

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P632598

Luminaire Tested: GWS-SA2D-722-U-SLR-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P632598  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-42)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2D-722-U-SLR-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND  
SPILL LIGHT ELIMINATOR RIGHT OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (32) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: -

**Summary**

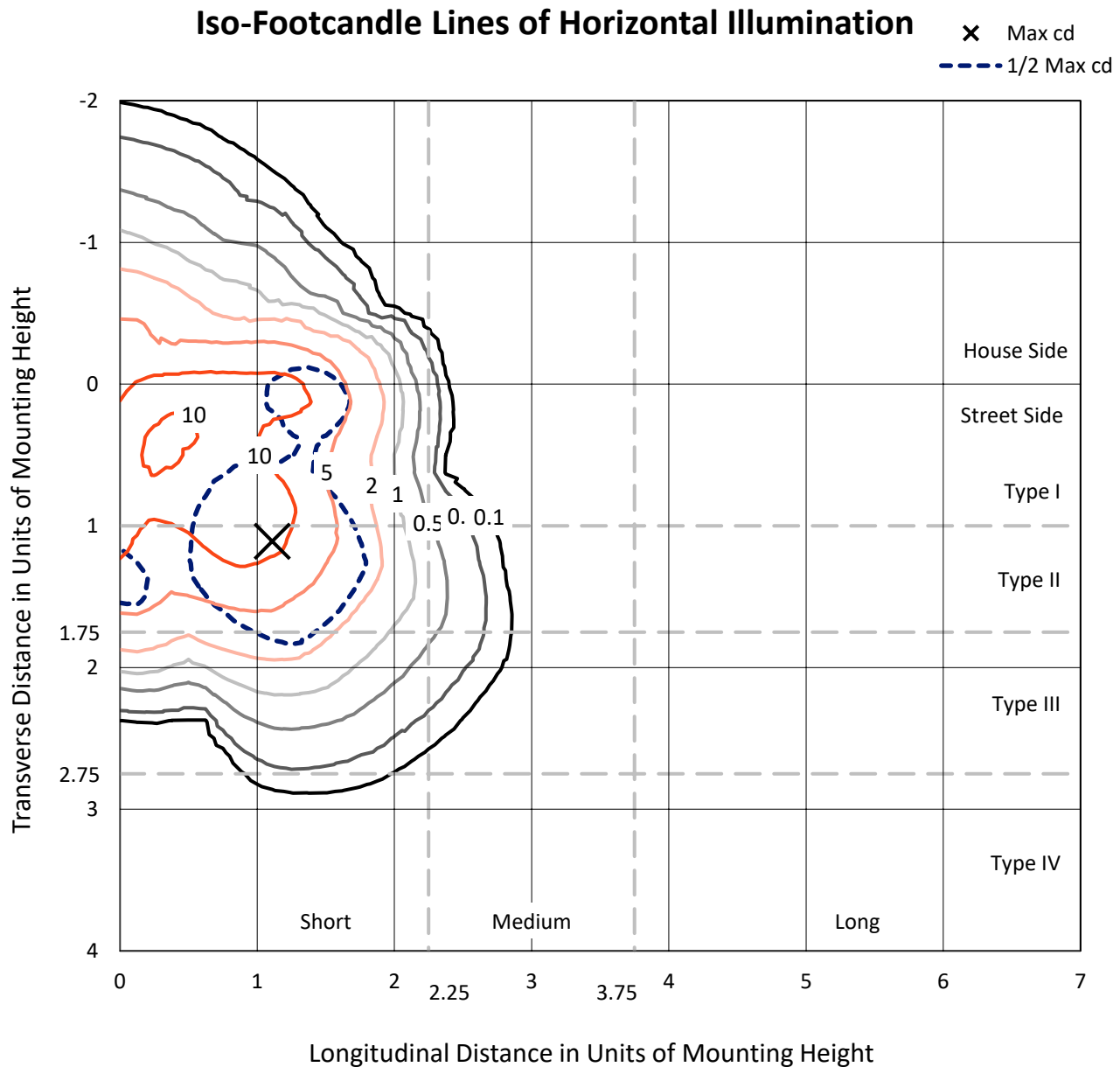
Lumens per Lamp: N/A  
Luminaire Lumens: 4588.4 lumens  
Efficiency: N/A  
Efficacy: 55.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G1

Input Watts (W): 82.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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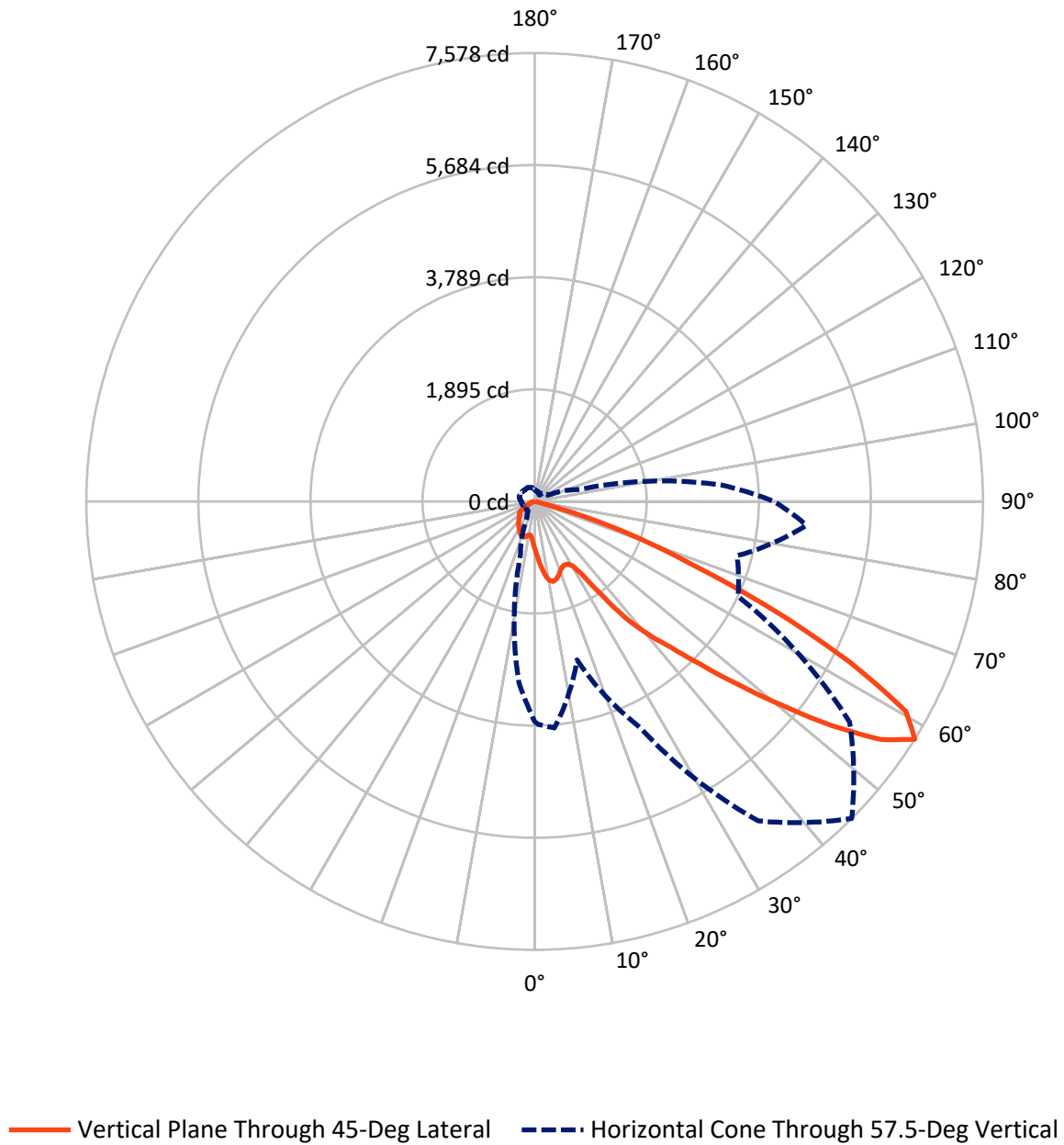


