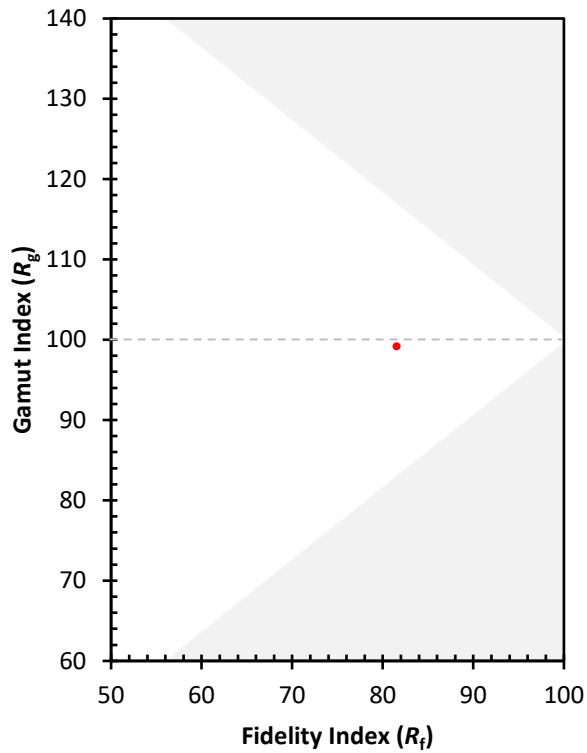
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 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)