

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: P324657

Luminaire Tested: **GLEON-SA3D-830-U-SLR-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P324657  
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-SA3D-830-U-SLR-HSS  
Description: GALLEON AREA AND ROADWAY LUMINAIRE  
(3) 80 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13953 lumens  
Efficiency: N/A  
Efficacy: 73.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Medium  
BUG Rating: B1 - U0 - G2

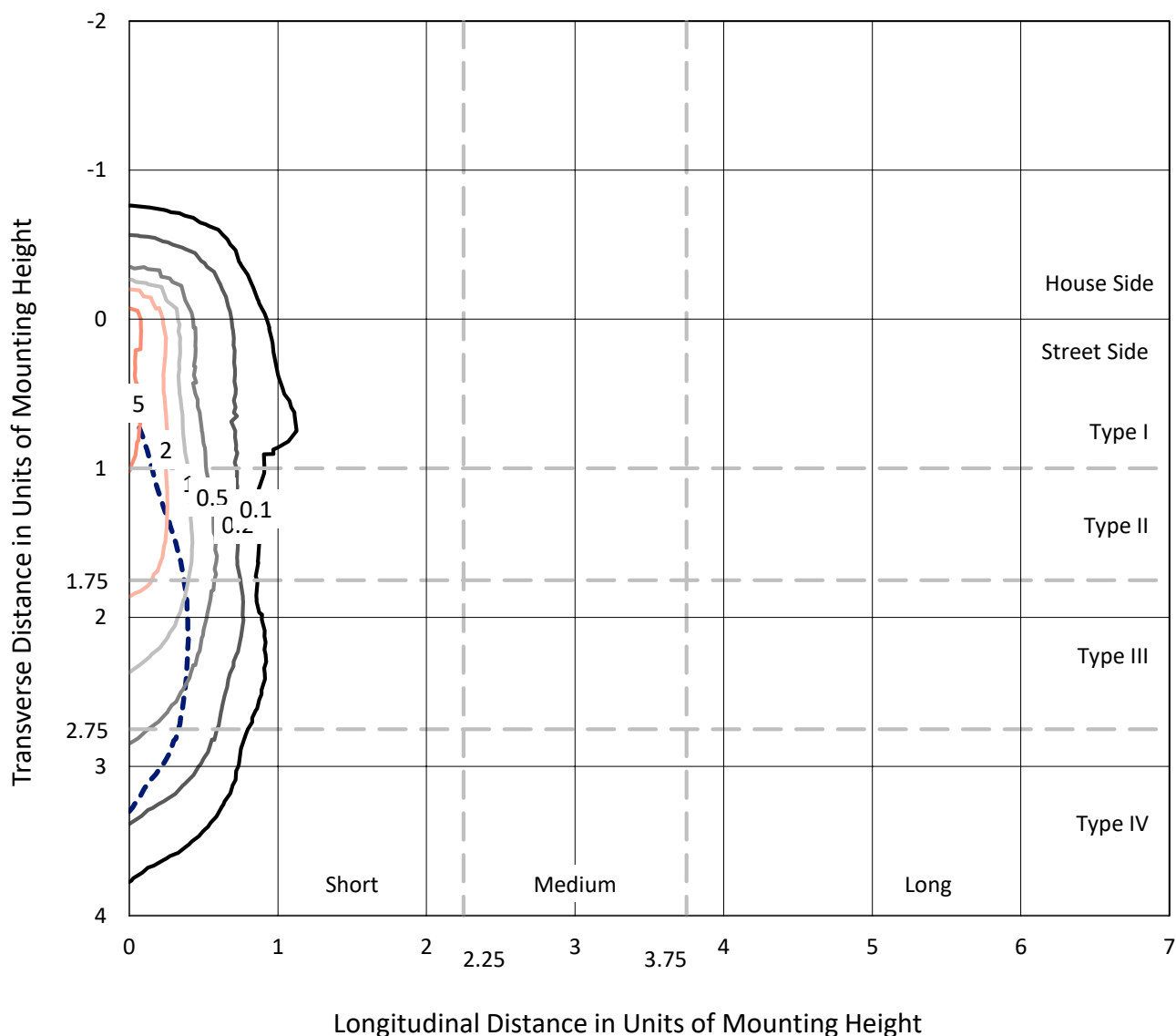
Input Watts (W): 191  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

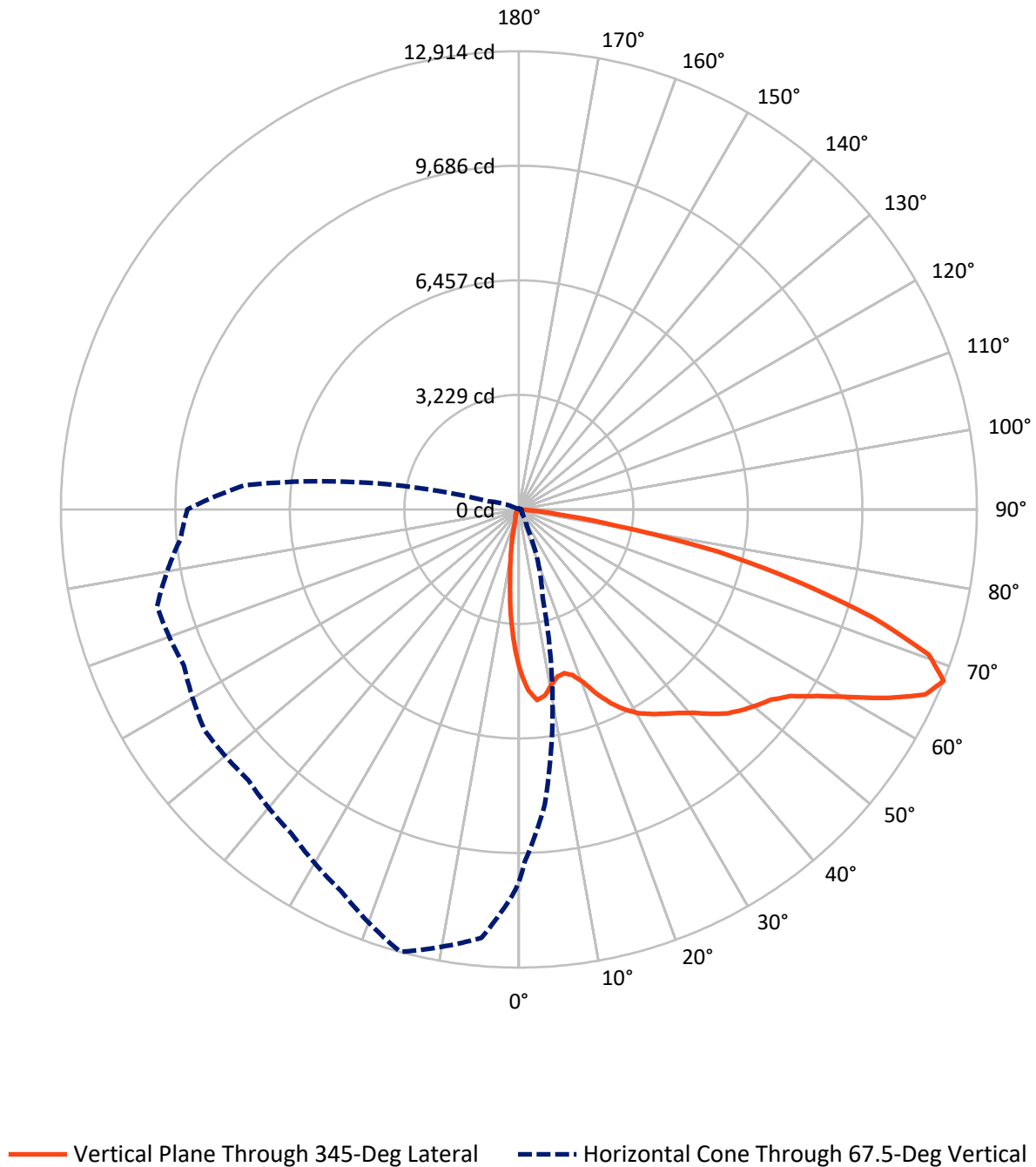
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.3 fc  
 Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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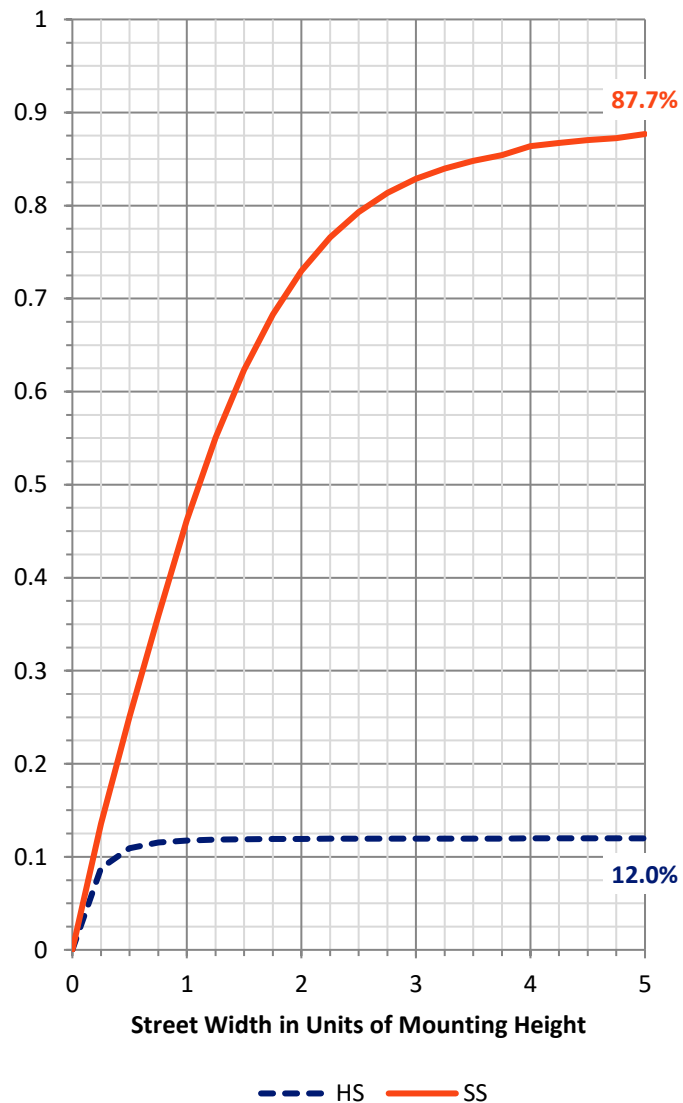
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1688.8   | 0.0    | 1688.8  |
|                    | % Fixture | 12.1     | 0.0    | 12.1    |
| <b>Street Side</b> | Lumens    | 12264.2  | 0.0    | 12264.2 |
|                    | % Fixture | 87.9     | 0.0    | 87.9    |
| <b>Total</b>       | Lumens    | 13953.0  | 0.0    | 13953.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 348.8   | 2.5       |
| 10°-20°   | 694.4   | 5.0       |
| 20°-30°   | 986.0   | 7.1       |
| 30°-40°   | 1456.4  | 10.4      |
| 40°-50°   | 2100.4  | 15.1      |
| 50°-60°   | 2948.5  | 21.1      |
| 60°-70°   | 3437.1  | 24.6      |
| 70°-80°   | 1757.1  | 12.6      |
| 80°-90°   | 224.4   | 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°    | 13953.0 | 100.0     |
| 0°-180°   | 13953.0 | 100.0     |

**Coefficient of Utilization**



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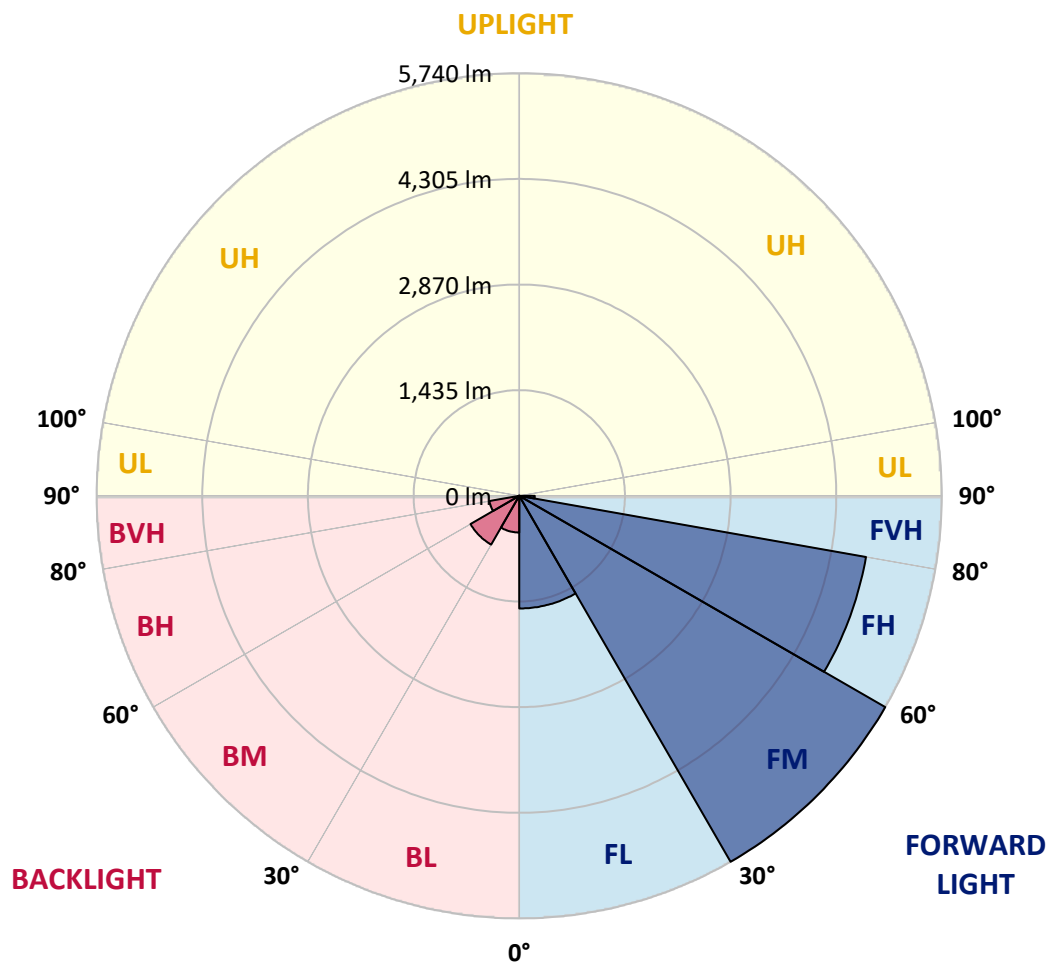
CATALOG NUMBER: GLEON-SA3D-830-U-SLR-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1530.4 | 11.0      |                         |      |         |
| FM   | (30°-60°)   | 5740.5 | 41.1      |                         |      |         |
| FH   | (60°-80°)   | 4782.6 | 34.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 210.8  | 1.5       |                         |      | G2/225  |
| BL   | (0°-30°)    | 498.8  | 3.6       | B1/500                  |      |         |
