

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



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

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1047750

Luminaire Tested: **GALN-SA5B-730-U-T2BC**

Issue Date: 07/10/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1047750  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 07/10/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GALN-SA5B-730-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 5xLight Square PACKAGE  
70CRI 3000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (70) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 21579.1 lumens  
Efficiency: N/A  
Efficacy: 120.7 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G3

Input Watts (W): 178.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

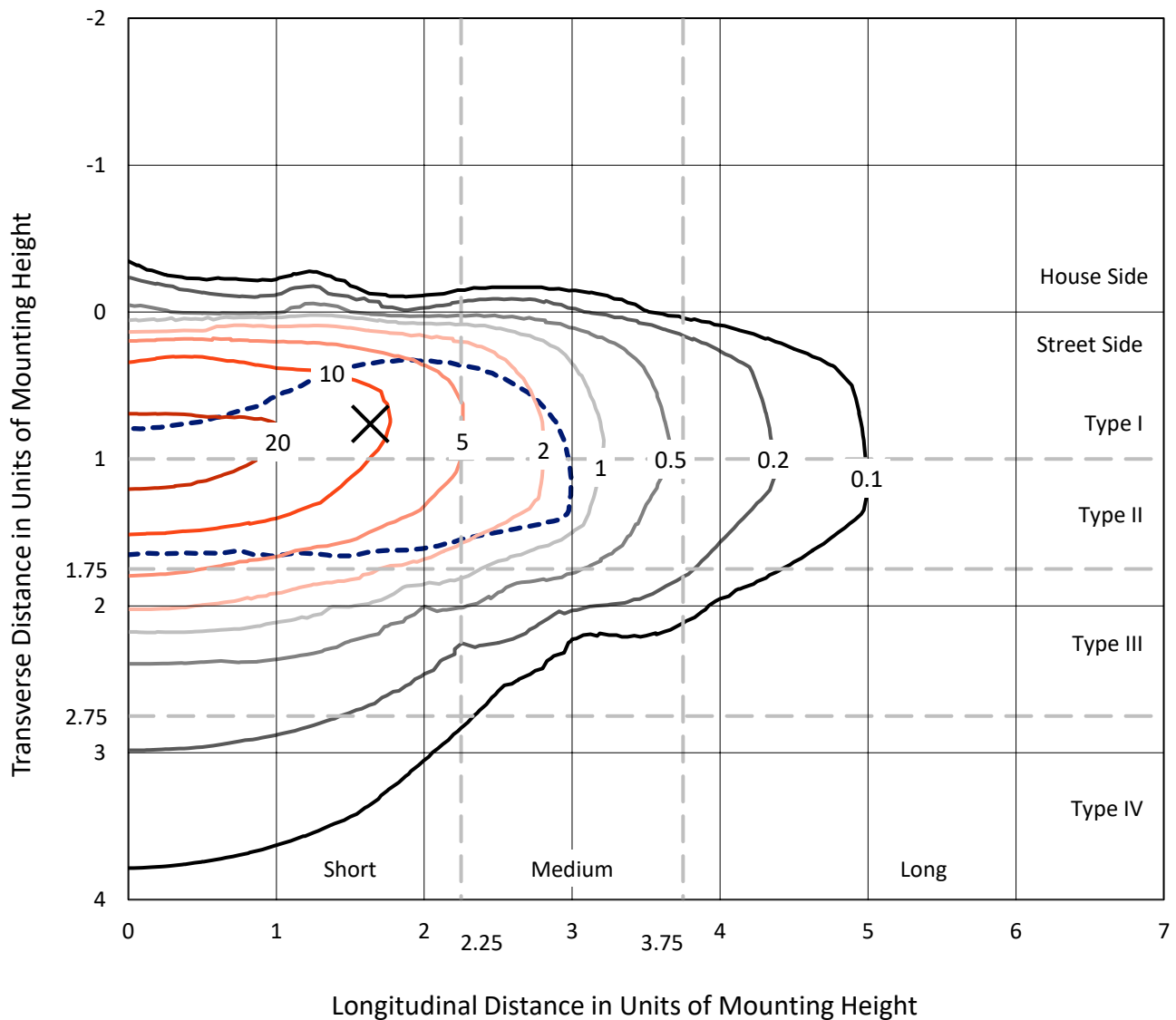


REPORT NUMBER: P1047750

CATALOG NUMBER: GALN-SA5B-730-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

