

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



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: METALUX

Report Number: P1432881

Luminaire Tested: EHBR1-18-UNV-TASM-L850-UPL40

Issue Date: 3/20/2026

**Test Information**

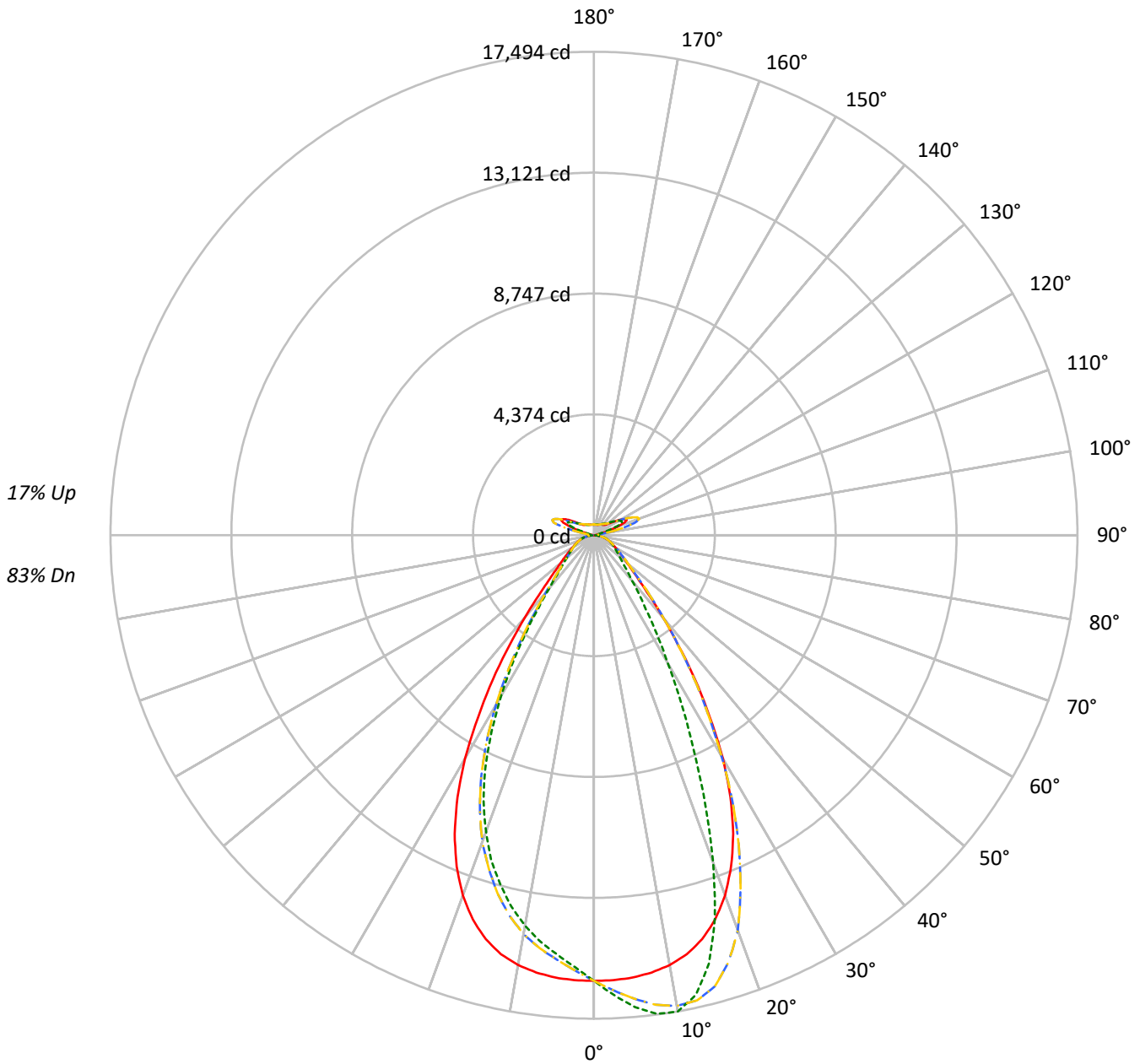
Test Method: LM-79-2019  
Report Number: P1432881  
REPORT IS A COMBINATION OF REPORTS P1431682 AND P1431635  
Test Lab: INNOVATION CENTER  
Issue Date: 3/20/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: EHBR1-18-UNV-TASM-L850-UPL40  
Description: Elevate Round Highbay at, 18000 lumens, 5000K 80CRI LEDs with TASM lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 21837.5 lumens  
Efficiency: N/A  
Efficacy: 174.3 lumens/watt  
Spacing Criteria (0/90/45): 0.99 / 0.84 / 0.9  
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')  
CIE Type: Semi-Direct  
  