| BM   | (30°-60°)   | 764.7  | 5.5       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 411.6  | 2.9       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 13.6   | 0.1       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4545.2  | 4545.2  | 4545.2  | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 |
| 2.5°  | 4976.8  | 4938.5  | 4896.2  | 4758.0 | 4629.8 | 4483.0 | 4363.4 | 4280.1 | 4175.7 | 4040.1 | 4005.8 |
| 5°    | 4941.1  | 4900.1  | 4767.3  | 4459.9 | 4190.9 | 3929.1 | 3676.6 | 3528.5 | 3344.8 | 3158.3 | 3112.1 |
| 7.5°  | 4582.2  | 4539.2  | 4347.5  | 3926.5 | 3564.2 | 3186.1 | 2858.2 | 2655.3 | 2447.8 | 2277.2 | 2186.6 |
| 10°   | 4208.7  | 4161.8  | 3946.3  | 3435.3 | 2989.1 | 2647.4 | 2406.8 | 2213.1 | 2016.8 | 1834.3 | 1688.9 |
| 12.5° | 3951.6  | 3890.1  | 3656.1  | 3077.0 | 2688.4 | 2456.3 | 2231.6 | 1999.6 | 1733.9 | 1538.2 | 1378.2 |
| 15°   | 3843.8  | 3773.8  | 3526.5  | 2938.9 | 2581.9 | 2309.6 | 2016.8 | 1731.9 | 1420.5 | 1196.4 | 1049.7 |
| 17.5° | 3927.1  | 3835.9  | 3570.8  | 2929.6 | 2448.4 | 2077.6 | 1707.4 | 1372.9 | 1035.2 | 808.4  | 704.0  |
| 20°   | 4210.0  | 4090.4  | 3753.9  | 2927.0 | 2286.5 | 1801.9 | 1332.6 | 954.5  | 682.2  | 548.6  | 493.8  |
| 22.5° | 4655.6  | 4497.6  | 4017.0  | 2948.1 | 2119.2 | 1512.4 | 962.4  | 648.5  | 512.3  | 442.9  | 410.5  |
| 25°   | 5193.6  | 5010.5  | 4395.8  | 3022.8 | 1972.5 | 1230.8 | 699.4  | 512.3  | 432.3  | 381.4  | 354.3  |
| 27.5° | 5705.3  | 5556.5  | 4874.4  | 3130.6 | 1858.8 | 1003.4 | 567.8  | 434.3  | 369.5  | 335.8  | 314.0  |
| 30°   | 6216.2  | 6029.2  | 5365.5  | 3258.8 | 1722.0 | 849.4  | 499.1  | 396.0  | 331.2  | 295.5  | 281.6  |
| 32.5° | 6587.7  | 6432.4  | 5750.2  | 3351.4 | 1575.9 | 748.9  | 446.2  | 362.2  | 309.4  | 273.0  | 252.5  |
| 35°   | 7024.6  | 6848.8  | 6080.0  | 3371.9 | 1482.0 | 685.5  | 401.2  | 325.9  | 268.4  | 236.0  | 214.2  |
| 37.5° | 7496.6  | 7277.8  | 6460.8  | 3326.9 | 1408.6 | 654.4  | 367.5  | 309.4  | 250.5  | 217.5  | 194.3  |
| 40°   | 8018.8  | 7771.6  | 6826.3  | 3262.1 | 1336.6 | 643.8  | 341.7  | 296.8  | 236.6  | 202.9  | 179.1  |
| 42.5° | 8568.8  | 8277.3  | 7143.0  | 3194.0 | 1291.0 | 607.5  | 339.1  | 284.2  | 226.1  | 189.7  | 165.9  |
| 45°   | 9030.8  | 8735.4  | 7468.2  | 3171.6 | 1258.6 | 567.8  | 350.3  | 275.6  | 218.8  | 179.1  | 156.0  |
| 47.5° | 9399.0  | 9119.4  | 7801.3  | 3221.8 | 1240.1 | 531.5  | 319.3  | 286.9  | 214.8  | 169.9  | 147.4  |
| 50°   | 9838.6  | 9522.0  | 8270.7  | 3371.9 | 1213.0 | 495.1  | 288.9  | 328.5  | 214.8  | 163.9  | 140.1  |
