

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: P1386067

Luminaire Tested: **VAL-T-SB4A-727-U-SLL-HSS**

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: P1386067  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 02/18/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VAL-T-SB4A-727-U-SLL-HSS  
Description: GALLEON II WALL SLIM HIGH DENSITY LED ARRAYS 4SQUARE 114W 70CRI  
2700K FIXTURE w/ 90° Spill Light Eliminator LETT OPTIC OPTIC AND HOUSE  
SIDE SHIELD  
Light Source: (104) 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               |

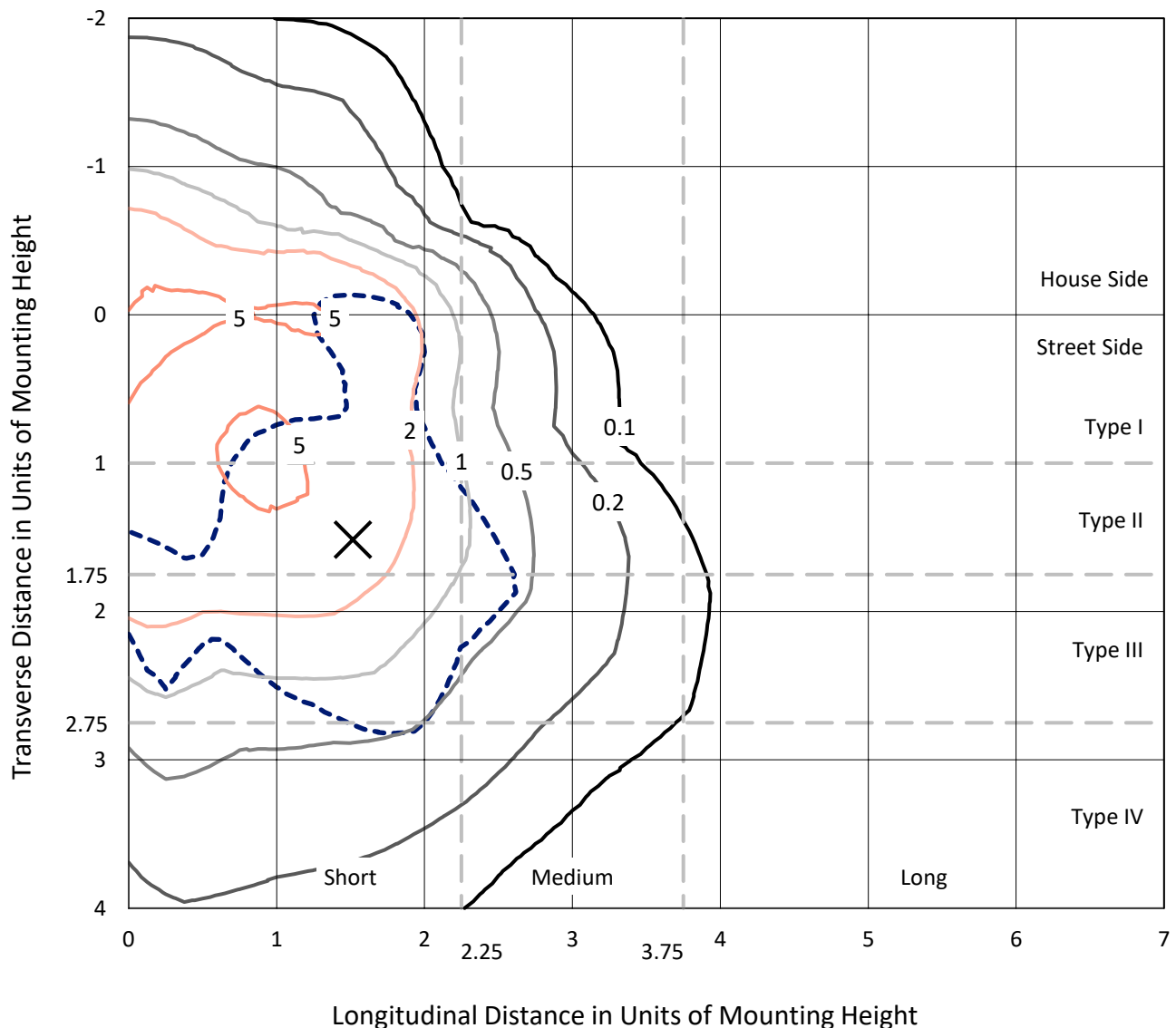
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12219.8 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 114  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.98  
Total Harmonic Distortion (THDi): 8.2%  
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

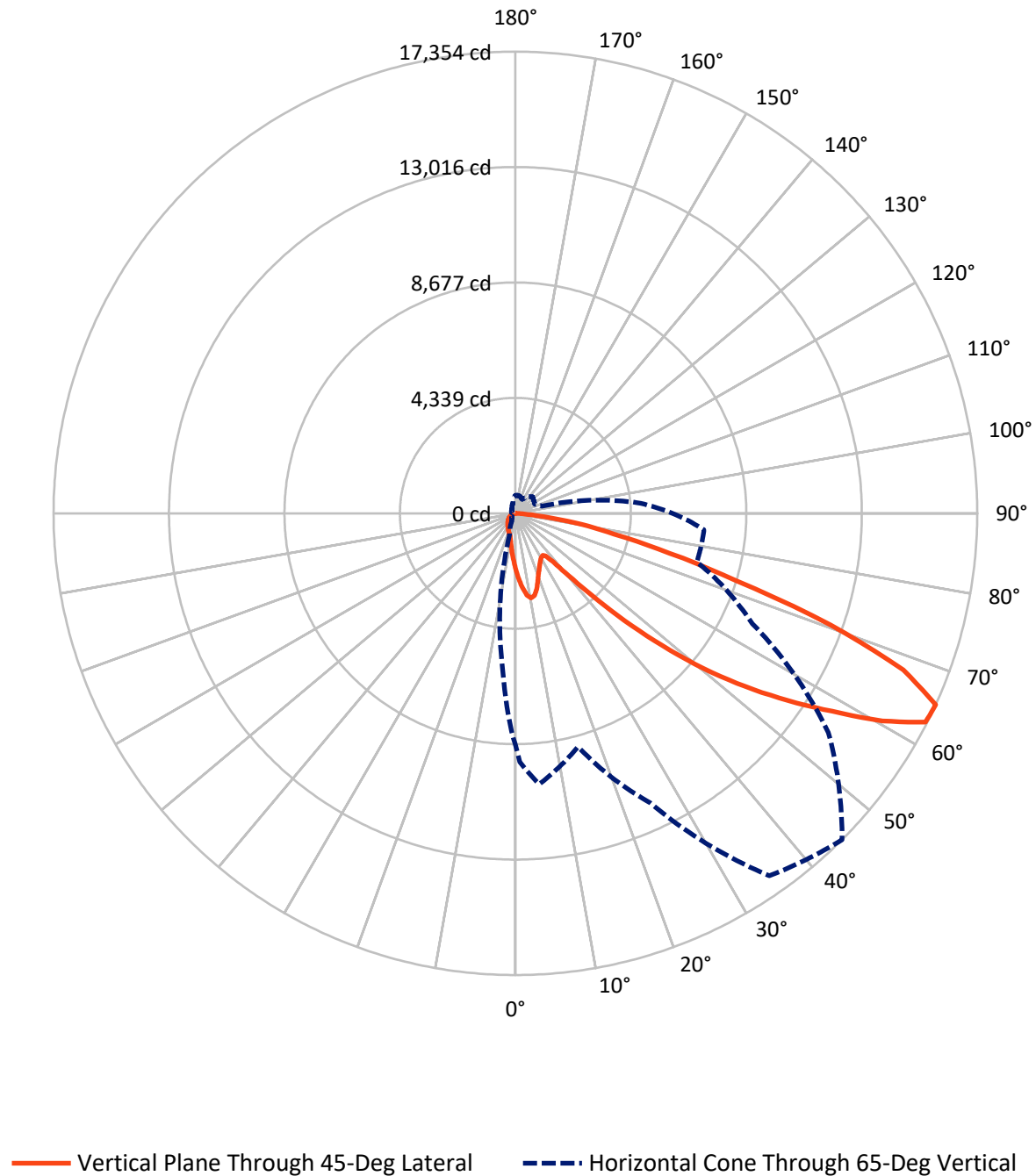
× Max cd  
 --- 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.7 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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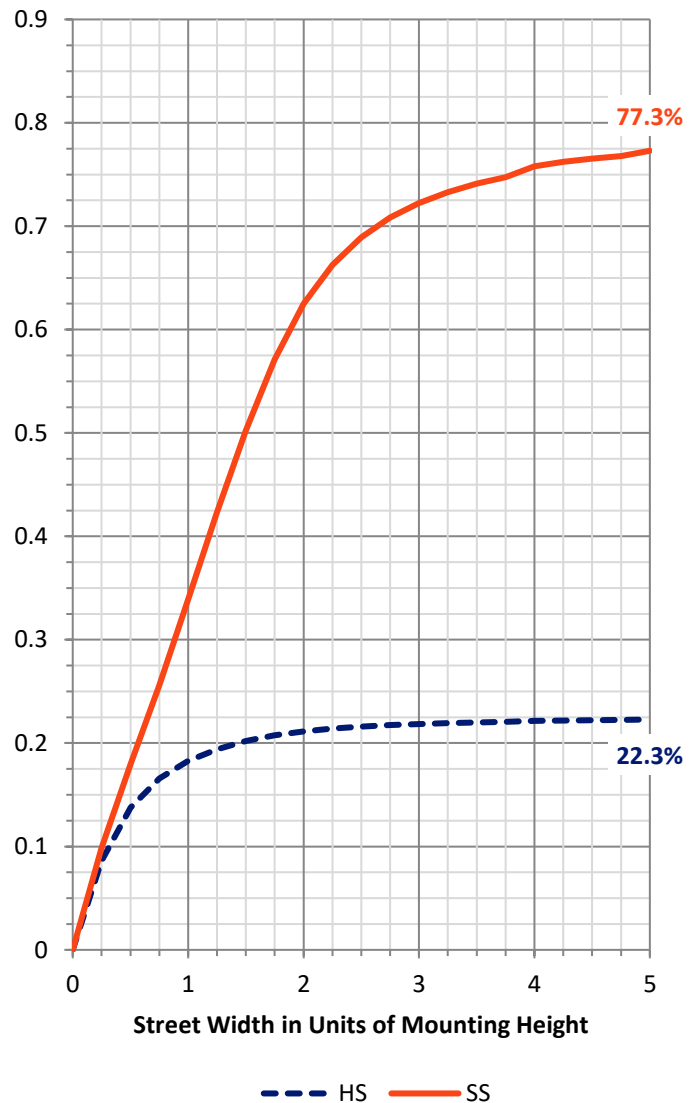
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2748.8   | 0.0    | 2748.8  |
|                    | % Fixture | 22.5     | 0.0    | 22.5    |
| <b>Street Side</b> | Lumens    | 9471.0   | 0.0    | 9471.0  |
|                    | % Fixture | 77.5     | 0.0    | 77.5    |
| <b>Total</b>       | Lumens    | 12219.8  | 0.0    | 12219.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 202.9   | 1.7       |
| 10°-20°   | 561.1   | 4.6       |
| 20°-30°   | 803.7   | 6.6       |
| 30°-40°   | 1008.2  | 8.3       |
| 40°-50°   | 1656.1  | 13.6      |
| 50°-60°   | 2990.2  | 24.5      |
| 60°-70°   | 3319.6  | 27.2      |
| 70°-80°   | 1500.5  | 12.3      |
| 80°-90°   | 177.6   | 1.5       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 12219.8 | 100.0     |
| 0°-180°   | 12219.8 | 100.0     |



