

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: P1383378

Luminaire Tested: **VAL-T-SB3D-727-U-SL2**

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.

**Test Information**

Test Method: LM-79-08  
 Report Number: P1383378  
 Test Lab: INNOVATION CENTER(G1)  
 Issue Date: 02/18/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: STREETWORKS  
 Catalog Number: VAL-T-SB3D-727-U-SL2  
 Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 3SQUARE 219W 70CRI  
 2700K FIXTURE w/ TYPE II SPILL CONTROL DISTRIBUTION OPTIC  
 Light Source: (78) 2700K 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**

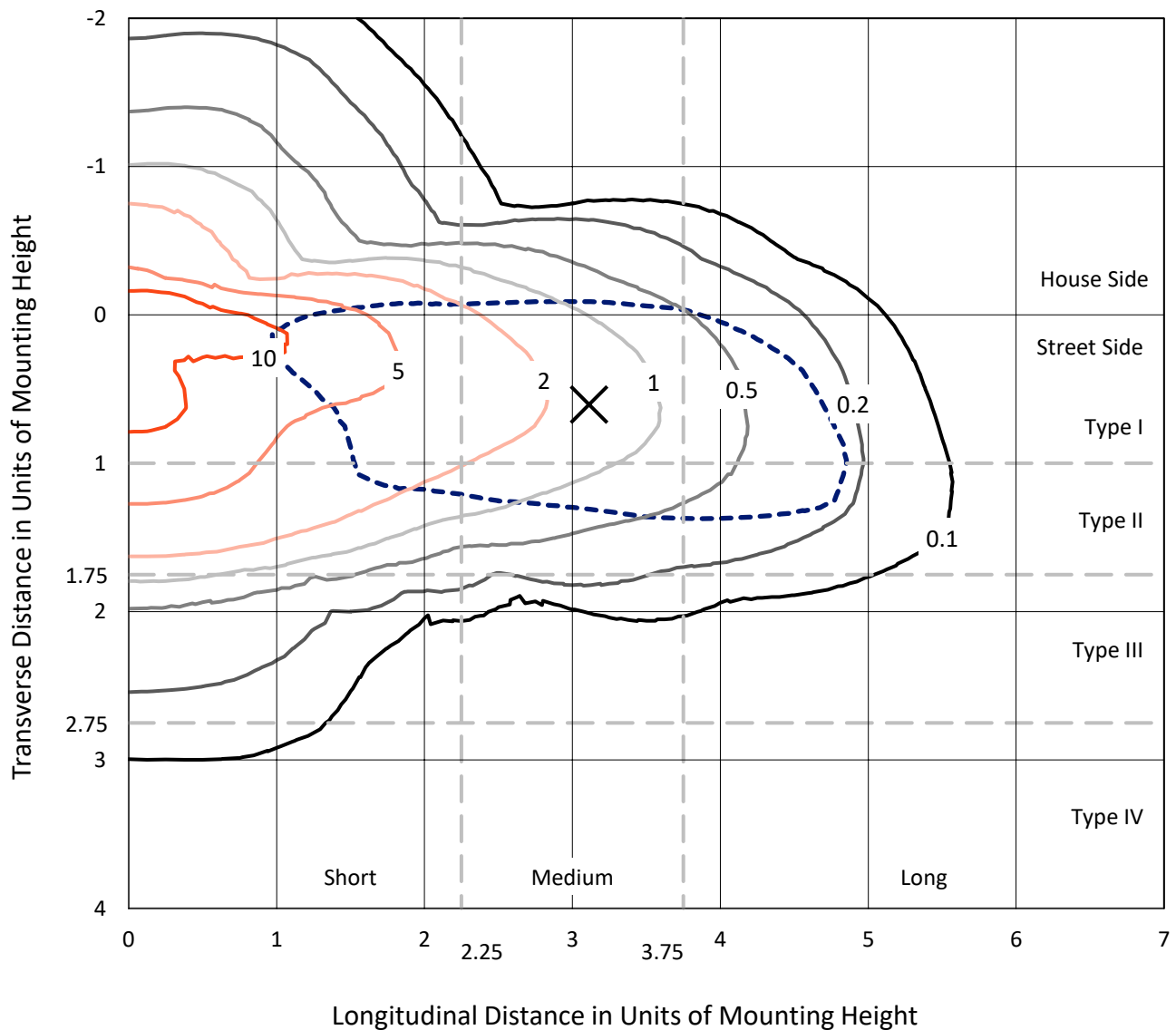
Lumens per Lamp: N/A  
 Luminaire Lumens: 26034.8 lumens  
 Efficiency: N/A  
 Efficacy: 118.9 lumens/watt  
 Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
 IES Classification: Type II - Medium  
 BUG Rating: B3 - U0 - G3  
  
 Input Watts (W): 219  
 Input Voltage (V): 120  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: 0.98  
 Total Harmonic Distortion (THDi): 2.5%  
 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

