

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: P1379185

Luminaire Tested: **VAL-T-SB5C-730-U-SL4**

Issue Date: 02/18/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Report Generated By 670245763



**Test Information**

Test Method: LM-79-08  
 Report Number: P1379185  
 Test Lab: INNOVATION CENTER(G3)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB5C-730-U-SL4  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 55 SQUARE 252W 70CRI  
 3000K FIXTURE w/ TYPE IV SPILL CONTROL DISTRIBUTION OPTIC  
 Light Source: (130) 3000K CCT, 70 CRI LEDS  
 Ballast/Driver: ELECTRONIC DRIVER

Luminaire Equipment:

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|--------------------|
| a                 | good             | reflector          |
| b                 | good             | lens               |
| c                 | good             | housing            |
| d                 | good             | cord               |

**Summary**

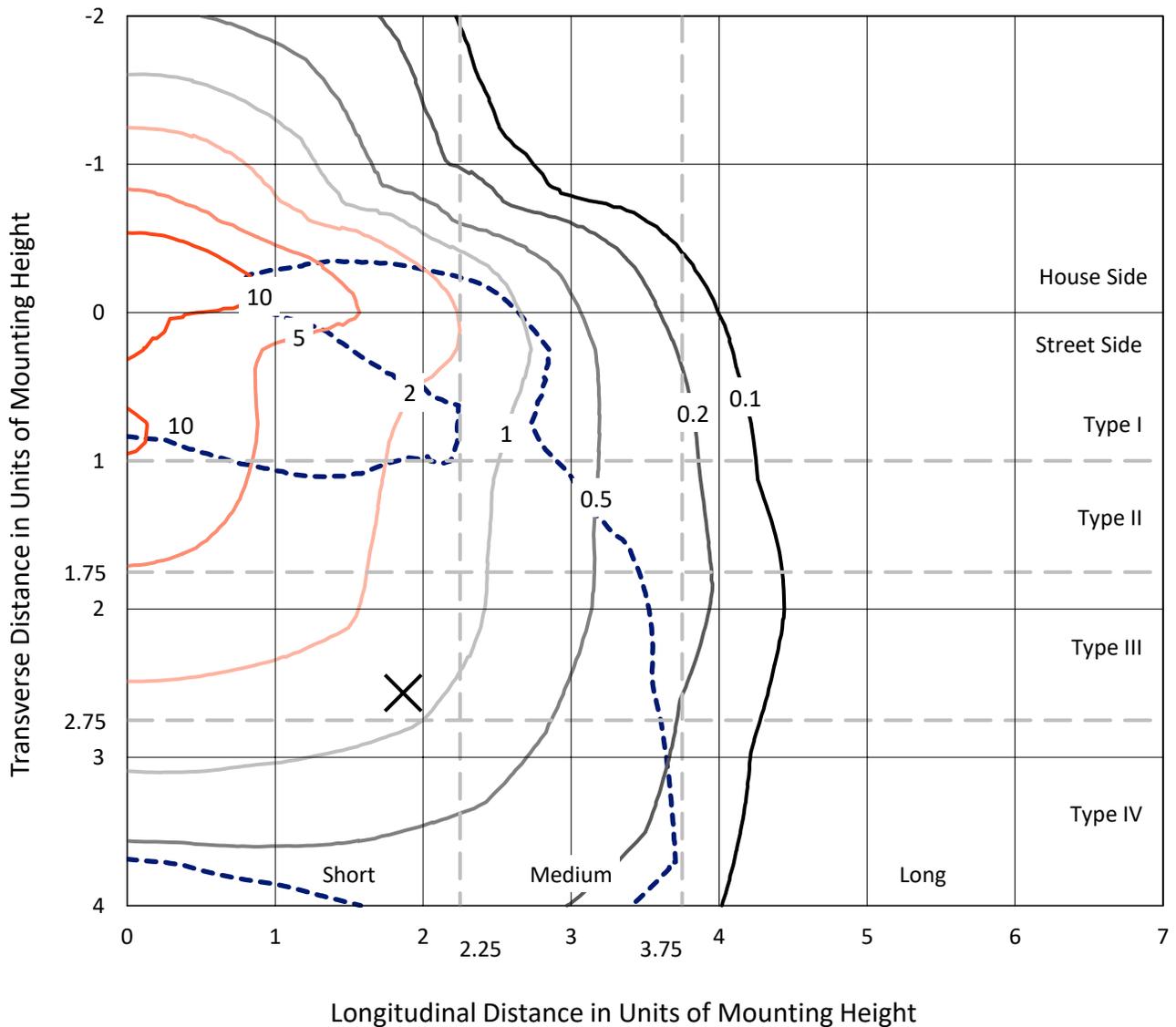
Lumens per Lamp: N/A  
 Luminaire Lumens: 34651.5 lumens  
 Efficiency: N/A  
 Efficacy: 137.5 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
 IES Classification: Type IV - Short  
 BUG Rating: B4 - U0 - G4

Input Watts (W): 252  
 Input Voltage (V): 120  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 7.9%  
 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

