

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: STREETWORKS

Report Number: P1064025

Luminaire Tested: **GLAN-SA3A-735-U-T4BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1064025  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA3A-735-U-T4BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 3xLight Square PACKAGE  
70CRI 3500K FIXTURE w/ TYPE IV ANGLED BACKLIGHT CONTROL  
Light Source: (42) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10946.5 lumens  
Efficiency: N/A  
Efficacy: 134.5 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G3

Input Watts (W): 81.4  
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

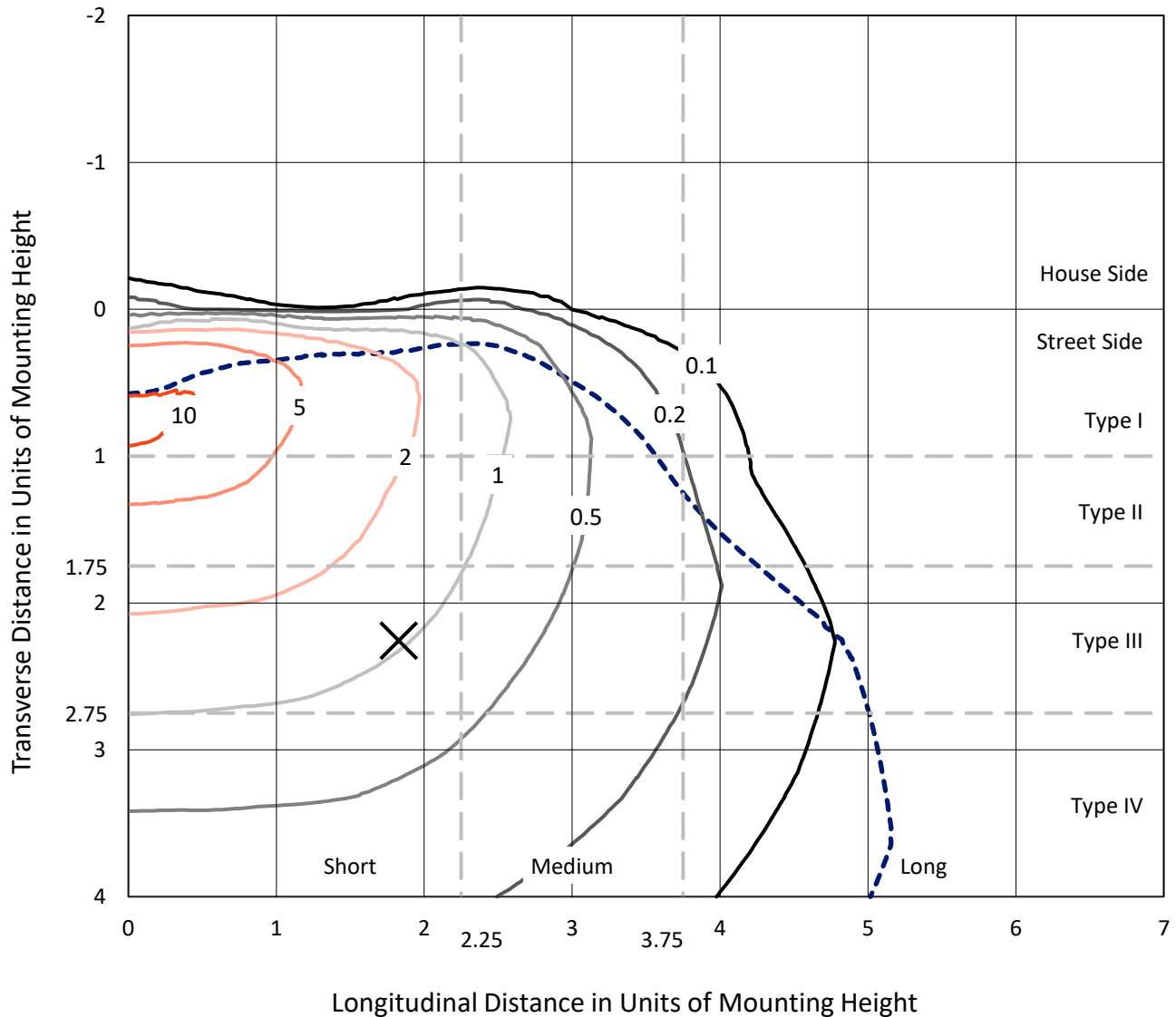


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

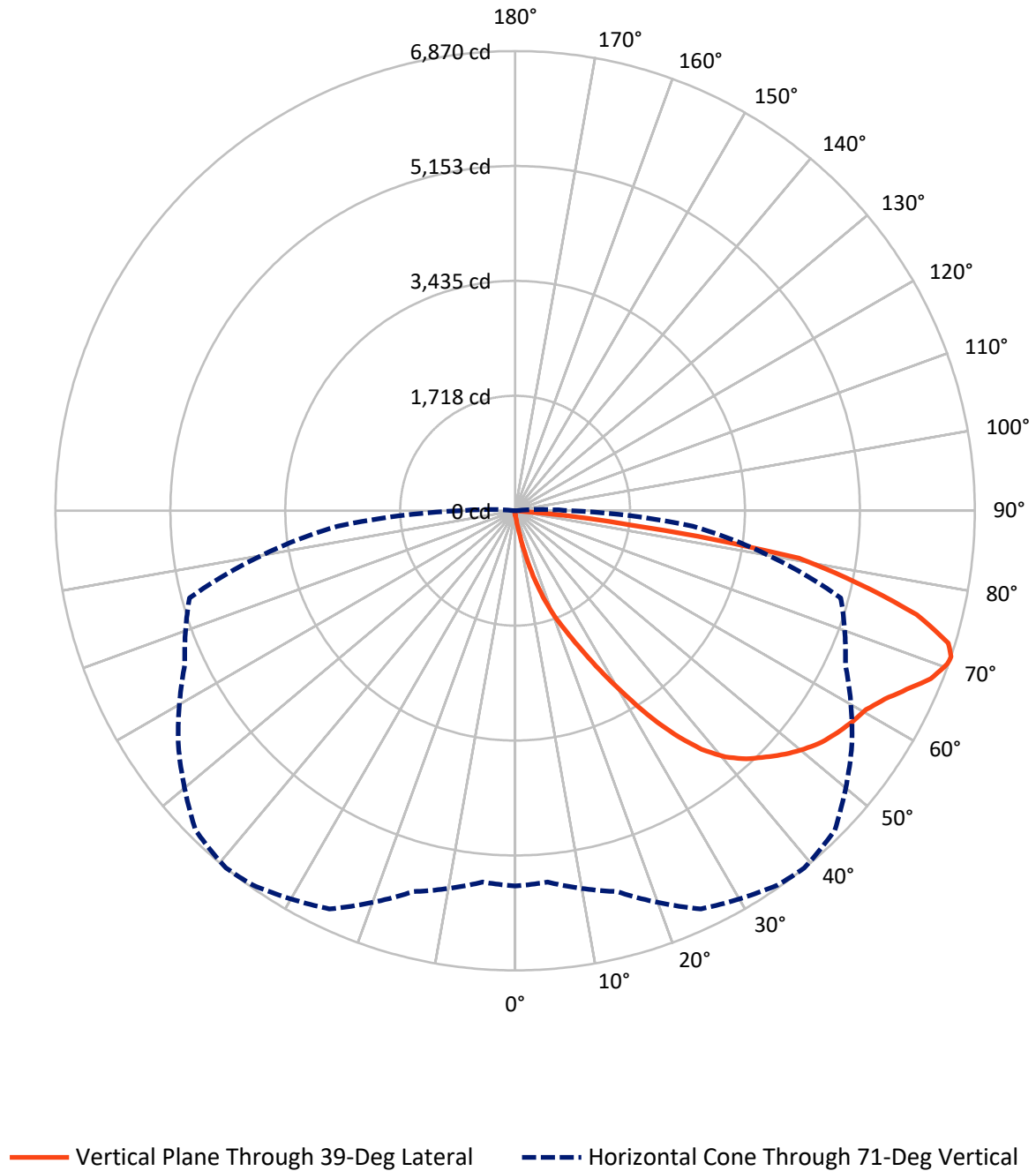


Based on 15 foot mounting height. Maximum calculated value = 11.3 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: GLAN-SA3A-735-U-T4BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 38.9     | 0.0    | 38.9    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 10907.6  | 0.0    | 10907.6 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 10946.5  | 0.0    | 10946.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 9.1     | 0.1       |
| 10°-20°   | 117.0   | 1.1       |
| 20°-30°   | 416.7   | 3.8       |
| 30°-40°   | 1004.2  | 9.2       |
| 40°-50°   | 1680.6  | 15.4      |
| 50°-60°   | 2158.5  | 19.7      |
| 60°-70°   | 2731.6  | 25.0      |
| 70°-80°   | 2435.3  | 22.2      |
| 80°-90°   | 393.7   | 3.6       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 10946.5 | 100.0     |
| 0°-180°   | 10946.5 | 100.0     |