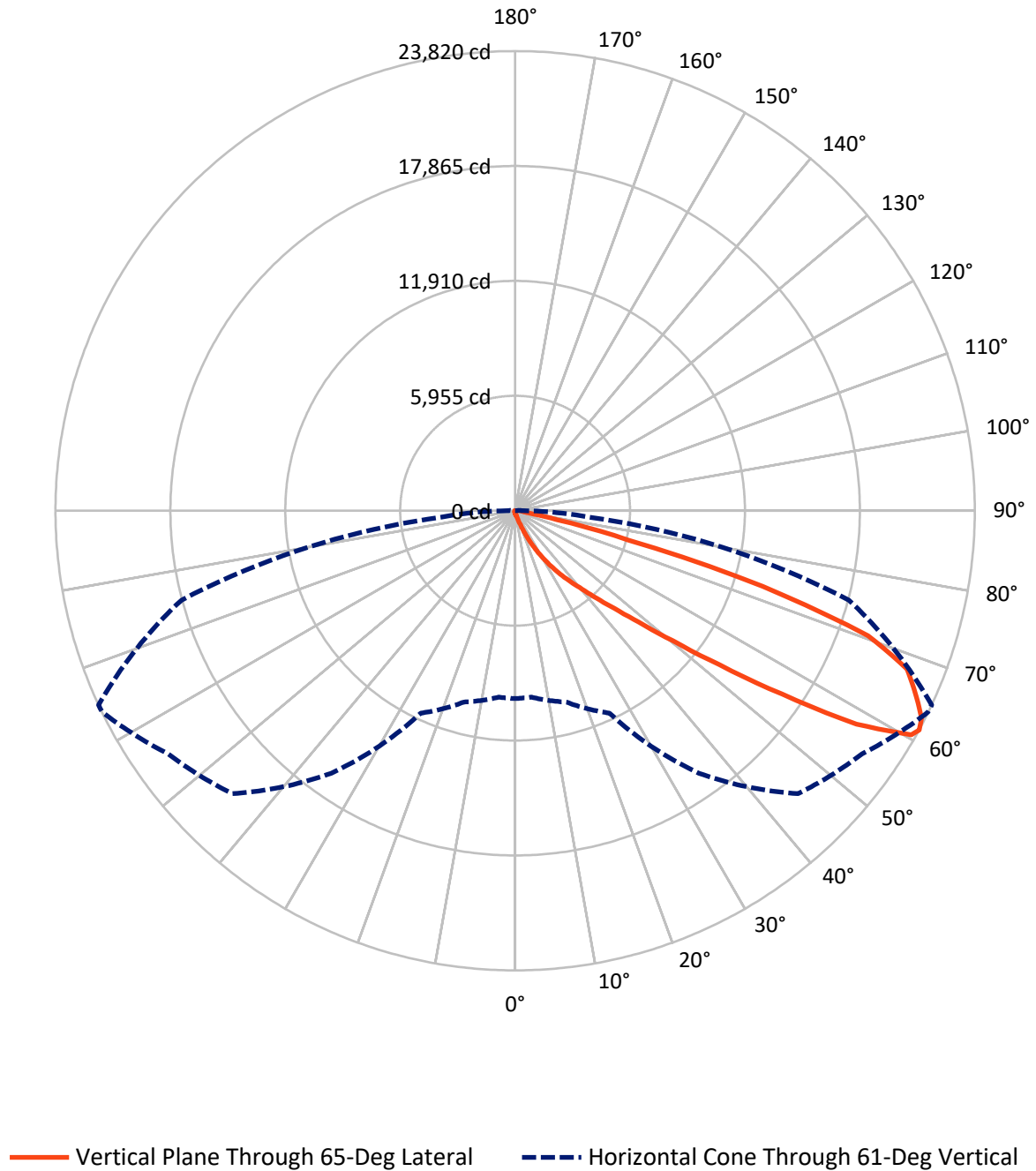


Based on 15 foot mounting height. Maximum calculated value = 28.5 fc  
 Type II - Short - N/A