Based on 10 foot mounting height. Maximum calculated value = 14.4 fc  
Type III - Short - N/A

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## Luminous Intensity Polar Plot



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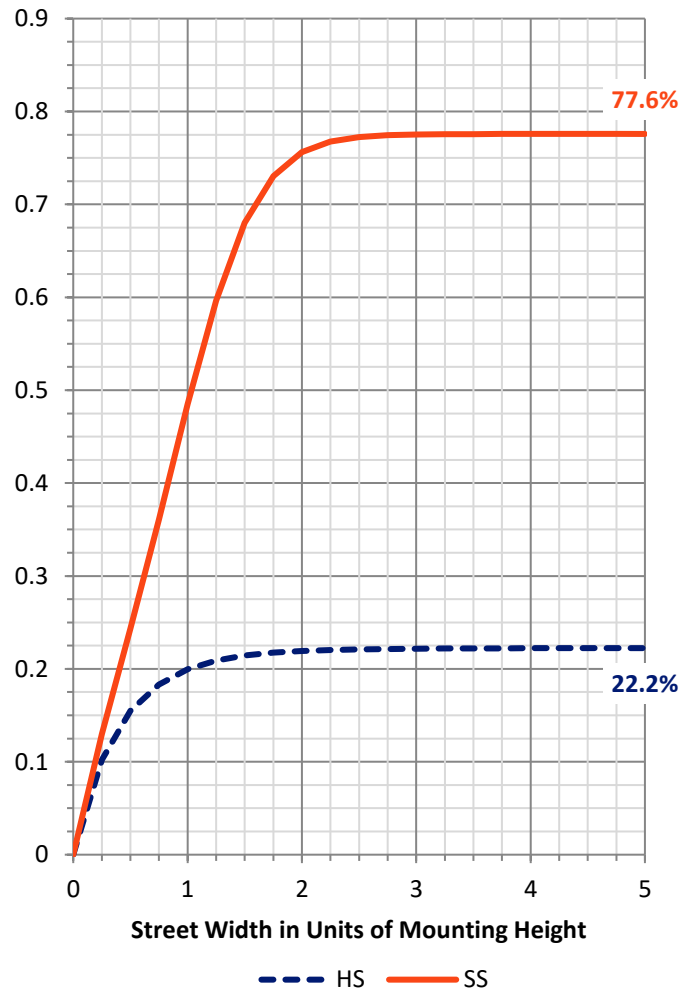
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1027.5   | 0.0    | 1027.5 |
|                    | % Fixture | 22.4     | 0.0    | 22.4   |
| <b>Street Side</b> | Lumens    | 3560.9   | 0.0    | 3560.9 |
|                    | % Fixture | 77.6     | 0.0    | 77.6   |
| <b>Total</b>       | Lumens    | 4588.4   | 0.0    | 4588.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 79.3   | 1.7       |
| 10°-20°   | 256.6  | 5.6       |
| 20°-30°   | 416.9  | 9.1       |
| 30°-40°   | 644.2  | 14.0      |
| 40°-50°   | 1033.0 | 22.5      |
| 50°-60°   | 1411.8 | 30.8      |
| 60°-70°   | 683.8  | 14.9      |
| 70°-80°   | 62.6   | 1.4       |
| 80°-90°   | 0.2    | 0.0       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 4588.4 | 100.0     |
| 0°-180°   | 4588.4 | 100.0     |