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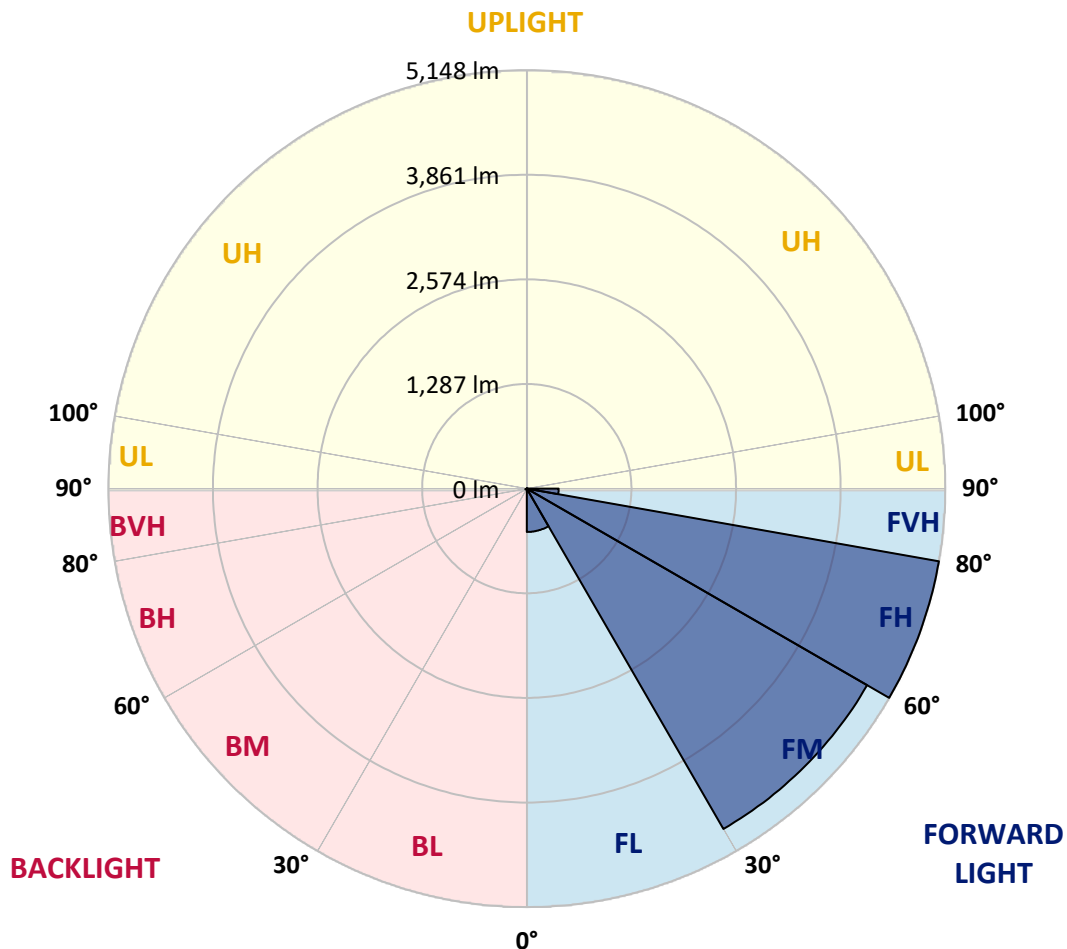
CATALOG NUMBER: GLAN-SA3A-735-U-T4BC