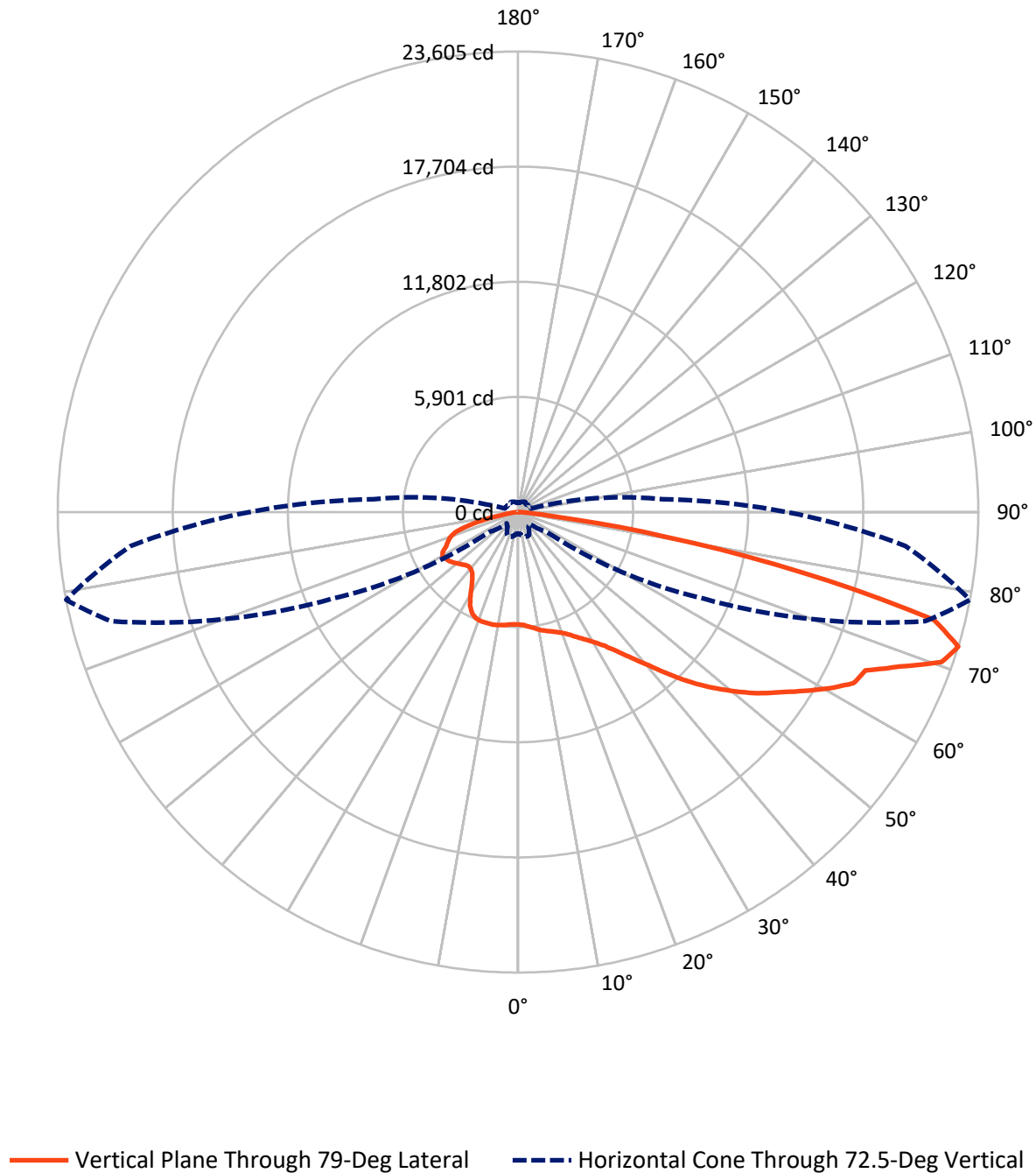
× Max cd  
- - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 14.5 fc  
Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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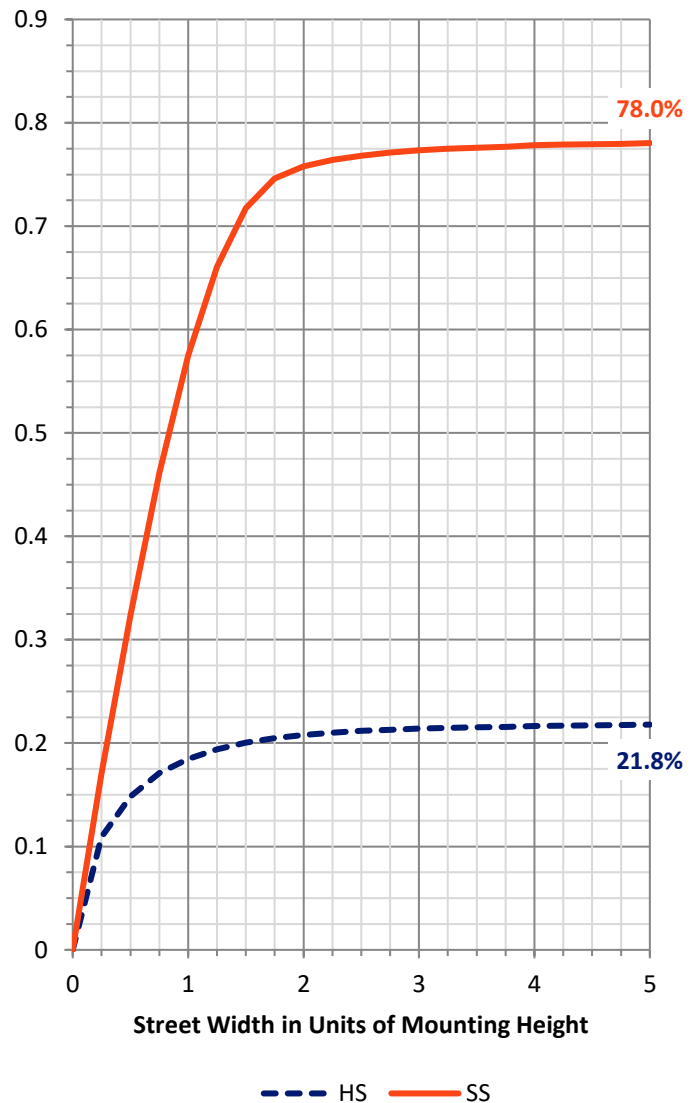
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5719.0   | 0.0    | 5719.0  |
|                    | % Fixture | 22.0     | 0.0    | 22.0    |
| <b>Street Side</b> | Lumens    | 20315.8  | 0.0    | 20315.8 |
|                    | % Fixture | 78.0     | 0.0    | 78.0    |
| <b>Total</b>       | Lumens    | 26034.8  | 0.0    | 26034.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 535.2   | 2.1       |
| 10°-20°   | 1329.3  | 5.1       |
| 20°-30°   | 2092.9  | 8.0       |
| 30°-40°   | 3123.2  | 12.0      |
| 40°-50°   | 4440.7  | 17.1      |
| 50°-60°   | 5609.5  | 21.5      |
| 60°-70°   | 5250.6  | 20.2      |
| 70°-80°   | 3335.2  | 12.8      |
| 80°-90°   | 318.2   | 1.2       |
| 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°    | 26034.8 | 100.0     |
| 0°-180°   | 26034.8 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P1383378