REPORT NUMBER: P1047750

CATALOG NUMBER: GALN-SA5B-730-U-T2BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1047750

CATALOG NUMBER: GALN-SA5B-730-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 92.1     | 0.0    | 92.1    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 21486.9  | 0.0    | 21486.9 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 21579.1  | 0.0    | 21579.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 16.8    | 0.1       |
| 10°-20°   | 177.4   | 0.8       |
| 20°-30°   | 636.8   | 3.0       |
| 30°-40°   | 1695.5  | 7.9       |
| 40°-50°   | 4454.0  | 20.6      |
| 50°-60°   | 6900.1  | 32.0      |
| 60°-70°   | 5785.7  | 26.8      |
| 70°-80°   | 1702.6  | 7.9       |
| 80°-90°   | 210.0   | 1.0       |
| 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°    | 21579.1 | 100.0     |
| 0°-180°   | 21579.1 | 100.0     |





REPORT NUMBER: P1047750

CATALOG NUMBER: GALN-SA5B-730-U-T2BC

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 132.1   | 132.1   | 132.1   | 132.1   | 132.1   | 132.1   | 132.1   | 132.1   | 132.1   | 132.1   | 132.1  |
| 2.5°  | 160.3   | 161.8   | 158.8   | 152.9   | 148.4   | 148.4   | 147.0   | 142.5   | 142.5   | 138.0   | 135.1  |
| 5°    | 224.1   | 221.2   | 215.2   | 203.4   | 193.0   | 182.6   | 172.2   | 161.8   | 160.3   | 147.0   | 138.0  |
| 7.5°  | 366.6   | 369.6   | 350.3   | 313.2   | 282.0   | 242.0   | 204.8   | 182.6   | 179.6   | 157.3   | 139.5  |
| 10°   | 804.5   | 782.3   | 737.8   | 593.8   | 488.4   | 368.1   | 273.1   | 212.3   | 209.3   | 169.2   | 142.5  |
| 12.5° | 1466.6  | 1448.8  | 1367.1  | 1218.7  | 947.1   | 659.1   | 399.3   | 262.7   | 253.8   | 179.6   | 144.0  |
| 15°   | 2113.8  | 2085.6  | 2041.1  | 1891.1  | 1573.5  | 1181.6  | 653.1   | 359.2   | 335.5   | 194.5   | 142.5  |
| 17.5° | 2526.5  | 2530.9  | 2490.8  | 2427.0  | 2222.2  | 1748.6  | 1128.1  | 535.9   | 489.9   | 221.2   | 139.5  |
| 20°   | 2887.2  | 2876.8  | 2899.0  | 2864.9  | 2720.9  | 2376.5  | 1641.8  | 849.1   | 770.4   | 264.2   | 141.0  |
| 22.5° | 3302.8  | 3328.0  | 3344.4  | 3336.9  | 3178.1  | 2884.2  | 2225.1  | 1270.7  | 1171.2  | 342.9   | 145.5  |
| 25°   | 3859.5  | 3856.5  | 3858.0  | 3838.7  | 3684.3  | 3357.7  | 2810.0  | 1794.6  | 1693.7  | 470.6   | 155.9  |
| 27.5° | 4442.8  | 4460.6  | 4468.1  | 4398.3  | 4196.4  | 3875.8  | 3351.8  | 2367.6  | 2248.9  | 675.4   | 169.2  |
| 30°   | 5240.0  | 5225.1  | 5191.0  | 5048.5  | 4803.5  | 4405.7  | 3886.2  | 2968.8  | 2844.1  | 961.9   | 190.0  |
| 32.5° | 6314.7  | 6298.3  | 6126.1  | 5811.5  | 5444.8  | 4957.9  | 4423.5  | 3571.5  | 3420.1  | 1319.6  | 218.2  |
| 35°   | 8085.6  | 8110.8  | 7687.7  | 6872.8  | 6215.2  | 5621.4  | 5018.8  | 4171.2  | 4037.6  | 1760.5  | 256.8  |