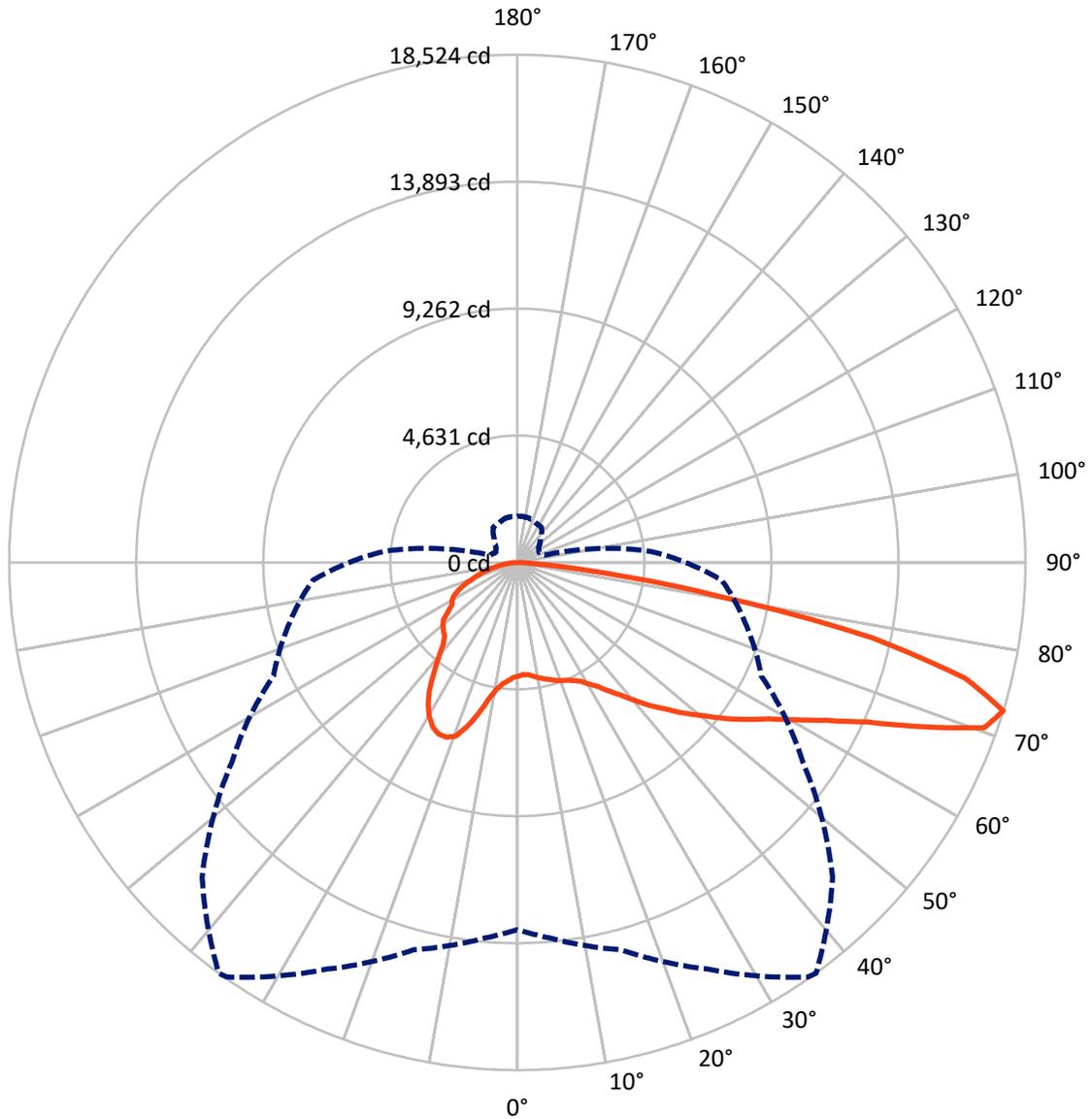
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 13.9 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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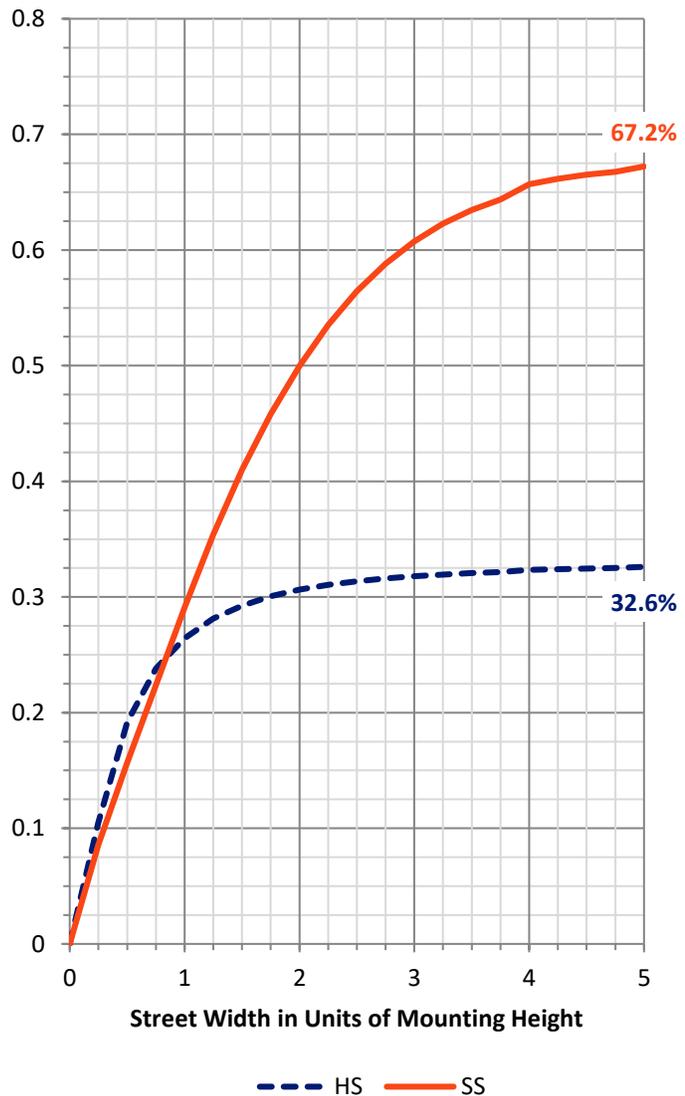
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 11403.5  | 0.0    | 11403.5 |
|                    | % Fixture | 32.9     | 0.0    | 32.9    |
| <b>Street Side</b> | Lumens    | 23248.1  | 0.0    | 23248.1 |
|                    | % Fixture | 67.1     | 0.0    | 67.1    |
| <b>Total</b>       | Lumens    | 34651.5  | 0.0    | 34651.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 410.8   | 1.2       |
| 10°-20°   | 1416.2  | 4.1       |
| 20°-30°   | 2689.0  | 7.8       |
| 30°-40°   | 3926.3  | 11.3      |
| 40°-50°   | 5222.3  | 15.1      |
| 50°-60°   | 6695.7  | 19.3      |
| 60°-70°   | 7876.2  | 22.7      |
| 70°-80°   | 5900.0  | 17.0      |
| 80°-90°   | 515.1   | 1.5       |
| 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°    | 34651.5 | 100.0     |
| 0°-180°   | 34651.5 | 100.0     |