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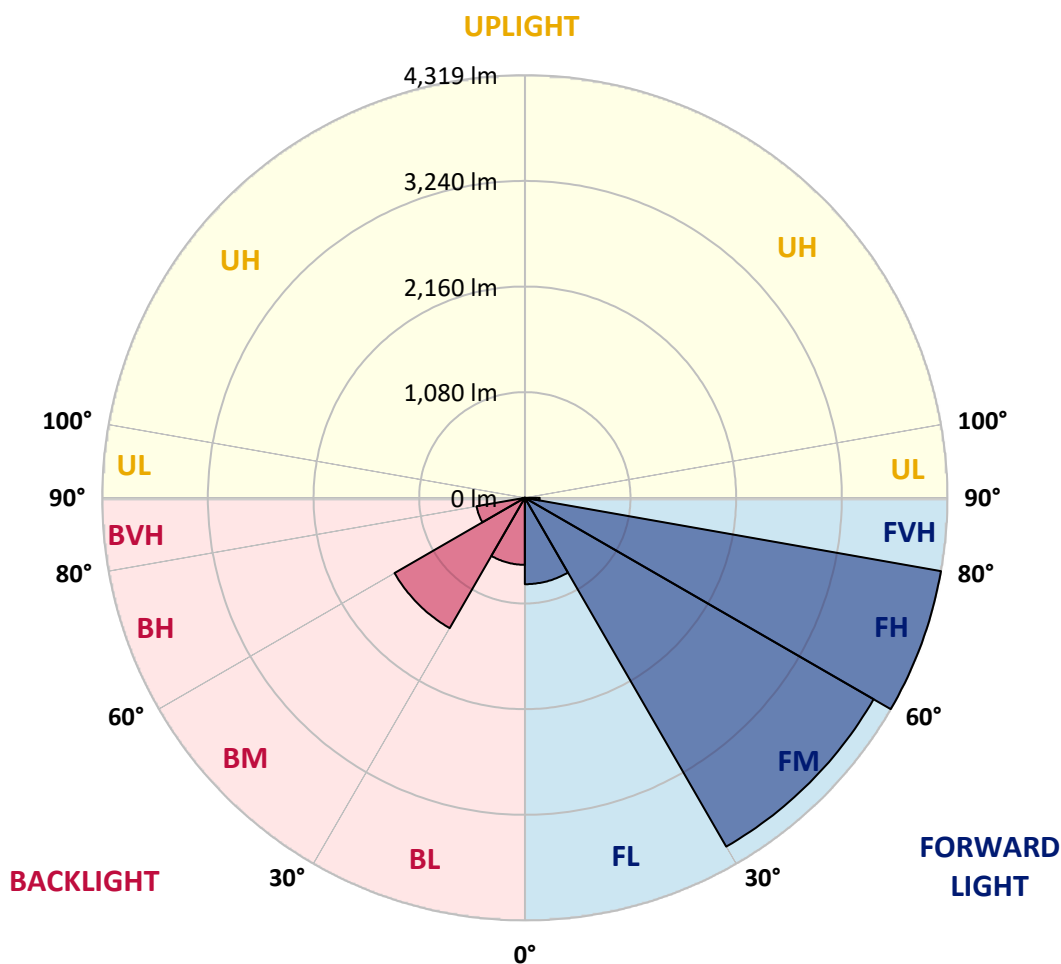
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 882.8  | 7.2       |                         |      |         |
| FM   | (30°-60°)   | 4116.4 | 33.7      |                         |      |         |
| FH   | (60°-80°)   | 4319.4 | 35.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 152.5  | 1.2       |                         |      | G2/225  |
| BL   | (0°-30°)    | 685.0  | 5.6       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1538.0 | 12.6      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 500.7  | 4.1       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 25.1   | 0.2       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  | 2111.1  |
| 2.5°  | 2324.9  | 2354.9  | 2351.1  | 2392.4  | 2429.9  | 2456.1  | 2478.6  | 2471.1  | 2452.4  | 2414.9  | 2388.6  |
| 5°    | 2568.6  | 2591.1  | 2628.6  | 2707.4  | 2767.3  | 2819.8  | 2812.3  | 2819.8  | 2763.6  | 2707.4  | 2639.9  |
| 7.5°  | 2778.6  | 2804.8  | 2857.3  | 2969.8  | 3044.8  | 3108.6  | 3101.1  | 3078.6  | 3014.8  | 2921.1  | 2819.8  |
| 10°   | 2909.8  | 2928.6  | 2984.8  | 3112.3  | 3198.6  | 3251.1  | 3232.3  | 3194.8  | 3112.3  | 3018.6  | 2898.6  |
| 12.5° | 2966.1  | 2988.6  | 3037.3  | 3138.6  | 3194.8  | 3183.6  | 3176.1  | 3168.6  | 3127.3  | 3056.1  | 2947.3  |
| 15°   | 2973.6  | 2988.6  | 3026.1  | 3071.1  | 3048.6  | 2984.8  | 2969.8  | 3026.1  | 3078.6  | 3063.6  | 2973.6  |
| 17.5° | 2973.6  | 2996.1  | 3003.6  | 2958.6  | 2842.3  | 2726.1  | 2711.1  | 2804.8  | 2951.1  | 3067.3  | 3014.8  |
| 20°   | 2984.8  | 2996.1  | 2981.1  | 2834.8  | 2617.4  | 2489.9  | 2463.6  | 2579.9  | 2797.3  | 3026.1  | 3056.1  |
| 22.5° | 2999.8  | 3011.1  | 2947.3  | 2688.6  | 2433.6  | 2298.6  | 2283.6  | 2369.9  | 2624.9  | 2966.1  | 3101.1  |
| 25°   | 3029.8  | 3022.3  | 2924.8  | 2561.1  | 2272.4  | 2144.9  | 2122.4  | 2234.9  | 2482.4  | 2906.1  | 3176.1  |
| 27.5° | 3067.3  | 3033.6  | 2894.8  | 2456.1  | 2156.1  | 2021.1  | 2006.1  | 2114.9  | 2362.4  | 2831.1  | 3239.8  |
| 30°   | 3116.1  | 3082.3  | 2891.1  | 2373.6  | 2069.9  | 1934.9  | 1916.1  | 2036.1  | 2279.9  | 2778.6  | 3329.8  |
| 32.5° | 3183.6  | 3134.8  | 2894.8  | 2309.9  | 2021.1  | 1893.6  | 1882.4  | 2009.9  | 2246.1  | 2748.6  | 3423.6  |
| 35°   | 3273.6  | 3202.3  | 2909.8  | 2287.4  | 2036.1  | 1949.9  | 1976.1  | 2073.6  | 2279.9  | 2771.1  | 3577.3  |
| 37.5° | 3386.1  | 3318.6  | 2984.8  | 2336.1  | 2201.1  | 2261.1  | 2328.6  | 2366.1  | 2441.1  | 2876.1  | 3824.8  |
| 40°   | 3573.6  | 3479.8  | 3097.3  | 2493.6  | 2643.6  | 2924.8  | 3056.1  | 3041.1  | 2868.6  | 3116.1  | 4173.5  |
| 42.5° | 3836.0  | 3749.8  | 3326.1  | 2894.8  | 3382.3  | 3978.5  | 4199.8  | 4072.3  | 3551.1  | 3498.6  | 4747.2  |
| 45°   | 4237.3  | 4094.8  | 3633.6  | 3491.1  | 4274.8  | 5253.5  | 5752.2  | 5313.5  | 4417.3  | 4102.3  | 5564.7  |
| 47.5° | 4751.0  | 4608.5  | 4113.5  | 4087.3  | 5272.2  | 6828.4  | 7420.8  | 6558.4  | 5276.0  | 4893.5  | 6543.4  |
| 50°   | 5575.9  | 5418.5  | 4818.5  | 4694.7  | 6374.7  | 8399.5  | 9190.7  | 7799.6  | 6149.7  | 5733.4  | 7750.8  |
| 52.5° | 6708.4  | 6603.4  | 5935.9  | 5321.0  | 7360.8  | 10131.9 | 10814.4 | 9097.0  | 6824.6  | 6693.4  | 9067.0  |
| 55°   | 8287.0  | 8185.8  | 7390.8  | 6018.4  | 8294.5  | 11868.1 | 12419.3 | 10278.2 | 7413.3  | 7818.3  | 10443.2 |
| 57.5° | 10075.7 | 10244.4 | 9382.0  | 6948.4  | 9277.0  | 13266.8 | 14035.5 | 11350.6 | 8208.3  | 9322.0  | 11973.1 |
| 60°   | 11241.9 | 11774.4 | 11665.6 | 8572.0  | 10803.2 | 15006.7 | 15842.9 | 12786.8 | 9370.7  | 10428.2 | 11939.3 |
| 62.5° | 10229.4 | 10761.9 | 11594.4 | 10454.4 | 12273.1 | 16581.6 | 17286.6 | 14298.0 | 10525.7 | 9547.0  | 10027.0 |
| 65°   | 8680.8  | 9344.5  | 10221.9 | 9082.0  | 12014.3 | 16630.3 | 17354.1 | 14354.2 | 9820.7  | 7057.1  | 7109.6  |
| 67.5° | 7480.8  | 8069.6  | 9149.5  | 7728.3  | 10649.4 | 15145.4 | 15715.4 | 12805.5 | 8118.3  | 4679.7  | 4638.5  |
| 70°   | 6243.4  | 6783.4  | 8148.3  | 6880.9  | 9329.5  | 13053.0 | 12561.8 | 10765.7 | 6862.1  | 3108.6  | 2576.1  |
| 72.5° | 5321.0  | 5819.7  | 7240.9  | 6183.4  | 7402.1  | 10578.2 | 8658.3  | 8932.0  | 5583.4  | 1976.1  | 1754.9  |