Input Watts (W): 125.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P1432881  
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### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - · - · 90°-270°    - · - · 135°-315°



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |    | 20 |    |    |    | 20 |    |    |    |    |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |    | 30 |    |    |    | 10 |    |    | 0  |    |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 0   | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 110 | 101 | 101 | 101 | 93 | 93 | 93 | 86 | 86 | 86 | 86 | 86 | 86 | 83 |
| 1   | 108 | 104 | 101 | 98  | 103 | 100 | 97  | 95  | 93  | 91  | 89  | 86 | 84 | 83 | 80 | 79 | 78 | 78 | 78 | 78 | 74 |
| 2   | 100 | 94  | 89  | 85  | 96  | 91  | 87  | 83  | 85  | 81  | 78  | 79 | 76 | 74 | 74 | 72 | 70 | 70 | 70 | 70 | 67 |
| 3   | 94  | 86  | 80  | 75  | 90  | 83  | 78  | 73  | 78  | 74  | 70  | 73 | 70 | 67 | 69 | 66 | 64 | 64 | 64 | 64 | 61 |
| 4   | 88  | 79  | 72  | 67  | 85  | 77  | 70  | 66  | 72  | 67  | 63  | 68 | 64 | 61 | 64 | 61 | 58 | 58 | 58 | 58 | 56 |
| 5   | 83  | 73  | 66  | 61  | 79  | 71  | 64  | 60  | 67  | 61  | 57  | 63 | 59 | 55 | 60 | 56 | 53 | 53 | 53 | 53 | 51 |
| 6   | 78  | 67  | 60  | 55  | 75  | 65  | 59  | 54  | 62  | 57  | 53  | 59 | 54 | 51 | 56 | 52 | 49 | 49 | 49 | 49 | 47 |
| 7   | 73  | 62  | 56  | 51  | 71  | 61  | 54  | 50  | 58  | 52  | 48  | 55 | 50 | 47 | 53 | 49 | 46 | 46 | 46 | 46 | 44 |
| 8   | 69  | 58  | 51  | 47  | 67  | 57  | 50  | 46  | 54  | 49  | 45  | 52 | 47 | 44 | 49 | 45 | 42 | 42 | 42 | 42 | 41 |
| 9   | 65  | 54  | 48  | 43  | 63  | 53  | 47  | 43  | 51  | 45  | 42  | 49 | 44 | 41 | 47 | 43 | 40 | 40 | 40 | 40 | 38 |
| 10  | 62  | 51  | 45  | 40  | 60  | 50  | 44  | 40  | 48  | 43  | 39  | 46 | 41 | 38 | 44 | 40 | 37 | 37 | 37 | 37 | 36 |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 90°   | 180°  | 270°  |
|-----|-------|-------|-------|-------|
| 0°  | 75712 | 75712 | 75712 | 75712 |
| 5°  | 75251 | 80278 | 75251 | 71346 |
| 10° | 74326 | 82340 | 74326 | 67523 |
| 15° | 72131 | 76519 | 72131 | 62373 |
| 20° | 67461 | 61358 | 67461 | 55557 |
| 25° | 59708 | 42512 | 59708 | 46559 |
| 30° | 48481 | 27657 | 48481 | 34836 |
| 35° | 34772 | 17911 | 34772 | 23191 |
| 40° | 22481 | 12346 | 22481 | 14625 |
| 45° | 14264 | 9563  | 14264 | 10421 |
| 50° | 10593 | 8126  | 10593 | 8680  |
| 55° | 8648  | 7403  | 8648  | 7662  |
| 60° | 7489  | 7051  | 7489  | 7094  |
| 65° | 6827  | 6800  | 6827  | 6773  |
| 70° | 6471  | 6664  | 6471  | 6577  |