| 37.5° | 10797.6 | 10659.5 | 10085.1 | 8645.2  | 7229.1  | 6449.7  | 5587.3  | 4776.8  | 4661.0  | 2303.8  | 307.3  |
| 40°   | 13432.4 | 13295.8 | 13129.6 | 11765.4 | 8991.1  | 7362.7  | 6383.0  | 5487.9  | 5337.9  | 2916.9  | 381.5  |
| 42.5° | 16202.3 | 16126.6 | 16119.2 | 15090.5 | 12206.3 | 8798.1  | 7340.4  | 6320.6  | 6192.9  | 3589.3  | 503.2  |
| 45°   | 18164.7 | 18089.0 | 18247.8 | 18427.4 | 16585.3 | 11873.8 | 9007.4  | 7402.7  | 7217.2  | 4405.7  | 697.7  |
| 47.5° | 18428.9 | 18431.9 | 18856.4 | 19419.0 | 19839.1 | 16631.3 | 11228.1 | 8836.7  | 8611.0  | 5573.9  | 1024.2 |
| 50°   | 17550.1 | 17584.3 | 18259.7 | 19266.1 | 20397.2 | 20622.9 | 15143.9 | 10917.8 | 10583.8 | 6958.9  | 1487.4 |
| 52.5° | 15877.2 | 15915.8 | 16856.9 | 18512.0 | 19883.6 | 21581.8 | 19754.5 | 13640.2 | 13255.8 | 8686.8  | 2140.5 |
| 55°   | 14370.5 | 14394.3 | 15473.5 | 17565.0 | 19264.6 | 21060.8 | 22491.7 | 17275.5 | 16770.8 | 10812.4 | 2784.7 |
| 57.5° | 12878.7 | 12823.8 | 13525.9 | 15920.3 | 19159.2 | 20421.0 | 22895.5 | 21418.5 | 20861.9 | 13135.5 | 3286.5 |
| 60°   | 10883.7 | 10791.6 | 11355.7 | 12878.7 | 17772.8 | 20841.1 | 22139.9 | 23710.4 | 23584.3 | 16370.0 | 3673.9 |
| 61°   | 9736.2  | 9697.6  | 10264.7 | 11571.0 | 16606.1 | 20734.2 | 21958.8 | 23806.9 | 23820.3 | 17900.5 | 3847.6 |
| 62.5° | 6953.0  | 7062.8  | 7929.7  | 9627.9  | 13908.9 | 20041.0 | 21982.6 | 23508.6 | 23640.7 | 19934.1 | 4297.4 |
| 65°   | 3090.5  | 3267.2  | 3941.1  | 5323.1  | 8088.5  | 16671.4 | 21771.8 | 22853.9 | 22788.6 | 20492.2 | 5847.1 |
| 67.5° | 1833.2  | 1860.0  | 2195.4  | 3016.3  | 4284.0  | 8967.3  | 19212.7 | 21988.5 | 21900.9 | 17839.6 | 7275.1 |
| 70°   | 1444.3  | 1457.7  | 1564.6  | 1892.6  | 2486.4  | 3434.9  | 10965.3 | 19024.2 | 19405.7 | 14465.5 | 7122.2 |
| 72.5° | 1370.1  | 1367.1  | 1382.0  | 1439.9  | 1566.0  | 1704.1  | 4245.4  | 12645.7 | 13422.0 | 10417.6 | 5971.8 |
| 75°   | 1352.3  | 1346.4  | 1331.5  | 1309.2  | 1134.1  | 1003.5  | 1315.2  | 5593.2  | 6043.0  | 7117.7  | 4496.3 |
| 77.5° | 1312.2  | 1313.7  | 1316.7  | 1255.8  | 972.3   | 709.5   | 636.8   | 1794.6  | 2207.3  | 4517.1  | 3195.9 |
| 80°   | 887.7   | 901.0   | 923.3   | 899.6   | 874.3   | 513.6   | 449.8   | 638.3   | 647.2   | 2535.4  | 2110.8 |
| 82.5° | 449.8   | 449.8   | 439.4   | 391.9   | 338.4   | 334.0   | 357.7   | 463.1   | 469.1   | 1282.5  | 993.1  |
| 85°   | 271.6   | 286.5   | 292.4   | 265.7   | 243.4   | 224.1   | 273.1   | 368.1   | 381.5   | 497.3   | 231.6  |
| 87.5° | 60.9    | 62.3    | 68.3    | 90.5    | 132.1   | 179.6   | 253.8   | 337.0   | 342.9   | 319.1   | 28.2   |
| 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: P1047750