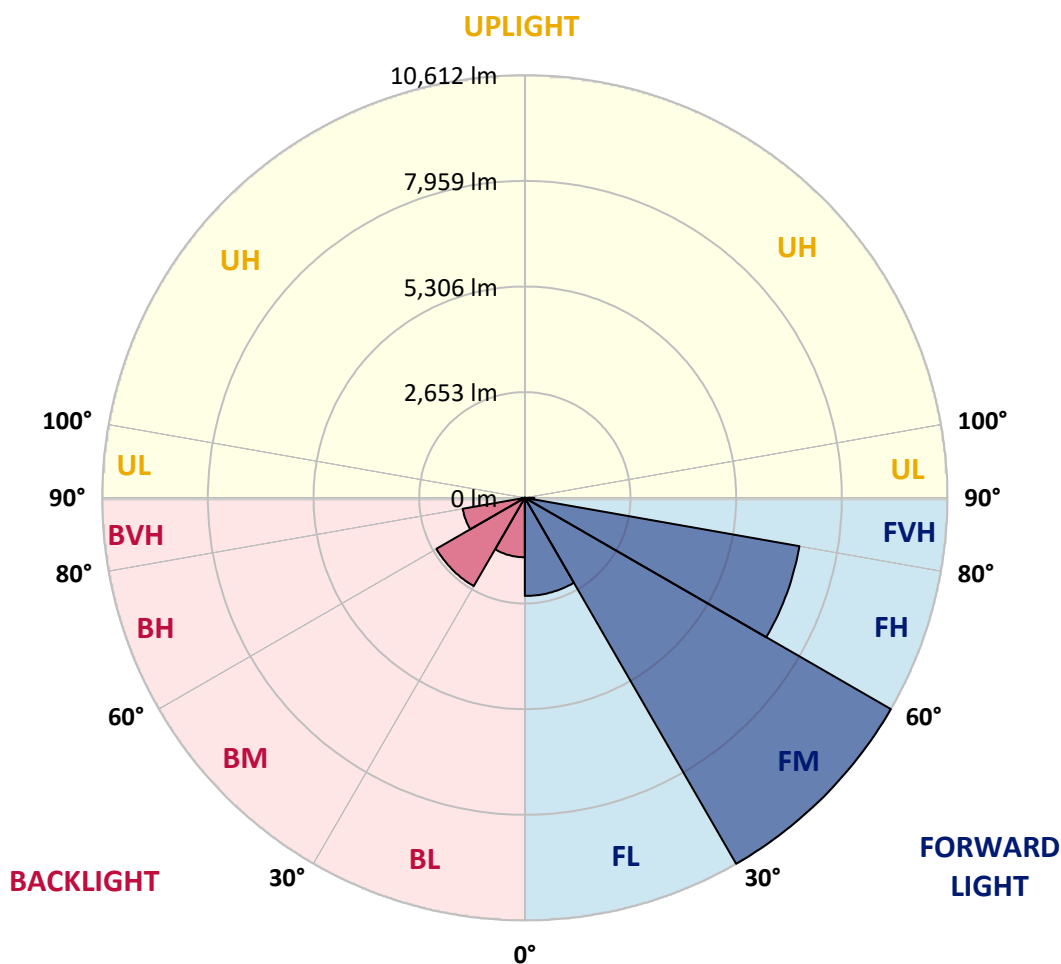
CATALOG NUMBER: VAL-T-SB3D-727-U-SL2

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 2464.3  | 9.5       |                         |      |         |
| FM   | (30°-60°)   | 10611.8 | 40.8      |                         |      |         |
| FH   | (60°-80°)   | 7002.7  | 26.9      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 237.0   | 0.9       |                         |      | G3/500  |
| BL   | (0°-30°)    | 1493.1  | 5.7       | B3/2500                 |      |         |
| BM   | (30°-60°)   | 2561.6  | 9.8       | B3/5000                 |      |         |
| BH   | (60°-80°)   | 1583.1  | 6.1       | B3/2500                 |      | G3/2500 |
| BVH  | (80°-90°)   | 81.2    | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G3**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 65°     | 75°     | 79°     | 85°     |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0°    | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7  | 5765.7  | 5765.7  | 5765.7  | 5765.7  |
| 2.5°  | 5901.2 | 5907.4 | 5882.7 | 5882.7 | 5888.9 | 5864.3 | 5833.5  | 5827.3  | 5802.7  | 5802.7  | 5802.7  |
| 5°    | 5932.0 | 5932.0 | 5925.9 | 5956.7 | 5969.0 | 5987.5 | 5962.8  | 5944.3  | 5907.4  | 5907.4  | 5858.1  |
| 7.5°  | 5605.5 | 5593.2 | 5642.5 | 5784.2 | 5932.0 | 6012.1 | 6061.4  | 6061.4  | 6042.9  | 6012.1  | 5969.0  |
| 10°   | 4989.5 | 5008.0 | 5081.9 | 5272.9 | 5543.9 | 5907.4 | 6104.5  | 6184.6  | 6153.8  | 6141.5  | 6067.5  |
| 12.5° | 4663.1 | 4656.9 | 4712.4 | 4854.0 | 5088.1 | 5531.6 | 6018.3  | 6270.8  | 6277.0  | 6246.2  | 6159.9  |
| 15°   | 4626.1 | 4607.6 | 4632.3 | 4681.6 | 4835.6 | 5192.8 | 5759.5  | 6301.6  | 6363.2  | 6350.9  | 6252.3  |
| 17.5° | 4835.6 | 4829.4 | 4792.4 | 4780.1 | 4774.0 | 4971.1 | 5507.0  | 6277.0  | 6480.3  | 6467.9  | 6357.1  |
| 20°   | 5199.0 | 5168.2 | 5100.4 | 5038.8 | 4909.5 | 4927.9 | 5309.9  | 6246.2  | 6640.4  | 6621.9  | 6511.1  |
| 22.5° | 5587.1 | 5599.4 | 5537.8 | 5389.9 | 5162.0 | 5057.3 | 5248.3  | 6203.1  | 6856.0  | 6843.7  | 6695.9  |
| 25°   | 6061.4 | 6049.1 | 5975.1 | 5808.8 | 5507.0 | 5279.1 | 5316.0  | 6190.7  | 7102.4  | 7114.7  | 6936.1  |
| 27.5° | 6548.0 | 6535.7 | 6443.3 | 6233.9 | 5882.7 | 5550.1 | 5470.0  | 6240.0  | 7416.6  | 7410.4  | 7188.6  |
| 30°   | 7090.1 | 7096.2 | 6979.2 | 6695.9 | 6270.8 | 5888.9 | 5716.4  | 6369.4  | 7730.7  | 7749.2  | 7478.2  |
| 32.5° | 7576.7 | 7607.5 | 7539.8 | 7274.9 | 6745.1 | 6240.0 | 6018.3  | 6578.8  | 8149.6  | 8180.4  | 7847.8  |
| 35°   | 7884.7 | 7903.2 | 7897.0 | 7773.8 | 7250.2 | 6640.4 | 6320.1  | 6843.7  | 8654.7  | 8771.8  | 8340.6  |
| 37.5° | 8180.4 | 8223.5 | 8229.7 | 8137.3 | 7743.0 | 7114.7 | 6677.4  | 7213.3  | 9301.5  | 9492.5  | 8987.3  |
| 40°   | 8500.7 | 8488.4 | 8574.6 | 8463.8 | 8186.6 | 7619.8 | 7047.0  | 7632.2  | 10016.1 | 10330.2 | 9745.0  |
| 42.5° | 8691.7 | 8722.5 | 8833.4 | 8808.7 | 8531.5 | 8088.0 | 7465.8  | 8100.3  | 10909.2 | 11371.2 | 10662.9 |
| 45°   | 8814.9 | 8845.7 | 9005.8 | 9030.5 | 8882.6 | 8408.3 | 7860.1  | 8550.0  | 11728.5 | 12449.2 | 11648.4 |
| 47.5° | 8858.0 | 8876.5 | 9085.9 | 9184.5 | 9122.9 | 8611.6 | 8168.1  | 9061.3  | 12535.5 | 13465.6 | 12634.0 |
| 50°   | 8685.5 | 8753.3 | 9024.3 | 9246.1 | 9289.2 | 8716.3 | 8433.0  | 9603.3  | 13404.0 | 14451.2 | 13625.8 |
| 52.5° | 8420.6 | 8457.6 | 8784.1 | 9258.4 | 9393.9 | 8888.8 | 8759.4  | 10176.2 | 14223.3 | 15436.8 | 14475.9 |
| 55°   | 7903.2 | 7977.1 | 8383.7 | 9055.1 | 9455.5 | 9116.7 | 9184.5  | 10823.0 | 15073.4 | 16299.2 | 15399.8 |
| 57.5° | 6437.1 | 6566.5 | 7237.9 | 8186.6 | 9289.2 | 9566.4 | 9818.9  | 11623.8 | 16003.5 | 17297.1 | 16225.3 |
| 60°   | 4034.8 | 4207.2 | 4909.5 | 6443.3 | 8346.7 | 9831.3 | 10829.2 | 12664.8 | 17112.3 | 18344.3 | 17143.1 |
| 62.5° | 2186.8 | 2180.6 | 2390.1 | 3295.6 | 6018.3 | 9141.3 | 11697.7 | 14469.7 | 18541.4 | 19317.6 | 17679.0 |
| 65°   | 1897.3 | 1897.3 | 1921.9 | 1915.7 | 2599.5 | 6745.1 | 10835.3 | 15547.7 | 19527.0 | 19576.3 | 17223.2 |
| 67.5° | 1706.3 | 1706.3 | 1743.3 | 1650.9 | 1416.8 | 3018.4 | 7927.8  | 14907.0 | 21159.4 | 21128.6 | 17808.4 |
| 70°   | 1503.0 | 1509.2 | 1570.8 | 1515.3 | 1139.6 | 1225.8 | 4336.6  | 13576.5 | 22379.1 | 23038.2 | 18972.6 |
| 72.5° | 1102.6 | 1139.6 | 1318.2 | 1318.2 | 936.3  | 825.4  | 1761.7  | 10527.3 | 21615.2 | 23604.9 | 19939.7 |
| 75°   | 776.2  | 782.3  | 874.7  | 942.5  | 739.2  | 622.2  | 856.2   | 7047.0  | 19828.8 | 22021.8 | 19077.3 |
| 77.5° | 591.4  | 597.5  | 628.3  | 751.5  | 505.1  | 455.8  | 591.4   | 3850.0  | 14303.4 | 14870.1 | 12375.3 |
| 80°   | 394.2  | 388.1  | 431.2  | 529.8  | 357.3  | 308.0  | 381.9   | 1287.4  | 8026.4  | 7656.8  | 5168.2  |
| 82.5° | 197.1  | 203.3  | 234.1  | 277.2  | 209.4  | 184.8  | 221.8   | 665.3   | 3147.7  | 1829.5  | 751.5   |
| 85°   | 55.4   | 67.8   | 80.1   | 110.9  | 86.2   | 80.1   | 104.7   | 234.1   | 400.4   | 295.7   | 203.3   |
| 87.5° | 6.2    | 6.2    | 12.3   | 12.3   | 12.3   | 18.5   | 30.8    | 49.3    | 67.8    | 67.8    | 67.8    |
| 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: P1383378