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 533.4  | 4.9       |                         |      |         |
| FM   | (30°-60°)   | 4834.2 | 44.2      |                         |      |         |
| FH   | (60°-80°)   | 5148.2 | 47.0      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 391.9  | 3.6       |                         |      | G3/500  |
| BL   | (0°-30°)    | 9.4    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 9.0    | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 18.7   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 1.8    | 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-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 39°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   | 60.0   |
| 2.5°  | 68.9   | 68.9   | 68.9   | 66.7   | 66.7   | 66.0   | 65.2   | 65.2   | 63.7   | 63.0   | 61.5   |
| 5°    | 104.5  | 102.3  | 97.1   | 94.1   | 88.2   | 84.5   | 80.8   | 75.6   | 70.4   | 66.7   | 62.2   |
| 7.5°  | 236.4  | 241.6  | 224.5  | 192.7  | 160.1  | 146.0  | 122.3  | 98.6   | 81.5   | 70.4   | 63.0   |
| 10°   | 602.5  | 599.5  | 541.7  | 478.0  | 369.0  | 325.3  | 254.9  | 160.8  | 105.2  | 77.1   | 63.7   |
| 12.5° | 1024.8 | 1021.9 | 953.7  | 867.0  | 723.2  | 632.1  | 498.7  | 300.1  | 151.2  | 87.4   | 63.7   |
| 15°   | 1379.8 | 1367.9 | 1346.4 | 1260.5 | 1092.3 | 1015.9 | 839.6  | 530.6  | 244.5  | 105.2  | 65.2   |
| 17.5° | 1614.7 | 1604.3 | 1584.3 | 1553.2 | 1446.5 | 1356.1 | 1214.5 | 833.6  | 395.7  | 136.3  | 68.2   |
| 20°   | 1830.3 | 1822.9 | 1806.6 | 1800.7 | 1731.8 | 1683.6 | 1566.5 | 1181.9 | 616.5  | 185.3  | 72.6   |
| 22.5° | 2126.7 | 2111.2 | 2117.8 | 2082.3 | 2014.8 | 1957.0 | 1885.2 | 1546.5 | 886.3  | 266.8  | 80.8   |
| 25°   | 2489.8 | 2482.4 | 2463.9 | 2438.7 | 2345.3 | 2294.9 | 2184.5 | 1890.3 | 1187.9 | 373.5  | 89.7   |
| 27.5° | 2928.5 | 2920.4 | 2915.9 | 2858.1 | 2750.7 | 2695.8 | 2541.7 | 2214.9 | 1527.2 | 523.2  | 101.5  |
| 30°   | 3433.9 | 3437.6 | 3408.7 | 3334.6 | 3209.4 | 3132.3 | 2973.7 | 2555.0 | 1874.8 | 698.8  | 114.1  |
| 32.5° | 3957.1 | 3949.6 | 3905.2 | 3817.7 | 3705.9 | 3634.0 | 3432.4 | 2927.8 | 2239.4 | 930.7  | 128.9  |
| 35°   | 4521.0 | 4506.9 | 4389.8 | 4289.8 | 4194.2 | 4103.8 | 3920.0 | 3360.5 | 2604.0 | 1190.8 | 148.9  |
| 37.5° | 5090.1 | 5024.1 | 4789.2 | 4662.5 | 4596.6 | 4522.5 | 4351.3 | 3822.2 | 2966.3 | 1481.3 | 173.4  |
| 40°   | 5519.9 | 5468.7 | 5190.1 | 4956.7 | 4904.1 | 4841.1 | 4713.6 | 4220.9 | 3351.6 | 1793.3 | 203.0  |
| 42.5° | 5757.7 | 5729.6 | 5479.1 | 5248.7 | 5124.9 | 5069.3 | 4960.4 | 4569.1 | 3732.5 | 2137.8 | 246.0  |
| 45°   | 5859.3 | 5815.5 | 5648.1 | 5540.6 | 5343.5 | 5251.6 | 5121.9 | 4832.2 | 4130.5 | 2529.1 | 306.0  |