| 75° | 6050  | 6446  | 6050  | 6253  |
| 80° | 5317  | 6085  | 5317  | 5689  |
| 85° | 3439  | 4344  | 3439  | 4143  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 20054 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 1533.0  | 7.0       |
| 10°-20°   | 4170.6  | 19.1      |
| 20°-30°   | 4891.2  | 22.4      |
| 30°-40°   | 3401.6  | 15.6      |
| 40°-50°   | 1690.4  | 7.7       |
| 50°-60°   | 1011.0  | 4.6       |
| 60°-70°   | 711.6   | 3.3       |
| 70°-80°   | 458.4   | 2.1       |
| 80°-90°   | 152.3   | 0.7       |
| 90°-100°  | 101.1   | 0.5       |
| 100°-110° | 665.2   | 3.0       |
| 110°-120° | 1229.8  | 5.6       |
| 120°-130° | 730.2   | 3.3       |
| 130°-140° | 440.5   | 2.0       |
| 140°-150° | 303.8   | 1.4       |
| 150°-160° | 197.3   | 0.9       |
| 160°-170° | 112.3   | 0.5       |
| 170°-180° | 37.1    | 0.2       |
| 0°-30°    | 10594.8 | 48.5      |
| 0°-40°    | 13996.3 | 64.1      |
| 0°-60°    | 16697.8 | 76.5      |
| 0°-90°    | 18020.1 | 82.5      |
| 90°-120°  | 1996.1  | 9.1       |
| 90°-150°  | 3470.7  | 15.9      |
| 90°-180°  | 3817.0  | 17.5      |
| 0°-180°   | 21837.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°    | 90°   | 180°  | 270°  | 360°  | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0°   | 16122 | 16122 | 16122 | 16122 | 16122 |      |
| 5°   | 16067 | 17141 | 16067 | 15234 | 16067 | 1525 |
| 15°  | 15133 | 16053 | 15133 | 13086 | 15133 | 4229 |
| 25°  | 11924 | 8490  | 11924 | 9298  | 11924 | 5398 |
| 35°  | 6382  | 3287  | 6382  | 4256  | 6382  | 3984 |
| 45°  | 2308  | 1547  | 2308  | 1686  | 2308  | 1889 |
| 55°  | 1169  | 1000  | 1169  | 1035  | 1169  | 1069 |
| 65°  | 713   | 710   | 713   | 707   | 713   | 716  |
| 75°  | 426   | 454   | 426   | 440   | 426   | 447  |
| 85°  | 118   | 149   | 118   | 142   | 118   | 131  |
| 90°  | 28    | 30    | 28    | 28    | 28    | 18   |
| 95°  | 54    | 49    | 54    | 47    | 54    | 57   |
| 105° | 305   | 153   | 305   | 231   | 305   | 412  |
| 115° | 1309  | 1116  | 1309  | 1063  | 1309  | 1193 |
| 125° | 837   | 875   | 837   | 767   | 837   | 771  |
| 135° | 527   | 609   | 527   | 560   | 527   | 418  |
| 145° | 476   | 497   | 476   | 463   | 476   | 298  |
| 155° | 422   | 439   | 422   | 408   | 422   | 197  |
| 165° | 393   | 404   | 393   | 385   | 393   | 112  |
| 175° | 390   | 394   | 390   | 383   | 390   | 37   |
| 180° | 388   | 388   | 388   | 388   | 388   |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 22.5°   | 45°     | 67.5°   | 90°     | 112.5°  | 135°    | 157.5°  | 180°    | 202.5°  | 225°    |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°     | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 |