CATALOG NUMBER: VAL-T-SB3D-727-U-SL2

**CANDELA DISTRIBUTION (continued):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5765.7  | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 | 5765.7 |
| 2.5°  | 5790.3  | 5771.9 | 5747.2 | 5710.3 | 5710.3 | 5667.1 | 5642.5 | 5593.2 | 5611.7 | 5587.1 | 5574.7 |
| 5°    | 5845.8  | 5821.1 | 5765.7 | 5704.1 | 5642.5 | 5550.1 | 5476.2 | 5371.5 | 5359.1 | 5334.5 | 5297.5 |
| 7.5°  | 5944.3  | 5882.7 | 5815.0 | 5673.3 | 5556.3 | 5346.8 | 5180.5 | 4971.1 | 4854.0 | 4780.1 | 4786.3 |
| 10°   | 6042.9  | 5962.8 | 5821.1 | 5636.3 | 5383.8 | 5038.8 | 4607.6 | 4194.9 | 3880.8 | 3702.1 | 3739.1 |
| 12.5° | 6110.7  | 6024.4 | 5833.5 | 5537.8 | 5069.6 | 4379.7 | 3578.9 | 2993.7 | 2765.8 | 2648.8 | 2648.8 |
| 15°   | 6178.4  | 6067.5 | 5815.0 | 5328.3 | 4478.3 | 3301.7 | 2667.3 | 2445.5 | 2383.9 | 2346.9 | 2334.6 |
| 17.5° | 6264.7  | 6135.3 | 5759.5 | 4940.3 | 3529.6 | 2581.0 | 2359.3 | 2291.5 | 2291.5 | 2285.3 | 2273.0 |
| 20°   | 6369.4  | 6215.4 | 5691.8 | 4324.3 | 2710.4 | 2316.1 | 2254.5 | 2242.2 | 2254.5 | 2248.4 | 2242.2 |
| 22.5° | 6529.5  | 6313.9 | 5519.3 | 3474.2 | 2328.5 | 2192.9 | 2186.8 | 2125.2 | 2137.5 | 2149.8 | 2143.7 |
| 25°   | 6732.8  | 6437.1 | 5192.8 | 2654.9 | 2137.5 | 2112.9 | 2051.3 | 1995.8 | 1989.7 | 1995.8 | 1995.8 |
| 27.5° | 6923.8  | 6529.5 | 4663.1 | 2186.8 | 2002.0 | 1995.8 | 1940.4 | 1891.1 | 1891.1 | 1897.3 | 1897.3 |
| 30°   | 7133.2  | 6585.0 | 3850.0 | 1946.5 | 1921.9 | 1891.1 | 1872.6 | 1854.1 | 1860.3 | 1878.8 | 1878.8 |
| 32.5° | 7410.4  | 6640.4 | 3055.3 | 1811.0 | 1841.8 | 1798.7 | 1811.0 | 1804.9 | 1817.2 | 1848.0 | 1854.1 |
| 35°   | 7749.2  | 6665.1 | 2445.5 | 1730.9 | 1730.9 | 1694.0 | 1700.1 | 1675.5 | 1675.5 | 1694.0 | 1706.3 |
| 37.5° | 8198.9  | 6677.4 | 2057.4 | 1687.8 | 1644.7 | 1626.2 | 1613.9 | 1583.1 | 1540.0 | 1509.2 | 1515.3 |
| 40°   | 8685.5  | 6708.2 | 1848.0 | 1657.0 | 1607.7 | 1601.6 | 1576.9 | 1533.8 | 1410.6 | 1312.1 | 1305.9 |
| 42.5° | 9332.3  | 6794.4 | 1743.3 | 1607.7 | 1607.7 | 1607.7 | 1570.8 | 1379.8 | 1281.3 | 1213.5 | 1207.3 |
| 45°   | 9985.3  | 7022.3 | 1687.8 | 1564.6 | 1601.6 | 1607.7 | 1441.4 | 1324.4 | 1244.3 | 1170.4 | 1151.9 |
| 47.5° | 10712.1 | 7348.8 | 1663.2 | 1540.0 | 1558.5 | 1570.8 | 1355.2 | 1299.7 | 1207.3 | 1121.1 | 1102.6 |
| 50°   | 11432.8 | 7693.8 | 1638.5 | 1496.9 | 1496.9 | 1416.8 | 1336.7 | 1275.1 | 1182.7 | 1090.3 | 1078.0 |
| 52.5° | 12196.7 | 8094.2 | 1613.9 | 1422.9 | 1416.8 | 1330.5 | 1318.2 | 1268.9 | 1170.4 | 1053.3 | 1028.7 |
| 55°   | 12861.9 | 8457.6 | 1570.8 | 1336.7 | 1330.5 | 1244.3 | 1305.9 | 1244.3 | 1096.5 | 961.0  | 936.3  |
| 57.5° | 13496.4 | 8753.3 | 1515.3 | 1244.3 | 1256.6 | 1176.5 | 1256.6 | 1195.0 | 1028.7 | 893.2  | 880.9  |
| 60°   | 14100.1 | 9061.3 | 1441.4 | 1164.2 | 1164.2 | 1114.9 | 1195.0 | 1114.9 | 961.0  | 825.4  | 807.0  |
| 62.5° | 14278.7 | 8962.7 | 1318.2 | 1078.0 | 1071.8 | 1034.9 | 1114.9 | 1022.5 | 874.7  | 751.5  | 733.0  |
| 65°   | 13662.7 | 8457.6 | 1170.4 | 991.7  | 973.3  | 942.5  | 997.9  | 911.7  | 776.2  | 677.6  | 671.4  |
| 67.5° | 13749.0 | 8260.5 | 1004.1 | 880.9  | 862.4  | 837.8  | 856.2  | 788.5  | 683.8  | 609.8  | 603.7  |
| 70°   | 13859.9 | 8044.9 | 850.1  | 776.2  | 733.0  | 689.9  | 733.0  | 677.6  | 603.7  | 542.1  | 535.9  |
| 72.5° | 13773.6 | 7447.4 | 702.2  | 653.0  | 622.2  | 572.9  | 628.3  | 585.2  | 523.6  | 474.3  | 462.0  |
| 75°   | 12529.3 | 5987.5 | 572.9  | 535.9  | 499.0  | 468.2  | 505.1  | 492.8  | 443.5  | 437.4  | 394.2  |
| 77.5° | 8426.8  | 3837.6 | 443.5  | 412.7  | 400.4  | 369.6  | 394.2  | 375.8  | 351.1  | 326.5  | 308.0  |
| 80°   | 3652.8  | 1718.6 | 320.3  | 289.5  | 277.2  | 258.7  | 283.4  | 277.2  | 264.9  | 246.4  | 240.2  |
| 82.5° | 523.6   | 406.6  | 215.6  | 197.1  | 166.3  | 154.0  | 166.3  | 178.6  | 258.7  | 314.2  | 308.0  |
| 85°   | 147.8   | 123.2  | 104.7  | 92.4   | 73.9   | 61.6   | 67.8   | 110.9  | 147.8  | 92.4   | 80.1   |
| 87.5° | 67.8    | 61.6   | 49.3   | 30.8   | 18.5   | 18.5   | 12.3   | 6.2    | 6.2    | 0.0    | 0.0    |
| 90°   | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-3