| 47.5° | 5828.1 | 5802.9 | 5682.9 | 5722.2 | 5579.2 | 5436.1 | 5245.7 | 5033.8 | 4470.6 | 2978.2 | 388.3  |
| 50°   | 5632.5 | 5611.0 | 5574.0 | 5786.6 | 5768.9 | 5599.9 | 5405.8 | 5193.1 | 4748.5 | 3441.3 | 515.8  |
| 52.5° | 5260.5 | 5251.6 | 5346.5 | 5736.3 | 5876.3 | 5744.4 | 5559.9 | 5333.9 | 5007.8 | 3925.2 | 698.0  |
| 55°   | 4781.1 | 4817.4 | 5088.6 | 5657.7 | 5931.1 | 5851.1 | 5696.2 | 5465.8 | 5216.1 | 4358.0 | 967.0  |
| 57.5° | 4584.0 | 4593.6 | 4932.2 | 5602.1 | 5955.6 | 5945.2 | 5828.9 | 5591.8 | 5407.2 | 4704.0 | 1377.6 |
| 60°   | 4814.4 | 4799.6 | 4978.2 | 5644.4 | 6004.5 | 6029.7 | 5946.7 | 5708.8 | 5573.2 | 5001.2 | 1924.4 |
| 62.5° | 5230.9 | 5222.7 | 5279.8 | 5824.4 | 6147.5 | 6198.6 | 6110.5 | 5793.3 | 5719.9 | 5196.8 | 2548.4 |
| 65°   | 5602.9 | 5585.8 | 5691.8 | 6143.8 | 6398.7 | 6435.0 | 6358.0 | 5937.8 | 5784.4 | 5339.1 | 3134.5 |
| 67.5° | 5763.7 | 5760.0 | 5930.4 | 6447.6 | 6662.5 | 6701.8 | 6634.4 | 6137.1 | 5769.6 | 5384.3 | 3393.1 |
| 70°   | 5690.3 | 5676.2 | 5948.9 | 6576.6 | 6811.5 | 6855.9 | 6790.7 | 6211.2 | 5608.8 | 5241.2 | 3010.0 |
| 71°   | 5609.5 | 5571.7 | 5893.3 | 6567.7 | 6832.2 | 6870.0 | 6755.9 | 6143.8 | 5447.3 | 5038.2 | 2662.5 |
| 72.5° | 5359.1 | 5365.7 | 5740.7 | 6475.1 | 6782.6 | 6771.5 | 6558.8 | 5902.2 | 5252.4 | 4577.3 | 2138.6 |
| 75°   | 4742.5 | 4781.8 | 5246.4 | 6086.0 | 6339.4 | 6197.9 | 5872.6 | 5440.6 | 4861.1 | 3282.0 | 1485.0 |
| 77.5° | 3875.5 | 3934.1 | 4444.7 | 5337.6 | 5265.7 | 5251.6 | 5238.3 | 4793.7 | 4151.2 | 1762.9 | 1033.0 |
| 80°   | 1850.3 | 1977.0 | 2681.0 | 3810.3 | 4139.3 | 4298.7 | 4198.6 | 3862.9 | 3210.1 | 839.6  | 617.3  |
| 82.5° | 120.8  | 119.3  | 169.0  | 320.1  | 1349.4 | 1744.4 | 2771.4 | 2761.0 | 2237.9 | 409.0  | 251.9  |
| 85°   | 57.1   | 58.5   | 64.5   | 73.4   | 85.2   | 93.4   | 128.9  | 755.8  | 1070.8 | 194.9  | 54.8   |
| 87.5° | 33.3   | 34.1   | 40.0   | 51.1   | 66.7   | 74.1   | 88.2   | 113.4  | 139.3  | 107.4  | 11.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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CATALOG NUMBER: GLAN-SA3A-735-U-T4BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 60.0   | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 |
| 2.5°  | 60.8   | 60.0 | 57.8 | 55.6 | 53.4 | 51.9 | 51.1 | 51.9 | 51.9 | 52.6 | 52.6 |
| 5°    | 60.8   | 58.5 | 54.8 | 50.4 | 47.4 | 44.5 | 43.0 | 42.2 | 43.0 | 43.0 | 43.0 |
| 7.5°  | 60.0   | 56.3 | 51.1 | 45.9 | 42.2 | 38.5 | 37.1 | 36.3 | 36.3 | 37.1 | 37.1 |
| 10°   | 58.5   | 54.8 | 48.2 | 42.2 | 37.8 | 33.3 | 31.1 | 28.9 | 28.9 | 28.9 | 29.6 |
| 12.5° | 57.8   | 52.6 | 44.5 | 38.5 | 32.6 | 27.4 | 23.0 | 20.7 | 21.5 | 21.5 | 21.5 |
