

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: P991118

Luminaire Tested: **GPC-SA2B-740-U-T2BC**

Issue Date: 07/03/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P991118  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 07/03/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GPC-SA2B-740-U-T2BC  
Description: GALLEON PEDESTRAIAN COMPANION 800mA 2xLight Square PACKAGE 70CRI  
4000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (28) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8538.1 lumens  
Efficiency: N/A  
Efficacy: 118.3 lumens/watt  
Luminous Opening: Rectangular (W 1.33' x L: 0.67' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 72.2  
Input Voltage (V): 120  
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



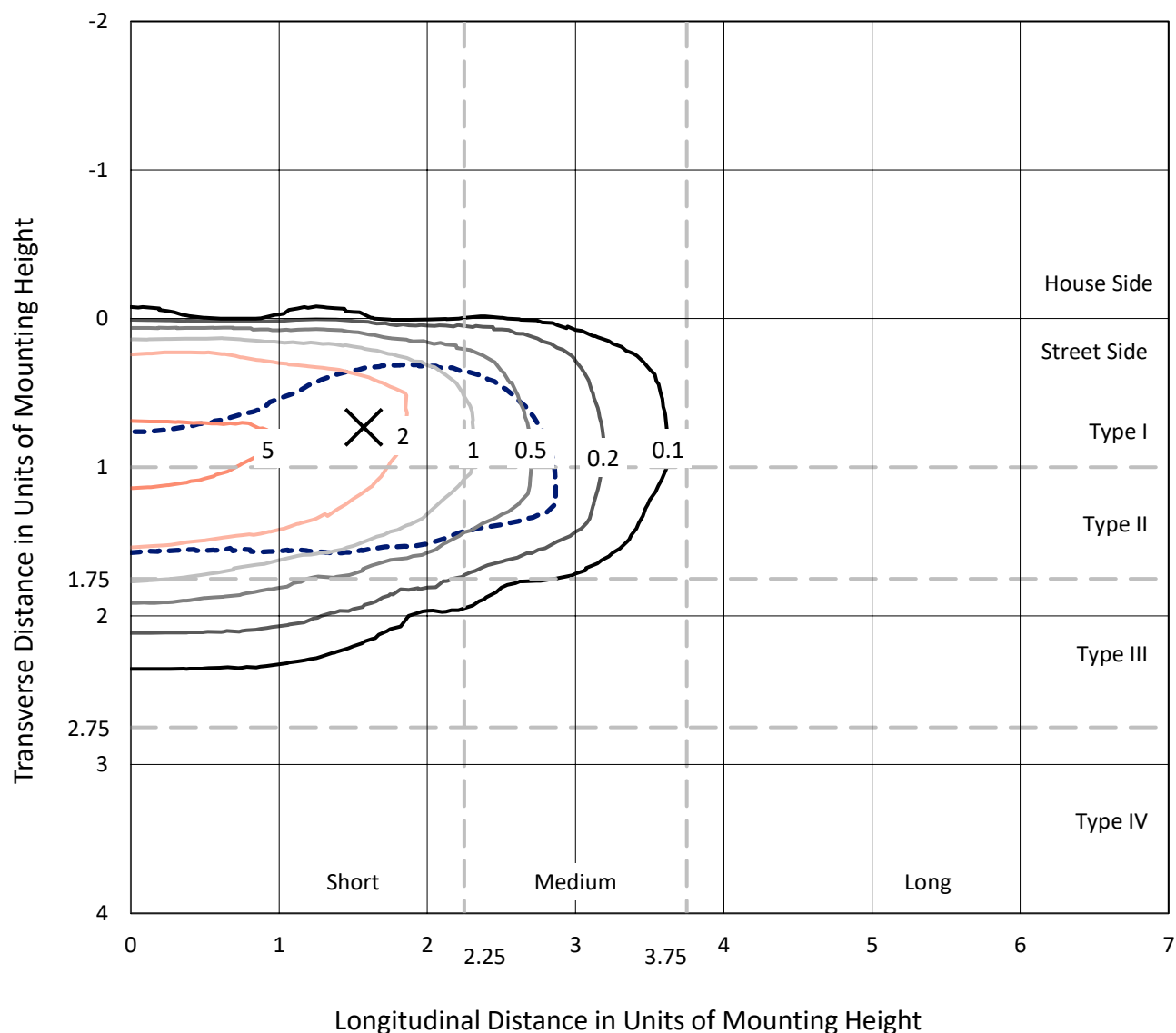
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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