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-727-U-5WQ

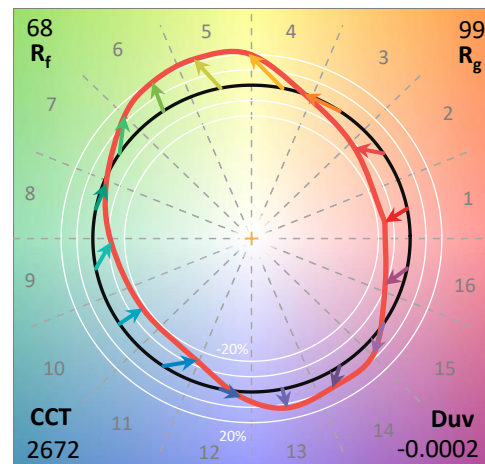
Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-3  
 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-727-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2700K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2672     | CRI (Ra): | 71.1 |      |       |
| CIE u':                   | 0.2638   | R1:       | 68.3 | R9:  | -27.8 |
| CIE v':                   | 0.5276   | R2:       | 79.8 | R10: | 54.4  |
| Duv:                      | -0.0002  | R3:       | 91.2 | R11: | 65.8  |
| CIE x:                    | 0.4619   | R4:       | 69.4 | R12: | 45.6  |
| CIE y:                    | 0.4106   | R5:       | 66.5 | R13: | 69.8  |
| CIE z:                    | 0.1275   | R6:       | 72.6 | R14: | 94.5  |
| Peak Wavelength (nm):     | 601      | R7:       | 77.0 | R15: | 60.1  |
| Dominant Wavelength (nm): | 584      | R8:       | 44.1 |      |       |
| Purity:                   | 61.88407 |           |      |      |       |
| Rf:                       | 67.9     |           |      |      |       |
| Rg:                       | 98.6     |           |      |      |       |



### Test Conditions

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

REPORT NUMBER: SP1-2407-184-3

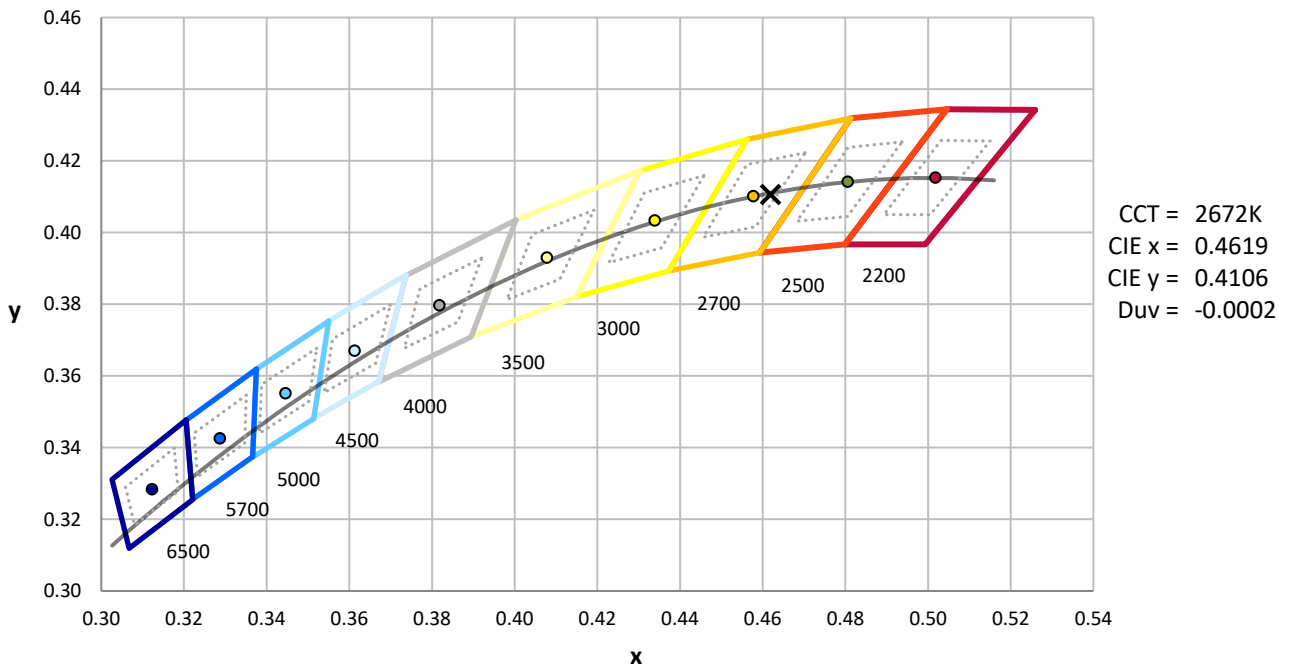
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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**



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### Photopic Flux vs. Wavelength