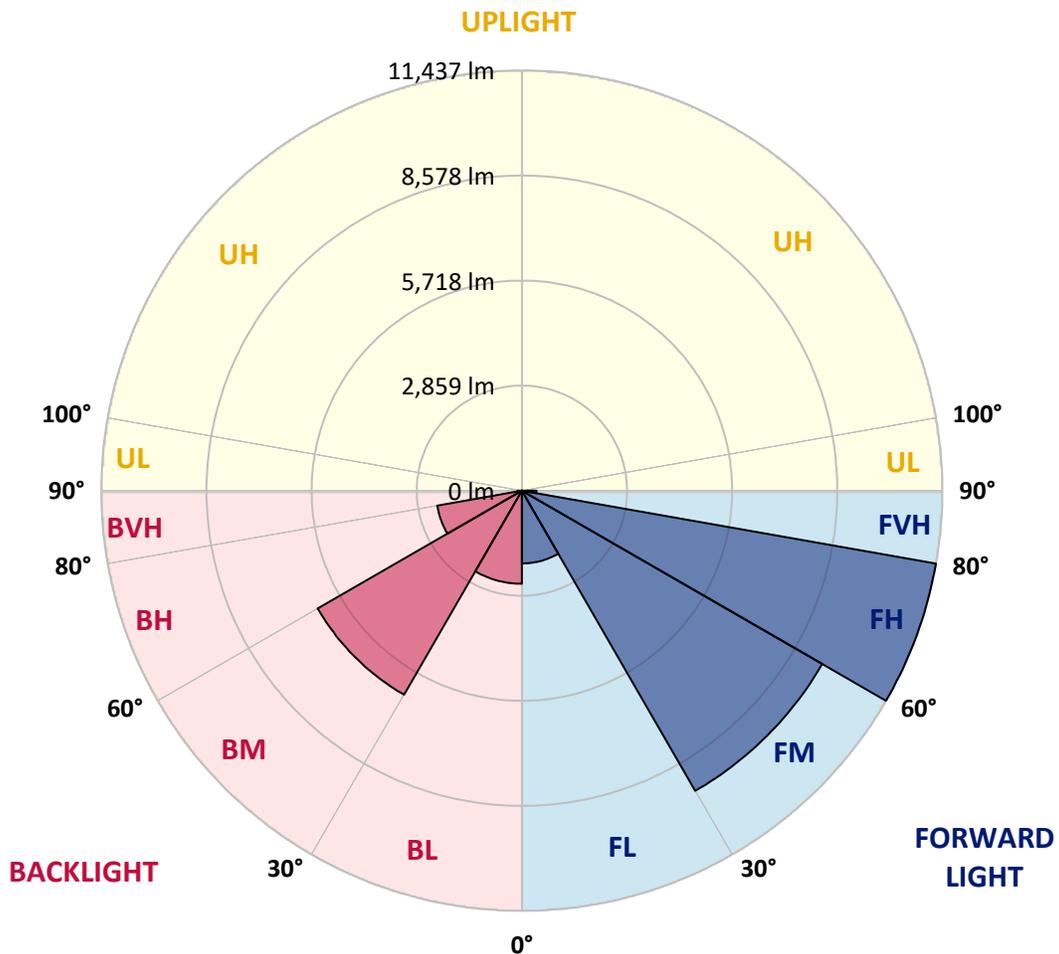


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|----------------|---------|-----------|-------------------------|------|----------|
|                |         |           | B                       | U    | G        |
| FL (0°-30°)    | 1981.0  | 5.7       |                         |      |          |
| FM (30°-60°)   | 9433.3  | 27.2      |                         |      |          |
| FH (60°-80°)   | 11437.0 | 33.0      |                         |      | G4/12000 |
| FVH (80°-90°)  | 396.7   | 1.1       |                         |      | G3/500   |
| BL (0°-30°)    | 2534.9  | 7.3       | B4/5000                 |      |          |
| BM (30°-60°)   | 6411.0  | 18.5      | B4/8500                 |      |          |
| BH (60°-80°)   | 2339.2  | 6.8       | B3/2500                 |      | G3/2500  |
| BVH (80°-90°)  | 118.3   | 0.3       |                         |      | G2/225   |
| UL (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B4-U0-G4**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 36°     | 45°     | 55°     | 65°    | 75°    | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|---------|
| 0°    | 4149.5  | 4149.5  | 4149.5  | 4149.5  | 4149.5  | 4149.5  | 4149.5  | 4149.5  | 4149.5 | 4149.5 | 4149.5  |
| 2.5°  | 4118.1  | 4094.5  | 4110.2  | 4094.5  | 4094.5  | 4094.5  | 4110.2  | 4110.2  | 4133.8 | 4133.8 | 4133.8  |
| 5°    | 4149.5  | 4141.7  | 4149.5  | 4141.7  | 4118.1  | 4118.1  | 4133.8  | 4118.1  | 4157.4 | 4141.7 | 4165.2  |
| 7.5°  | 4236.0  | 4220.3  | 4220.3  | 4196.7  | 4204.5  | 4188.8  | 4204.5  | 4181.0  | 4204.5 | 4188.8 | 4188.8  |
| 10°   | 4338.1  | 4314.6  | 4322.4  | 4291.0  | 4267.4  | 4275.3  | 4291.0  | 4267.4  | 4275.3 | 4283.1 | 4283.1  |
| 12.5° | 4424.6  | 4408.9  | 4408.9  | 4346.0  | 4361.7  | 4361.7  | 4377.4  | 4353.9  | 4369.6 | 4361.7 | 4393.2  |
| 15°   | 4534.6  | 4511.0  | 4495.3  | 4448.2  | 4440.3  | 4432.4  | 4456.0  | 4432.4  | 4471.7 | 4463.9 | 4503.2  |
| 17.5° | 4636.8  | 4613.2  | 4597.5  | 4518.9  | 4503.2  | 4526.8  | 4534.6  | 4518.9  | 4558.2 | 4573.9 | 4652.5  |
| 20°   | 4731.1  | 4738.9  | 4683.9  | 4589.6  | 4589.6  | 4597.5  | 4597.5  | 4597.5  | 4660.4 | 4683.9 | 4770.4  |
| 22.5° | 4896.1  | 4880.4  | 4825.4  | 4715.4  | 4668.2  | 4668.2  | 4738.9  | 4691.8  | 4731.1 | 4786.1 | 4935.4  |
| 25°   | 5108.3  | 5076.9  | 4982.6  | 4841.1  | 4762.5  | 4770.4  | 4794.0  | 4762.5  | 4809.7 | 4872.5 | 5100.5  |
| 27.5° | 5485.5  | 5446.3  | 5281.2  | 4998.3  | 4904.0  | 4911.8  | 4919.7  | 4833.3  | 4825.4 | 4927.6 | 5241.9  |
| 30°   | 6035.7  | 5988.5  | 5737.0  | 5383.4  | 5131.9  | 5147.6  | 5061.2  | 4904.0  | 4849.0 | 4959.0 | 5407.0  |