**Coefficient of Utilization**



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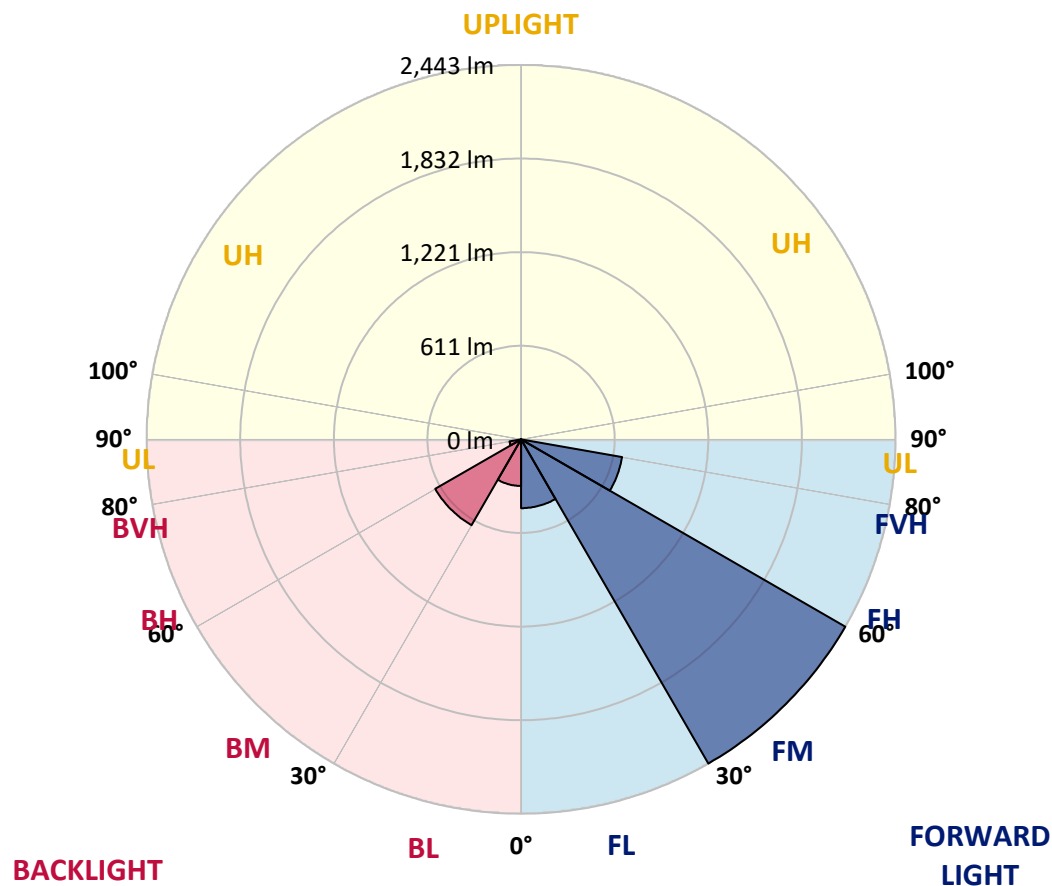
CATALOG NUMBER: GWS-SA2D-722-U-SLR-W-GRSBK