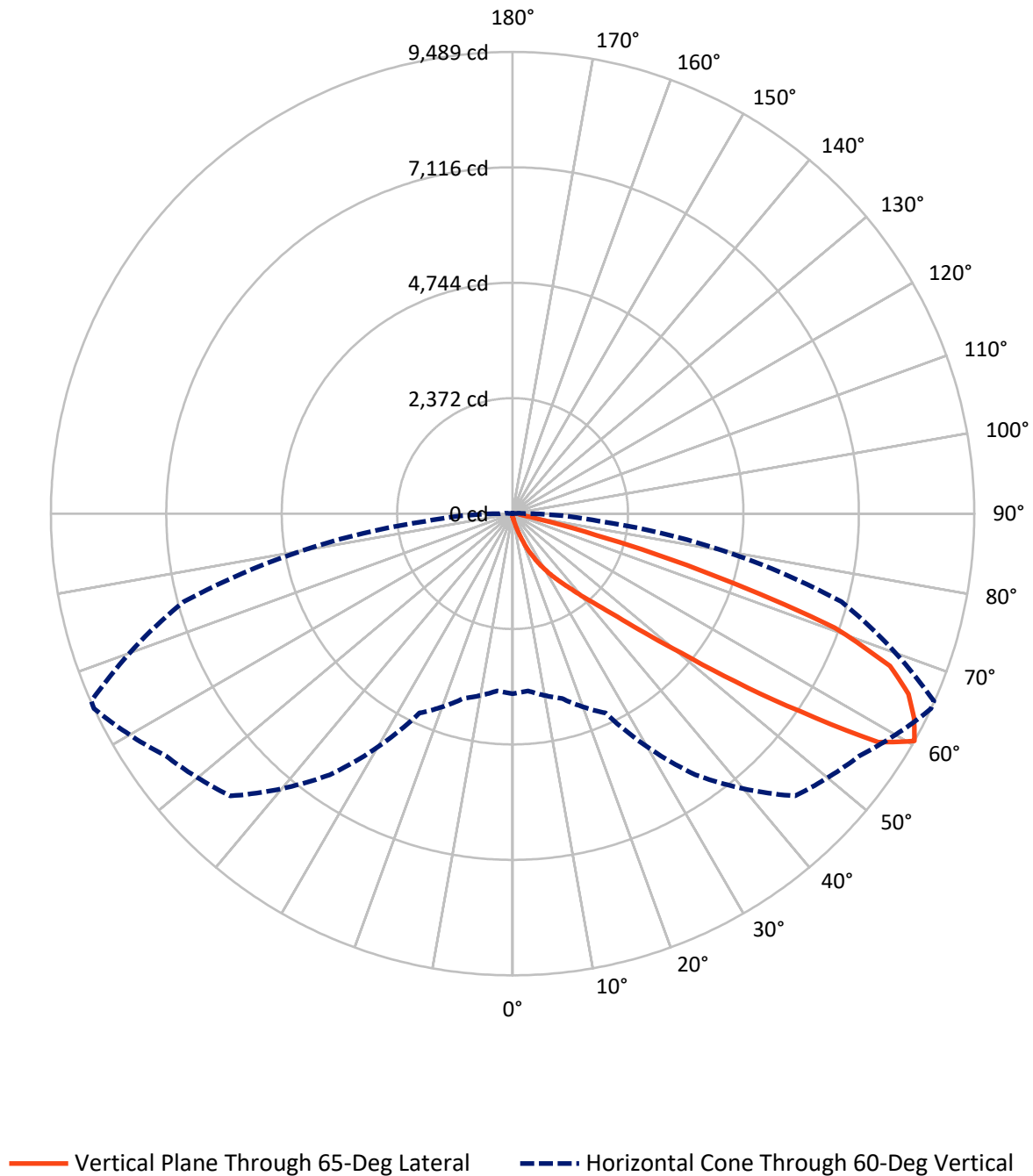


Based on 20 foot mounting height. Maximum calculated value = 6.9 fc

Type II - Short - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: GPC-SA2B-740-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 38.0     | 0.0    | 38.0   |
|                    | % Fixture | 0.4      | 0.0    | 0.4    |
| <b>Street Side</b> | Lumens    | 8500.1   | 0.0    | 8500.1 |
|                    | % Fixture | 99.6     | 0.0    | 99.6   |
| <b>Total</b>       | Lumens    | 8538.1   | 0.0    | 8538.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 11.3   | 0.1       |