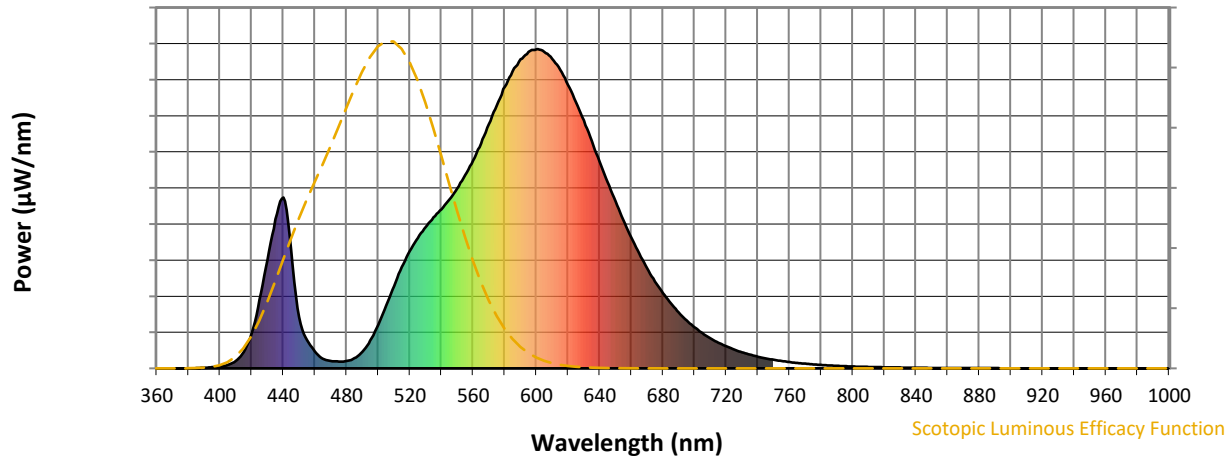


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 52                          | NR               | 620       | 888                         | NR               | 750       | 27                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 87                          | NR               | 625       | 834                         | NR               | 755       | 23                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 135                         | NR               | 630       | 776                         | NR               | 760       | 20                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 196                         | NR               | 635       | 712                         | NR               | 765       | 17                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 258                         | NR               | 640       | 648                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 317                         | NR               | 645       | 583                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 368                         | NR               | 650       | 523                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 408                         | NR               | 655       | 465                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 443                         | NR               | 660       | 410                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 11                          | NR               | 535       | 473                         | NR               | 665       | 360                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 23                          | NR               | 540       | 498                         | NR               | 670       | 313                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 51                          | NR               | 545       | 530                         | NR               | 675       | 272                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 111                         | NR               | 550       | 563                         | NR               | 680       | 236                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 214                         | NR               | 555       | 605                         | NR               | 685       | 203                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 339                         | NR               | 560       | 651                         | NR               | 690       | 175                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 467                         | NR               | 565       | 705                         | NR               | 695       | 150                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 535                         | NR               | 570       | 765                         | NR               | 700       | 128                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 372                         | NR               | 575       | 824                         | NR               | 705       | 110                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 160                         | NR               | 580       | 882                         | NR               | 710       | 94                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 89                          | NR               | 585       | 930                         | NR               | 715       | 80                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 53                          | NR               | 590       | 968                         | NR               | 720       | 69                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 31                          | NR               | 595       | 991                         | NR               | 725       | 59                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 999                         | NR               | 730       | 50                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 21                          | NR               | 605       | 992                         | NR               | 735       | 43                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 23                          | NR               | 610       | 969                         | NR               | 740       | 36                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 32                          | NR               | 615       | 935                         | NR               | 745       | 31                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.02

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 52                          | NR               | 620       | 888                         | NR               | 750       | 27                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 87                          | NR               | 625       | 834                         | NR               | 755       | 23                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 135                         | NR               | 630       | 776                         | NR               | 760       | 20                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 196                         | NR               | 635       | 712                         | NR               | 765       | 17                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 258                         | NR               | 640       | 648                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 317                         | NR               | 645       | 583                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 368                         | NR               | 650       | 523                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 408                         | NR               | 655       | 465                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 443                         | NR               | 660       | 410                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 11                          | NR               | 535       | 473                         | NR               | 665       | 360                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 23                          | NR               | 540       | 498                         | NR               | 670       | 313                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 51                          | NR               | 545       | 530                         | NR               | 675       | 272                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 111                         | NR               | 550       | 563                         | NR               | 680       | 236                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 214                         | NR               | 555       | 605                         | NR               | 685       | 203                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 339                         | NR               | 560       | 651                         | NR               | 690       | 175                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 467                         | NR               | 565       | 705                         | NR               | 695       | 150                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 