| 32.5° | 6633.0  | 6570.1  | 6318.6  | 5815.6  | 5477.7  | 5399.1  | 5234.1  | 4959.0  | 4872.5 | 4990.4 | 5556.3  |
| 35°   | 7348.1  | 7293.1  | 6986.6  | 6279.3  | 5815.6  | 5768.5  | 5438.4  | 5076.9  | 4935.4 | 5014.0 | 5697.7  |
| 37.5° | 8361.9  | 8220.5  | 7851.1  | 6876.6  | 6224.3  | 6153.6  | 5705.6  | 5241.9  | 4943.3 | 4998.3 | 5894.2  |
| 40°   | 9234.3  | 9092.8  | 8692.0  | 7631.0  | 6743.0  | 6633.0  | 6098.5  | 5438.4  | 5021.9 | 5029.7 | 6145.7  |
| 42.5° | 10145.9 | 10012.3 | 9580.1  | 8267.6  | 7206.7  | 7151.6  | 6444.3  | 5674.2  | 5124.0 | 5116.2 | 6428.6  |
| 45°   | 11104.7 | 11112.6 | 10444.5 | 9029.9  | 7756.8  | 7646.8  | 6868.7  | 5988.5  | 5312.6 | 5218.3 | 6892.3  |
| 47.5° | 12456.4 | 12307.1 | 11489.8 | 9760.8  | 8369.8  | 8228.3  | 7316.7  | 6318.6  | 5595.6 | 5454.1 | 7411.0  |
| 50°   | 13548.8 | 13438.8 | 12448.6 | 10601.7 | 8943.5  | 8794.2  | 7843.2  | 6680.1  | 5847.1 | 5784.2 | 8102.6  |
| 52.5° | 14460.5 | 14271.9 | 13360.2 | 11395.5 | 9587.9  | 9454.3  | 8275.5  | 7033.8  | 6200.7 | 6169.3 | 8912.0  |
| 55°   | 14963.4 | 14767.0 | 13988.9 | 12134.2 | 10318.8 | 10114.5 | 8762.7  | 7458.1  | 6625.1 | 6640.8 | 9815.8  |
| 57.5° | 15356.4 | 15152.1 | 14389.7 | 12692.2 | 11041.8 | 10766.8 | 9297.1  | 7921.8  | 7128.1 | 7277.4 | 11049.7 |
| 60°   | 15497.8 | 15293.5 | 14727.7 | 13430.9 | 11819.9 | 11647.0 | 9902.3  | 8495.5  | 7709.6 | 8024.0 | 12252.1 |
| 62.5° | 15702.2 | 15749.3 | 15348.5 | 14334.7 | 12833.7 | 12684.3 | 10680.3 | 9202.8  | 8424.8 | 8676.3 | 12676.5 |
| 65°   | 15867.2 | 15843.6 | 15890.8 | 15584.3 | 14248.3 | 14036.1 | 11835.6 | 10122.3 | 8904.2 | 8896.3 | 12464.3 |
| 67.5° | 15482.1 | 15505.7 | 15757.2 | 16511.7 | 16213.0 | 16008.7 | 13328.8 | 10971.1 | 9132.1 | 9312.9 | 11788.4 |
| 70°   | 15191.3 | 15262.1 | 15600.0 | 16543.1 | 18036.3 | 18059.9 | 15411.4 | 11694.1 | 9784.4 | 9312.9 | 9902.3  |
| 72.5° | 13399.5 | 13761.0 | 14633.4 | 16370.2 | 18468.5 | 18523.5 | 16252.3 | 12707.9 | 9808.0 | 8605.5 | 7481.7  |
| 75°   | 8872.8  | 9155.7  | 11481.9 | 14688.4 | 16936.0 | 16849.6 | 15049.9 | 12220.7 | 9179.3 | 7018.0 | 4762.5  |
| 77.5° | 2617.0  | 3151.4  | 5375.5  | 9108.5  | 12676.5 | 13226.6 | 12346.4 | 8361.9  | 6805.9 | 3292.9 | 1697.5  |
| 80°   | 746.6   | 833.0   | 1501.1  | 3198.6  | 6845.1  | 7434.6  | 7670.3  | 4000.2  | 2019.8 | 872.3  | 565.8   |
| 82.5° | 361.5   | 377.2   | 542.3   | 895.9   | 2931.4  | 3206.5  | 2687.8  | 1210.3  | 542.3  | 314.4  | 220.1   |
| 85°   | 62.9    | 78.6    | 133.6   | 267.2   | 526.5   | 636.6   | 597.3   | 243.6   | 165.0  | 141.5  | 102.2   |
| 87.5° | 15.7    | 15.7    | 23.6    | 23.6    | 31.4    | 31.4    | 31.4    | 39.3    | 39.3   | 39.3   | 39.3    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0     |