| 10°-20°   | 94.3   | 1.1       |
| 20°-30°   | 289.0  | 3.4       |
| 30°-40°   | 751.0  | 8.8       |
| 40°-50°   | 1890.8 | 22.1      |
| 50°-60°   | 2740.9 | 32.1      |
| 60°-70°   | 2114.0 | 24.8      |
| 70°-80°   | 583.2  | 6.8       |
| 80°-90°   | 63.6   | 0.7       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 8538.1 | 100.0     |
| 0°-180°   | 8538.1 | 100.0     |



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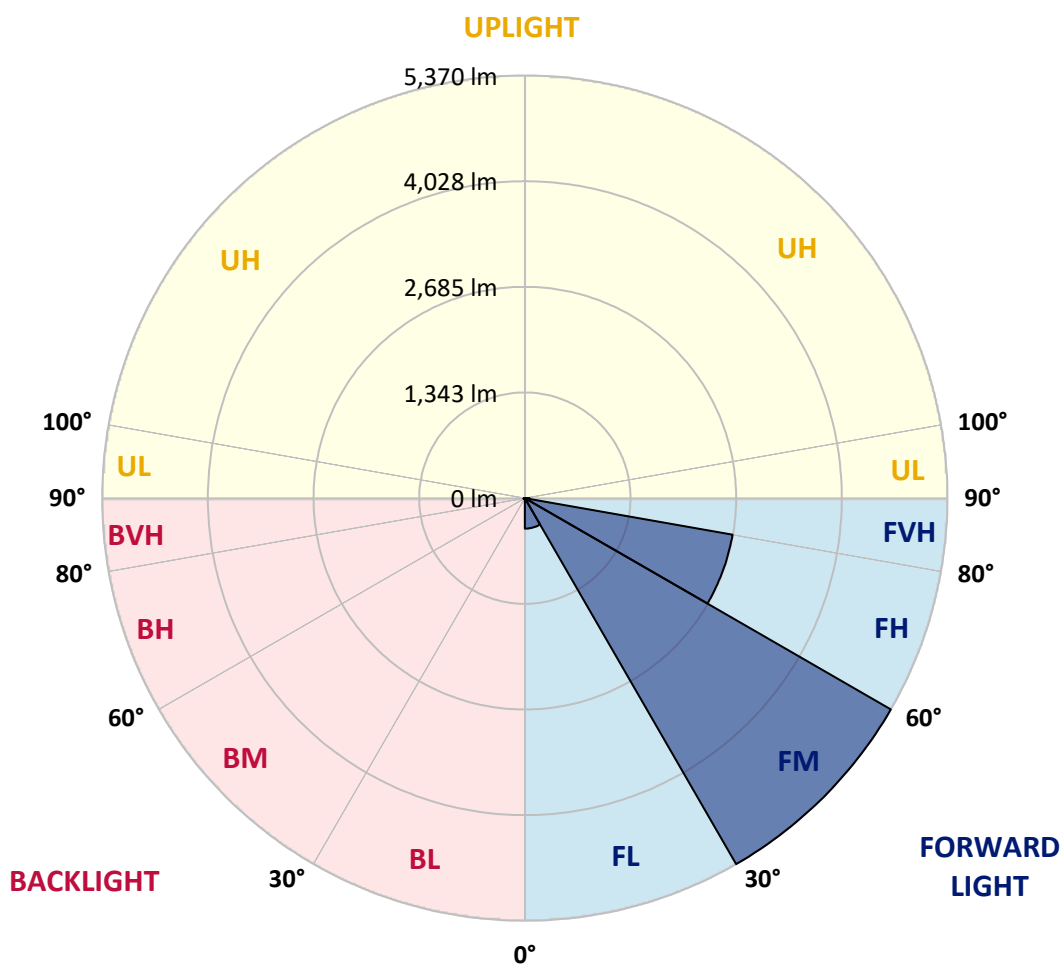
CATALOG NUMBER: GPC-SA2B-740-U-T2BC