CATALOG NUMBER: GALN-SA5B-730-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 132.1  | 132.1 | 132.1 | 132.1 | 132.1 | 132.1 | 132.1 | 132.1 | 132.1 | 132.1 | 132.1 |
| 2.5°  | 133.6  | 130.6 | 129.1 | 124.7 | 120.2 | 115.8 | 112.8 | 111.3 | 112.8 | 114.3 | 114.3 |
| 5°    | 132.1  | 127.7 | 120.2 | 112.8 | 106.9 | 100.9 | 95.0  | 93.5  | 93.5  | 95.0  | 95.0  |
| 7.5°  | 132.1  | 124.7 | 114.3 | 105.4 | 96.5  | 87.6  | 83.1  | 80.2  | 81.6  | 81.6  | 81.6  |
| 10°   | 132.1  | 123.2 | 109.8 | 96.5  | 86.1  | 75.7  | 68.3  | 65.3  | 65.3  | 65.3  | 65.3  |
| 12.5° | 130.6  | 121.7 | 105.4 | 89.1  | 74.2  | 62.3  | 53.4  | 49.0  | 50.5  | 50.5  | 50.5  |
| 15°   | 127.7  | 117.3 | 99.5  | 75.7  | 59.4  | 47.5  | 38.6  | 34.1  | 35.6  | 38.6  | 40.1  |
| 17.5° | 123.2  | 112.8 | 89.1  | 63.8  | 47.5  | 35.6  | 26.7  | 23.8  | 25.2  | 29.7  | 29.7  |
| 20°   | 121.7  | 108.4 | 78.7  | 52.0  | 35.6  | 25.2  | 17.8  | 14.8  | 16.3  | 22.3  | 23.8  |
| 22.5° | 121.7  | 105.4 | 71.3  | 43.0  | 26.7  | 16.3  | 10.4  | 5.9   | 5.9   | 10.4  | 10.4  |
| 25°   | 123.2  | 103.9 | 65.3  | 35.6  | 19.3  | 11.9  | 5.9   | 3.0   | 5.9   | 16.3  | 19.3  |
| 27.5° | 126.2  | 102.4 | 62.3  | 29.7  | 14.8  | 10.4  | 4.5   | 10.4  | 17.8  | 17.8  | 17.8  |
| 30°   | 129.1  | 99.5  | 57.9  | 25.2  | 13.4  | 7.4   | 7.4   | 14.8  | 14.8  | 17.8  | 19.3  |
| 32.5° | 133.6  | 98.0  | 54.9  | 22.3  | 10.4  | 5.9   | 10.4  | 8.9   | 8.9   | 10.4  | 11.9  |
| 35°   | 142.5  | 99.5  | 52.0  | 22.3  | 10.4  | 7.4   | 8.9   | 4.5   | 3.0   | 3.0   | 3.0   |
| 37.5° | 154.4  | 100.9 | 47.5  | 19.3  | 8.9   | 8.9   | 4.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 173.7  | 105.4 | 44.5  | 17.8  | 7.4   | 7.4   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 206.3  | 114.3 | 43.0  | 16.3  | 7.4   | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 271.6  | 135.1 | 40.1  | 14.8  | 7.4   | 3.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 390.4  | 184.1 | 38.6  | 11.9  | 4.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 570.0  | 249.4 | 37.1  | 10.4  | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 727.4  | 262.7 | 25.2  | 8.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 745.2  | 181.1 | 19.3  | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 593.8  | 117.3 | 16.3  | 4.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 449.8  | 89.1  | 14.8  | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 432.0  | 80.2  | 14.8  | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 476.5  | 69.8  | 13.4  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 774.9  | 57.9  | 11.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 1346.4 | 50.5  | 10.4  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 1701.1 | 47.5  | 8.9   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1482.9 | 43.0  | 8.9   | 3.0   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 892.1  | 37.1  | 8.9   | 5.9   | 3.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 467.6  | 28.2  | 8.9   | 7.4   | 4.5   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 227.1  | 25.2  | 10.4  | 7.4   | 5.9   | 3.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 89.1   | 20.8  | 11.9  | 10.4  | 7.4   | 4.5   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 40.1   | 17.8  | 13.4  | 11.9  | 10.4  | 5.9   | 1.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 20.8   | 16.3  | 14.8  | 13.4  | 10.4  | 7.4   | 3.0   | 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   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