| 75°   | 4402.3  | 4859.7  | 6157.2  | 5598.4  | 6123.4  | 6599.6  | 5984.7  | 6344.7  | 4601.0  | 1676.2  | 1353.7  |
| 77.5° | 3089.8  | 3374.8  | 4319.8  | 4454.8  | 4766.0  | 3907.3  | 3794.8  | 4443.5  | 3273.6  | 832.5   | 570.0   |
| 80°   | 1522.4  | 1698.7  | 2253.6  | 2651.1  | 2253.6  | 2216.1  | 2527.4  | 2958.6  | 1698.7  | 510.0   | 315.0   |
| 82.5° | 682.5   | 810.0   | 1038.7  | 1604.9  | 813.7   | 885.0   | 1117.4  | 1574.9  | 772.5   | 303.7   | 135.0   |
| 85°   | 108.7   | 120.0   | 202.5   | 270.0   | 221.2   | 341.2   | 326.2   | 307.5   | 165.0   | 82.5    | 37.5    |
| 87.5° | 3.7     | 3.7     | 3.7     | 7.5     | 11.2    | 15.0    | 18.7    | 18.7    | 18.7    | 18.7    | 18.7    |
| 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°    | 2111.1  | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 |
| 2.5°  | 2381.1  | 2369.9 | 2313.6 | 2257.4 | 2208.6 | 2159.9 | 2111.1 | 2043.6 | 1991.1 | 1946.1 | 1927.4 |
| 5°    | 2606.1  | 2546.1 | 2459.9 | 2366.1 | 2283.6 | 2189.9 | 2099.9 | 1998.6 | 1916.1 | 1829.9 | 1784.9 |
| 7.5°  | 2759.8  | 2699.9 | 2557.4 | 2414.9 | 2313.6 | 2212.4 | 2118.6 | 2006.1 | 1897.4 | 1773.7 | 1706.2 |
| 10°   | 2831.1  | 2763.6 | 2609.9 | 2444.9 | 2321.1 | 2219.9 | 2133.6 | 2039.9 | 1931.1 | 1777.4 | 1687.4 |
| 12.5° | 2879.8  | 2797.3 | 2621.1 | 2452.4 | 2328.6 | 2223.6 | 2141.1 | 2073.6 | 2009.9 | 1859.9 | 1754.9 |
| 15°   | 2909.8  | 2834.8 | 2651.1 | 2456.1 | 2317.4 | 2193.6 | 2114.9 | 2092.4 | 2103.6 | 2032.4 | 1904.9 |
| 17.5° | 2954.8  | 2883.6 | 2688.6 | 2478.6 | 2298.6 | 2129.9 | 2043.6 | 2092.4 | 2193.6 | 2216.1 | 2114.9 |
| 20°   | 3014.8  | 2939.8 | 2737.4 | 2497.4 | 2242.4 | 2009.9 | 1927.4 | 2051.1 | 2219.9 | 2336.1 | 2279.9 |
| 22.5° | 3082.3  | 3022.3 | 2793.6 | 2516.1 | 2159.9 | 1852.4 | 1814.9 | 1964.9 | 2144.9 | 2294.9 | 2298.6 |
| 25°   | 3164.8  | 3108.6 | 2872.3 | 2534.9 | 2047.4 | 1717.4 | 1724.9 | 1852.4 | 1994.9 | 2148.6 | 2174.9 |
| 27.5° | 3277.3  | 3224.8 | 2969.8 | 2557.4 | 1931.1 | 1608.7 | 1646.2 | 1739.9 | 1837.4 | 1931.1 | 1968.6 |
| 30°   | 3401.1  | 3359.8 | 3086.1 | 2602.4 | 1822.4 | 1544.9 | 1567.4 | 1631.2 | 1709.9 | 1766.2 | 1784.9 |
| 32.5° | 3569.8  | 3502.3 | 3194.8 | 2598.6 | 1739.9 | 1514.9 | 1492.4 | 1511.2 | 1574.9 | 1631.2 | 1634.9 |
| 35°   | 3779.8  | 3727.3 | 3307.3 | 2531.1 | 1664.9 | 1499.9 | 1421.2 | 1409.9 | 1447.4 | 1503.7 | 1499.9 |
| 37.5° | 4087.3  | 4042.3 | 3491.1 | 2426.1 | 1571.2 | 1462.4 | 1346.2 | 1308.7 | 1334.9 | 1372.4 | 1383.7 |
| 40°   | 4548.5  | 4432.3 | 3701.0 | 2309.9 | 1477.4 | 1394.9 | 1256.2 | 1203.7 | 1222.4 | 1263.7 | 1271.2 |
| 42.5° | 5174.7  | 4953.5 | 3982.3 | 2152.4 | 1387.4 | 1293.7 | 1166.2 | 1109.9 | 1121.2 | 1158.7 | 1166.2 |
| 45°   | 5977.2  | 5643.4 | 4368.5 | 1987.4 | 1316.2 | 1188.7 | 1072.4 | 1012.4 | 1023.7 | 1064.9 | 1083.7 |
| 47.5° | 6914.6  | 6457.1 | 4773.5 | 1811.2 | 1274.9 | 1106.2 | 978.7  | 933.7  | 959.9  | 1001.2 | 1008.7 |
| 50°   | 8020.8  | 7559.6 | 5032.2 | 1668.7 | 1248.7 | 1042.4 | 892.5  | 873.7  | 907.5  | 941.2  | 948.7  |
| 52.5° | 9228.2  | 8572.0 | 4867.2 | 1552.4 | 1226.2 | 1019.9 | 832.5  | 840.0  | 866.2  | 900.0  | 911.2  |
| 55°   | 10401.9 | 8943.3 | 4319.8 | 1402.4 | 1199.9 | 1034.9 | 787.5  | 806.2  | 840.0  | 866.2  | 873.7  |
| 57.5° | 11166.9 | 8632.0 | 3479.8 | 1244.9 | 1169.9 | 1046.2 | 765.0  | 780.0  | 817.5  | 847.5  | 851.2  |
| 60°   | 10499.4 | 7949.6 | 2606.1 | 1109.9 | 1106.2 | 1027.4 | 757.5  | 735.0  | 787.5  | 813.7  | 817.5  |
| 62.5° | 8602.0  | 6502.1 | 1664.9 | 982.4  | 986.2  | 986.2  | 753.7  | 660.0  | 727.5  | 750.0  | 746.2  |
| 65°   | 5909.7  | 4597.2 | 1031.2 | 802.5  | 840.0  | 896.2  | 731.2  | 581.2  | 660.0  | 682.5  | 675.0  |
| 67.5° | 3884.8  | 2921.1 | 637.5  | 618.7  | 690.0  | 776.2  | 686.2  | 521.2  | 592.5  | 607.5  | 585.0  |
| 70°   | 2107.4  | 1376.2 | 420.0  | 405.0  | 540.0  | 611.2  | 581.2  | 468.7  | 528.7  | 543.7  | 521.2  |
| 72.5° | 1391.2  | 791.2  | 296.2  | 296.2  | 423.7  | 427.5  | 476.2  | 420.0  | 468.7  | 483.7  | 461.2  |
| 75°   | 1046.2  | 510.0  | 206.2  | 228.7  | 270.0  | 333.7  | 341.2  | 352.5  | 397.5  | 416.2  | 393.7  |
| 77.5° | 480.0   | 187.5  | 123.7  | 168.7  | 187.5  | 255.0  | 217.5  | 262.5  | 296.2  | 303.7  | 285.0  |
| 80°   | 277.5   | 105.0  | 82.5   | 108.7  | 120.0  | 210.0  | 127.5  | 157.5  | 210.0  | 221.2  | 198.7  |