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 387.6  | 4.5       |                         |      |         |
| FM   | (30°-60°)   | 5370.2 | 62.9      |                         |      |         |
| FH   | (60°-80°)   | 2680.2 | 31.4      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 62.1   | 0.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 7.0    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 12.4   | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 17.0   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 1.5    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 66°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   | 61.3   |
| 2.5°  | 98.4   | 98.4   | 96.8   | 93.6   | 85.5   | 80.7   | 75.8   | 71.0   | 69.4   | 66.2   | 62.9   |
| 5°    | 179.1  | 175.9  | 174.3  | 158.1  | 142.0  | 122.6  | 103.3  | 87.1   | 85.5   | 74.2   | 64.5   |
| 7.5°  | 375.9  | 375.9  | 343.7  | 304.9  | 261.4  | 201.7  | 148.4  | 114.6  | 109.7  | 85.5   | 66.2   |
| 10°   | 614.7  | 616.3  | 595.4  | 534.0  | 455.0  | 355.0  | 240.4  | 148.4  | 145.2  | 100.0  | 67.8   |
| 12.5° | 829.3  | 827.7  | 806.7  | 763.2  | 676.0  | 550.2  | 377.5  | 214.6  | 201.7  | 116.2  | 67.8   |
| 15°   | 966.4  | 966.4  | 963.2  | 940.6  | 879.3  | 750.2  | 559.9  | 314.6  | 300.1  | 140.4  | 69.4   |
| 17.5° | 1100.4 | 1108.4 | 1097.1 | 1087.5 | 1042.3 | 945.5  | 750.2  | 453.4  | 424.3  | 179.1  | 72.6   |
| 20°   | 1261.7 | 1269.8 | 1264.9 | 1250.4 | 1193.9 | 1108.4 | 940.6  | 613.1  | 584.1  | 243.6  | 79.1   |
| 22.5° | 1448.9 | 1455.3 | 1445.6 | 1440.8 | 1369.8 | 1261.7 | 1116.5 | 805.1  | 761.5  | 325.9  | 87.1   |
| 25°   | 1679.6 | 1674.7 | 1671.5 | 1644.1 | 1574.7 | 1456.9 | 1282.7 | 982.6  | 948.7  | 435.6  | 98.4   |
| 27.5° | 1950.6 | 1944.2 | 1923.2 | 1887.7 | 1786.1 | 1657.0 | 1460.2 | 1171.4 | 1139.1 | 567.9  | 114.6  |
| 30°   | 2316.9 | 2278.2 | 2247.5 | 2168.5 | 2032.9 | 1861.9 | 1658.6 | 1356.9 | 1321.4 | 726.0  | 132.3  |
| 32.5° | 2833.2 | 2821.9 | 2702.5 | 2496.0 | 2300.8 | 2095.9 | 1879.7 | 1553.7 | 1516.6 | 889.0  | 156.5  |
| 35°   | 3759.3 | 3706.1 | 3497.9 | 2978.4 | 2612.2 | 2389.5 | 2103.9 | 1750.6 | 1711.9 | 1077.8 | 188.8  |
| 37.5° | 4800.0 | 4753.2 | 4551.5 | 3925.5 | 3084.9 | 2692.8 | 2354.0 | 1973.2 | 1931.3 | 1284.3 | 229.1  |
| 40°   | 5843.9 | 5829.3 | 5753.5 | 5253.3 | 4043.3 | 3097.8 | 2684.8 | 2257.2 | 2208.8 | 1492.4 | 285.6  |
| 42.5° | 7018.4 | 6976.5 | 6928.1 | 6758.7 | 5698.7 | 3909.4 | 3144.6 | 2581.5 | 2539.5 | 1749.0 | 366.2  |
| 45°   | 7391.1 | 7375.0 | 7433.1 | 7596.1 | 7433.1 | 5609.9 | 3857.7 | 3023.6 | 2981.6 | 2078.1 | 482.4  |
| 47.5° | 7265.3 | 7249.2 | 7408.9 | 7676.7 | 8049.4 | 7650.9 | 4962.9 | 3657.7 | 3580.2 | 2471.8 | 655.1  |
| 50°   | 6629.6 | 6636.1 | 6918.4 | 7454.1 | 7988.1 | 8464.1 | 6808.7 | 4501.5 | 4448.2 | 3031.6 | 887.4  |
| 52.5° | 6027.8 | 6039.1 | 6392.4 | 7078.1 | 7665.4 | 8494.7 | 8569.0 | 5729.3 | 5500.2 | 3717.4 | 1174.6 |
| 55°   | 5442.1 | 5426.0 | 5693.8 | 6726.4 | 7607.3 | 8075.2 | 9122.4 | 7170.1 | 7020.1 | 4606.4 | 1456.9 |
| 57.5° | 4822.6 | 4803.2 | 4943.6 | 5711.6 | 7486.3 | 8133.3 | 8977.2 | 8865.8 | 8686.7 | 5627.7 | 1684.4 |
| 60°   | 3699.6 | 3656.0 | 3933.6 | 4520.8 | 6552.2 | 8204.3 | 8690.0 | 9488.6 | 9477.3 | 6995.9 | 1799.0 |
| 62.5° | 1773.2 | 1844.2 | 2220.1 | 2857.4 | 4380.5 | 7575.1 | 8801.3 | 9257.9 | 9280.5 | 8202.7 | 2063.6 |
| 65°   | 905.1  | 921.3  | 1114.9 | 1560.2 | 2318.5 | 5445.3 | 8480.2 | 8938.4 | 8904.5 | 7967.1 | 2749.3 |
| 67.5° | 609.9  | 617.9  | 708.3  | 943.9  | 1345.6 | 2281.4 | 6589.3 | 8364.0 | 8339.8 | 6790.9 | 3157.5 |
| 70°   | 540.5  | 543.7  | 566.3  | 642.1  | 806.7  | 1005.2 | 3017.1 | 7018.4 | 7199.1 | 5187.2 | 2883.2 |