| 15°   | 56.3   | 50.4 | 42.2 | 34.8 | 27.4 | 20.7 | 17.0 | 14.8 | 15.6 | 16.3 | 15.6 |
| 17.5° | 56.3   | 49.6 | 39.3 | 30.4 | 21.5 | 15.6 | 12.6 | 11.1 | 11.1 | 11.9 | 11.9 |
| 20°   | 56.3   | 48.2 | 37.1 | 25.9 | 16.3 | 11.9 | 8.9  | 8.2  | 8.2  | 9.6  | 10.4 |
| 22.5° | 57.8   | 48.2 | 34.1 | 21.5 | 13.3 | 8.9  | 6.7  | 5.9  | 6.7  | 8.2  | 8.9  |
| 25°   | 60.0   | 47.4 | 31.1 | 19.3 | 11.1 | 6.7  | 5.2  | 3.7  | 4.4  | 5.9  | 6.7  |
| 27.5° | 62.2   | 46.7 | 28.2 | 17.0 | 8.9  | 5.2  | 3.7  | 3.0  | 2.2  | 3.0  | 3.0  |
| 30°   | 64.5   | 46.7 | 25.2 | 14.1 | 7.4  | 3.7  | 2.2  | 1.5  | 0.7  | 0.0  | 0.0  |
| 32.5° | 66.0   | 45.2 | 23.0 | 11.1 | 5.9  | 3.0  | 1.5  | 0.7  | 0.0  | 0.0  | 0.0  |
| 35°   | 67.4   | 43.7 | 20.0 | 8.9  | 4.4  | 2.2  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 68.9   | 41.5 | 17.0 | 7.4  | 3.7  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 70.4   | 38.5 | 14.1 | 6.7  | 2.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 71.9   | 36.3 | 11.9 | 5.2  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 75.6   | 34.8 | 9.6  | 4.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 82.3   | 33.3 | 8.9  | 3.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 91.9   | 31.9 | 8.2  | 2.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 105.2  | 31.1 | 7.4  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 128.9  | 30.4 | 6.7  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 169.7  | 29.6 | 6.7  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 260.1  | 28.2 | 6.7  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 464.6  | 27.4 | 5.9  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 809.9  | 28.2 | 5.9  | 1.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1161.2 | 29.6 | 5.2  | 2.2  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 993.7  | 25.9 | 5.2  | 3.0  | 1.5  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 71°   | 809.9  | 23.0 | 5.2  | 3.0  | 1.5  | 0.7  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 520.9  | 17.8 | 4.4  | 3.0  | 1.5  | 1.5  | 0.7  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 220.1  | 14.8 | 4.4  | 3.0  | 2.2  | 1.5  | 1.5  | 0.7  | 0.0  | 0.0  | 0.0  |
| 77.5° | 94.1   | 11.1 | 4.4  | 3.7  | 3.0  | 2.2  | 2.2  | 1.5  | 0.7  | 0.0  | 0.0  |
| 80°   | 35.6   | 8.9  | 5.2  | 4.4  | 3.7  | 3.7  | 3.0  | 1.5  | 0.7  | 0.0  | 0.0  |
| 82.5° | 16.3   | 7.4  | 5.2  | 4.4  | 4.4  | 3.7  | 3.0  | 2.2  | 1.5  | 0.0  | 0.0  |
| 85°   | 10.4   | 6.7  | 5.2  | 4.4  | 4.4  | 3.7  | 3.7  | 2.2  | 1.5  | 0.0  | 0.0  |
| 87.5° | 8.2    | 6.7  | 5.2  | 5.2  | 4.4  | 4.4  | 3.0  | 2.2  | 0.7  | 0.0  | 0.0  |
| 90°   | 0.0    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-5