| 82.5° | 116.2   | 52.5   | 56.2   | 67.5   | 71.2   | 116.2  | 90.0   | 101.2  | 138.7  | 135.0  | 120.0  |
| 85°   | 33.7    | 33.7   | 37.5   | 41.2   | 41.2   | 67.5   | 63.7   | 60.0   | 63.7   | 63.7   | 52.5   |
| 87.5° | 22.5    | 22.5   | 22.5   | 26.2   | 26.2   | 30.0   | 33.7   | 37.5   | 37.5   | 37.5   | 33.7   |
| 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°    | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 |
| 2.5°  | 1901.1 | 1867.4 | 1818.7 | 1811.2 | 1784.9 | 1766.2 | 1784.9 | 1803.7 | 1837.4 | 1841.1 | 1856.1 |
| 5°    | 1743.7 | 1664.9 | 1604.9 | 1537.4 | 1503.7 | 1499.9 | 1492.4 | 1514.9 | 1563.7 | 1593.7 | 1616.2 |
| 7.5°  | 1638.7 | 1496.2 | 1391.2 | 1297.4 | 1263.7 | 1237.4 | 1259.9 | 1256.2 | 1319.9 | 1346.2 | 1368.7 |
| 10°   | 1582.4 | 1383.7 | 1226.2 | 1109.9 | 1064.9 | 1038.7 | 1034.9 | 1042.4 | 1079.9 | 1106.2 | 1132.4 |
| 12.5° | 1619.9 | 1338.7 | 1106.2 | 971.2  | 922.4  | 892.5  | 866.2  | 866.2  | 873.7  | 907.5  | 918.7  |
| 15°   | 1743.7 | 1364.9 | 1049.9 | 903.7  | 840.0  | 791.2  | 757.5  | 731.2  | 735.0  | 738.7  | 750.0  |
| 17.5° | 1923.6 | 1432.4 | 1031.2 | 862.5  | 795.0  | 735.0  | 701.2  | 671.2  | 663.7  | 663.7  | 660.0  |
| 20°   | 2096.1 | 1484.9 | 1016.2 | 828.7  | 742.5  | 690.0  | 660.0  | 633.7  | 622.5  | 622.5  | 622.5  |
| 22.5° | 2167.4 | 1529.9 | 997.4  | 787.5  | 690.0  | 641.2  | 615.0  | 596.2  | 592.5  | 592.5  | 588.7  |
| 25°   | 2111.1 | 1514.9 | 974.9  | 746.2  | 641.2  | 603.7  | 581.2  | 562.5  | 558.7  | 562.5  | 558.7  |
| 27.5° | 1934.9 | 1462.4 | 944.9  | 712.5  | 603.7  | 570.0  | 551.2  | 532.5  | 528.7  | 532.5  | 532.5  |
| 30°   | 1747.4 | 1372.4 | 896.2  | 686.2  | 573.7  | 536.2  | 517.5  | 498.7  | 498.7  | 502.5  | 506.2  |
| 32.5° | 1597.4 | 1282.4 | 840.0  | 652.5  | 540.0  | 506.2  | 487.5  | 468.7  | 468.7  | 476.2  | 476.2  |
| 35°   | 1469.9 | 1211.2 | 783.7  | 618.7  | 510.0  | 472.5  | 457.5  | 442.5  | 438.7  | 446.2  | 450.0  |
| 37.5° | 1368.7 | 1147.4 | 723.7  | 585.0  | 480.0  | 446.2  | 431.2  | 412.5  | 408.7  | 416.2  | 423.7  |
| 40°   | 1263.7 | 1076.2 | 671.2  | 543.7  | 450.0  | 416.2  | 401.2  | 378.7  | 378.7  | 386.2  | 393.7  |
| 42.5° | 1162.4 | 1012.4 | 637.5  | 506.2  | 420.0  | 382.5  | 367.5  | 348.7  | 348.7  | 356.2  | 363.7  |
| 45°   | 1079.9 | 952.4  | 618.7  | 468.7  | 386.2  | 352.5  | 333.7  | 318.7  | 322.5  | 330.0  | 337.5  |
| 47.5° | 1001.2 | 888.7  | 622.5  | 450.0  | 363.7  | 318.7  | 300.0  | 288.7  | 296.2  | 307.5  | 315.0  |
| 50°   | 941.2  | 843.7  | 626.2  | 420.0  | 333.7  | 292.5  | 273.7  | 266.2  | 277.5  | 288.7  | 296.2  |
| 52.5° | 903.7  | 798.7  | 603.7  | 382.5  | 311.2  | 266.2  | 255.0  | 255.0  | 266.2  | 273.7  | 281.2  |
| 55°   | 866.2  | 723.7  | 555.0  | 341.2  | 288.7  | 247.5  | 240.0  | 240.0  | 251.2  | 258.7  | 262.5  |
| 57.5° | 836.2  | 645.0  | 498.7  | 307.5  | 262.5  | 228.7  | 228.7  | 228.7  | 232.5  | 236.2  | 243.7  |
| 60°   | 780.0  | 562.5  | 427.5  | 281.2  | 236.2  | 213.7  | 210.0  | 210.0  | 206.2  | 210.0  | 221.2  |
| 62.5° | 682.5  | 472.5  | 363.7  | 251.2  | 213.7  | 195.0  | 191.2  | 180.0  | 168.7  | 172.5  | 180.0  |
| 65°   | 577.5  | 375.0  | 303.7  | 217.5  | 183.7  | 172.5  | 168.7  | 150.0  | 135.0  | 138.7  | 150.0  |
| 67.5° | 461.2  | 281.2  | 255.0  | 187.5  | 157.5  | 146.2  | 146.2  | 135.0  | 123.7  | 123.7  | 131.2  |
| 70°   | 360.0  | 236.2  | 191.2  | 150.0  | 123.7  | 123.7  | 131.2  | 120.0  | 105.0  | 105.0  | 116.2  |
| 72.5° | 292.5  | 191.2  | 153.7  | 116.2  | 97.5   | 105.0  | 108.7  | 97.5   | 86.2   | 86.2   | 93.7   |
| 75°   | 228.7  | 150.0  | 120.0  | 86.2   | 75.0   | 78.7   | 86.2   | 78.7   | 67.5   | 71.2   | 75.0   |
| 77.5° | 157.5  | 101.2  | 78.7   | 63.7   | 56.2   | 60.0   | 60.0   | 56.2   | 52.5   | 52.5   | 56.2   |
| 80°   | 105.0  | 67.5   | 52.5   | 45.0   | 41.2   | 41.2   | 37.5   | 37.5   | 41.2   | 41.2   | 45.0   |
| 82.5° | 75.0   | 48.7   | 41.2   | 33.7   | 26.2   | 26.2   | 30.0   | 30.0   | 33.7   | 33.7   | 37.5   |
| 85°   | 45.0   | 33.7   | 30.0   | 22.5   | 18.7   | 22.5   | 22.5   | 26.2   | 30.0   | 30.0   | 33.7   |
| 87.5° | 33.7   | 26.2   | 22.5   | 18.7   | 15.0   | 15.0   | 18.7   | 18.7   | 22.5   | 26.2   | 26.2   |
| 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: P1386067