| 72.5° | 529.2  | 529.2  | 526.0  | 530.8  | 521.1  | 545.3  | 1058.4 | 4225.6 | 4488.6 | 3623.8 | 2336.3 |
| 75°   | 517.9  | 519.5  | 514.7  | 498.6  | 405.0  | 340.4  | 387.2  | 1779.6 | 1973.2 | 2384.7 | 1750.6 |
| 77.5° | 484.0  | 487.3  | 501.8  | 461.4  | 367.9  | 240.4  | 221.0  | 564.7  | 659.9  | 1523.1 | 1282.7 |
| 80°   | 182.3  | 182.3  | 182.3  | 167.8  | 245.2  | 182.3  | 159.7  | 230.7  | 245.2  | 858.3  | 789.0  |
| 82.5° | 133.9  | 132.3  | 125.8  | 116.2  | 98.4   | 92.0   | 130.7  | 174.3  | 174.3  | 401.7  | 300.1  |
| 85°   | 38.7   | 38.7   | 43.6   | 58.1   | 72.6   | 80.7   | 100.0  | 133.9  | 138.8  | 153.3  | 45.2   |
| 87.5° | 17.7   | 17.7   | 22.6   | 29.0   | 38.7   | 58.1   | 83.9   | 114.6  | 116.2  | 127.5  | 8.1    |
| 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°    | 61.3  | 61.3  | 61.3 | 61.3 | 61.3 | 61.3 | 61.3 | 61.3 | 61.3 | 61.3 | 61.3 |
| 2.5°  | 61.3  | 59.7  | 58.1 | 56.5 | 53.2 | 50.0 | 45.2 | 43.6 | 41.9 | 41.9 | 41.9 |
| 5°    | 61.3  | 58.1  | 53.2 | 48.4 | 45.2 | 40.3 | 37.1 | 35.5 | 33.9 | 32.3 | 32.3 |
| 7.5°  | 59.7  | 54.9  | 48.4 | 43.6 | 40.3 | 35.5 | 30.7 | 29.0 | 27.4 | 27.4 | 27.4 |
| 10°   | 59.7  | 53.2  | 45.2 | 40.3 | 35.5 | 29.0 | 24.2 | 22.6 | 21.0 | 19.4 | 19.4 |
| 12.5° | 56.5  | 50.0  | 41.9 | 35.5 | 29.0 | 22.6 | 17.7 | 14.5 | 12.9 | 12.9 | 12.9 |
| 15°   | 54.9  | 48.4  | 38.7 | 30.7 | 22.6 | 16.1 | 11.3 | 8.1  | 6.5  | 8.1  | 8.1  |
| 17.5° | 53.2  | 43.6  | 35.5 | 24.2 | 16.1 | 9.7  | 4.8  | 1.6  | 1.6  | 1.6  | 1.6  |
| 20°   | 53.2  | 41.9  | 30.7 | 19.4 | 11.3 | 4.8  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  |
| 22.5° | 54.9  | 41.9  | 27.4 | 16.1 | 6.5  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 25°   | 56.5  | 40.3  | 24.2 | 11.3 | 4.8  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 27.5° | 58.1  | 38.7  | 21.0 | 8.1  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 61.3  | 37.1  | 17.7 | 6.5  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 66.2  | 35.5  | 14.5 | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 71.0  | 32.3  | 9.7  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 77.4  | 32.3  | 6.5  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 87.1  | 32.3  | 6.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 103.3 | 33.9  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 133.9 | 43.6  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 190.4 | 66.2  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 269.4 | 95.2  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 337.2 | 100.0 | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 350.1 | 71.0  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 301.7 | 58.1  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 259.8 | 38.7  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 313.0 | 32.3  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 498.6 | 30.7  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 776.1 | 30.7  | 4.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 869.6 | 30.7  | 4.8  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 672.8 | 24.2  | 4.8  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 422.7 | 19.4  | 4.8  | 3.2  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 230.7 | 12.9  | 4.8  | 3.2  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 87.1  | 9.7   | 4.8  | 3.2  | 3.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 30.7  | 8.1   | 6.5  | 4.8  | 3.2  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 11.3  | 6.5   | 6.5  | 4.8  | 4.8  | 1.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 6.5   | 6.5   | 6.5  | 6.5  | 4.8  | 1.6  | 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  |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-1