| 52.5° | 10389.9 | 10076.6 | 8794.2  | 3604.5 | 1158.8 | 444.9  | 259.8  | 329.2  | 216.8  | 156.0  | 130.9  |
| 55°   | 11083.3 | 10855.9 | 9541.8  | 3859.7 | 1072.2 | 370.8  | 224.7  | 282.9  | 208.9  | 141.5  | 122.3  |
| 57.5° | 11748.3 | 11562.5 | 10223.3 | 4034.2 | 956.5  | 289.5  | 195.7  | 228.1  | 191.0  | 124.3  | 109.1  |
| 59°   | 11930.1 | 11727.1 | 10473.2 | 4042.1 | 869.9  | 252.5  | 181.1  | 188.4  | 187.1  | 116.3  | 101.1  |
| 60°   | 11930.1 | 11714.6 | 10545.2 | 3999.8 | 807.1  | 232.0  | 171.9  | 167.9  | 195.0  | 111.1  | 96.5   |
| 62.5° | 11713.9 | 11411.2 | 10311.2 | 3713.6 | 658.4  | 197.6  | 150.1  | 138.8  | 175.2  | 99.8   | 85.3   |
| 65°   | 11264.4 | 10823.5 | 9514.0  | 3196.0 | 587.0  | 181.1  | 129.6  | 113.7  | 121.6  | 87.9   | 74.7   |
| 67.5° | 10514.8 | 9917.3  | 8364.5  | 2581.9 | 558.6  | 176.5  | 111.7  | 96.5   | 91.9   | 75.4   | 65.4   |
| 70°   | 9194.8  | 8531.8  | 6969.1  | 2030.0 | 534.1  | 174.5  | 93.9   | 81.3   | 74.0   | 63.5   | 55.5   |
| 72.5° | 6692.2  | 6000.7  | 4947.7  | 1587.1 | 519.6  | 178.5  | 75.4   | 68.1   | 60.8   | 49.6   | 43.0   |
| 75°   | 3828.0  | 3375.2  | 2780.9  | 1048.4 | 442.9  | 170.5  | 58.2   | 56.8   | 43.6   | 35.7   | 29.7   |
| 77.5° | 1977.8  | 1917.6  | 1666.4  | 402.6  | 212.2  | 74.7   | 38.3   | 33.1   | 25.8   | 21.8   | 17.8   |
| 80°   | 853.4   | 844.1   | 730.4   | 116.3  | 56.2   | 41.6   | 21.8   | 13.9   | 11.9   | 9.3    | 7.3    |
| 82.5° | 294.8   | 294.8   | 259.8   | 39.0   | 25.1   | 20.5   | 2.6    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 59.5    | 66.8    | 46.9    | 0.0    | 8.6    | 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 |
| 2.5°  | 3964.1 | 3884.1 | 3878.9 | 3828.6 | 3765.8 | 3737.4 | 3720.9 | 3750.0 | 3785.7 | 3789.6 | 3843.2 |
| 5°    | 3077.0 | 2993.1 | 3028.1 | 2938.9 | 2956.7 | 2938.9 | 2909.8 | 2915.1 | 2931.0 | 2881.4 | 2942.9 |
| 7.5°  | 2160.9 | 2097.4 | 2137.7 | 2113.9 | 2145.7 | 2158.2 | 2140.4 | 2113.9 | 2035.9 | 2026.7 | 2080.2 |
| 10°   | 1628.7 | 1556.7 | 1513.7 | 1468.8 | 1478.7 | 1499.2 | 1492.6 | 1473.4 | 1423.8 | 1426.5 | 1478.0 |
| 12.5° | 1308.8 | 1228.2 | 1142.9 | 1032.5 | 1005.4 | 1020.6 | 1005.4 | 994.2  | 946.6  | 950.5  | 996.2  |
| 15°   | 992.8  | 926.7  | 837.5  | 748.9  | 700.7  | 705.3  | 663.0  | 633.3  | 603.5  | 567.8  | 595.6  |