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-735-U-5WQ

Data in this report applies to families of products including GSS-SB1A-735-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-5  
 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-735-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI 3500K CCT 26 LEDS

### Spectral Parameters

CCT (K): 3369  
 CIE  $u'$ : 0.2386  
 CIE  $v'$ : 0.5156  
 Duv: 0.0013  
 CIE x: 0.4143  
 CIE y: 0.3980  
 CIE z: 0.1877  
 Peak Wavelength (nm): 590  
 Dominant Wavelength (nm): 580  
 Purity: 43.80166  
 R<sub>f</sub>: 71.4  
 R<sub>g</sub>: 96

CRI (Ra): 70.1  
 R1: 66.6  
 R2: 77.6  
 R3: 88.5  
 R4: 69.5  
 R5: 66.4  
 R6: 69.6  
 R7: 77.5  
 R8: 44.9  
 R9: -40.2  
 R10: 49.1  
 R11: 66.3  
 R12: 45.7  
 R13: 68.0  
 R14: 93.4  
 R15: 57.6



### Test Conditions

Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-5

| 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: SP1-2407-184-5

### 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               | 119                           | NR                             | 620               | 778                           | NR                             | 750               | 19                            | NR                             | 880               | 1                             | NR                             |
| 365               | 0                             | NR                             | 495               | 173                           | NR                             | 625               | 711                           | NR                             | 755               | 16                            | NR                             | 885               | 0                             | NR                             |
| 370               | 0                             | NR                             | 500               | 239                           | NR                             | 630               | 648                           | NR                             | 760               | 14                            | NR                             | 890               | 0                             | NR                             |
| 375               | 0                             | NR                             | 505               | 313                           | NR                             | 635               | 582                           | NR                             | 765               | 12                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 383                           | NR                             | 640               | 520                           | NR                             | 770               | 11                            | NR                             | 900               | 0                             | NR                             |
| 385               | 0                             | NR                             | 515               | 448                           | NR                             | 645               | 460                           | NR                             | 775               | 9                             | NR                             | 905               | 0                             | NR                             |
| 390               | 2                             | NR                             | 520               | 500                           | NR                             | 650               | 406                           | NR                             | 780               | 8                             | NR                             | 910               | 0                             | NR                             |
| 395               | 4                             | NR                             | 525               | 539                           | NR                             | 655               | 355                           | NR                             | 785               | 7                             | NR                             | 915               | 0                             | NR                             |
| 400               | 6                             | NR                             | 530               | 575                           | NR                             | 660               | 309                           | NR                             | 790               | 6                             | NR                             | 920               | 0                             | NR                             |
| 405               | 11                            | NR                             | 535               | 606                           | NR                             | 665               | 269                           | NR                             | 795               | 5                             | NR                             | 925               | 0                             | NR                             |
| 410               | 22                            | NR                             | 540               | 633                           | NR                             | 670               | 231                           | NR                             | 800               | 4                             | NR                             | 930               | 0                             | NR                             |
| 415               | 45                            | NR                             | 545               | 666                           | NR                             | 675               | 199                           | NR                             | 805               | 4                             | NR                             | 935               | 0                             | NR                             |
| 420               | 96                            | NR                             | 550               | 701                           | NR                             | 680               | 171                           | NR                             | 810               | 3                             | NR                             | 940               | 0                             | NR                             |
| 425               | 193                           | NR                             | 555               | 743                           | NR                             | 685               | 147                           | NR                             | 815               | 3                             | NR                             | 945               | 0                             | NR                             |
| 430               | 341                           | NR                             | 560               | 788                           | NR                             | 690               | 126                           | NR                             | 820               | 3                             | NR                             | 950               | 0                             | NR                             |
| 435               | 547                           | NR                             | 565               | 837                           | NR                             | 695               | 107                           | NR                             | 825               | 2                             | NR                             | 955               | 0                             | NR                             |
| 440               | 799                           | NR                             | 570               | 887                           | NR                             | 700               | 92                            | NR                             | 830               | 2                             | NR                             | 960               | 0                             | NR                             |
| 445               | 831                           | NR                             | 575               | 931                           | NR                             | 705               | 78                            | NR                             | 835               | 2                             | NR                             | 965               | 0                             | NR                             |
| 450               | 461                           | NR                             | 580               | 967                           | NR                             | 710               | 67                            | NR                             | 840               | 2                             | NR                             | 970               | 0                             | NR                             |
| 455               | 256                           | NR                             | 585               | 990                           | NR                             | 715               | 57                            | NR                             | 845               | 1                             | NR                             | 975               | 0                             | NR                             |
| 460               | 176                           | NR                             | 590               | 1000                          | NR                             | 720               | 49                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 107                           | NR                             | 595               | 994                           | NR                             | 725               | 42                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 74                            | NR                             | 600               | 973                           | NR                             | 730               | 36                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 67                            | NR                             | 605               | 938                           | NR                             | 735               | 31                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 68                            | NR                             | 610               | 892                           | NR                             | 740               | 26                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 84                            | NR                             | 615               | 838                           | NR                             | 745               | 22                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.29

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 119                      | NR            | 620    | 778                      | NR            | 750    | 19                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 173                      | NR            | 625    | 711                      | NR            | 755    | 16                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 239                      | NR            | 630    | 648                      | NR            | 760    | 14                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 313                      | NR            | 635    | 582                      | NR            | 765    | 12                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 383                      | NR            | 640    | 520                      | NR            | 770    | 11                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 448                      | NR            | 645    | 460                      | NR            | 775    | 9                        | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 500                      | NR            | 650    | 406                      | NR            | 780    | 8                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 539                      | NR            | 655    | 355                      | NR            | 785    | 7                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 575                      | NR            | 660    | 309                      | NR            | 790    | 6                        | NR            | 920    | 0                        | NR            |
| 405    | 11                       | NR            | 535    | 606                      | NR            | 665    | 269                      | NR            | 795    | 5                        | NR            | 925    | 0                        | NR            |
| 410    | 22                       | NR            | 540    | 633                      | NR            | 670    | 231                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 45                       | NR            | 545    | 666                      | NR            | 675    | 199                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 96                       | NR            | 550    | 701                      | NR            | 680    | 171                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 193                      | NR            | 555    | 743                      | NR            | 685    | 147                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 341                      | NR            | 560    | 788                      | NR            | 690    | 126                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 547                      | NR            | 565    | 837                      | NR            | 695    | 107                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 799                      | NR            | 570    | 887                      | NR            | 700    | 92                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 831                      | NR            | 575    | 931                      | NR            | 705    | 78                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 461                      | NR            | 580    | 967                      | NR            | 710    | 67                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 256                      | NR            | 585    | 990                      | NR            | 715    | 57                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 176                      | NR            | 590    | 1000                     | NR            | 720    | 49                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 107                      | NR            | 595    | 994                      | NR            | 725    | 42                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 74                       | NR            | 600    | 973                      | NR            | 730    | 36                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 67                       | NR            | 605    | 938                      | NR            | 735    | 31                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 68                       | NR            | 610    | 892                      | NR            | 740    | 26                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 84                       | NR            | 615    | 838                      | NR            | 745    | 22                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.36**