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-740-U-5WQ

Data in this report applies to families of products including GSS-SB1A-740-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-1  
 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-740-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 4000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 3949     | CRI (Ra): | 70.7 |      |       |
| CIE u':                   | 0.2248   | R1:       | 68.0 | R9:  | -36.7 |
| CIE v':                   | 0.5053   | R2:       | 76.0 | R10: | 45.1  |
| Duv:                      | 0.0022   | R3:       | 84.3 | R11: | 70.7  |
| CIE x:                    | 0.3844   | R4:       | 72.0 | R12: | 47.1  |
| CIE y:                    | 0.3840   | R5:       | 68.6 | R13: | 68.5  |
| CIE z:                    | 0.2316   | R6:       | 68.3 | R14: | 91.1  |
| Peak Wavelength (nm):     | 440      | R7:       | 77.9 | R15: | 58.7  |
| Dominant Wavelength (nm): | 578      | R8:       | 50.3 |      |       |
| Purity:                   | 30.60026 |           |      |      |       |
| Rf:                       | 71.8     |           |      |      |       |
| Rg:                       | 96.5     |           |      |      |       |



### Test Conditions

Stabilization Time: 34M  
 Operation Time: 1H 34M  
 Sphere Temperature (°C): 25.2

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| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 4000K 4-step quadrangle