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 448.9  | 9.8       |                         |      |         |
| FM   | (30°-60°)   | 2442.5 | 53.2      |                         |      |         |
| FH   | (60°-80°)   | 669.4  | 14.6      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 0.2    | 0.0       |                         |      | G0/10   |
| BL   | (0°-30°)    | 304.0  | 6.6       | B1/500                  |      |         |
| BM   | (30°-60°)   | 646.4  | 14.1      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 77.0   | 1.7       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 0.0    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  | 806.5  |
| 2.5°  | 873.7  | 879.2  | 888.5  | 908.2  | 924.8  | 935.9  | 940.9  | 939.6  | 932.9  | 927.9  | 918.1  |
| 5°    | 967.4  | 967.4  | 985.3  | 1030.3 | 1064.8 | 1086.4 | 1097.5 | 1090.7 | 1077.1 | 1055.6 | 1022.3 |
| 7.5°  | 1049.4 | 1052.5 | 1082.7 | 1146.8 | 1199.2 | 1230.0 | 1247.9 | 1244.2 | 1220.2 | 1178.9 | 1112.3 |
| 10°   | 1113.5 | 1117.2 | 1157.3 | 1235.6 | 1297.2 | 1328.7 | 1355.2 | 1357.7 | 1331.2 | 1276.3 | 1199.8 |
| 12.5° | 1175.8 | 1179.5 | 1221.4 | 1296.6 | 1350.9 | 1363.8 | 1387.3 | 1396.5 | 1389.7 | 1350.9 | 1271.3 |
| 15°   | 1243.0 | 1251.6 | 1287.4 | 1343.5 | 1366.3 | 1350.9 | 1366.3 | 1382.9 | 1405.8 | 1402.1 | 1330.5 |
| 17.5° | 1309.0 | 1315.1 | 1351.5 | 1371.2 | 1346.0 | 1305.9 | 1313.3 | 1333.0 | 1384.8 | 1435.4 | 1389.1 |
| 20°   | 1370.0 | 1378.6 | 1408.8 | 1382.9 | 1306.5 | 1244.2 | 1244.8 | 1270.7 | 1349.6 | 1455.7 | 1448.9 |
| 22.5° | 1434.1 | 1447.1 | 1468.6 | 1395.9 | 1270.1 | 1195.5 | 1198.6 | 1222.0 | 1321.9 | 1474.8 | 1516.7 |
| 25°   | 1518.0 | 1530.3 | 1544.5 | 1428.0 | 1258.4 | 1171.5 | 1183.2 | 1204.8 | 1321.9 | 1507.5 | 1600.6 |
| 27.5° | 1631.4 | 1640.0 | 1640.7 | 1487.8 | 1278.7 | 1175.2 | 1199.8 | 1224.5 | 1361.4 | 1572.8 | 1712.8 |
| 30°   | 1773.8 | 1787.4 | 1769.5 | 1580.9 | 1342.3 | 1224.5 | 1260.9 | 1291.7 | 1446.4 | 1683.2 | 1878.0 |
| 32.5° | 1947.1 | 1966.2 | 1942.2 | 1719.0 | 1474.8 | 1394.7 | 1460.6 | 1478.5 | 1582.1 | 1842.9 | 2065.5 |
| 35°   | 2150.6 | 2166.6 | 2140.7 | 1910.1 | 1784.3 | 1799.1 | 1918.7 | 1895.9 | 1854.6 | 2039.6 | 2284.4 |
| 37.5° | 2373.8 | 2388.6 | 2338.6 | 2199.9 | 2241.8 | 2305.9 | 2497.1 | 2418.8 | 2285.6 | 2293.0 | 2521.7 |
| 40°   | 2578.5 | 2594.5 | 2516.2 | 2514.9 | 2601.3 | 2718.4 | 2949.0 | 2841.1 | 2659.8 | 2624.7 | 2744.3 |
| 42.5° | 2790.6 | 2801.6 | 2730.7 | 2682.7 | 2878.7 | 3119.8 | 3364.0 | 3218.4 | 2907.7 | 2869.5 | 3023.0 |
| 45°   | 3093.3 | 3116.7 | 2990.3 | 2765.3 | 3128.4 | 3581.6 | 3921.9 | 3637.7 | 3076.6 | 3045.8 | 3449.7 |
| 47.5° | 3538.4 | 3555.7 | 3298.0 | 2817.1 | 3360.9 | 4156.8 | 4619.3 | 4181.5 | 3225.2 | 3154.9 | 4032.9 |
| 50°   | 3906.5 | 3918.2 | 3581.0 | 2873.8 | 3608.1 | 4777.1 | 5414.0 | 4826.4 | 3392.3 | 3335.6 | 4577.3 |
| 52.5° | 4177.8 | 4222.2 | 3952.8 | 2990.3 | 3933.0 | 5506.5 | 6293.8 | 5590.4 | 3653.1 | 3684.6 | 5028.7 |
| 55°   | 4233.9 | 4294.3 | 4206.8 | 3061.8 | 4219.1 | 6249.5 | 7106.5 | 6274.1 | 3913.3 | 3949.1 | 5180.3 |
| 57.5° | 3720.9 | 3769.0 | 3841.8 | 2773.3 | 4212.3 | 6589.8 | 7578.1 | 6501.0 | 3794.9 | 3541.5 | 4612.5 |
| 60°   | 2787.5 | 2820.8 | 2952.7 | 2119.7 | 3873.8 | 6288.9 | 7210.7 | 6115.0 | 3318.3 | 2702.4 | 3514.4 |
| 62.5° | 1653.0 | 1667.8 | 1834.9 | 1373.1 | 3215.4 | 5415.9 | 5980.0 | 5276.5 | 2622.2 | 1817.6 | 2152.4 |
| 65°   | 634.4  | 628.3  | 755.9  | 677.6  | 2364.5 | 4314.1 | 4447.9 | 4022.4 | 1799.1 | 833.0  | 820.6  |
| 67.5° | 98.0   | 93.7   | 126.4  | 200.4  | 1705.4 | 2989.7 | 2934.8 | 2899.1 | 1127.1 | 194.2  | 169.6  |
| 70°   | 22.2   | 22.2   | 27.1   | 59.2   | 1042.0 | 1756.6 | 1879.9 | 1792.3 | 721.4  | 41.3   | 22.2   |
| 72.5° | 10.5   | 10.5   | 12.9   | 25.3   | 377.3  | 723.8  | 843.5  | 830.5  | 234.3  | 13.6   | 8.0    |
| 75°   | 3.7    | 4.3    | 4.3    | 5.5    | 22.8   | 37.6   | 86.3   | 61.7   | 14.8   | 0.0    | 0.0    |
| 77.5° | 1.2    | 1.2    | 1.2    | 1.2    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°   | 0.6    | 0.6    | 0.6    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.6    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 806.5  | 806.5  | 806.5  | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 |
| 2.5°  | 896.5  | 892.2  | 876.1  | 854.6 | 833.6 | 815.1 | 796.0 | 773.2 | 756.5 | 737.4 | 731.2 |
| 5°    | 996.4  | 969.2  | 925.5  | 879.8 | 837.9 | 802.1 | 767.6 | 730.6 | 703.5 | 676.4 | 667.1 |
| 7.5°  | 1080.8 | 1040.8 | 969.8  | 901.4 | 844.1 | 793.5 | 743.6 | 693.0 | 653.6 | 621.5 | 611.6 |
| 10°   | 1156.7 | 1110.4 | 1015.5 | 931.0 | 858.9 | 800.3 | 739.9 | 676.4 | 625.2 | 587.0 | 577.7 |
| 12.5° | 1222.0 | 1168.4 | 1054.3 | 953.2 | 865.0 | 797.8 | 739.3 | 688.7 | 642.5 | 598.7 | 587.0 |
| 15°   | 1276.9 | 1217.7 | 1087.0 | 968.0 | 855.8 | 767.0 | 715.8 | 707.8 | 704.1 | 656.0 | 633.2 |
| 17.5° | 1330.5 | 1263.9 | 1113.5 | 974.8 | 829.9 | 712.7 | 675.7 | 712.1 | 751.0 | 719.5 | 690.5 |
| 20°   | 1386.6 | 1310.8 | 1140.6 | 976.0 | 786.7 | 651.7 | 645.5 | 702.9 | 752.2 | 742.3 | 715.2 |
| 22.5° | 1452.6 | 1369.4 | 1174.5 | 975.4 | 732.5 | 599.9 | 623.3 | 685.0 | 725.1 | 724.5 | 702.9 |
| 25°   | 1548.2 | 1443.4 | 1220.2 | 979.1 | 673.3 | 559.8 | 598.7 | 654.8 | 687.5 | 686.2 | 668.4 |
| 27.5° | 1650.5 | 1531.5 | 1279.4 | 988.3 | 622.7 | 536.4 | 569.7 | 613.5 | 641.8 | 640.6 | 625.2 |
| 30°   | 1794.2 | 1633.3 | 1336.1 | 989.0 | 586.3 | 524.1 | 537.6 | 567.9 | 595.0 | 591.9 | 580.2 |
| 32.5° | 1968.7 | 1747.9 | 1383.6 | 953.8 | 563.5 | 512.4 | 504.3 | 519.8 | 540.7 | 536.4 | 533.3 |
| 35°   | 2179.5 | 1884.2 | 1424.3 | 876.7 | 528.4 | 488.9 | 467.4 | 470.4 | 485.2 | 487.7 | 486.5 |
| 37.5° | 2420.0 | 2046.4 | 1474.8 | 775.0 | 480.9 | 455.0 | 426.0 | 423.6 | 432.2 | 440.2 | 446.4 |
| 40°   | 2657.4 | 2228.9 | 1543.2 | 672.1 | 437.8 | 411.9 | 384.1 | 378.0 | 381.7 | 395.8 | 408.8 |
| 42.5° | 2924.3 | 2440.3 | 1617.2 | 583.9 | 408.2 | 364.4 | 337.9 | 326.2 | 336.6 | 359.5 | 374.9 |
| 45°   | 3309.1 | 2736.9 | 1689.4 | 513.6 | 395.8 | 322.5 | 286.7 | 285.5 | 297.2 | 326.8 | 344.0 |
| 47.5° | 3849.2 | 3120.4 | 1736.8 | 458.7 | 395.2 | 289.8 | 247.2 | 254.6 | 268.2 | 297.2 | 316.9 |
| 50°   | 4375.7 | 3600.7 | 1684.4 | 416.8 | 382.3 | 268.2 | 217.6 | 232.4 | 246.0 | 271.3 | 291.6 |
| 52.5° | 4693.3 | 3859.0 | 1480.4 | 377.3 | 342.2 | 258.3 | 188.7 | 214.6 | 217.0 | 239.8 | 261.4 |
| 55°   | 4660.0 | 3692.0 | 1133.9 | 316.3 | 283.0 | 244.2 | 158.5 | 193.6 | 194.8 | 212.1 | 230.6 |
| 57.5° | 4044.6 | 3169.7 | 778.7  | 256.5 | 212.7 | 201.6 | 130.7 | 163.4 | 175.1 | 185.6 | 199.1 |
| 60°   | 3014.4 | 2312.7 | 347.1  | 208.4 | 135.0 | 136.3 | 111.6 | 123.3 | 141.2 | 153.5 | 165.2 |
| 62.5° | 1776.3 | 1330.5 | 141.2  | 125.2 | 74.6  | 85.7  | 90.0  | 90.0  | 101.1 | 110.4 | 117.8 |
| 65°   | 671.4  | 465.5  | 57.3   | 62.9  | 38.8  | 40.1  | 53.0  | 65.4  | 74.0  | 82.0  | 91.9  |
| 67.5° | 117.8  | 81.4   | 29.6   | 23.4  | 22.8  | 20.3  | 27.1  | 42.5  | 47.5  | 53.6  | 58.0  |
| 70°   | 19.7   | 16.6   | 12.3   | 11.7  | 10.5  | 11.1  | 17.9  | 30.2  | 33.3  | 35.1  | 37.0  |
| 72.5° | 5.5    | 4.9    | 3.7    | 3.1   | 2.5   | 3.1   | 11.1  | 23.4  | 24.7  | 25.9  | 27.7  |
| 75°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 4.3   | 16.6  | 17.9  | 18.5  | 20.3  |
| 77.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 3.7   | 4.9   | 6.2   | 4.9   |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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**CANDELA DISTRIBUTION (continued):**