| 17.5° | 670.3  | 630.0  | 603.5  | 577.1  | 519.6  | 506.3  | 452.8  | 395.3  | 372.8  | 356.3  | 368.2  |
| 20°   | 474.6  | 452.8  | 442.2  | 440.9  | 407.8  | 391.3  | 339.1  | 303.4  | 292.2  | 288.9  | 296.1  |
| 22.5° | 396.6  | 380.7  | 365.5  | 357.0  | 340.4  | 321.3  | 281.6  | 263.7  | 255.8  | 251.8  | 257.1  |
| 25°   | 345.1  | 333.2  | 317.3  | 302.7  | 296.1  | 275.6  | 247.2  | 234.0  | 228.7  | 224.7  | 227.4  |
| 27.5° | 306.7  | 296.1  | 277.6  | 268.4  | 263.1  | 245.2  | 220.8  | 210.2  | 205.6  | 204.3  | 203.6  |
| 30°   | 276.3  | 266.4  | 249.2  | 238.6  | 229.4  | 213.5  | 199.0  | 188.4  | 183.8  | 182.4  | 181.1  |
| 32.5° | 245.9  | 238.0  | 226.7  | 216.2  | 206.2  | 191.7  | 179.1  | 170.5  | 163.3  | 161.9  | 161.3  |
| 35°   | 207.6  | 199.6  | 193.7  | 193.0  | 183.8  | 169.9  | 160.6  | 149.4  | 143.4  | 141.5  | 142.1  |
| 37.5° | 184.4  | 173.8  | 160.6  | 165.3  | 162.6  | 152.7  | 140.1  | 128.9  | 122.9  | 121.6  | 121.6  |
| 40°   | 169.9  | 158.6  | 143.4  | 135.5  | 143.4  | 141.5  | 121.6  | 110.4  | 104.4  | 103.8  | 102.5  |
| 42.5° | 156.0  | 144.8  | 127.6  | 114.4  | 118.3  | 124.3  | 105.1  | 94.5   | 88.6   | 87.3   | 85.3   |
| 45°   | 146.1  | 134.2  | 115.0  | 99.8   | 91.9   | 104.4  | 89.9   | 76.7   | 73.4   | 70.7   | 69.4   |
| 47.5° | 136.8  | 125.6  | 103.8  | 86.6   | 73.4   | 75.4   | 72.1   | 62.8   | 58.8   | 56.2   | 55.5   |
| 50°   | 128.9  | 117.0  | 93.9   | 74.0   | 60.8   | 55.5   | 58.2   | 49.6   | 46.3   | 43.6   | 42.3   |
| 52.5° | 119.6  | 108.4  | 83.3   | 64.1   | 50.9   | 43.6   | 44.3   | 39.0   | 35.7   | 33.7   | 33.1   |
| 55°   | 112.4  | 101.1  | 74.7   | 56.2   | 44.9   | 35.7   | 31.7   | 30.4   | 28.4   | 27.1   | 26.4   |
| 57.5° | 102.5  | 91.9   | 66.1   | 47.6   | 38.3   | 29.1   | 24.5   | 24.5   | 23.8   | 22.5   | 21.8   |
| 59°   | 96.5   | 87.3   | 60.8   | 43.0   | 35.0   | 25.1   | 21.8   | 22.5   | 21.8   | 20.5   | 19.8   |
| 60°   | 91.9   | 83.3   | 56.8   | 39.7   | 33.1   | 23.1   | 19.8   | 21.2   | 20.5   | 19.2   | 18.5   |
| 62.5° | 81.3   | 75.4   | 48.9   | 33.1   | 29.1   | 18.5   | 16.5   | 17.8   | 17.8   | 17.2   | 16.5   |
| 65°   | 71.4   | 64.8   | 41.6   | 27.8   | 27.1   | 15.9   | 13.2   | 15.9   | 16.5   | 15.2   | 13.9   |
| 67.5° | 62.1   | 55.5   | 36.4   | 22.5   | 25.1   | 12.6   | 9.9    | 13.2   | 17.8   | 13.9   | 12.6   |