| $\lambda$<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               | 119                                  | NR                             | 620               | 778                                  | NR                             | 750               | 19                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 173                                  | NR                             | 625               | 711                                  | NR                             | 755               | 16                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 239                                  | NR                             | 630               | 648                                  | NR                             | 760               | 14                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 313                                  | NR                             | 635               | 582                                  | NR                             | 765               | 12                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 383                                  | NR                             | 640               | 520                                  | NR                             | 770               | 11                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 448                                  | NR                             | 645               | 460                                  | NR                             | 775               | 9                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 500                                  | NR                             | 650               | 406                                  | NR                             | 780               | 8                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 539                                  | NR                             | 655               | 355                                  | NR                             | 785               | 7                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 575                                  | NR                             | 660               | 309                                  | NR                             | 790               | 6                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 11                                   | NR                             | 535               | 606                                  | NR                             | 665               | 269                                  | NR                             | 795               | 5                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 22                                   | NR                             | 540               | 633                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 45                                   | NR                             | 545               | 666                                  | NR                             | 675               | 199                                  | NR                             | 805               | 4                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 96                                   | NR                             | 550               | 701                                  | NR                             | 680               | 171                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 193                                  | NR                             | 555               | 743                                  | NR                             | 685               | 147                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 341                                  | NR                             | 560               | 788                                  | NR                             | 690               | 126                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 547                                  | NR                             | 565               | 837                                  | NR                             | 695               | 107                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 799                                  | NR                             | 570               | 887                                  | NR                             | 700               | 92                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 831                                  | NR                             | 575               | 931                                  | NR                             | 705               | 78                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 461                                  | NR                             | 580               | 967                                  | NR                             | 710               | 67                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 256                                  | NR                             | 585               | 990                                  | NR                             | 715               | 57                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 176                                  | NR                             | 590               | 1000                                 | NR                             | 720               | 49                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 107                                  | NR                             | 595               | 994                                  | NR                             | 725               | 42                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 74                                   | NR                             | 600               | 973                                  | NR                             | 730               | 36                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 67                                   | NR                             | 605               | 938                                  | NR                             | 735               | 31                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 68                                   | NR                             | 610               | 892                                  | NR                             | 740               | 26                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 84                                   | NR                             | 615               | 838                                  | NR                             | 745               | 22                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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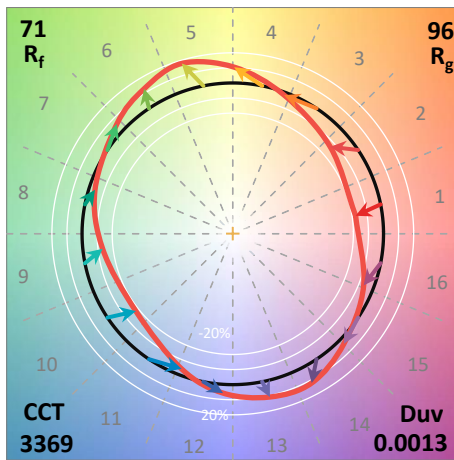
TM-30-18

### Summary

$R_f = 71.4$   
 $R_g = 96$   
 CIE  $R_a = 70.1$   
 $R_g = -40.2$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 57 | CES51 = 84 | CES76 = 50 |
| CES02 = 62 | CES27 = 80 | CES52 = 86 | CES77 = 74 |
| CES03 = 31 | CES28 = 81 | CES53 = 72 | CES78 = 54 |
| CES04 = 70 | CES29 = 50 | CES54 = 79 | CES79 = 81 |
| CES05 = 48 | CES30 = 55 | CES55 = 78 | CES80 = 79 |
| CES06 = 51 | CES31 = 56 | CES56 = 67 | CES81 = 74 |
| CES07 = 40 | CES32 = 54 | CES57 = 65 | CES82 = 91 |
| CES08 = 39 | CES33 = 60 | CES58 = 68 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 85 | CES84 = 89 |
| CES10 = 75 | CES35 = 83 | CES60 = 91 | CES85 = 83 |
| CES11 = 58 | CES36 = 88 | CES61 = 85 | CES86 = 66 |
| CES12 = 64 | CES37 = 78 | CES62 = 78 | CES87 = 77 |
| CES13 = 43 | CES38 = 64 | CES63 = 71 | CES88 = 75 |
| CES14 = 74 | CES39 = 92 | CES64 = 70 | CES89 = 68 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 72 |
| CES16 = 47 | CES41 = 81 | CES66 = 65 | CES91 = 95 |
| CES17 = 50 | CES42 = 79 | CES67 = 63 | CES92 = 62 |
| CES18 = 56 | CES43 = 71 | CES68 = 69 | CES93 = 78 |
| CES19 = 72 | CES44 = 98 | CES69 = 80 | CES94 = 51 |
| CES20 = 65 | CES45 = 80 | CES70 = 60 | CES95 = 70 |
| CES21 = 87 | CES46 = 75 | CES71 = 58 | CES96 = 76 |
| CES22 = 79 | CES47 = 71 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 61 | CES73 = 51 | CES98 = 72 |
| CES24 = 91 | CES49 = 74 | CES74 = 94 | CES99 = 60 |
| CES25 = 72 | CES50 = 83 | CES75 = 57 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)