CCT (K): 2985  
 CIE  $u'$ : 0.2504  
 CIE  $v'$ : 0.5243  
 Duv: 0.0019  
 CIE x: 0.4408  
 CIE y: 0.4101  
 CIE z: 0.1491  
 Peak Wavelength (nm): 595  
 Dominant Wavelength (nm): 582  
 Purity: 55.41818  
 R<sub>f</sub>: 73.8  
 R<sub>g</sub>: 94.4

CRI (Ra): 70.8  
 R1: 66.3  
 R2: 80.6  
 R3: 94.5  
 R4: 68.2  
 R5: 66.5  
 R6: 74.7  
 R7: 76.2  
 R8: 39.6  
 R9: -43.2  
 R10: 57.6  
 R11: 64.8  
 R12: 53.5  
 R13: 68.7  
 R14: 97.0  
 R15: 56.4



### Test Conditions

Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

| 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: SP1-2407-184-4

**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: SP1-2407-184-4

### 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               | 142                           | NR                             | 620               | 803                           | NR                             | 750               | 17                            | NR                             | 880               | 0                             | NR                             |
| 365               | 0                             | NR                             | 495               | 189                           | NR                             | 625               | 734                           | NR                             | 755               | 15                            | NR                             | 885               | 0                             | NR                             |
| 370               | 0                             | NR                             | 500               | 240                           | NR                             | 630               | 670                           | NR                             | 760               | 13                            | NR                             | 890               | 0                             | NR                             |
| 375               | 0                             | NR                             | 505               | 290                           | NR                             | 635               | 600                           | NR                             | 765               | 11                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 335                           | NR                             | 640               | 535                           | NR                             | 770               | 9                             | NR                             | 900               | 0                             | NR                             |
| 385               | 0                             | NR                             | 515               | 375                           | NR                             | 645               | 473                           | NR                             | 775               | 8                             | NR                             | 905               | 0                             | NR                             |
| 390               | 1                             | NR                             | 520               | 408                           | NR                             | 650               | 415                           | NR                             | 780               | 7                             | NR                             | 910               | 0                             | NR                             |
| 395               | 2                             | NR                             | 525               | 434                           | NR                             | 655               | 362                           | NR                             | 785               | 6                             | NR                             | 915               | 0                             | NR                             |
| 400               | 4                             | NR                             | 530               | 461                           | NR                             | 660               | 313                           | NR                             | 790               | 5                             | NR                             | 920               | 0                             | NR                             |
| 405               | 8                             | NR                             | 535               | 486                           | NR                             | 665               | 271                           | NR                             | 795               | 4                             | NR                             | 925               | 0                             | NR                             |
| 410               | 16                            | NR                             | 540               | 514                           | NR                             | 670               | 231                           | NR                             | 800               | 4                             | NR                             | 930               | 0                             | NR                             |
| 415               | 33                            | NR                             | 545               | 549                           | NR                             | 675               | 198                           | NR                             | 805               | 3                             | NR                             | 935               | 0                             | NR                             |
| 420               | 69                            | NR                             | 550               | 591                           | NR                             | 680               | 169                           | NR                             | 810               | 3                             | NR                             | 940               | 0                             | NR                             |
| 425               | 131                           | NR                             | 555               | 640                           | NR                             | 685               | 144                           | NR                             | 815               | 2                             | NR                             | 945               | 0                             | NR                             |
| 430               | 227                           | NR                             | 560               | 695                           | NR                             | 690               | 123                           | NR                             | 820               | 2                             | NR                             | 950               | 0                             | NR                             |
| 435               | 369                           | NR                             | 565               | 757                           | NR                             | 695               | 104                           | NR                             | 825               | 2                             | NR                             | 955               | 0                             | NR                             |
| 440               | 517                           | NR                             | 570               | 822                           | NR                             | 700               | 88                            | NR                             | 830               | 2                             | NR                             | 960               | 0                             | NR                             |
| 445               | 498                           | NR                             | 575               | 882                           | NR                             | 705               | 75                            | NR                             | 835               | 1                             | NR                             | 965               | 0                             | NR                             |
| 450               | 315                           | NR                             | 580               | 935                           | NR                             | 710               | 63                            | NR                             | 840               | 1                             | NR                             | 970               | 0                             | NR                             |
| 455               | 204                           | NR                             | 585               | 972                           | NR                             | 715               | 54                            | NR                             | 845               | 1                             | NR                             | 975               | 0                             | NR                             |
| 460               | 145                           | NR                             | 590               | 996                           | NR                             | 720               | 46                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 100                           | NR                             | 595               | 1000                          | NR                             | 725               | 39                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 78                            | NR                             | 600               | 989                           | NR                             | 730               | 33                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 76                            | NR                             | 605               | 960                           | NR                             | 735               | 28                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 83                            | NR                             | 610               | 918                           | NR                             | 740               | 24                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 105                           | NR                             | 615               | 864                           | NR                             | 745               | 20                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