| 70°   | 52.9   | 46.3   | 28.4   | 17.8   | 26.4   | 8.6    | 7.9    | 11.9   | 21.2   | 15.2   | 11.9   |
| 72.5° | 41.0   | 35.7   | 19.8   | 13.2   | 28.4   | 5.9    | 5.9    | 9.9    | 23.8   | 16.5   | 11.2   |
| 75°   | 28.4   | 23.1   | 11.9   | 7.9    | 23.1   | 4.0    | 4.0    | 9.3    | 22.5   | 15.2   | 10.6   |
| 77.5° | 16.5   | 12.6   | 4.0    | 0.7    | 11.9   | 0.0    | 0.7    | 6.6    | 15.9   | 9.3    | 4.6    |
| 80°   | 5.9    | 2.6    | 0.0    | 0.0    | 7.3    | 0.0    | 0.0    | 0.0    | 1.3    | 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°    | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2 | 4545.2  | 4545.2  |
| 2.5°  | 3857.0 | 3946.3 | 4026.3 | 4147.2 | 4290.7 | 4455.9 | 4598.0 | 4750.7 | 4894.2 | 4953.7  | 4994.7  |
| 5°    | 2955.4 | 3065.8 | 3194.7 | 3372.5 | 3609.2 | 3900.7 | 4173.7 | 4482.4 | 4814.2 | 4980.1  | 5136.1  |
| 7.5°  | 2089.5 | 2201.9 | 2361.8 | 2550.9 | 2837.1 | 3184.1 | 3541.1 | 3967.4 | 4416.9 | 4679.4  | 4937.8  |
| 10°   | 1502.5 | 1640.6 | 1790.0 | 2048.5 | 2339.3 | 2668.5 | 3036.1 | 3512.0 | 4013.0 | 4303.9  | 4615.2  |
| 12.5° | 1022.6 | 1179.9 | 1406.0 | 1695.5 | 2037.3 | 2359.8 | 2679.1 | 3133.2 | 3714.9 | 4003.1  | 4336.9  |
| 15°   | 613.4  | 700.7  | 940.0  | 1275.1 | 1694.2 | 2096.1 | 2445.8 | 2901.2 | 3521.2 | 3874.2  | 4221.3  |
| 17.5° | 378.1  | 418.4  | 548.6  | 823.6  | 1263.9 | 1772.2 | 2251.4 | 2822.5 | 3549.0 | 3978.7  | 4350.2  |
| 20°   | 301.4  | 317.3  | 358.9  | 486.5  | 837.5  | 1415.2 | 2032.6 | 2806.7 | 3775.7 | 4304.6  | 4703.1  |
| 22.5° | 261.8  | 277.0  | 304.7  | 353.6  | 526.8  | 1059.6 | 1825.1 | 2821.2 | 4101.0 | 4793.0  | 5258.4  |
| 25°   | 230.7  | 243.9  | 270.4  | 310.7  | 386.0  | 746.3  | 1603.0 | 2886.0 | 4524.7 | 5399.2  | 5893.6  |
| 27.5° | 206.2  | 217.5  | 241.9  | 278.9  | 331.2  | 520.9  | 1351.1 | 2964.7 | 5027.0 | 6019.2  | 6507.1  |
| 30°   | 183.8  | 193.7  | 215.5  | 249.9  | 287.5  | 400.6  | 1074.8 | 3018.2 | 5530.1 | 6507.1  | 6945.3  |
| 32.5° | 164.6  | 171.9  | 191.7  | 220.8  | 249.9  | 319.3  | 817.0  | 3009.6 | 5903.6 | 6912.9  | 7260.6  |
| 35°   | 144.8  | 152.0  | 169.2  | 194.3  | 217.5  | 263.7  | 642.5  | 2849.0 | 6228.8 | 7334.0  | 7621.5  |
| 37.5° | 122.9  | 132.2  | 148.7  | 171.2  | 187.1  | 232.0  | 519.6  | 2655.3 | 6558.6 | 7815.2  | 8024.1  |
| 40°   | 104.4  | 113.7  | 128.2  | 152.7  | 162.6  | 220.1  | 399.3  | 2419.3 | 6929.5 | 8353.3  | 8465.7  |