CATALOG NUMBER: VAL-T-SB4A-727-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°    | 360°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| 0°    | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1 | 2111.1  | 2111.1  |
| 2.5°  | 1893.6 | 1938.6 | 2002.4 | 2058.6 | 2126.1 | 2193.6 | 2257.4 | 2317.4 | 2321.1  | 2324.9  |
| 5°    | 1687.4 | 1777.4 | 1882.4 | 2009.9 | 2144.9 | 2276.1 | 2414.9 | 2527.4 | 2553.6  | 2568.6  |
| 7.5°  | 1458.7 | 1589.9 | 1751.2 | 1931.1 | 2133.6 | 2336.1 | 2531.1 | 2699.9 | 2763.6  | 2778.6  |
| 10°   | 1218.7 | 1379.9 | 1574.9 | 1807.4 | 2081.1 | 2351.1 | 2613.6 | 2819.8 | 2894.8  | 2909.8  |
| 12.5° | 1004.9 | 1136.2 | 1361.2 | 1642.4 | 1972.4 | 2328.6 | 2643.6 | 2872.3 | 2947.3  | 2966.1  |
| 15°   | 821.2  | 944.9  | 1154.9 | 1451.2 | 1822.4 | 2249.9 | 2621.1 | 2883.6 | 2958.6  | 2973.6  |
| 17.5° | 678.7  | 757.5  | 948.7  | 1271.2 | 1687.4 | 2148.6 | 2591.1 | 2891.1 | 2962.3  | 2973.6  |
| 20°   | 622.5  | 637.5  | 738.7  | 1053.7 | 1544.9 | 2073.6 | 2572.4 | 2902.3 | 2973.6  | 2984.8  |
| 22.5° | 596.2  | 596.2  | 618.7  | 802.5  | 1346.2 | 1994.9 | 2564.9 | 2936.1 | 2988.6  | 2999.8  |
| 25°   | 570.0  | 570.0  | 577.5  | 630.0  | 1109.9 | 1897.4 | 2579.9 | 2996.1 | 3029.8  | 3029.8  |
| 27.5° | 543.7  | 543.7  | 551.2  | 562.5  | 825.0  | 1736.2 | 2583.6 | 3063.6 | 3078.6  | 3067.3  |
| 30°   | 517.5  | 525.0  | 525.0  | 532.5  | 607.5  | 1533.7 | 2561.1 | 3138.6 | 3138.6  | 3116.1  |
| 32.5° | 491.2  | 495.0  | 502.5  | 506.2  | 528.7  | 1271.2 | 2523.6 | 3232.3 | 3213.6  | 3183.6  |
| 35°   | 468.7  | 472.5  | 472.5  | 480.0  | 502.5  | 1016.2 | 2482.4 | 3359.8 | 3307.3  | 3273.6  |
| 37.5° | 438.7  | 442.5  | 446.2  | 453.7  | 476.2  | 806.2  | 2422.4 | 3468.6 | 3431.1  | 3386.1  |
| 40°   | 412.5  | 416.2  | 420.0  | 427.5  | 450.0  | 693.7  | 2347.4 | 3633.6 | 3626.1  | 3573.6  |
| 42.5° | 382.5  | 390.0  | 393.7  | 397.5  | 427.5  | 633.7  | 2294.9 | 3899.8 | 3899.8  | 3836.0  |
| 45°   | 356.2  | 363.7  | 363.7  | 371.2  | 412.5  | 581.2  | 2411.1 | 4267.3 | 4297.3  | 4237.3  |
| 47.5° | 333.7  | 337.5  | 337.5  | 341.2  | 390.0  | 536.2  | 2722.4 | 4829.7 | 4792.2  | 4751.0  |
| 50°   | 311.2  | 318.7  | 311.2  | 315.0  | 371.2  | 562.5  | 3236.1 | 5549.7 | 5647.2  | 5575.9  |
| 52.5° | 296.2  | 300.0  | 285.0  | 285.0  | 345.0  | 596.2  | 3656.1 | 6468.4 | 6794.6  | 6708.4  |
| 55°   | 277.5  | 281.2  | 262.5  | 262.5  | 303.7  | 517.5  | 3682.3 | 7514.6 | 8230.8  | 8287.0  |
| 57.5° | 258.7  | 258.7  | 243.7  | 240.0  | 262.5  | 420.0  | 3266.1 | 8324.5 | 9948.2  | 10075.7 |
| 60°   | 236.2  | 232.5  | 225.0  | 217.5  | 240.0  | 386.2  | 2489.9 | 8215.8 | 10799.4 | 11241.9 |
| 62.5° | 202.5  | 210.0  | 206.2  | 191.2  | 217.5  | 360.0  | 1623.7 | 7109.6 | 9839.5  | 10229.4 |
| 65°   | 168.7  | 180.0  | 180.0  | 168.7  | 240.0  | 315.0  | 855.0  | 5692.2 | 8212.1  | 8680.8  |
| 67.5° | 150.0  | 157.5  | 153.7  | 146.2  | 213.7  | 198.7  | 412.5  | 4364.8 | 7030.9  | 7480.8  |
| 70°   | 131.2  | 138.7  | 127.5  | 120.0  | 172.5  | 142.5  | 243.7  | 2921.1 | 5804.7  | 6243.4  |
| 72.5° | 108.7  | 116.2  | 105.0  | 93.7   | 127.5  | 108.7  | 161.2  | 1901.1 | 4833.5  | 5321.0  |
| 75°   | 90.0   | 93.7   | 86.2   | 75.0   | 93.7   | 86.2   | 112.5  | 1241.2 | 4042.3  | 4402.3  |
| 77.5° | 63.7   | 71.2   | 67.5   | 56.2   | 67.5   | 60.0   | 78.7   | 708.7  | 2819.8  | 3089.8  |
| 80°   | 48.7   | 48.7   | 48.7   | 45.0   | 41.2   | 41.2   | 52.5   | 318.7  | 1368.7  | 1522.4  |
| 82.5° | 41.2   | 41.2   | 37.5   | 33.7   | 30.0   | 26.2   | 30.0   | 93.7   | 645.0   | 682.5   |
| 85°   | 37.5   | 30.0   | 26.2   | 22.5   | 18.7   | 11.2   | 11.2   | 26.2   | 131.2   | 108.7   |
| 87.5° | 22.5   | 18.7   | 15.0   | 7.5    | 3.7    | 3.7    | 0.0    | 3.7    | 3.7     | 3.7     |
| 90°   | 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