REPORT NUMBER: P1379185  
 CATALOG NUMBER: VAL-T-SB5C-730-U-SL4

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°     | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4149.5  | 4149.5  | 4149.5 | 4149.5 | 4149.5 | 4149.5 | 4149.5 | 4149.5 | 4149.5 | 4149.5 | 4149.5 |
| 2.5°  | 4173.1  | 4173.1  | 4204.5 | 4220.3 | 4220.3 | 4196.7 | 4196.7 | 4267.4 | 4236.0 | 4251.7 | 4243.8 |
| 5°    | 4181.0  | 4212.4  | 4212.4 | 4259.6 | 4283.1 | 4322.4 | 4338.1 | 4369.6 | 4401.0 | 4401.0 | 4393.2 |
| 7.5°  | 4228.1  | 4251.7  | 4291.0 | 4322.4 | 4385.3 | 4448.2 | 4471.7 | 4566.0 | 4581.8 | 4621.1 | 4605.3 |
| 10°   | 4298.8  | 4338.1  | 4401.0 | 4487.5 | 4566.0 | 4668.2 | 4715.4 | 4817.5 | 4872.5 | 4935.4 | 4896.1 |
| 12.5° | 4408.9  | 4456.0  | 4558.2 | 4676.1 | 4849.0 | 5006.2 | 5131.9 | 5234.1 | 5312.6 | 5383.4 | 5359.8 |
| 15°   | 4526.8  | 4621.1  | 4754.7 | 4966.9 | 5273.4 | 5556.3 | 5721.3 | 5894.2 | 5933.5 | 5996.4 | 5988.5 |
| 17.5° | 4731.1  | 4794.0  | 5061.2 | 5485.5 | 5886.4 | 6130.0 | 6271.4 | 6357.9 | 6334.3 | 6357.9 | 6342.2 |
| 20°   | 4896.1  | 5053.3  | 5532.7 | 6153.6 | 6546.5 | 6703.7 | 6719.4 | 6640.8 | 6475.8 | 6444.3 | 6381.5 |
| 22.5° | 5139.8  | 5375.5  | 6145.7 | 6790.1 | 7104.5 | 7088.8 | 6860.9 | 6625.1 | 6412.9 | 6326.5 | 6295.0 |
| 25°   | 5375.5  | 5799.9  | 6790.1 | 7395.3 | 7481.7 | 7206.7 | 6860.9 | 6554.4 | 6271.4 | 6185.0 | 6114.3 |
| 27.5° | 5674.2  | 6287.2  | 7521.0 | 7906.1 | 7646.8 | 7222.4 | 6711.5 | 6365.7 | 6098.5 | 5957.1 | 5925.6 |
| 30°   | 5980.7  | 6853.0  | 8134.0 | 8149.7 | 7693.9 | 7057.3 | 6436.5 | 6130.0 | 5823.5 | 5682.0 | 5689.9 |
| 32.5° | 6397.2  | 7473.9  | 8652.7 | 8330.5 | 7560.3 | 6727.3 | 6067.1 | 5737.0 | 5469.8 | 5399.1 | 5383.4 |
| 35°   | 6805.9  | 8173.3  | 9069.2 | 8346.2 | 7246.0 | 6263.6 | 5579.9 | 5210.5 | 5045.4 | 4974.7 | 5006.2 |
| 37.5° | 7387.4  | 8888.5  | 9312.9 | 8196.9 | 6790.1 | 5642.7 | 5006.2 | 4715.4 | 4589.6 | 4566.0 | 4597.5 |
| 40°   | 8024.0  | 9548.6  | 9470.0 | 8024.0 | 6169.3 | 4982.6 | 4456.0 | 4275.3 | 4196.7 | 4212.4 | 4267.4 |
| 42.5° | 8707.7  | 10090.9 | 9587.9 | 7631.0 | 5438.4 | 4377.4 | 4015.9 | 3937.3 | 4055.2 | 4125.9 | 4173.1 |
| 45°   | 9438.6  | 10586.0 | 9627.2 | 7073.1 | 4754.7 | 3913.8 | 3764.4 | 3913.8 | 4094.5 | 4125.9 | 4149.5 |
| 47.5° | 10161.6 | 11018.2 | 9627.2 | 6334.3 | 4102.4 | 3607.3 | 3685.8 | 3882.3 | 4023.8 | 3968.8 | 3976.6 |
| 50°   | 10853.2 | 11364.0 | 9603.6 | 5477.7 | 3646.6 | 3450.1 | 3583.7 | 3709.4 | 3646.6 | 3489.4 | 3505.1 |
| 52.5° | 11481.9 | 11670.5 | 9438.6 | 4597.5 | 3269.3 | 3410.8 | 3418.6 | 3261.5 | 3120.0 | 3041.4 | 3057.1 |
| 55°   | 12181.4 | 11953.5 | 8951.3 | 3811.6 | 3025.7 | 3308.6 | 3088.6 | 2884.2 | 2955.0 | 2931.4 | 2923.5 |
| 57.5° | 12912.3 | 12283.5 | 8283.3 | 3135.7 | 2797.8 | 3065.0 | 2821.4 | 2805.6 | 2797.8 | 2766.4 | 2727.1 |
| 60°   | 13541.0 | 12550.7 | 7285.2 | 2467.7 | 2459.9 | 2695.6 | 2766.4 | 2727.1 | 2687.8 | 2624.9 | 2593.5 |
| 62.5° | 13179.5 | 11882.7 | 5823.5 | 1996.2 | 2114.1 | 2404.8 | 2664.2 | 2585.6 | 2593.5 | 2538.4 | 2514.9 |
| 65°   | 12157.8 | 10562.4 | 3968.8 | 1666.1 | 1784.0 | 2145.5 | 2420.6 | 2349.8 | 2310.5 | 2294.8 | 2279.1 |
| 67.5° | 10837.5 | 9147.8  | 2617.0 | 1320.3 | 1493.2 | 1878.3 | 2137.6 | 2051.2 | 2106.2 | 2106.2 | 2098.3 |
| 70°   | 8527.0  | 6994.5  | 1650.4 | 1076.7 | 1186.7 | 1556.1 | 1776.1 | 1815.4 | 1894.0 | 1901.9 | 1894.0 |
| 72.5° | 6130.0  | 4786.1  | 1029.5 | 864.5  | 943.1  | 1186.7 | 1548.2 | 1587.5 | 1674.0 | 1689.7 | 1689.7 |
| 75°   | 3615.1  | 2695.6  | 691.6  | 691.6  | 730.9  | 966.7  | 1281.0 | 1406.8 | 1446.0 | 1461.8 | 1446.0 |
| 77.5° | 1453.9  | 1037.4  | 455.8  | 510.8  | 565.8  | 778.0  | 982.4  | 1139.5 | 1123.8 | 1116.0 | 1076.7 |
| 80°   | 518.7   | 448.0   | 314.4  | 337.9  | 408.7  | 581.6  | 730.9  | 778.0  | 825.2  | 801.6  | 778.0  |
| 82.5° | 212.2   | 204.3   | 196.5  | 220.1  | 243.6  | 353.7  | 510.8  | 510.8  | 518.7  | 510.8  | 503.0  |
| 85°   | 78.6    | 78.6    | 94.3   | 110.0  | 133.6  | 165.0  | 227.9  | 290.8  | 243.6  | 172.9  | 180.8  |
| 87.5° | 39.3    | 39.3    | 31.4   | 31.4   | 39.3   | 55.0   | 55.0   | 70.7   | 70.7   | 39.3   | 23.6   |
| 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: SP1-2407-184-4