| 42.5° | 86.6   | 95.2   | 110.4  | 131.5  | 153.4  | 189.7  | 295.5  | 2149.6 | 7285.7 | 8813.4  | 8868.2  |
| 45°   | 70.1   | 78.7   | 94.5   | 115.7  | 163.9  | 157.3  | 228.7  | 1860.8 | 7573.3 | 9196.1  | 9213.9  |
| 47.5° | 55.5   | 63.5   | 80.0   | 109.1  | 152.7  | 125.6  | 163.3  | 1634.0 | 7814.6 | 9494.9  | 9447.9  |
| 50°   | 43.0   | 49.6   | 66.8   | 124.9  | 133.5  | 103.8  | 123.6  | 1558.7 | 8030.7 | 9680.0  | 9558.3  |
| 52.5° | 33.7   | 39.7   | 54.9   | 117.0  | 103.8  | 85.9   | 103.8  | 1629.4 | 8326.9 | 9833.3  | 9620.5  |
| 55°   | 27.1   | 33.1   | 43.0   | 66.8   | 70.7   | 72.7   | 88.6   | 1695.5 | 8837.8 | 10192.9 | 9987.3  |
| 57.5° | 22.5   | 28.4   | 35.0   | 46.9   | 53.5   | 61.5   | 78.7   | 1702.8 | 9440.0 | 10790.5 | 10596.1 |
| 59°   | 20.5   | 25.8   | 31.7   | 41.6   | 46.9   | 56.2   | 74.0   | 1663.1 | 9652.2 | 11007.9 | 10910.8 |
| 60°   | 19.2   | 24.5   | 29.7   | 38.3   | 43.6   | 52.9   | 71.4   | 1625.4 | 9661.4 | 11000.0 | 11045.0 |
| 62.5° | 16.5   | 21.8   | 26.4   | 32.4   | 37.0   | 44.9   | 64.1   | 1486.0 | 9270.1 | 10639.8 | 10964.3 |
| 65°   | 14.5   | 19.2   | 23.8   | 27.8   | 31.7   | 40.3   | 58.2   | 1231.5 | 8601.8 | 10058.7 | 10412.4 |
| 67.5° | 13.2   | 16.5   | 21.8   | 24.5   | 28.4   | 35.7   | 51.6   | 877.8  | 7767.0 | 9348.1  | 9577.5  |
| 70°   | 11.9   | 15.9   | 19.8   | 22.5   | 25.8   | 31.1   | 44.3   | 504.4  | 6558.6 | 8307.7  | 8471.0  |
| 72.5° | 11.2   | 15.2   | 17.8   | 21.2   | 23.1   | 27.8   | 40.3   | 237.3  | 4802.3 | 6655.1  | 7081.5  |
| 75°   | 9.9    | 13.9   | 16.5   | 19.8   | 21.8   | 25.1   | 34.4   | 113.7  | 3194.0 | 4816.2  | 5300.7  |
| 77.5° | 5.9    | 11.2   | 15.2   | 17.8   | 19.2   | 21.8   | 28.4   | 65.4   | 2038.6 | 3333.5  | 3926.5  |
| 80°   | 0.0    | 4.0    | 11.2   | 15.2   | 16.5   | 18.5   | 21.8   | 51.6   | 1090.7 | 1904.4  | 2285.8  |
| 82.5° | 0.0    | 0.0    | 7.9    | 11.9   | 11.2   | 12.6   | 16.5   | 32.4   | 491.8  | 1244.7  | 1402.7  |
| 85°   | 0.0    | 0.0    | 2.6    | 9.3    | 7.9    | 5.9    | 11.2   | 11.2   | 107.7  | 630.0   | 786.0   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.7    | 4.0    | 2.6    | 4.6    | 1.3    | 0.7    | 46.9    | 190.4   |
| 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: P324657