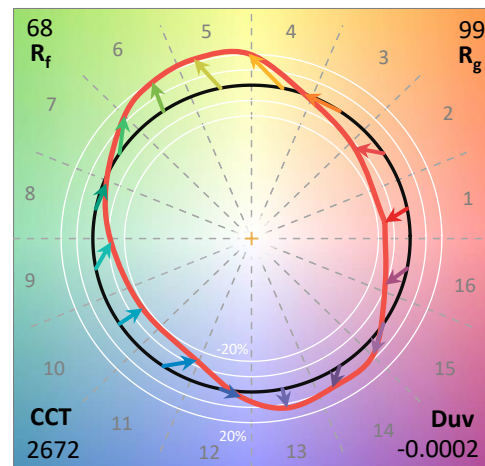
Data in this report applies to families of products including GSS-SB1A-727-U-5WQ

### 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

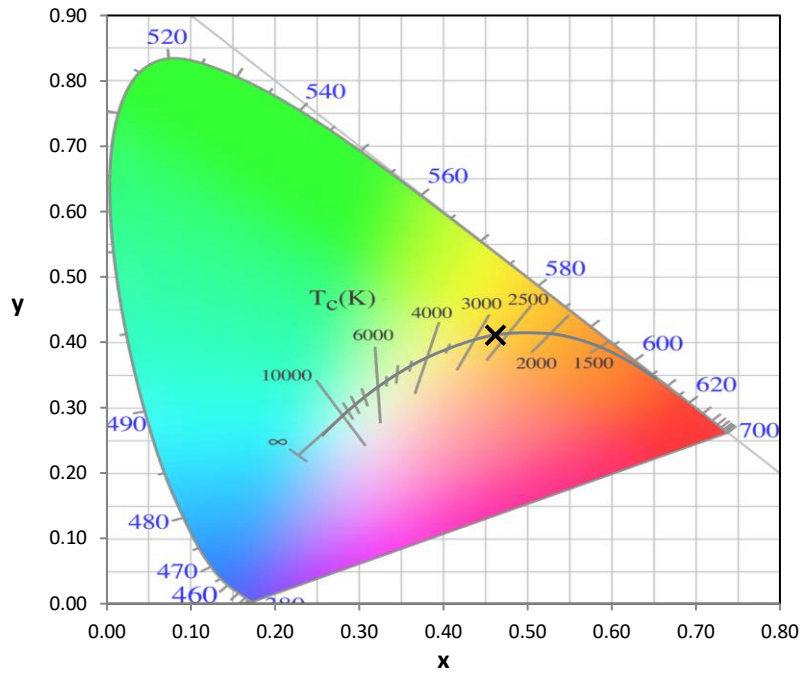
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-3

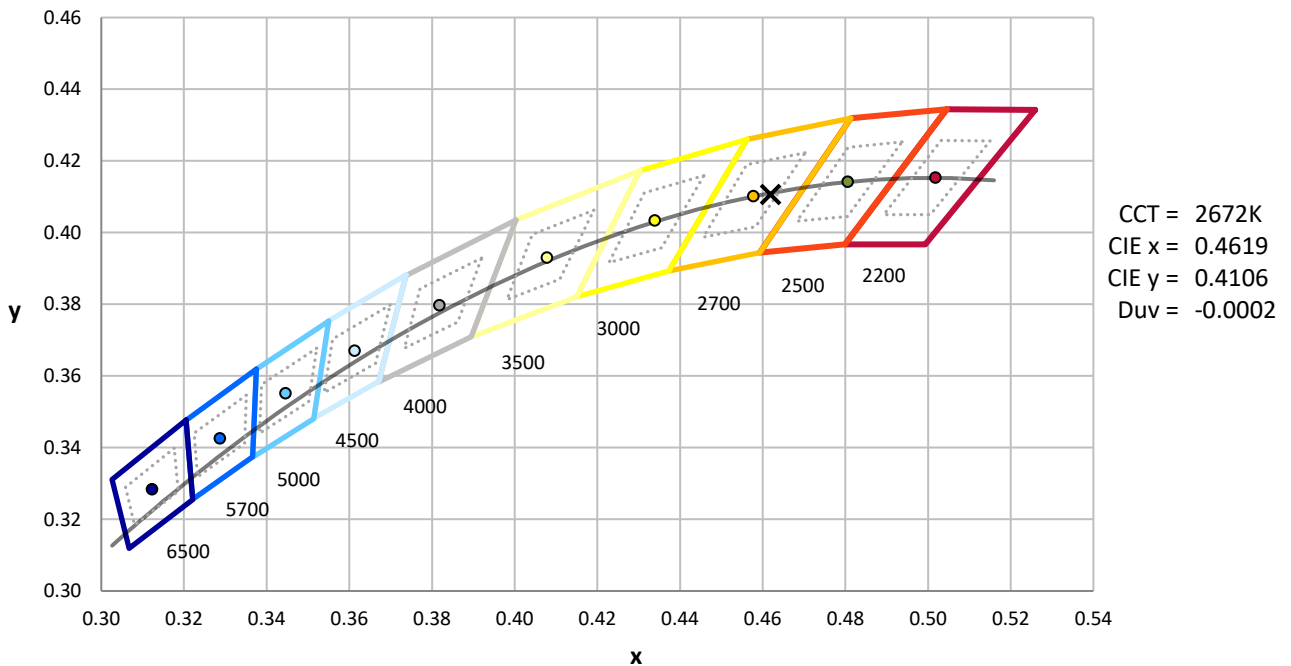
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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



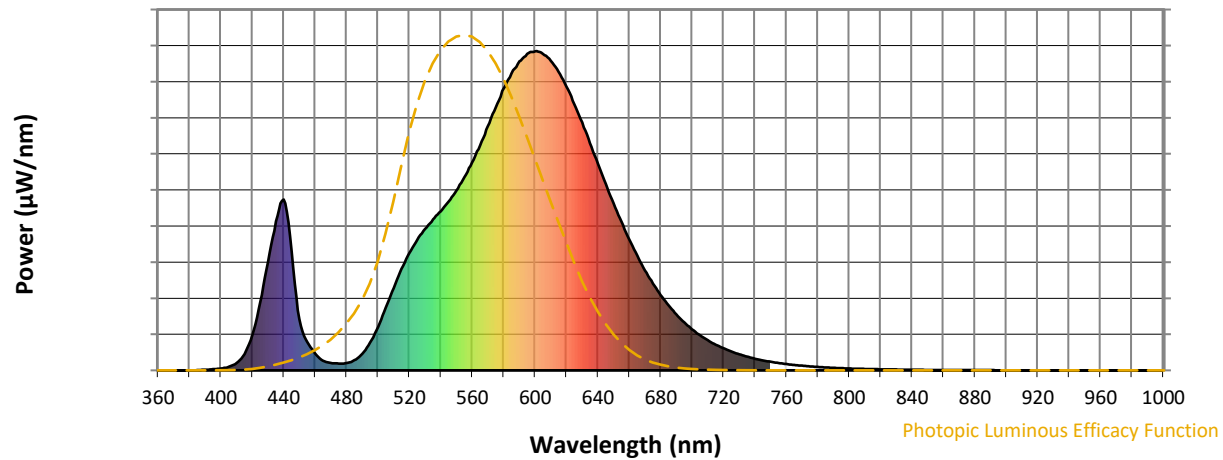
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-3

### Photopic Flux vs. Wavelength

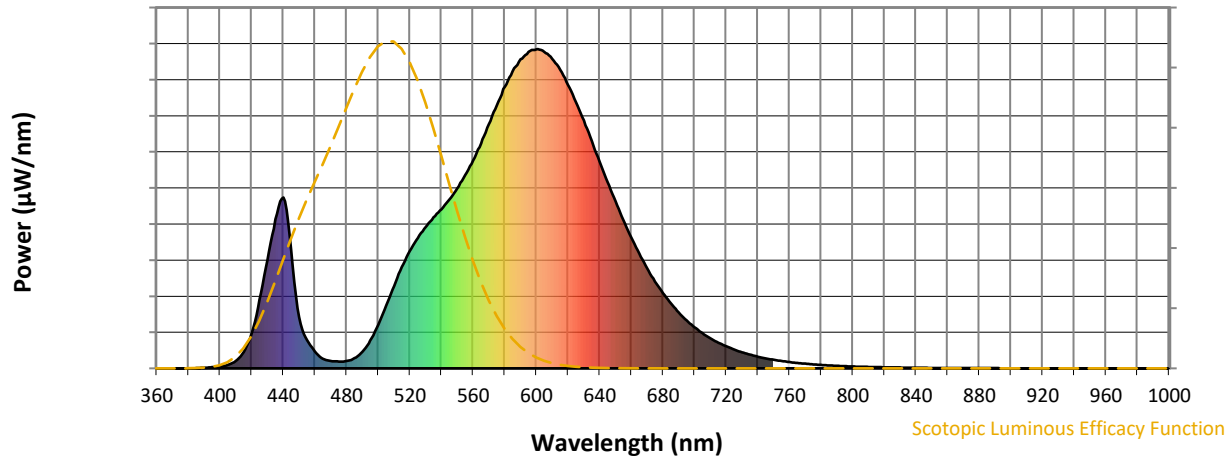


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 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                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-3