535                         | NR               | 570       | 765                         | NR               | 700       | 128                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 372                         | NR               | 575       | 824                         | NR               | 705       | 110                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 160                         | NR               | 580       | 882                         | NR               | 710       | 94                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 89                          | NR               | 585       | 930                         | NR               | 715       | 80                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 53                          | NR               | 590       | 968                         | NR               | 720       | 69                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 31                          | NR               | 595       | 991                         | NR               | 725       | 59                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 999                         | NR               | 730       | 50                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 21                          | NR               | 605       | 992                         | NR               | 735       | 43                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 23                          | NR               | 610       | 969                         | NR               | 740       | 36                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 32                          | NR               | 615       | 935                         | NR               | 745       | 31                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.71

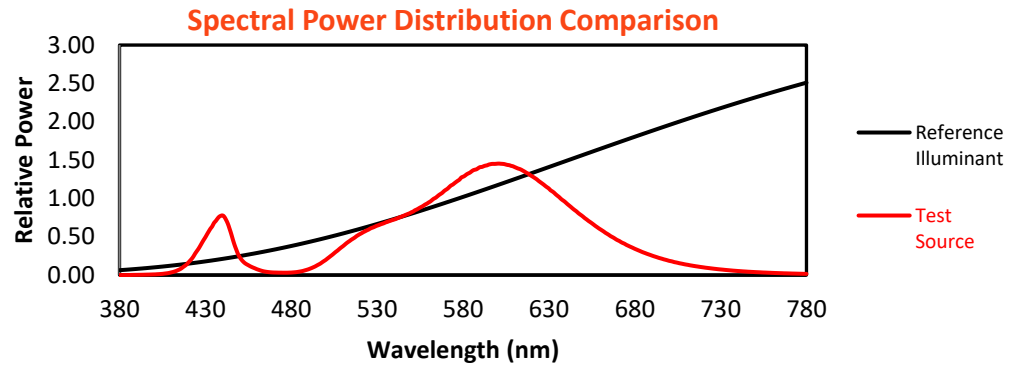
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 52                          | NR               | 620       | 888                         | NR               | 750       | 27                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 87                          | NR               | 625       | 834                         | NR               | 755       | 23                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 135                         | NR               | 630       | 776                         | NR               | 760       | 20                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 196                         | NR               | 635       | 712                         | NR               | 765       | 17                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 258                         | NR               | 640       | 648                         | NR               | 770       | 15                          | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 317                         | NR               | 645       | 583                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 368                         | NR               | 650       | 523                         | NR               | 780       | 11                          | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 408                         | NR               | 655       | 465                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 443                         | NR               | 660       | 410                         | NR               | 790       | 8                           | NR               | 920       | 0                           | NR               |
| 405       | 11                          | NR               | 535       | 473                         | NR               | 665       | 360                         | NR               | 795       | 7                           | NR               | 925       | 0                           | NR               |
| 410       | 23                          | NR               | 540       | 498                         | NR               | 670       | 313                         | NR               | 800       | 6                           | NR               | 930       | 0                           | NR               |
| 415       | 51                          | NR               | 545       | 530                         | NR               | 675       | 272                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 111                         | NR               | 550       | 563                         | NR               | 680       | 236                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 214                         | NR               | 555       | 605                         | NR               | 685       | 203                         | NR               | 815       | 4                           | NR               | 945       | 0                           | NR               |
| 430       | 339                         | NR               | 560       | 651                         | NR               | 690       | 175                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 467                         | NR               | 565       | 705                         | NR               | 695       | 150                         | NR               | 825       | 3                           | NR               | 955       | 0                           | NR               |
| 440       | 535                         | NR               | 570       | 765                         | NR               | 700       | 128                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 372                         | NR               | 575       | 824                         | NR               | 705       | 110                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 160                         | NR               | 580       | 882                         | NR               | 710       | 94                          | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 89                          | NR               | 585       | 930                         | NR               | 715       | 80                          | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 53                          | NR               | 590       | 968                         | NR               | 720       | 69                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 31                          | NR               | 595       | 991                         | NR               | 725       | 59                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 999                         | NR               | 730       | 50                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 21                          | NR               | 605       | 992                         | NR               | 735       | 43                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 23                          | NR               | 610       | 969                         | NR               | 740       | 36                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 32                          | NR               | 615       | 935                         | NR               | 745       | 31                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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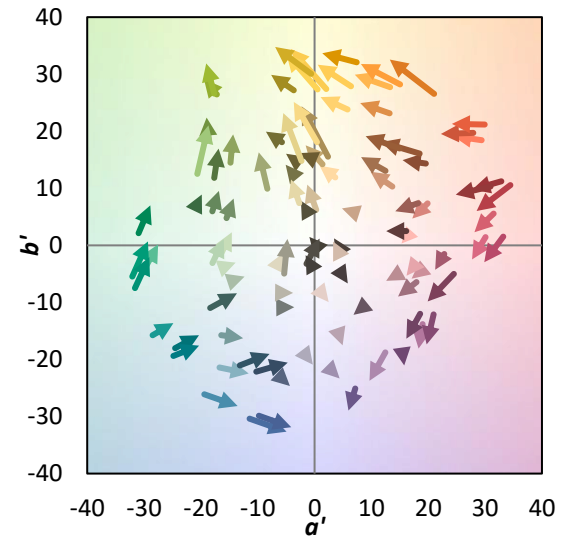
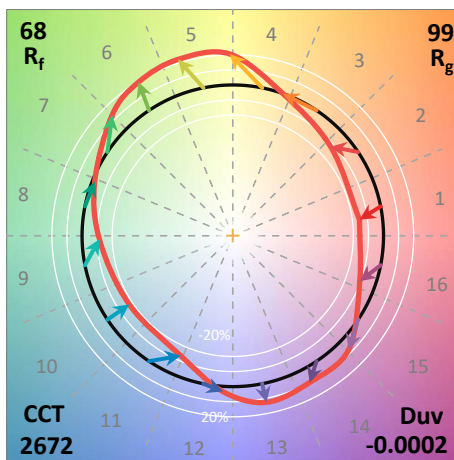
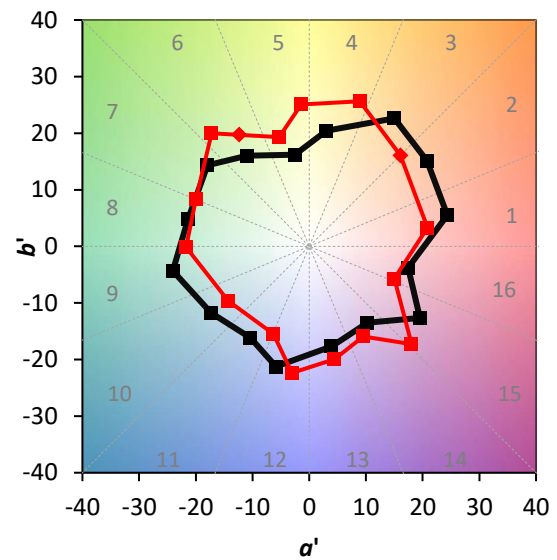
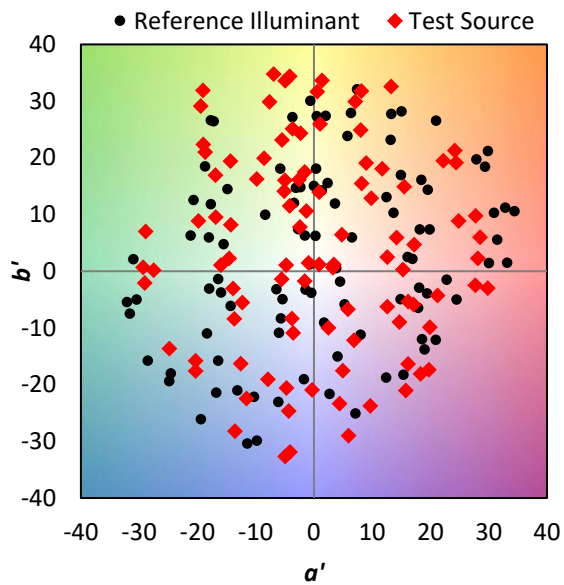
TM-30-18