Test Date: 10/10/2024

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

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

**Test Information**

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

**Spectral Parameters**

CCT (K): 2985  
 CIE u': 0.2504  
 CIE v': 0.5243  
 Duv: 0.0019  
 CIE x: 0.4408  
 CIE y: 0.4101  
 CIE z: 0.1491  
 Peak Wavelength (nm): 595  
 Dominant Wavelength (nm): 582  
 Purity: 55.41818  
 Rf: 73.8  
 Rg: 94.4

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



**Test Conditions**

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

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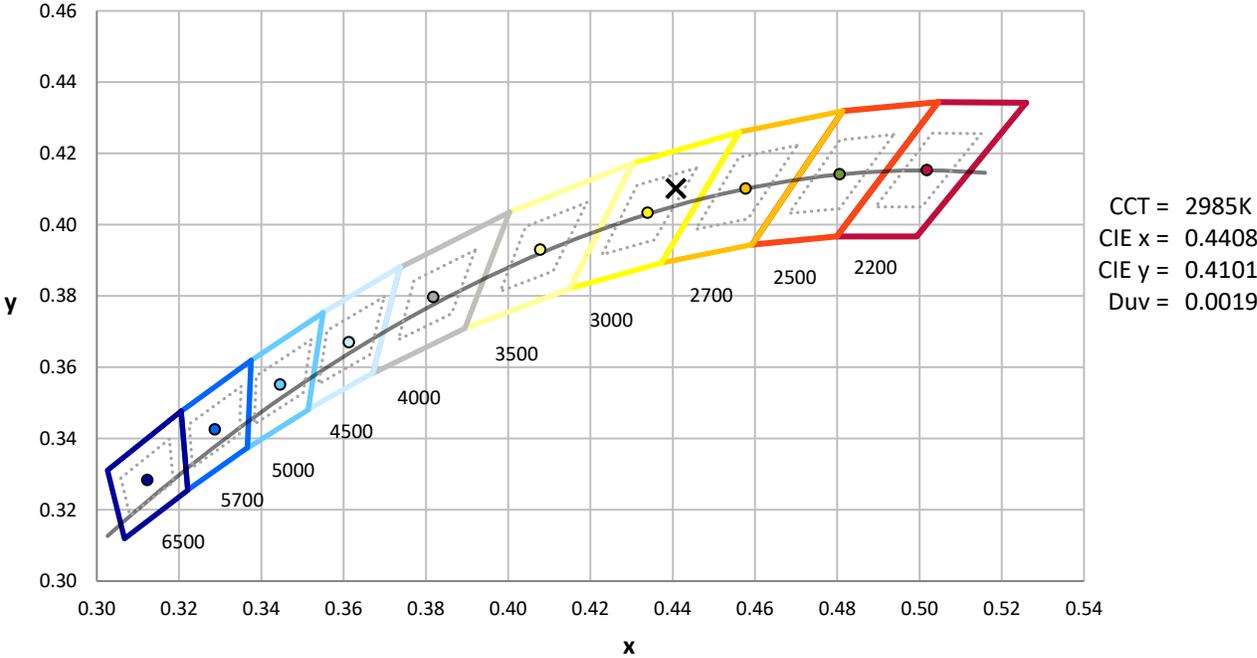
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) | $\lambda$ (nm) | Power W <sup>^</sup> /nm | Lumens ( $\phi$ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360            | 0                        | NR                   | 490            | 142                      | NR                   | 620            | 803                      | NR                   | 750            | 17                       | NR                   | 880            | 0                        | NR                   |
| 365            | 0                        | NR                   | 495            | 189                      | NR                   | 625            | 734                      | NR                   | 755            | 15                       | NR                   | 885            | 0                        | NR                   |
| 370            | 0                        | NR                   | 500            | 240                      | NR                   | 630            | 670                      | NR                   | 760            | 13                       | NR                   | 890            | 0                        | NR                   |
| 375            | 0                        | NR                   | 505            | 290                      | NR                   | 635            | 600                      | NR                   | 765            | 11                       | NR                   | 895            | 0                        | NR                   |
| 380            | 0                        | NR                   | 510            | 335                      | NR                   | 640            | 535                      | NR                   | 770            | 9                        | NR                   | 900            | 0                        | NR                   |
| 385            | 0                        | NR                   | 515            | 375                      | NR                   | 645            | 473                      | NR                   | 775            | 8                        | NR                   | 905            | 0                        | NR                   |
| 390            | 1                        | NR                   | 520            | 408                      | NR                   | 650            | 415                      | NR                   | 780            | 7                        | NR                   | 910            | 0                        | NR                   |
| 395            | 2                        | NR                   | 525            | 434                      | NR                   | 655            | 362                      | NR                   | 785            | 6                        | NR                   | 915            | 0                        | NR                   |
| 400            | 4                        | NR                   | 530            | 461                      | NR                   | 660            | 313                      | NR                   | 790            | 5                        | NR                   | 920            | 0                        | NR                   |
| 405            | 8                        | NR                   | 535            | 486                      | NR                   | 665            | 271                      | NR                   | 795            | 4                        | NR                   | 925            | 0                        | NR                   |
| 410            | 16                       | NR                   | 540            | 514                      | NR                   | 670            | 231                      | NR                   | 800            | 4                        | NR                   | 930            | 0                        | NR                   |
| 415            | 33                       | NR                   | 545            | 549                      | NR                   | 675            | 198                      | NR                   | 805            | 3                        | NR                   | 935            | 0                        | NR                   |
| 420            | 69                       | NR                   | 550            | 591                      | NR                   | 680            | 169                      | NR                   | 810            | 3                        | NR                   | 940            | 0                        | NR                   |
| 425            | 131                      | NR                   | 555            | 640                      | NR                   | 685            | 144                      | NR                   | 815            | 2                        | NR                   | 945            | 0                        | NR                   |
| 430            | 227                      | NR                   | 560            | 695                      | NR                   | 690            | 123                      | NR                   | 820            | 2                        | NR                   | 950            | 0                        | NR                   |
| 435            | 369                      | NR                   | 565            | 757                      | NR                   | 695            | 104                      | NR                   | 825            | 2                        | NR                   | 955            | 0                        | NR                   |
| 440            | 517                      | NR                   | 570            | 822                      | NR                   | 700            | 88                       | NR                   | 830            | 2                        | NR                   | 960            | 0                        | NR                   |
| 445            | 498                      | NR                   | 575            | 882                      | NR                   | 705            | 75                       | NR                   | 835            | 1                        | NR                   | 965            | 0                        | NR                   |
| 450            | 315                      | NR                   | 580            | 935                      | NR                   | 710            | 63                       | NR                   | 840            | 1                        | NR                   | 970            | 0                        | NR                   |
| 455            | 204                      | NR                   | 585            | 972                      | NR                   | 715            | 54                       | NR                   | 845            | 1                        | NR                   | 975            | 0                        | NR                   |
| 460            | 145                      | NR                   | 590            | 996                      | NR                   | 720            | 46                       | NR                   | 850            | 1                        | NR                   | 980            | 0                        | NR                   |
| 465            | 100                      | NR                   | 595            | 1000                     | NR                   | 725            | 39                       | NR                   | 855            | 1                        | NR                   | 985            | 0                        | NR                   |
| 470            | 78                       | NR                   | 600            | 989                      | NR                   | 730            | 33                       | NR                   | 860            | 1                        | NR                   | 990            | 0                        | NR                   |
| 475            | 76                       | NR                   | 605            | 960                      | NR                   | 735            | 28                       | NR                   | 865            | 1                        | NR                   | 995            | 0                        | NR                   |
| 480            | 83                       | NR                   | 610            | 918                      | NR                   | 740            | 24                       | NR                   | 870            | 1                        | NR                   | 1000           | 0                        | NR                   |
| 485            | 105                      | NR                   | 615            | 864                      | NR                   | 745            | 20                       | NR                   | 875            | 1                        | NR                   |                |                          |                      |