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

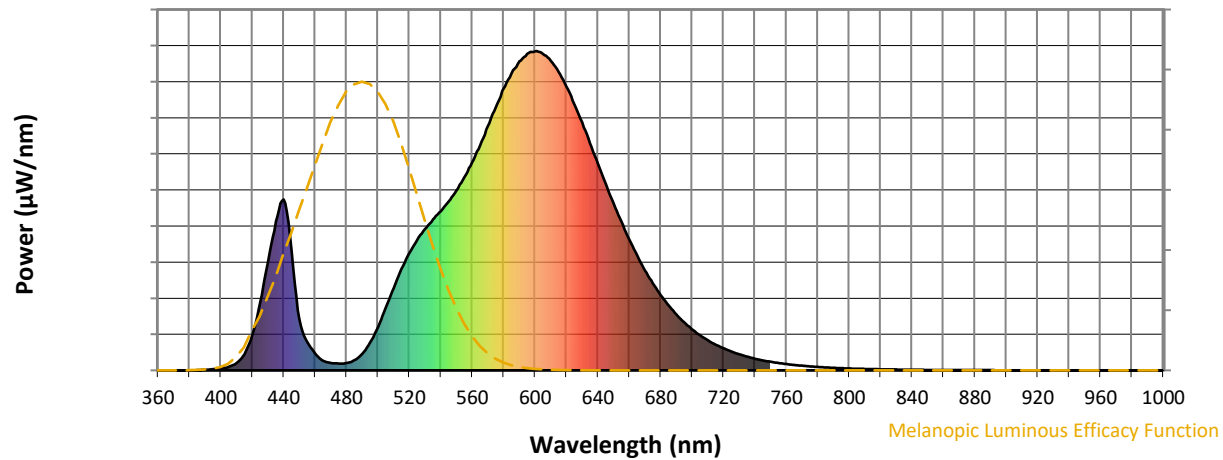
S/P: 1.02

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 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**

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 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                             |                   |                                      |                                |

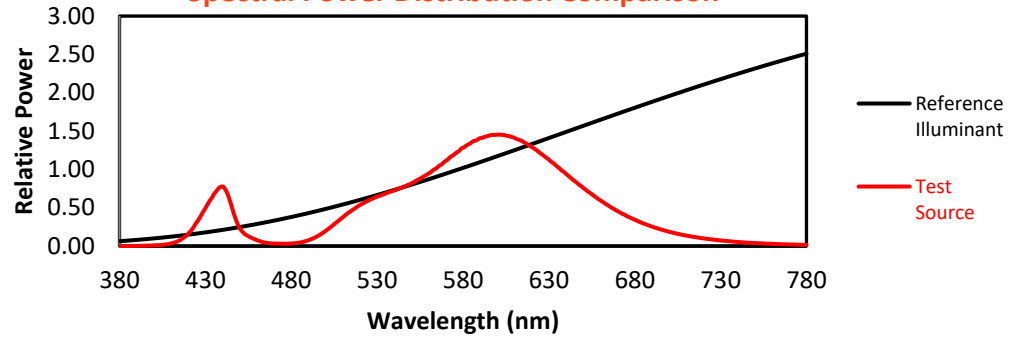
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TM-30-18

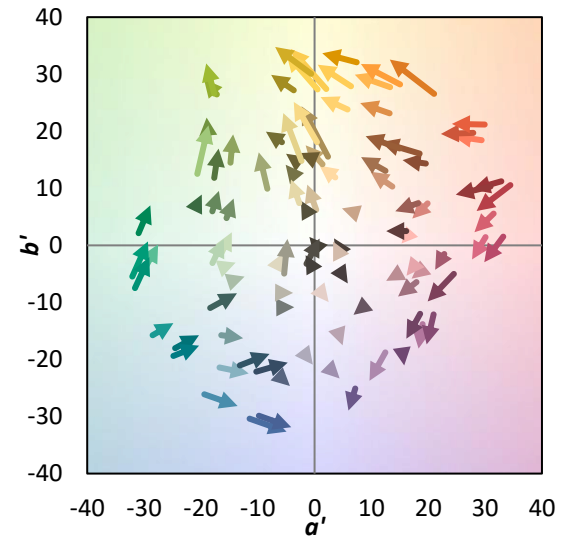
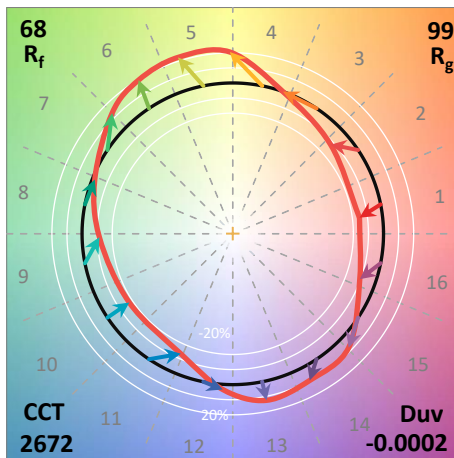
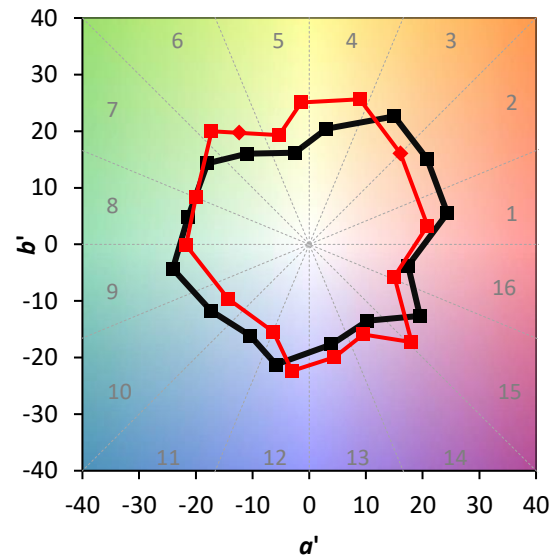
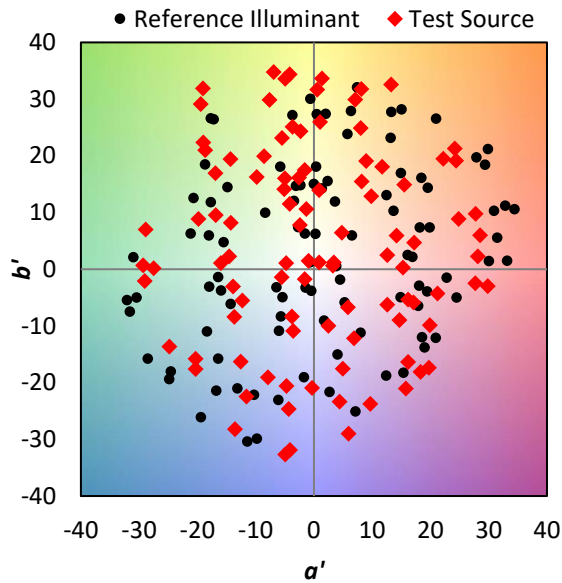
### Summary