REPORT NUMBER: SP1-2407-184-4

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.19

| $\lambda$<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               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-4

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.13

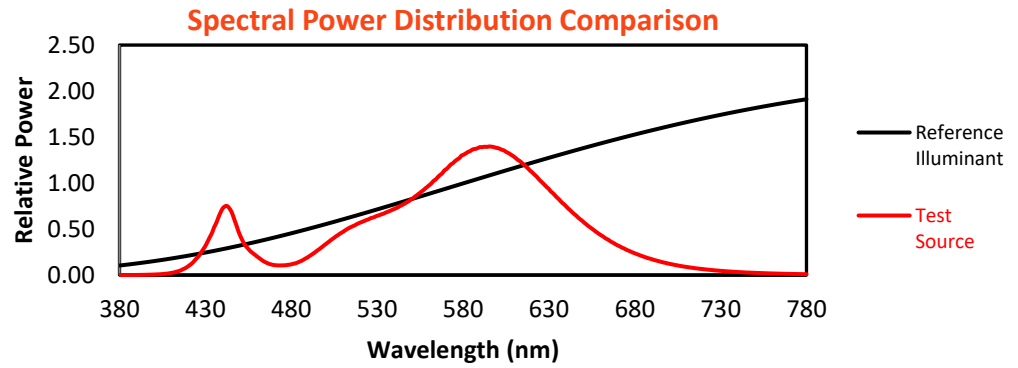
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-4

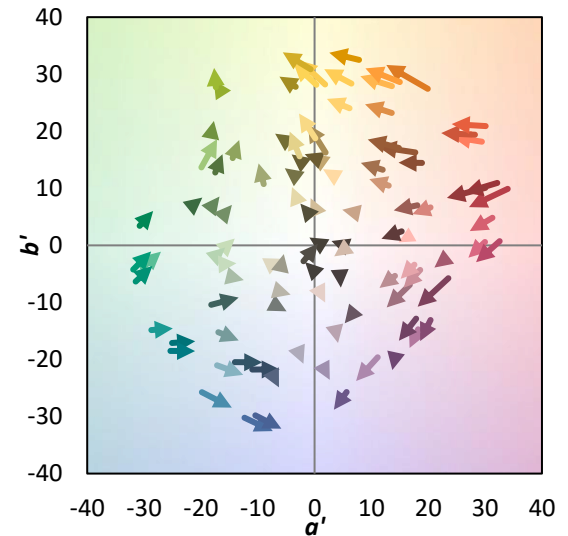
TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 94.4$   
 $CIE\ R_a = 70.8$   
 $R_g = -43.2$