### Summary

$R_f = 67.9$   
 $R_g = 98.6$   
 $CIE R_a = 71.1$   
 $R_g = -27.8$



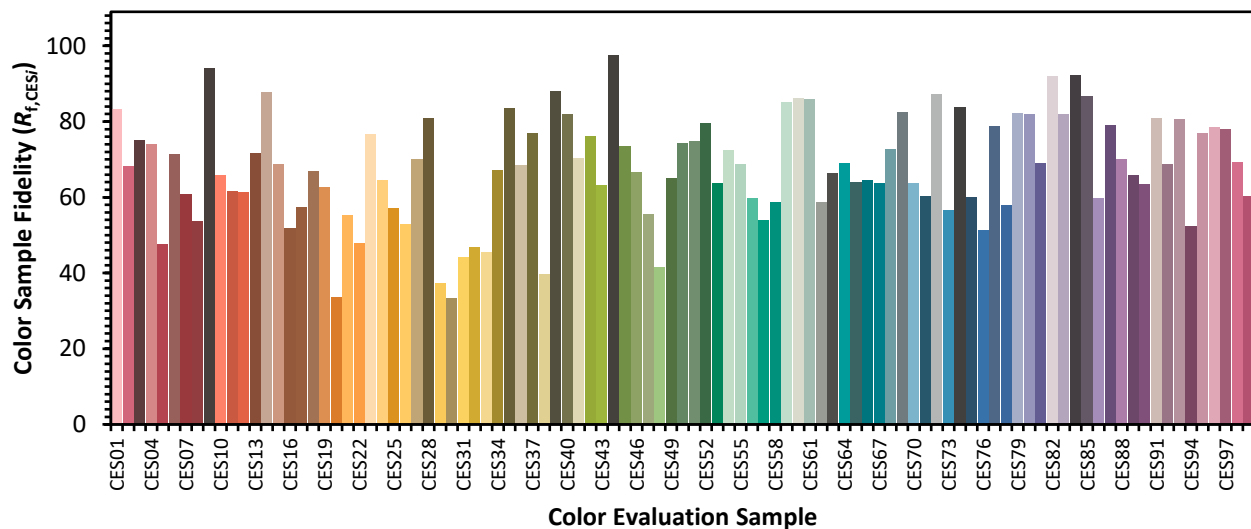
### Color Vector Graphics



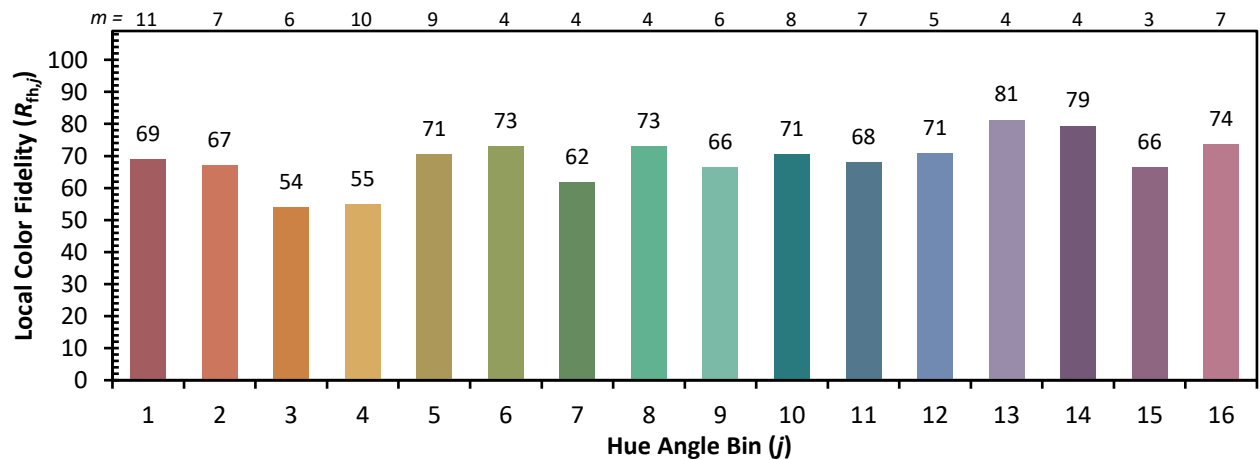
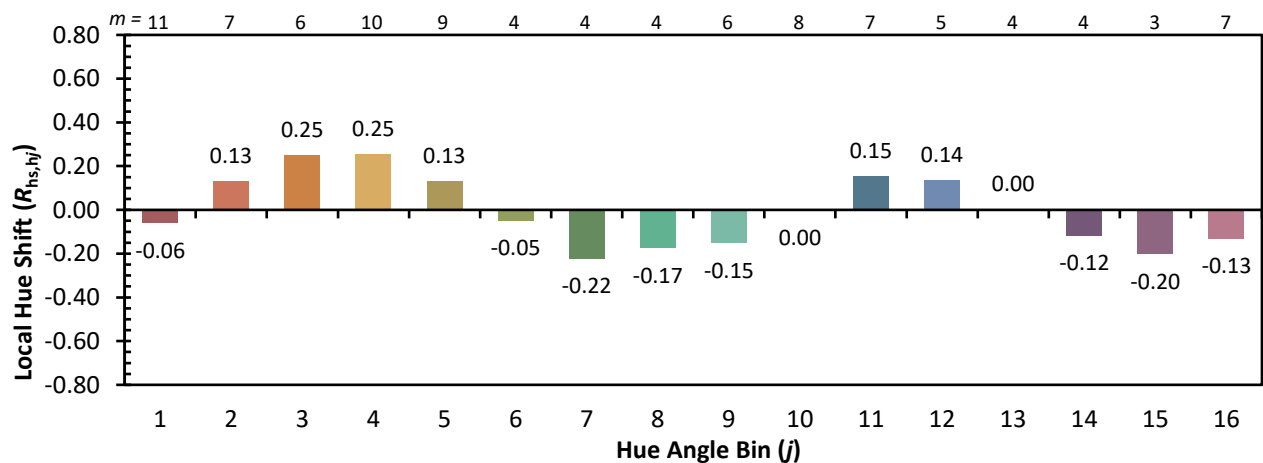


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

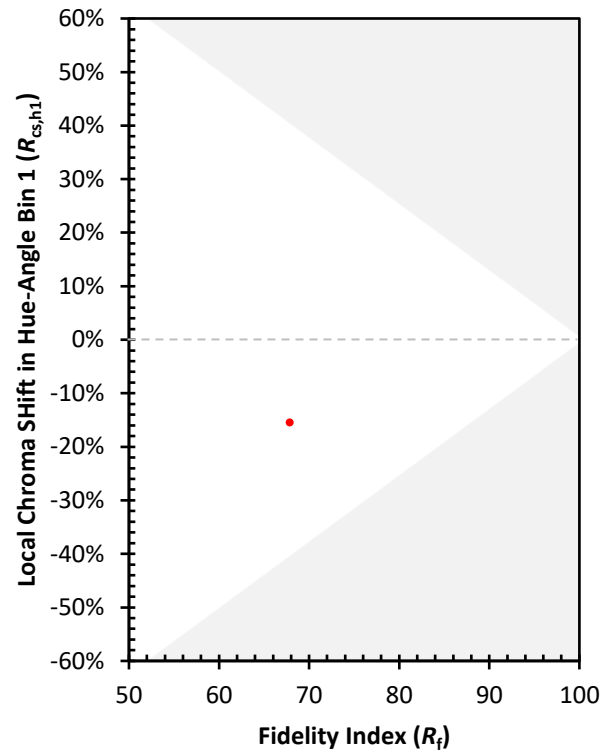
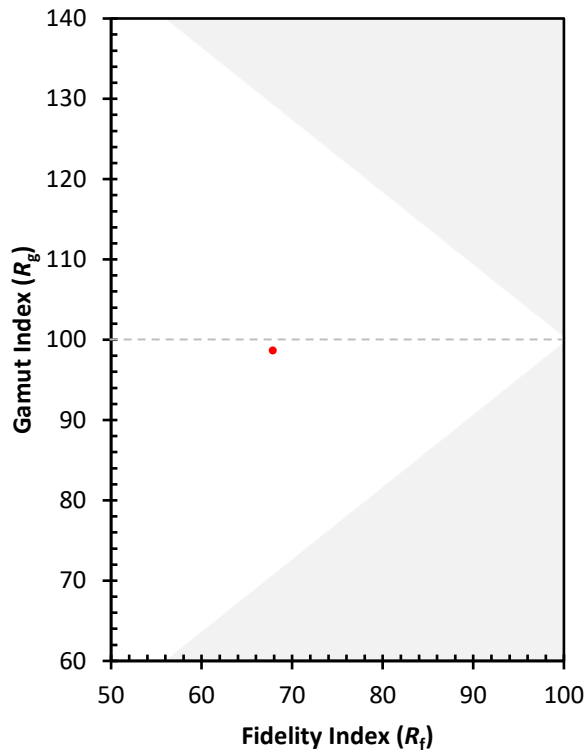
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 53 | CES51 = 75 | CES76 = 51 |
| CES02 = 63 | CES27 = 70 | CES52 = 80 | CES77 = 79 |
| CES03 = 31 | CES28 = 81 | CES53 = 64 | CES78 = 58 |
| CES04 = 71 | CES29 = 37 | CES54 = 73 | CES79 = 82 |
| CES05 = 50 | CES30 = 33 | CES55 = 69 | CES80 = 82 |
| CES06 = 52 | CES31 = 44 | CES56 = 60 | CES81 = 69 |
| CES07 = 42 | CES32 = 47 | CES57 = 54 | CES82 = 92 |
| CES08 = 41 | CES33 = 45 | CES58 = 59 | CES83 = 82 |
| CES09 = 29 | CES34 = 67 | CES59 = 85 | CES84 = 92 |
| CES10 = 77 | CES35 = 84 | CES60 = 86 | CES85 = 87 |
| CES11 = 60 | CES36 = 68 | CES61 = 86 | CES86 = 60 |
| CES12 = 66 | CES37 = 77 | CES62 = 59 | CES87 = 79 |
| CES13 = 44 | CES38 = 40 | CES63 = 66 | CES88 = 70 |
| CES14 = 74 | CES39 = 88 | CES64 = 69 | CES89 = 66 |
| CES15 = 72 | CES40 = 82 | CES65 = 64 | CES90 = 64 |
| CES16 = 48 | CES41 = 70 | CES66 = 65 | CES91 = 81 |
| CES17 = 51 | CES42 = 76 | CES67 = 64 | CES92 = 69 |
| CES18 = 57 | CES43 = 63 | CES68 = 73 | CES93 = 81 |
| CES19 = 73 | CES44 = 97 | CES69 = 83 | CES94 = 53 |
| CES20 = 67 | CES45 = 74 | CES70 = 64 | CES95 = 77 |
| CES21 = 88 | CES46 = 67 | CES71 = 60 | CES96 = 79 |
| CES22 = 80 | CES47 = 55 | CES72 = 87 | CES97 = 78 |
| CES23 = 92 | CES48 = 42 | CES73 = 57 | CES98 = 69 |
| CES24 = 92 | CES49 = 65 | CES74 = 84 | CES99 = 60 |
| CES25 = 73 | CES50 = 74 | CES75 = 60 |            |



### Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)