|       | 185°  | 195°  | 205°  | 215°  | 225°  | 235°  | 245°  | 255°  | 265°  | 270°  | 275°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 |
| 2.5°  | 727.5 | 715.2 | 708.4 | 704.7 | 704.7 | 699.8 | 694.2 | 692.4 | 700.4 | 700.4 | 714.0 |
| 5°    | 655.4 | 645.5 | 634.4 | 627.7 | 617.2 | 619.0 | 612.9 | 612.2 | 620.3 | 624.0 | 638.1 |
| 7.5°  | 605.5 | 593.1 | 586.3 | 582.0 | 576.5 | 574.0 | 568.5 | 566.6 | 570.9 | 577.1 | 590.7 |
| 10°   | 572.2 | 570.3 | 569.7 | 572.8 | 572.8 | 569.7 | 564.8 | 561.7 | 562.9 | 574.6 | 590.0 |
| 12.5° | 580.8 | 584.5 | 585.7 | 590.7 | 593.1 | 590.7 | 587.0 | 588.2 | 596.2 | 617.8 | 640.6 |
| 15°   | 618.4 | 615.3 | 614.1 | 616.6 | 618.4 | 615.9 | 614.7 | 624.0 | 651.7 | 682.5 | 708.4 |
| 17.5° | 658.5 | 638.8 | 630.1 | 630.1 | 631.4 | 630.1 | 631.4 | 649.2 | 694.2 | 725.1 | 744.2 |
| 20°   | 678.8 | 642.5 | 628.9 | 625.8 | 628.3 | 628.9 | 633.2 | 653.6 | 702.9 | 724.5 | 728.8 |
| 22.5° | 672.7 | 627.0 | 611.6 | 609.2 | 611.6 | 614.1 | 618.4 | 635.7 | 681.9 | 693.0 | 691.2 |
| 25°   | 641.8 | 596.8 | 584.5 | 584.5 | 590.0 | 589.4 | 591.3 | 603.6 | 641.8 | 648.6 | 645.5 |
| 27.5° | 603.0 | 560.5 | 550.0 | 556.1 | 561.1 | 559.8 | 560.5 | 570.9 | 599.3 | 601.1 | 598.1 |
| 30°   | 563.5 | 526.5 | 516.7 | 524.1 | 530.9 | 529.6 | 530.2 | 540.7 | 558.6 | 556.8 | 552.4 |
| 32.5° | 523.5 | 496.3 | 488.9 | 493.2 | 503.7 | 502.5 | 505.0 | 516.1 | 522.8 | 514.8 | 509.9 |
| 35°   | 486.5 | 472.3 | 466.7 | 469.2 | 477.2 | 479.1 | 483.4 | 490.8 | 490.8 | 480.9 | 472.3 |
| 37.5° | 451.9 | 450.1 | 446.4 | 443.3 | 450.7 | 456.3 | 462.4 | 471.1 | 458.7 | 444.5 | 436.5 |
| 40°   | 419.9 | 427.9 | 423.0 | 414.9 | 419.3 | 427.3 | 439.6 | 446.4 | 431.6 | 417.4 | 403.8 |
| 42.5° | 390.3 | 403.8 | 402.0 | 392.1 | 395.8 | 403.2 | 417.4 | 423.0 | 405.7 | 389.7 | 376.7 |
| 45°   | 361.9 | 381.0 | 382.3 | 369.9 | 373.6 | 381.0 | 397.7 | 399.5 | 377.3 | 360.1 | 350.8 |
| 47.5° | 337.3 | 358.2 | 358.8 | 349.6 | 350.8 | 361.3 | 376.7 | 377.3 | 352.1 | 336.0 | 324.3 |
| 50°   | 313.8 | 337.9 | 339.7 | 331.7 | 332.9 | 345.3 | 358.2 | 355.8 | 328.6 | 312.0 | 301.5 |
| 52.5° | 285.5 | 318.1 | 322.5 | 318.8 | 323.7 | 333.6 | 341.6 | 332.9 | 301.5 | 284.9 | 275.6 |
| 55°   | 254.6 | 297.2 | 306.4 | 304.0 | 309.5 | 317.5 | 319.4 | 313.8 | 274.4 | 257.7 | 249.1 |
| 57.5° | 218.9 | 244.8 | 260.8 | 255.9 | 260.2 | 268.2 | 273.8 | 269.4 | 239.8 | 226.9 | 219.5 |
| 60°   | 181.3 | 198.5 | 202.2 | 194.2 | 190.5 | 204.7 | 217.6 | 212.1 | 186.8 | 178.8 | 170.2 |
| 62.5° | 132.6 | 152.3 | 154.8 | 144.3 | 140.0 | 155.4 | 166.5 | 160.9 | 133.2 | 124.5 | 117.8 |
| 65°   | 106.0 | 124.5 | 129.5 | 119.6 | 117.1 | 128.9 | 135.6 | 122.1 | 102.3 | 93.1  | 85.7  |
| 67.5° | 69.7  | 84.5  | 97.4  | 96.8  | 91.9  | 95.6  | 90.6  | 79.5  | 65.4  | 60.4  | 55.5  |
| 70°   | 43.2  | 51.8  | 59.8  | 62.9  | 62.3  | 61.0  | 54.3  | 46.2  | 41.9  | 40.1  | 37.6  |
| 72.5° | 33.3  | 41.9  | 48.1  | 49.9  | 50.6  | 48.7  | 43.2  | 35.8  | 31.4  | 29.0  | 27.1  |
| 75°   | 24.7  | 31.4  | 36.4  | 38.8  | 40.1  | 38.8  | 33.3  | 28.4  | 24.0  | 22.2  | 20.3  |
| 77.5° | 8.6   | 10.5  | 12.9  | 14.2  | 13.6  | 12.9  | 11.7  | 11.7  | 9.2   | 8.6   | 7.4   |
| 80°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