CATALOG NUMBER: GLEON-SA3D-830-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°    | 295°    | 305°    | 315°    | 325°    | 335°    | 345°    | 355°    | 359°    | 360°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 4545.2  | 4545.2  | 4545.2  | 4545.2  | 4545.2  | 4545.2  | 4545.2  | 4545.2  | 4545.2  | 4545.2  |
| 2.5°  | 5138.1  | 5187.0  | 5269.6  | 5308.6  | 5289.5  | 5208.2  | 5111.0  | 5011.8  | 4953.7  | 4976.8  |
| 5°    | 5454.1  | 5705.9  | 5851.3  | 5899.6  | 5818.9  | 5636.5  | 5397.9  | 5083.2  | 4971.5  | 4941.1  |
| 7.5°  | 5454.1  | 5928.0  | 6228.1  | 6281.0  | 6101.2  | 5743.6  | 5296.1  | 4804.9  | 4641.7  | 4582.2  |
| 10°   | 5262.4  | 5907.5  | 6325.9  | 6409.9  | 6158.7  | 5623.9  | 5024.4  | 4463.9  | 4270.2  | 4208.7  |
| 12.5° | 5046.2  | 5740.9  | 6181.8  | 6297.5  | 6091.3  | 5505.0  | 4836.0  | 4233.2  | 4005.1  | 3951.6  |
| 15°   | 4913.4  | 5536.0  | 5900.9  | 5984.9  | 5897.6  | 5435.6  | 4791.1  | 4163.8  | 3895.4  | 3843.8  |
| 17.5° | 4960.9  | 5377.4  | 5508.9  | 5557.8  | 5616.7  | 5411.1  | 4913.4  | 4315.8  | 3976.0  | 3927.1  |
| 20°   | 5140.1  | 5210.1  | 5142.1  | 5203.5  | 5362.2  | 5434.9  | 5204.9  | 4683.3  | 4275.5  | 4210.0  |
| 22.5° | 5444.1  | 5123.6  | 4932.5  | 4957.0  | 5150.0  | 5513.6  | 5650.4  | 5208.2  | 4737.5  | 4655.6  |
| 25°   | 5798.5  | 5193.6  | 4816.2  | 4794.4  | 4992.7  | 5617.3  | 6057.6  | 5779.3  | 5284.2  | 5193.6  |
| 27.5° | 6244.0  | 5350.9  | 4792.4  | 4770.6  | 4937.8  | 5714.5  | 6396.0  | 6343.8  | 5859.9  | 5705.3  |
| 30°   | 6587.7  | 5505.6  | 4863.1  | 4812.9  | 4992.7  | 5781.9  | 6667.7  | 6823.0  | 6318.7  | 6216.2  |
| 32.5° | 6834.3  | 5688.1  | 4978.1  | 4905.4  | 5147.4  | 5898.3  | 6877.2  | 7262.0  | 6743.1  | 6587.7  |
| 35°   | 7022.0  | 5886.4  | 5163.9  | 5044.2  | 5360.2  | 6074.8  | 7073.6  | 7729.3  | 7194.5  | 7024.6  |
| 37.5° | 7197.8  | 6164.7  | 5454.1  | 5311.3  | 5694.0  | 6359.0  | 7281.1  | 8259.4  | 7699.5  | 7496.6  |
| 40°   | 7443.1  | 6480.0  | 5901.6  | 5774.7  | 6255.2  | 6746.4  | 7540.2  | 8812.0  | 8274.0  | 8018.8  |
| 42.5° | 7688.3  | 6818.4  | 6359.7  | 6394.0  | 6955.2  | 7217.0  | 7874.7  | 9396.4  | 8841.1  | 8568.8  |
| 45°   | 7912.4  | 7167.4  | 7012.1  | 7170.7  | 7605.0  | 7733.3  | 8207.2  | 9734.2  | 9293.9  | 9030.8  |
| 47.5° | 8112.0  | 7603.7  | 7660.5  | 8082.9  | 8344.0  | 8200.6  | 8455.7  | 10025.7 | 9631.0  | 9399.0  |