| 2.5°   | 16112.9 | 16321.2 | 16489.9 | 16601.2 | 16656.2 | 16601.2 | 16489.9 | 16321.2 | 16112.9 | 15905.8 | 15763.5 |
| 5°     | 16067.3 | 16484.5 | 16837.9 | 17069.1 | 17140.7 | 17069.1 | 16837.9 | 16484.5 | 16067.3 | 15673.1 | 15411.5 |
| 7.5°   | 15958.2 | 16608.1 | 17133.3 | 17403.2 | 17469.1 | 17403.2 | 17133.3 | 16608.1 | 15958.2 | 15400.0 | 15069.7 |
| 10°    | 15791.6 | 16686.1 | 17292.9 | 17486.3 | 17494.2 | 17486.3 | 17292.9 | 16686.1 | 15791.6 | 15039.7 | 14650.0 |
| 12.5°  | 15525.8 | 16658.3 | 17239.4 | 17175.9 | 17031.6 | 17175.9 | 17239.4 | 16658.3 | 15525.8 | 14599.5 | 14108.0 |
| 15°    | 15132.8 | 16493.5 | 16900.5 | 16383.8 | 16053.3 | 16383.8 | 16900.5 | 16493.5 | 15132.8 | 14005.1 | 13435.0 |
| 17.5°  | 14579.0 | 16185.2 | 16193.0 | 15170.9 | 14547.5 | 15170.9 | 16193.0 | 16185.2 | 14579.0 | 13278.3 | 12650.5 |
| 20°    | 13865.2 | 15690.6 | 15219.0 | 13349.5 | 12610.9 | 13349.5 | 15219.0 | 15690.6 | 13865.2 | 12419.2 | 11803.1 |
| 22.5°  | 12970.3 | 15023.7 | 13862.4 | 11517.1 | 10509.4 | 11517.1 | 13862.4 | 15023.7 | 12970.3 | 11420.0 | 10778.8 |
| 25°    | 11923.7 | 14206.5 | 12403.2 | 9520.5  | 8489.7  | 9520.5  | 12403.2 | 14206.5 | 11923.7 | 10229.5 | 9649.6  |
| 27.5°  | 10692.6 | 13170.8 | 10849.3 | 7779.8  | 6828.8  | 7779.8  | 10849.3 | 13170.8 | 10692.6 | 9000.3  | 8408.1  |
| 30°    | 9325.3  | 11843.0 | 9232.1  | 6195.7  | 5319.8  | 6195.7  | 9232.1  | 11843.0 | 9325.3  | 7619.3  | 7089.1  |
| 32.5°  | 7794.4  | 10541.6 | 7679.1  | 4964.3  | 4222.5  | 4964.3  | 7679.1  | 10541.6 | 7794.4  | 6301.5  | 5747.3  |
| 35°    | 6381.9  | 8913.2  | 6278.9  | 3900.8  | 3287.4  | 3900.8  | 6278.9  | 8913.2  | 6381.9  | 5057.5  | 4513.3  |
| 37.5°  | 5008.5  | 7374.7  | 5005.2  | 3141.1  | 2666.5  | 3141.1  | 5005.2  | 7374.7  | 5008.5  | 3932.0  | 3490.2  |
| 40°    | 3896.6  | 5766.4  | 3921.6  | 2507.4  | 2139.8  | 2507.4  | 3921.6  | 5766.4  | 3896.6  | 2991.7  | 2709.1  |
| 42.5°  | 2952.4  | 4409.3  | 3082.5  | 2057.9  | 1817.5  | 2057.9  | 3082.5  | 4409.3  | 2952.4  | 2357.1  | 2145.5  |
| 45°    | 2307.9  | 3244.7  | 2407.0  | 1736.2  | 1547.2  | 1736.2  | 2407.0  | 3244.7  | 2307.9  | 1898.3  | 1756.2  |
| 47.5°  | 1879.5  | 2507.7  | 1950.8  | 1489.2  | 1356.8  | 1489.2  | 1950.8  | 2507.7  | 1879.5  | 1605.6  | 1499.2  |
| 50°    | 1578.7  | 1924.2  | 1619.8  | 1300.0  | 1211.1  | 1300.0  | 1619.8  | 1924.2  | 1578.7  | 1374.9  | 1303.9  |