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

### Spectral Power Distribution Comparison

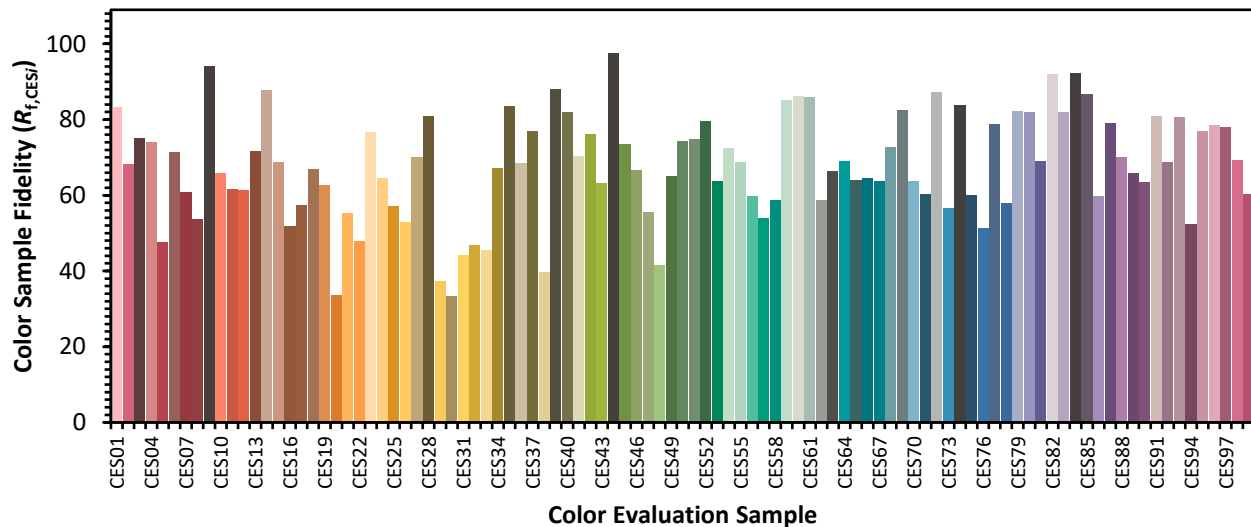


### Color Vector Graphics

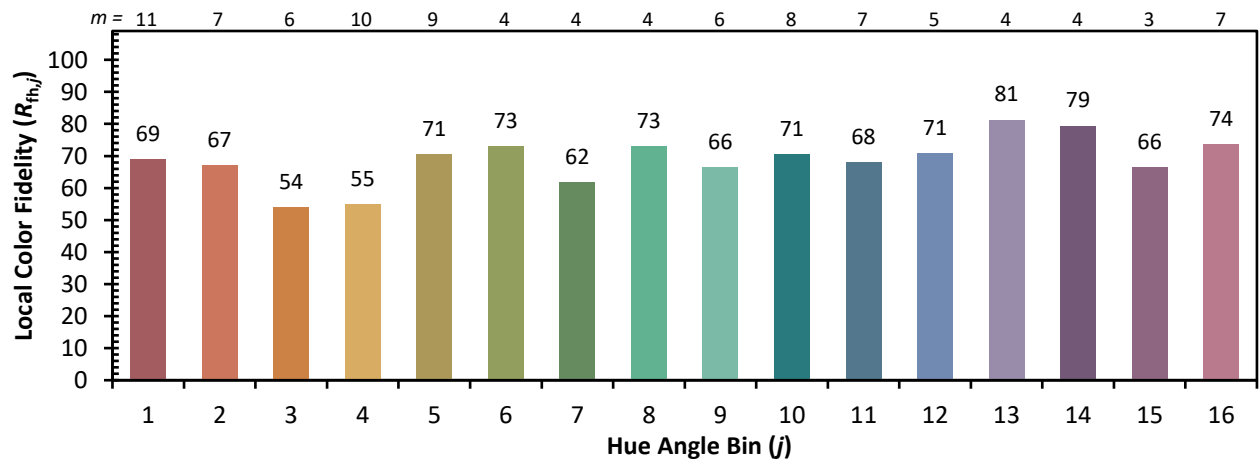
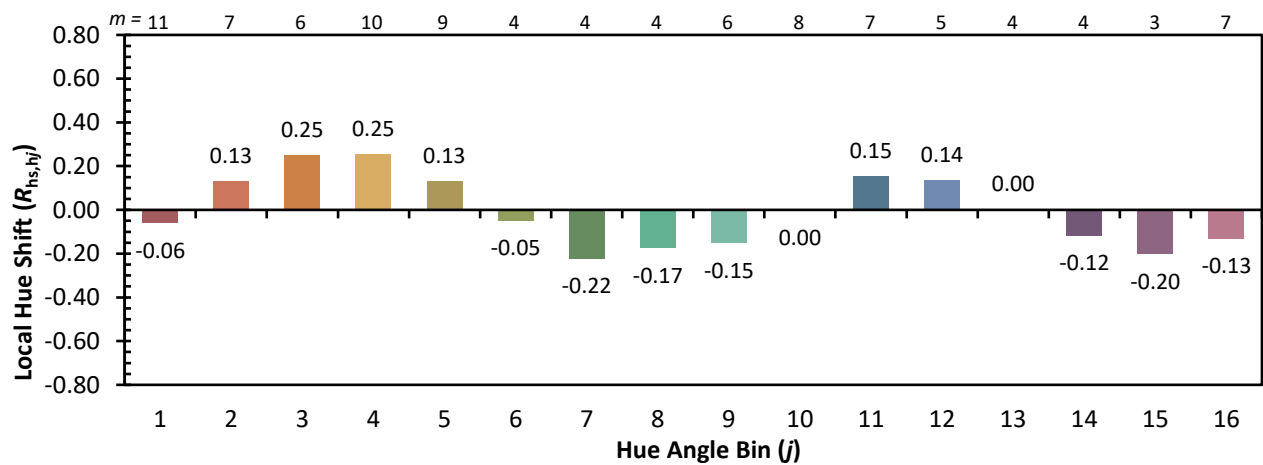
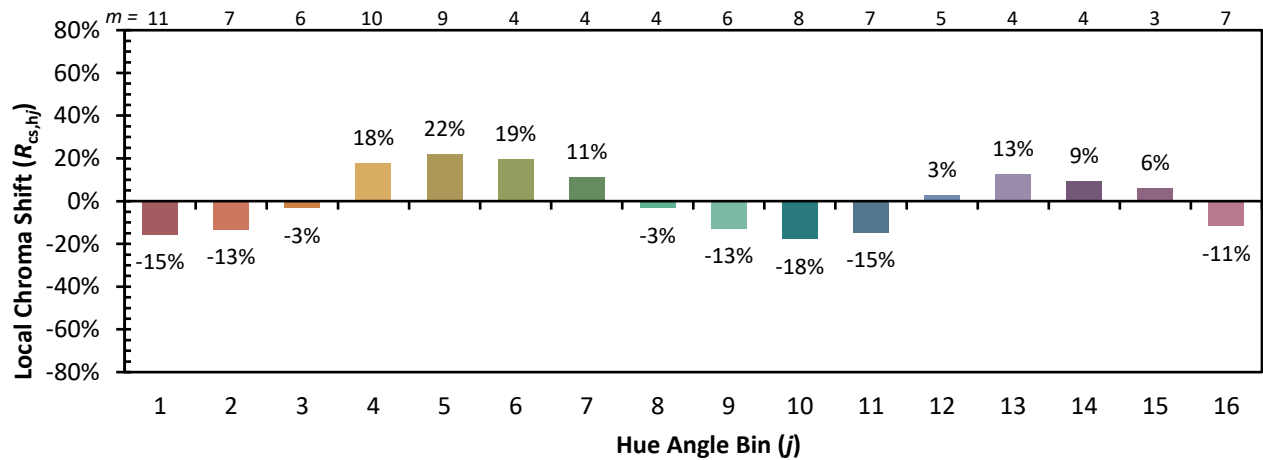


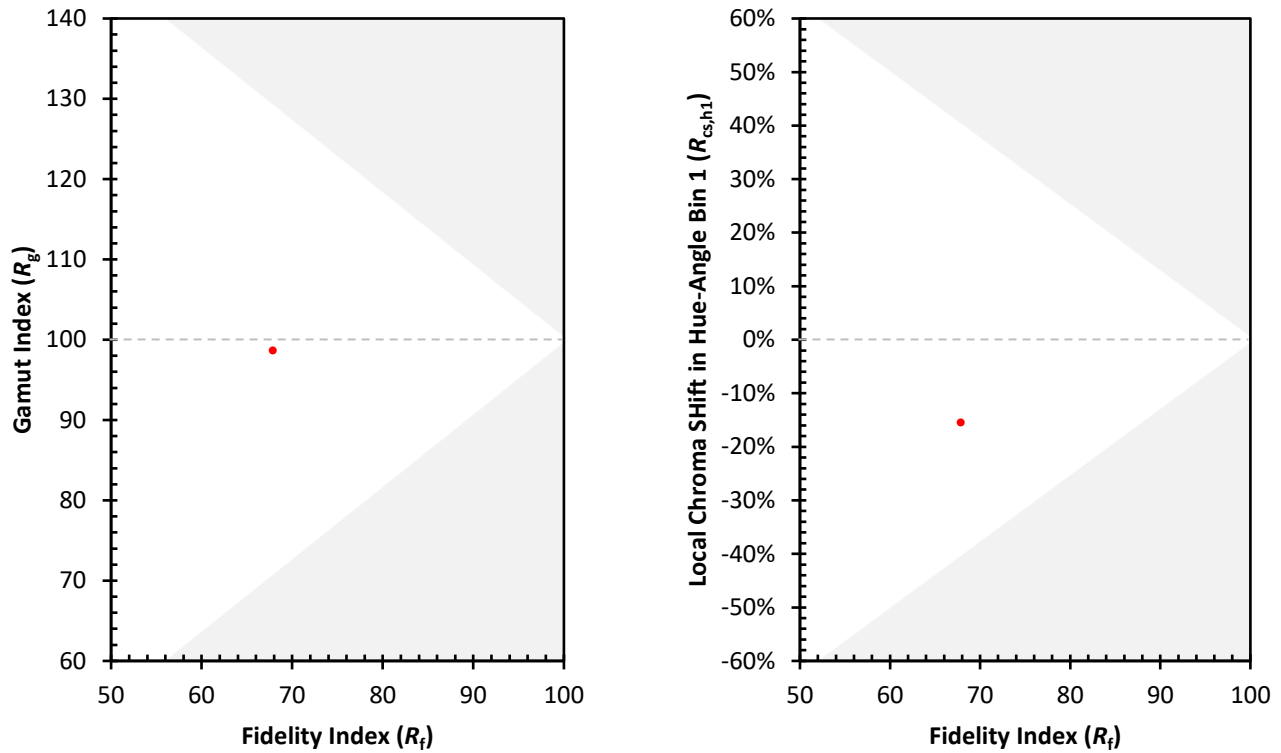
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| 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)