### Color Vector Graphics

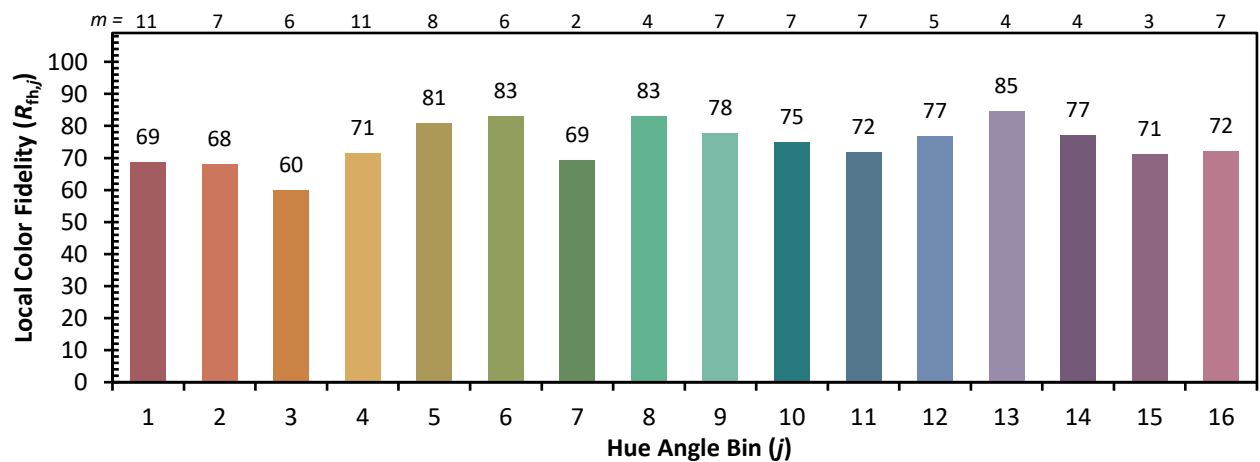
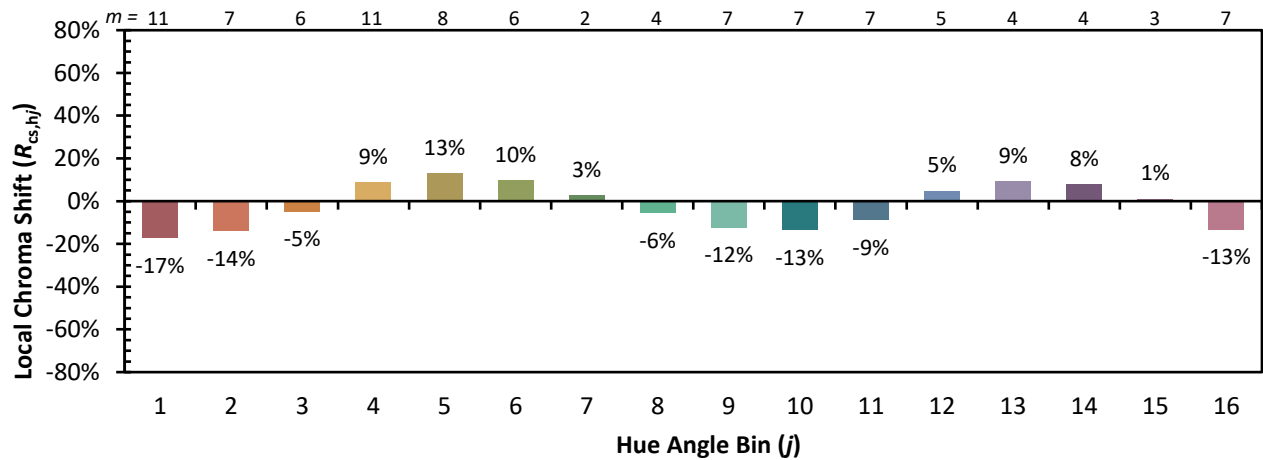


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)