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.19**

| $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360               | 0                           | NR                      | 490               | 142                         | NR                      | 620               | 803                         | NR                      | 750               | 17                          | NR                      | 880               | 0                           | NR                      |
| 365               | 0                           | NR                      | 495               | 189                         | NR                      | 625               | 734                         | NR                      | 755               | 15                          | NR                      | 885               | 0                           | NR                      |
| 370               | 0                           | NR                      | 500               | 240                         | NR                      | 630               | 670                         | NR                      | 760               | 13                          | NR                      | 890               | 0                           | NR                      |
| 375               | 0                           | NR                      | 505               | 290                         | NR                      | 635               | 600                         | NR                      | 765               | 11                          | NR                      | 895               | 0                           | NR                      |
| 380               | 0                           | NR                      | 510               | 335                         | NR                      | 640               | 535                         | NR                      | 770               | 9                           | NR                      | 900               | 0                           | NR                      |
| 385               | 0                           | NR                      | 515               | 375                         | NR                      | 645               | 473                         | NR                      | 775               | 8                           | NR                      | 905               | 0                           | NR                      |
| 390               | 1                           | NR                      | 520               | 408                         | NR                      | 650               | 415                         | NR                      | 780               | 7                           | NR                      | 910               | 0                           | NR                      |
| 395               | 2                           | NR                      | 525               | 434                         | NR                      | 655               | 362                         | NR                      | 785               | 6                           | NR                      | 915               | 0                           | NR                      |
| 400               | 4                           | NR                      | 530               | 461                         | NR                      | 660               | 313                         | NR                      | 790               | 5                           | NR                      | 920               | 0                           | NR                      |
| 405               | 8                           | NR                      | 535               | 486                         | NR                      | 665               | 271                         | NR                      | 795               | 4                           | NR                      | 925               | 0                           | NR                      |
| 410               | 16                          | NR                      | 540               | 514                         | NR                      | 670               | 231                         | NR                      | 800               | 4                           | NR                      | 930               | 0                           | NR                      |
| 415               | 33                          | NR                      | 545               | 549                         | NR                      | 675               | 198                         | NR                      | 805               | 3                           | NR                      | 935               | 0                           | NR                      |
| 420               | 69                          | NR                      | 550               | 591                         | NR                      | 680               | 169                         | NR                      | 810               | 3                           | NR                      | 940               | 0                           | NR                      |
| 425               | 131                         | NR                      | 555               | 640                         | NR                      | 685               | 144                         | NR                      | 815               | 2                           | NR                      | 945               | 0                           | NR                      |
| 430               | 227                         | NR                      | 560               | 695                         | NR                      | 690               | 123                         | NR                      | 820               | 2                           | NR                      | 950               | 0                           | NR                      |
| 435               | 369                         | NR                      | 565               | 757                         | NR                      | 695               | 104                         | NR                      | 825               | 2                           | NR                      | 955               | 0                           | NR                      |
| 440               | 517                         | NR                      | 570               | 822                         | NR                      | 700               | 88                          | NR                      | 830               | 2                           | NR                      | 960               | 0                           | NR                      |
| 445               | 498                         | NR                      | 575               | 882                         | NR                      | 705               | 75                          | NR                      | 835               | 1                           | NR                      | 965               | 0                           | NR                      |
| 450               | 315                         | NR                      | 580               | 935                         | NR                      | 710               | 63                          | NR                      | 840               | 1                           | NR                      | 970               | 0                           | NR                      |
| 455               | 204                         | NR                      | 585               | 972                         | NR                      | 715               | 54                          | NR                      | 845               | 1                           | NR                      | 975               | 0                           | NR                      |
| 460               | 145                         | NR                      | 590               | 996                         | NR                      | 720               | 46                          | NR                      | 850               | 1                           | NR                      | 980               | 0                           | NR                      |
| 465               | 100                         | NR                      | 595               | 1000                        | NR                      | 725               | 39                          | NR                      | 855               | 1                           | NR                      | 985               | 0                           | NR                      |
| 470               | 78                          | NR                      | 600               | 989                         | NR                      | 730               | 33                          | NR                      | 860               | 1                           | NR                      | 990               | 0                           | NR                      |
| 475               | 76                          | NR                      | 605               | 960                         | NR                      | 735               | 28                          | NR                      | 865               | 1                           | NR                      | 995               | 0                           | NR                      |
| 480               | 83                          | NR                      | 610               | 918                         | NR                      | 740               | 24                          | NR                      | 870               | 1                           | NR                      | 1000              | 0                           | NR                      |
| 485               | 105                         | NR                      | 615               | 864                         | NR                      | 745               | 20                          | NR                      | 875               | 1                           | NR                      |                   |                             |                         |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 2.13**