REPORT NUMBER: P632598

CATALOG NUMBER: GWS-SA2D-722-U-SLR-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

|       | 285°  | 295°  | 305°  | 315°  | 325°  | 335°  | 345°   | 355°   | 359°   | 360°   |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0°    | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5 | 806.5  | 806.5  | 806.5  | 806.5  |
| 2.5°  | 729.4 | 740.5 | 760.8 | 779.3 | 799.1 | 819.4 | 841.6  | 864.4  | 874.9  | 873.7  |
| 5°    | 659.7 | 683.8 | 717.1 | 753.4 | 794.1 | 837.9 | 886.6  | 936.6  | 958.1  | 967.4  |
| 7.5°  | 615.9 | 649.9 | 693.6 | 739.9 | 793.5 | 855.8 | 929.2  | 1007.5 | 1038.9 | 1049.4 |
| 10°   | 621.5 | 661.0 | 697.3 | 742.3 | 799.7 | 880.4 | 971.7  | 1064.8 | 1101.8 | 1113.5 |
| 12.5° | 666.5 | 675.1 | 685.0 | 722.0 | 794.1 | 898.9 | 1010.5 | 1121.5 | 1164.1 | 1175.8 |
| 15°   | 707.2 | 667.1 | 648.6 | 682.5 | 774.4 | 911.9 | 1050.0 | 1182.6 | 1229.4 | 1243.0 |
| 17.5° | 709.0 | 648.6 | 607.3 | 633.8 | 742.3 | 917.4 | 1088.8 | 1244.8 | 1296.0 | 1309.0 |
| 20°   | 686.2 | 628.3 | 575.3 | 575.9 | 698.6 | 916.2 | 1120.9 | 1300.9 | 1358.3 | 1370.0 |
| 22.5° | 652.9 | 604.2 | 549.4 | 530.2 | 651.7 | 913.7 | 1156.1 | 1360.7 | 1423.0 | 1434.1 |
| 25°   | 615.9 | 573.4 | 524.7 | 495.7 | 604.8 | 916.2 | 1205.4 | 1439.1 | 1507.5 | 1518.0 |
| 27.5° | 575.9 | 539.5 | 505.6 | 482.1 | 565.4 | 925.5 | 1264.6 | 1538.9 | 1620.3 | 1631.4 |
| 30°   | 533.9 | 506.8 | 493.2 | 479.1 | 540.7 | 927.9 | 1328.7 | 1655.5 | 1758.4 | 1773.8 |
| 32.5° | 492.6 | 477.8 | 478.5 | 480.9 | 517.3 | 910.7 | 1387.3 | 1784.9 | 1922.4 | 1947.1 |
| 35°   | 454.4 | 450.1 | 462.4 | 474.8 | 483.4 | 866.3 | 1438.4 | 1937.8 | 2125.3 | 2150.6 |
| 37.5° | 421.7 | 425.4 | 440.8 | 453.2 | 446.4 | 803.4 | 1506.3 | 2129.0 | 2352.2 | 2373.8 |
| 40°   | 390.3 | 399.5 | 417.4 | 423.0 | 418.0 | 730.0 | 1587.6 | 2313.3 | 2548.9 | 2578.5 |
| 42.5° | 361.3 | 368.1 | 393.4 | 394.6 | 410.0 | 655.4 | 1665.9 | 2511.9 | 2775.1 | 2790.6 |
| 45°   | 337.9 | 336.6 | 362.5 | 370.6 | 420.5 | 572.8 | 1742.4 | 2776.4 | 3071.1 | 3093.3 |
| 47.5° | 315.1 | 313.8 | 320.0 | 356.4 | 424.8 | 496.3 | 1818.2 | 3163.6 | 3500.2 | 3538.4 |
| 50°   | 293.5 | 295.3 | 276.2 | 349.6 | 401.4 | 437.8 | 1852.8 | 3521.8 | 3890.5 | 3906.5 |
| 52.5° | 274.4 | 267.6 | 234.3 | 327.4 | 351.4 | 382.3 | 1754.7 | 3684.6 | 4132.2 | 4177.8 |
| 55°   | 247.2 | 209.6 | 193.0 | 265.7 | 277.5 | 333.6 | 1437.2 | 3590.2 | 4153.1 | 4233.9 |
| 57.5° | 211.5 | 164.6 | 164.0 | 196.1 | 196.1 | 309.5 | 920.5  | 3067.4 | 3579.1 | 3720.9 |
| 60°   | 162.8 | 127.6 | 135.6 | 136.3 | 125.8 | 225.7 | 516.7  | 2222.1 | 2646.3 | 2787.5 |
| 62.5° | 115.9 | 97.4  | 102.3 | 81.4  | 72.1  | 112.8 | 247.9  | 1279.4 | 1633.3 | 1653.0 |
| 65°   | 77.7  | 66.0  | 53.6  | 45.0  | 44.4  | 48.1  | 102.3  | 462.4  | 562.3  | 634.4  |
| 67.5° | 51.2  | 40.1  | 28.4  | 28.4  | 32.1  | 32.1  | 38.8   | 76.5   | 107.3  | 98.0   |
| 70°   | 33.3  | 27.7  | 17.9  | 17.3  | 21.0  | 21.0  | 19.7   | 21.0   | 22.2   | 22.2   |
| 72.5° | 24.7  | 21.0  | 10.5  | 9.2   | 11.7  | 12.3  | 11.1   | 10.5   | 10.5   | 10.5   |
| 75°   | 18.5  | 14.8  | 6.2   | 4.3   | 5.5   | 7.4   | 6.2    | 4.3    | 4.3    | 3.7    |
| 77.5° | 7.4   | 5.5   | 2.5   | 1.8   | 3.1   | 4.3   | 3.7    | 1.8    | 1.2    | 1.2    |
| 80°   | 0.6   | 1.2   | 1.2   | 1.2   | 1.8   | 2.5   | 3.1    | 1.2    | 0.6    | 0.6    |
| 82.5° | 0.0   | 0.6   | 0.6   | 0.6   | 1.2   | 1.8   | 2.5    | 1.2    | 0.6    | 0.6    |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 1.2   | 1.8   | 1.2    | 0.6    | 0.0    | 0.0    |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.6   | 1.8   | 1.2    | 0.6    | 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    |

LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

### Test Information

Test Method: LM-79-2008 Report  
 Number: SP1-1908-441-10-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-722-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

\*\*\*THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.\*\*\*TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 2237    | CRI (Ra): | 72.0 |      |       |
| CIE u':                   | 0.2876  | R1:       | 68.9 | R9:  | -17.4 |
| CIE v':                   | 0.5346  | R2:       | 83.0 | R10: | 61.3  |
| Duv:                      | -0.0006 | R3:       | 95.2 | R11: | 59.8  |
| CIE x:                    | 0.5005  | R4:       | 66.2 | R12: | 50.5  |
| CIE y:                    | 0.4134  | R5:       | 65.9 | R13: | 71.1  |
| CIE z:                    | 0.0860  | R6:       | 76.3 | R14: | 96.9  |
| Peak Wavelength (nm):     | 603     | R7:       | 76.7 |      |       |
| Dominant Wavelength (nm): | 587     | R8:       | 43.8 |      |       |
| Purity:                   | 74.5    |           |      |      |       |
| Rf:                       | 69.8    |           |      |      |       |
| Rg:                       | 99.2    |           |      |      |       |



### Test Conditions

Stabilization Time: 71M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.7/41%  
 Sphere Temperature (°C): 25.6

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| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/28/2019        | 12/28/2019           |
| Power Meter                    | IN0071                | 12/5/2018        | 12/5/2019            |
| AC Power Source                | IN0063                | 12/5/2018        | 12/5/2019            |
| DC Power Source                | IN0208                | 12/5/2018        | 12/5/2019            |
| Sphere Thermometer             | IN0085                | 12/5/2018        | 12/5/2019            |
| Room Thermometer               | IN0046                | 12/5/2018        | 12/5/2019            |

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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 2200K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 1470.8 M/P: 0.27**

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 1768             | NR               | 490       | 5206             | NR               | 620       | 130919           | NR               | 750       | 8553             | NR               | 880       | 2713             | NR               |
| 365       | 1569             | NR               | 495       | 7286             | NR               | 625       | 125335           | NR               | 755       | 7696             | NR               | 885       | 2316             | NR               |
| 370       | 1594             | NR               | 500       | 10654            | NR               | 630       | 118388           | NR               | 760       | 6978             | NR               | 890       | 2539             | NR               |
| 375       | 1744             | NR               | 505       | 15189            | NR               | 635       | 111855           | NR               | 765       | 6377             | NR               | 895       | 1933             | NR               |
| 380       | 1659             | NR               | 510       | 20541            | NR               | 640       | 104062           | NR               | 770       | 5600             | NR               | 900       | 2216             | NR               |
| 385       | 1504             | NR               | 515       | 26492            | NR               | 645       | 96365            | NR               | 775       | 5000             | NR               | 905       | 2067             | NR               |
| 390       | 1541             | NR               | 520       | 32294            | NR               | 650       | 88651            | NR               | 780       | 4709             | NR               | 910       | 1959             | NR               |
| 395       | 1355             | NR               | 525       | 38123            | NR               | 655       | 81152            | NR               | 785       | 4305             | NR               | 915       | 1874             | NR               |
| 400       | 1243             | NR               | 530       | 43232            | NR               | 660       | 73523            | NR               | 790       | 4040             | NR               | 920       | 1484             | NR               |
| 405       | 1417             | NR               | 535       | 48012            | NR               | 665       | 66123            | NR               | 795       | 3642             | NR               | 925       | 1914             | NR               |
| 410       | 2147             | NR               | 540       | 52623            | NR               | 670       | 58677            | NR               | 800       | 3594             | NR               | 930       | 1948             | NR               |
| 415       | 3837             | NR               | 545       | 57516            | NR               | 675       | 52349            | NR               | 805       | 3190             | NR               | 935       | 2079             | NR               |
| 420       | 7159             | NR               | 550       | 62613            | NR               | 680       | 46159            | NR               | 810       | 3241             | NR               | 940       | 2263             | NR               |
| 425       | 12599            | NR               | 555       | 68554            | NR               | 685       | 40525            | NR               | 815       | 2732             | NR               | 945       | 1688             | NR               |
| 430       | 19019            | NR               | 560       | 75325            | NR               | 690       | 35615            | NR               | 820       | 2612             | NR               | 950       | 1560             | NR               |
| 435       | 24875            | NR               | 565       | 82533            | NR               | 695       | 31158            | NR               | 825       | 2966             | NR               | 955       | 2826             | NR               |
| 440       | 29103            | NR               | 570       | 90909            | NR               | 700       | 27409            | NR               | 830       | 2574             | NR               | 960       | 1477             | NR               |
| 445       | 29901            | NR               | 575       | 99621            | NR               | 705       | 24204            | NR               | 835       | 2633             | NR               | 965       | 1568             | NR               |
| 450       | 24862            | NR               | 580       | 108484           | NR               | 710       | 21558            | NR               | 840       | 2526             | NR               | 970       | 2030             | NR               |
| 455       | 15942            | NR               | 585       | 116679           | NR               | 715       | 19222            | NR               | 845       | 2631             | NR               | 975       | 1986             | NR               |
| 460       | 9916             | NR               | 590       | 123752           | NR               | 720       | 17310            | NR               | 850       | 2079             | NR               | 980       | 2540             | NR               |
| 465       | 7051             | NR               | 595       | 129324           | NR               | 725       | 15280            | NR               | 855       | 2309             | NR               | 985       | 1139             | NR               |
| 470       | 5227             | NR               | 600       | 134082           | NR               | 730       | 13282            | NR               | 860       | 2528             | NR               | 990       | 2018             | NR               |
| 475       | 4257             | NR               | 605       | 135698           | NR               | 735       | 11753            | NR               | 865       | 2121             | NR               | 995       | 3445             | NR               |
| 480       | 4052             | NR               | 610       | 135144           | NR               | 740       | 10654            | NR               | 870       | 2751             | NR               | 1000      | 3704             | NR               |
| 485       | 4298             | NR               | 615       | 134180           | NR               | 745       | 9451             | NR               | 875       | 2317             | NR               |           |                  |                  |