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### 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               | 139                           | NR                             | 620               | 607                           | NR                             | 750               | 15                            | NR                             | 880               | 0                             | NR                             |
| 365               | 0                             | NR                             | 495               | 198                           | NR                             | 625               | 554                           | NR                             | 755               | 13                            | NR                             | 885               | 0                             | NR                             |
| 370               | 0                             | NR                             | 500               | 267                           | NR                             | 630               | 504                           | NR                             | 760               | 11                            | NR                             | 890               | 0                             | NR                             |
| 375               | 0                             | NR                             | 505               | 343                           | NR                             | 635               | 452                           | NR                             | 765               | 10                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 410                           | NR                             | 640               | 403                           | NR                             | 770               | 8                             | NR                             | 900               | 0                             | NR                             |
| 385               | 2                             | NR                             | 515               | 470                           | NR                             | 645               | 357                           | NR                             | 775               | 7                             | NR                             | 905               | 0                             | NR                             |
| 390               | 4                             | NR                             | 520               | 516                           | NR                             | 650               | 314                           | NR                             | 780               | 6                             | NR                             | 910               | 0                             | NR                             |
| 395               | 7                             | NR                             | 525               | 550                           | NR                             | 655               | 275                           | NR                             | 785               | 5                             | NR                             | 915               | 0                             | NR                             |
| 400               | 10                            | NR                             | 530               | 578                           | NR                             | 660               | 240                           | NR                             | 790               | 5                             | NR                             | 920               | 0                             | NR                             |
| 405               | 17                            | NR                             | 535               | 601                           | NR                             | 665               | 208                           | NR                             | 795               | 4                             | NR                             | 925               | 0                             | NR                             |
| 410               | 35                            | NR                             | 540               | 620                           | NR                             | 670               | 179                           | NR                             | 800               | 4                             | NR                             | 930               | 0                             | NR                             |
| 415               | 70                            | NR                             | 545               | 641                           | NR                             | 675               | 155                           | NR                             | 805               | 3                             | NR                             | 935               | 0                             | NR                             |
| 420               | 147                           | NR                             | 550               | 664                           | NR                             | 680               | 133                           | NR                             | 810               | 3                             | NR                             | 940               | 0                             | NR                             |
| 425               | 285                           | NR                             | 555               | 689                           | NR                             | 685               | 114                           | NR                             | 815               | 2                             | NR                             | 945               | 0                             | NR                             |
| 430               | 487                           | NR                             | 560               | 715                           | NR                             | 690               | 98                            | NR                             | 820               | 2                             | NR                             | 950               | 0                             | NR                             |
| 435               | 787                           | NR                             | 565               | 743                           | NR                             | 695               | 84                            | NR                             | 825               | 2                             | NR                             | 955               | 0                             | NR                             |
| 440               | 1000                          | NR                             | 570               | 771                           | NR                             | 700               | 72                            | NR                             | 830               | 2                             | NR                             | 960               | 0                             | NR                             |
| 445               | 783                           | NR                             | 575               | 794                           | NR                             | 705               | 61                            | NR                             | 835               | 1                             | NR                             | 965               | 0                             | NR                             |
| 450               | 417                           | NR                             | 580               | 811                           | NR                             | 710               | 52                            | NR                             | 840               | 1                             | NR                             | 970               | 0                             | NR                             |
| 455               | 261                           | NR                             | 585               | 817                           | NR                             | 715               | 45                            | NR                             | 845               | 1                             | NR                             | 975               | 0                             | NR                             |
| 460               | 167                           | NR                             | 590               | 815                           | NR                             | 720               | 39                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 104                           | NR                             | 595               | 801                           | NR                             | 725               | 33                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 79                            | NR                             | 600               | 777                           | NR                             | 730               | 28                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 73                            | NR                             | 605               | 744                           | NR                             | 735               | 24                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 76                            | NR                             | 610               | 704                           | NR                             | 740               | 21                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 98                            | NR                             | 615               | 657                           | NR                             | 745               | 18                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

REPORT NUMBER: SP1-2407-184-1

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.47

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(Φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 139                         | NR               | 620       | 607                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 198                         | NR               | 625       | 554                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 267                         | NR               | 630       | 504                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 343                         | NR               | 635       | 452                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 410                         | NR               | 640       | 403                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 470                         | NR               | 645       | 357                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 516                         | NR               | 650       | 314                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 7                           | NR               | 525       | 550                         | NR               | 655       | 275                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 10                          | NR               | 530       | 578                         | NR               | 660       | 240                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 17                          | NR               | 535       | 601                         | NR               | 665       | 208                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 35                          | NR               | 540       | 620                         | NR               | 670       | 179                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 70                          | NR               | 545       | 641                         | NR               | 675       | 155                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 147                         | NR               | 550       | 664                         | NR               | 680       | 133                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 285                         | NR               | 555       | 689                         | NR               | 685       | 114                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 487                         | NR               | 560       | 715                         | NR               | 690       | 98                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 787                         | NR               | 565       | 743                         | NR               | 695       | 84                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 1000                        | NR               | 570       | 771                         | NR               | 700       | 72                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 783                         | NR               | 575       | 794                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 417                         | NR               | 580       | 811                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 261                         | NR               | 585       | 817                         | NR               | 715       | 45                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 167                         | NR               | 590       | 815                         | NR               | 720       | 39                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 104                         | NR               | 595       | 801                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 79                          | NR               | 600       | 777                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 73                          | NR               | 605       | 744                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 704                         | NR               | 740       | 21                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 98                          | NR               | 615       | 657                         | NR               | 745       | 18                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-1