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

**Summary**

$R_f = 73.8$   
 $R_g = 94.4$   
 CIE  $R_a = 70.8$   
 $R_9 = -43.2$

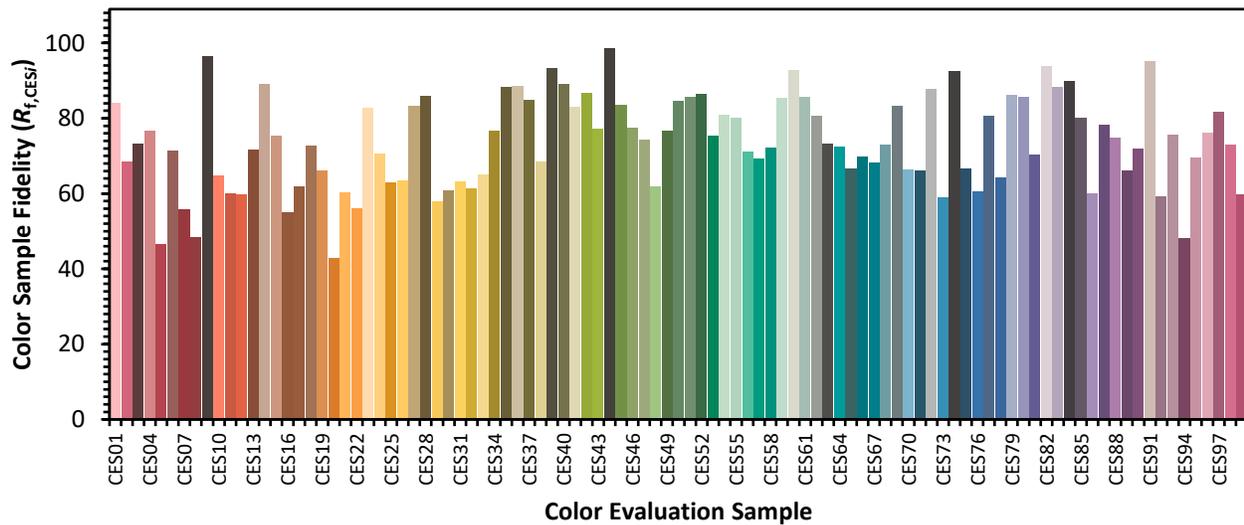


**Color Vector Graphics**

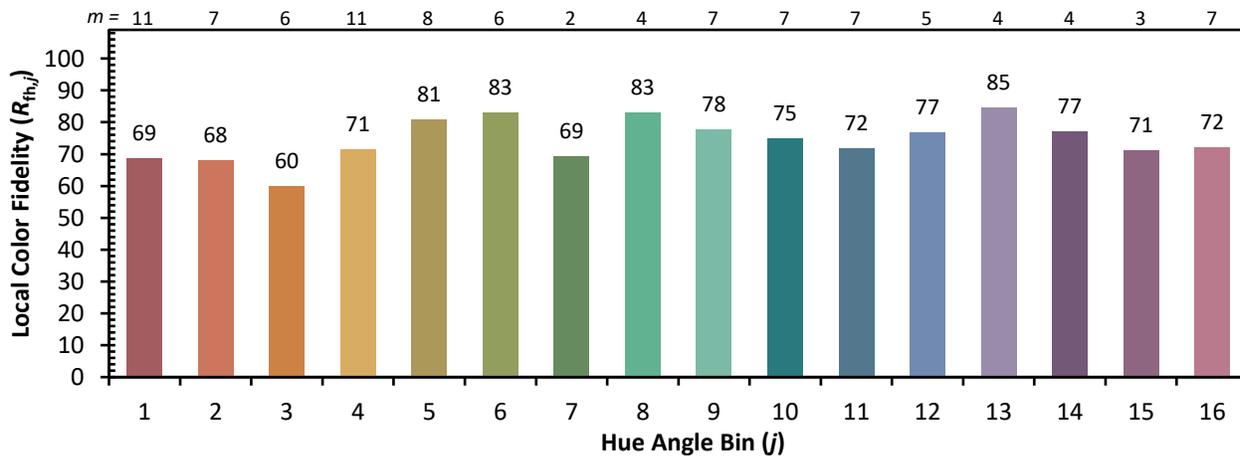
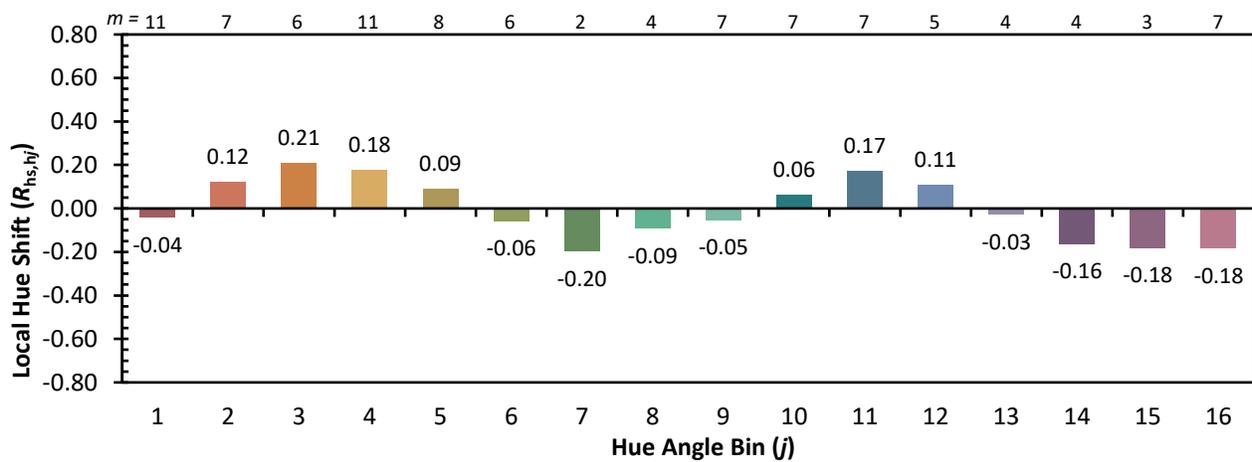


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)