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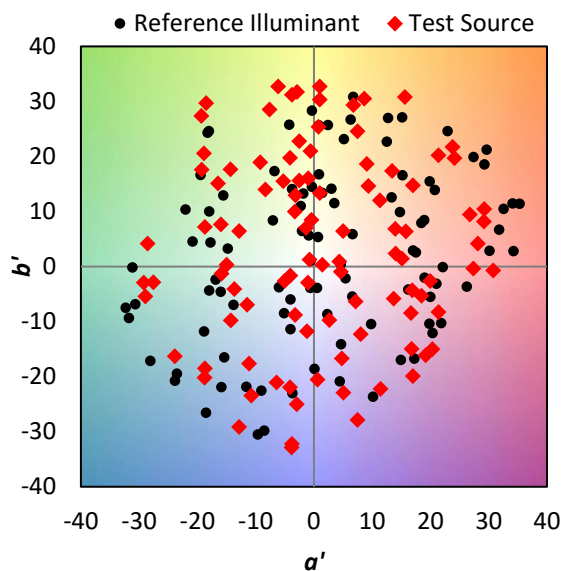
TM-30-18

### Summary

$R_f = 69.8$   
 $R_g = 99.2$   
 CIE  $R_a = 72.0$   
 $R_g = -17.4$



### Color Vector Graphics



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

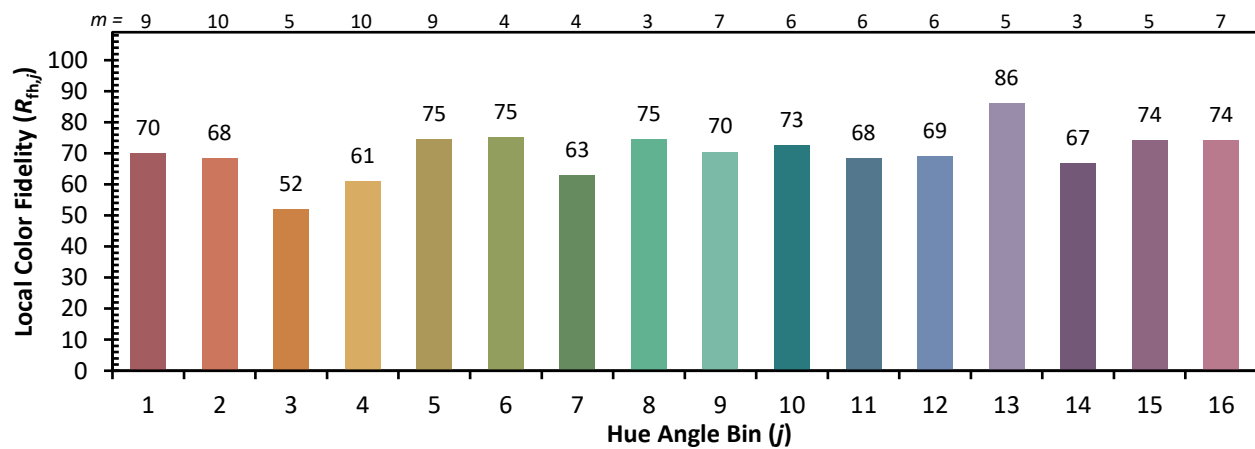
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



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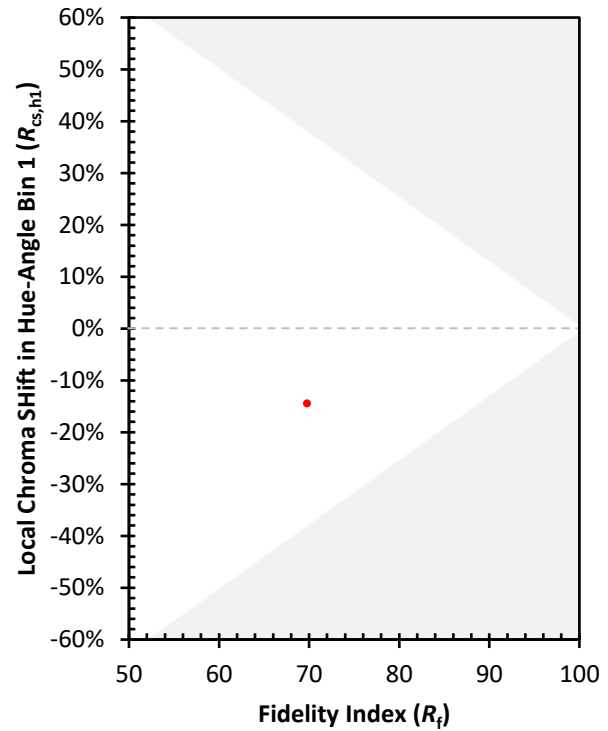
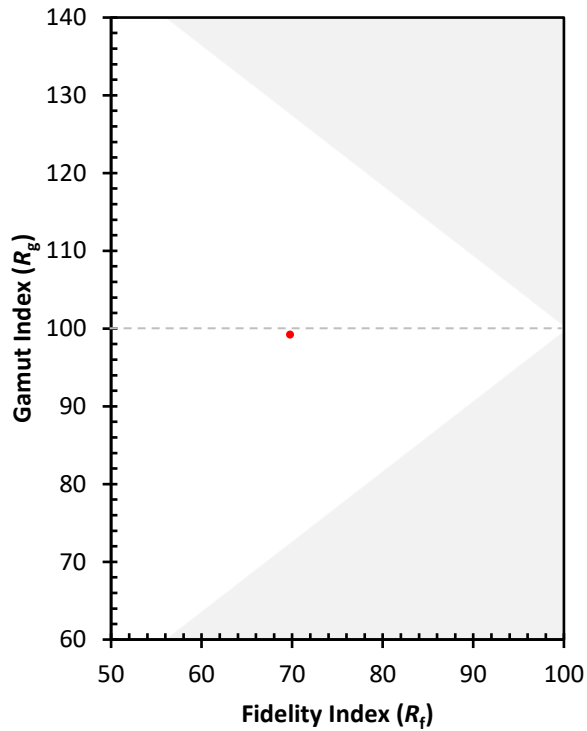
Color Rendition by Hue-Angle Bin



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**Measure Comparisons**



(END OF REPORT)