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.78

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 139                         | NR               | 620       | 607                         | NR               | 750       | 15                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 198                         | NR               | 625       | 554                         | NR               | 755       | 13                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 267                         | NR               | 630       | 504                         | NR               | 760       | 11                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 343                         | NR               | 635       | 452                         | NR               | 765       | 10                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 410                         | NR               | 640       | 403                         | NR               | 770       | 8                           | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 470                         | NR               | 645       | 357                         | NR               | 775       | 7                           | NR               | 905       | 0                           | NR               |
| 390       | 4                           | NR               | 520       | 516                         | NR               | 650       | 314                         | NR               | 780       | 6                           | NR               | 910       | 0                           | NR               |
| 395       | 7                           | NR               | 525       | 550                         | NR               | 655       | 275                         | NR               | 785       | 5                           | NR               | 915       | 0                           | NR               |
| 400       | 10                          | NR               | 530       | 578                         | NR               | 660       | 240                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 17                          | NR               | 535       | 601                         | NR               | 665       | 208                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 35                          | NR               | 540       | 620                         | NR               | 670       | 179                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 70                          | NR               | 545       | 641                         | NR               | 675       | 155                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 147                         | NR               | 550       | 664                         | NR               | 680       | 133                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 285                         | NR               | 555       | 689                         | NR               | 685       | 114                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 487                         | NR               | 560       | 715                         | NR               | 690       | 98                          | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 787                         | NR               | 565       | 743                         | NR               | 695       | 84                          | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 1000                        | NR               | 570       | 771                         | NR               | 700       | 72                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 783                         | NR               | 575       | 794                         | NR               | 705       | 61                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 417                         | NR               | 580       | 811                         | NR               | 710       | 52                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 261                         | NR               | 585       | 817                         | NR               | 715       | 45                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 167                         | NR               | 590       | 815                         | NR               | 720       | 39                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 104                         | NR               | 595       | 801                         | NR               | 725       | 33                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 79                          | NR               | 600       | 777                         | NR               | 730       | 28                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 73                          | NR               | 605       | 744                         | NR               | 735       | 24                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 76                          | NR               | 610       | 704                         | NR               | 740       | 21                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 98                          | NR               | 615       | 657                         | NR               | 745       | 18                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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TM-30-18

### Summary

$R_f = 71.8$   
 $R_g = 96.5$   
 $CIE R_a = 70.7$   
 $R_g = -36.7$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 56 | CES51 = 86 | CES76 = 48 |
| CES02 = 61 | CES27 = 79 | CES52 = 88 | CES77 = 71 |
| CES03 = 30 | CES28 = 80 | CES53 = 73 | CES78 = 52 |
| CES04 = 70 | CES29 = 49 | CES54 = 79 | CES79 = 79 |
| CES05 = 47 | CES30 = 53 | CES55 = 77 | CES80 = 77 |
| CES06 = 50 | CES31 = 55 | CES56 = 67 | CES81 = 75 |
| CES07 = 40 | CES32 = 53 | CES57 = 64 | CES82 = 90 |
| CES08 = 39 | CES33 = 59 | CES58 = 67 | CES83 = 84 |
| CES09 = 29 | CES34 = 67 | CES59 = 87 | CES84 = 89 |
| CES10 = 74 | CES35 = 82 | CES60 = 91 | CES85 = 86 |
| CES11 = 57 | CES36 = 86 | CES61 = 87 | CES86 = 71 |
| CES12 = 63 | CES37 = 76 | CES62 = 76 | CES87 = 78 |
| CES13 = 42 | CES38 = 62 | CES63 = 73 | CES88 = 76 |
| CES14 = 74 | CES39 = 91 | CES64 = 71 | CES89 = 72 |
| CES15 = 71 | CES40 = 84 | CES65 = 64 | CES90 = 72 |
| CES16 = 46 | CES41 = 81 | CES66 = 67 | CES91 = 97 |
| CES17 = 49 | CES42 = 76 | CES67 = 65 | CES92 = 66 |
| CES18 = 56 | CES43 = 71 | CES68 = 72 | CES93 = 81 |
| CES19 = 72 | CES44 = 98 | CES69 = 82 | CES94 = 55 |
| CES20 = 65 | CES45 = 80 | CES70 = 61 | CES95 = 73 |
| CES21 = 86 | CES46 = 76 | CES71 = 59 | CES96 = 78 |
| CES22 = 78 | CES47 = 71 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 61 | CES73 = 52 | CES98 = 72 |
| CES24 = 91 | CES49 = 76 | CES74 = 93 | CES99 = 60 |
| CES25 = 72 | CES50 = 84 | CES75 = 56 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)