| 50°   | 8344.0  | 8168.2  | 8515.2  | 9112.8  | 9194.8  | 8623.6  | 8681.8  | 10370.7 | 10025.0 | 9838.6  |
| 52.5° | 8597.9  | 8763.1  | 9461.8  | 9988.7  | 9962.2  | 9083.1  | 8909.2  | 10757.4 | 10565.1 | 10389.9 |
| 55°   | 8886.1  | 9243.7  | 10295.4 | 10808.3 | 10785.8 | 9596.0  | 9286.0  | 11235.3 | 11241.9 | 11083.3 |
| 57.5° | 9313.8  | 9657.5  | 10861.2 | 11471.3 | 11509.0 | 10188.3 | 9924.5  | 11770.8 | 11854.0 | 11748.3 |
| 59°   | 9620.5  | 9925.9  | 11085.3 | 11748.3 | 11901.6 | 10646.4 | 10391.2 | 12081.4 | 12026.6 | 11930.1 |
| 60°   | 9847.9  | 10096.4 | 11196.3 | 11893.0 | 12129.7 | 10957.0 | 10735.6 | 12263.9 | 12047.1 | 11930.1 |
| 62.5° | 10410.4 | 10467.9 | 11396.6 | 12057.0 | 12392.1 | 11647.1 | 11704.7 | 12574.6 | 11904.9 | 11713.9 |
| 65°   | 10672.8 | 10702.6 | 11394.0 | 11763.5 | 12138.3 | 12184.6 | 12583.8 | 12583.8 | 11557.9 | 11264.4 |
| 67.5° | 10563.1 | 10419.6 | 10828.8 | 10790.5 | 11164.6 | 11865.3 | 12914.3 | 12122.4 | 10894.2 | 10514.8 |
| 70°   | 9670.7  | 9118.8  | 8937.0  | 8953.5  | 9239.7  | 10320.5 | 12259.9 | 10764.7 | 9638.3  | 9194.8  |
| 72.5° | 8046.6  | 6722.6  | 6273.7  | 6786.0  | 6860.7  | 7931.6  | 10448.1 | 8106.7  | 7107.9  | 6692.2  |
| 75°   | 6472.0  | 4738.8  | 4009.1  | 4549.8  | 4676.7  | 5804.4  | 8082.3  | 5048.9  | 4151.9  | 3828.0  |
| 77.5° | 4649.6  | 3401.6  | 2876.8  | 2839.1  | 3003.0  | 3681.2  | 5735.0  | 2541.0  | 2119.2  | 1977.8  |
| 80°   | 2641.4  | 2238.9  | 2410.7  | 2274.6  | 2357.2  | 2301.7  | 2724.7  | 1114.5  | 912.9   | 853.4   |
| 82.5° | 1594.4  | 1323.4  | 1433.1  | 1193.1  | 1509.8  | 1314.8  | 1049.7  | 357.0   | 310.0   | 294.8   |
| 85°   | 1037.1  | 723.2   | 376.8   | 252.5   | 520.2   | 840.2   | 234.7   | 97.2    | 74.7    | 59.5    |
| 87.5° | 357.6   | 184.4   | 18.5    | 7.9     | 55.5    | 156.7   | 8.6     | 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

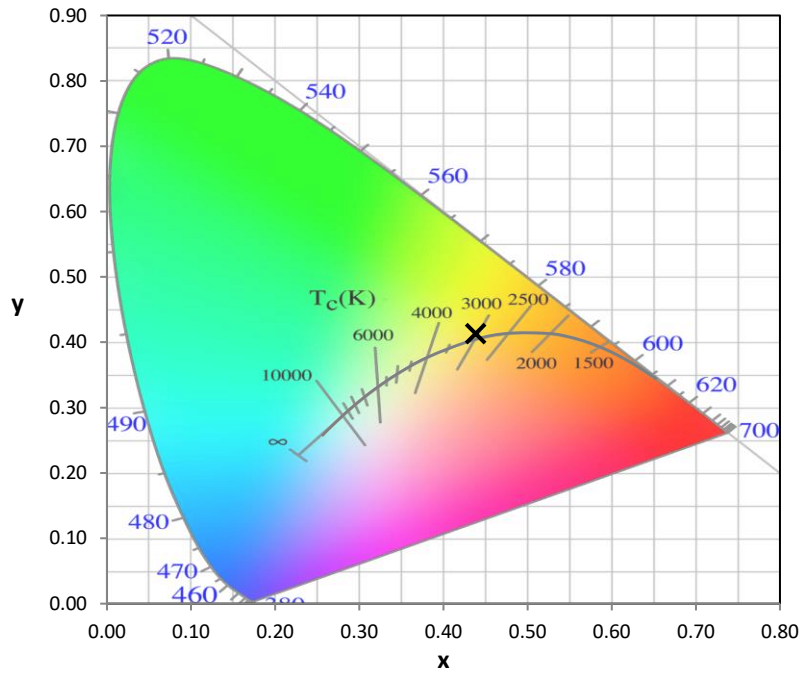
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

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

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

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

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



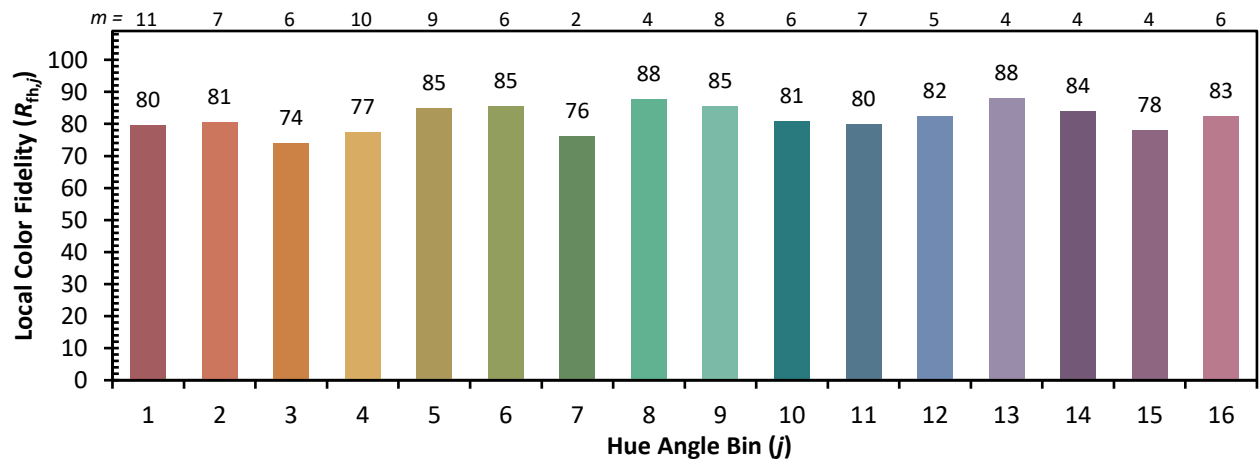
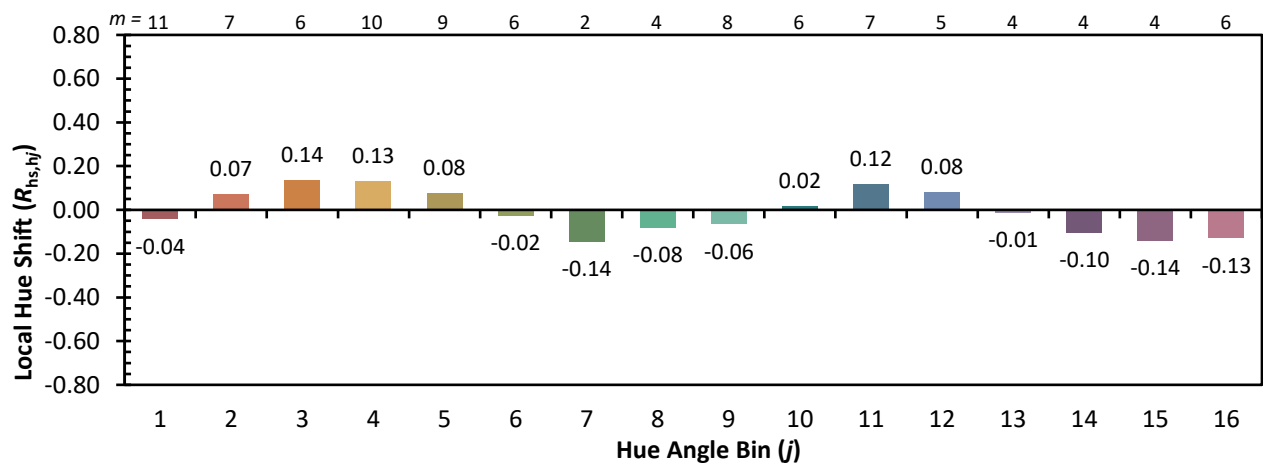
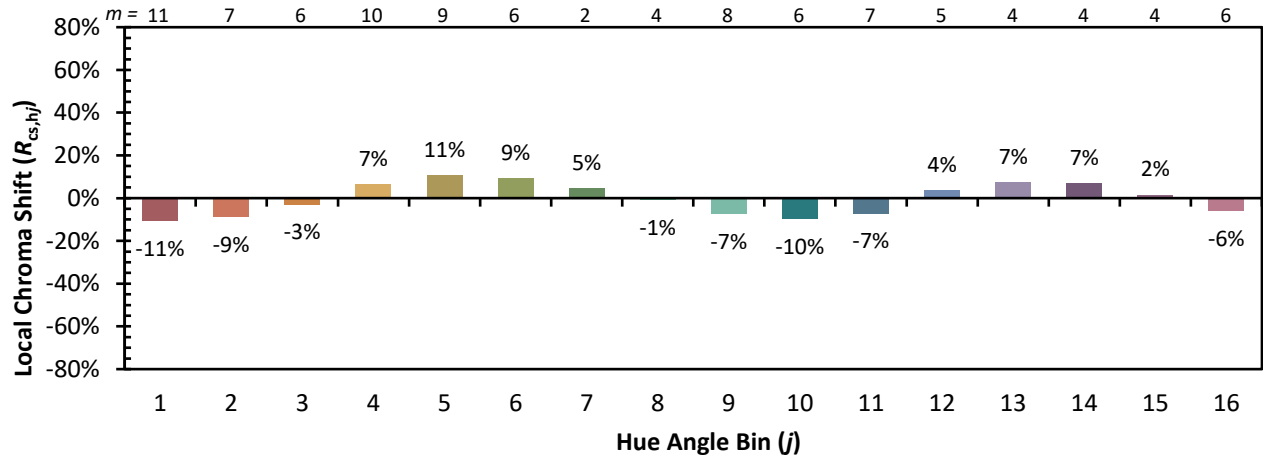
### Color Vector Graphics



**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)