| 52.5°  | 1356.2  | 1569.3  | 1379.4  | 1158.5  | 1098.6  | 1158.5  | 1379.4  | 1569.3  | 1356.2  | 1202.9  | 1158.8  |
| 55°    | 1168.7  | 1319.3  | 1199.6  | 1041.8  | 1000.4  | 1041.8  | 1199.6  | 1319.3  | 1168.7  | 1070.5  | 1037.9  |
| 57.5°  | 1026.4  | 1119.1  | 1041.8  | 942.3   | 914.8   | 942.3   | 1041.8  | 1119.1  | 1026.4  | 952.6   | 935.1   |
| 60°    | 900.3   | 969.2   | 919.3   | 855.6   | 847.7   | 855.6   | 919.3   | 969.2   | 900.3   | 857.1   | 845.6   |
| 62.5°  | 803.2   | 846.7   | 813.0   | 777.6   | 770.6   | 777.6   | 813.0   | 846.7   | 803.2   | 770.0   | 772.1   |
| 65°    | 712.6   | 753.0   | 726.5   | 707.5   | 709.8   | 707.5   | 726.5   | 753.0   | 712.6   | 697.1   | 700.5   |
| 67.5°  | 642.4   | 663.5   | 652.1   | 641.2   | 643.9   | 641.2   | 652.1   | 663.5   | 642.4   | 627.3   | 632.4   |
| 70°    | 567.8   | 590.5   | 578.7   | 580.1   | 584.7   | 580.1   | 578.7   | 590.5   | 567.8   | 563.3   | 567.2   |
| 72.5°  | 496.4   | 513.9   | 510.0   | 513.6   | 518.5   | 513.6   | 510.0   | 513.9   | 496.4   | 495.8   | 496.1   |
| 75°    | 426.2   | 439.6   | 441.3   | 446.6   | 454.1   | 446.6   | 441.3   | 439.6   | 426.2   | 421.7   | 427.2   |
| 77.5°  | 349.8   | 364.9   | 370.6   | 377.6   | 388.8   | 377.6   | 370.6   | 364.9   | 349.8   | 352.8   | 355.5   |
| 80°    | 279.7   | 286.6   | 299.3   | 304.4   | 320.1   | 304.4   | 299.3   | 286.6   | 279.7   | 274.6   | 278.5   |
| 82.5°  | 204.7   | 211.0   | 221.9   | 231.5   | 240.7   | 231.5   | 221.9   | 211.0   | 204.7   | 202.3   | 202.6   |
| 85°    | 118.2   | 127.9   | 135.2   | 146.7   | 149.3   | 146.7   | 135.2   | 127.9   | 118.2   | 120.9   | 118.2   |
| 87.5°  | 41.5    | 44.4    | 50.8    | 55.3    | 55.6    | 55.3    | 50.8    | 44.4    | 41.5    | 42.3    | 38.4    |
| 90°    | 27.8    | 47.2    | 81.3    | 44.1    | 30.0    | 44.1    | 81.3    | 47.2    | 27.8    | 49.0    | 76.5    |
| 92.5°  | 36.2    | 64.0    | 115.2   | 58.9    | 40.6    | 58.9    | 115.2   | 64.0    | 36.2    | 63.8    | 123.1   |
| 95°    | 53.5    | 78.9    | 147.0   | 65.2    | 49.0    | 65.2    | 147.0   | 78.9    | 53.5    | 85.0    | 171.7   |
| 97.5°  | 83.1    | 97.9    | 166.0   | 69.5    | 59.6    | 69.5    | 166.0   | 97.9    | 83.1    | 104.0   | 197.1   |
| 100°   | 110.7   | 110.7   | 303.5   | 80.1    | 68.1    | 80.1    | 303.5   | 110.7   | 110.7   | 127.6   | 307.3   |
| 102.5° | 167.8   | 216.8   | 703.9   | 160.9   | 82.9    | 160.9   | 703.9   | 216.8   | 167.8   | 239.8   | 652.2   |
| 105°   | 305.4   | 496.2   | 1239.5  | 417.0   | 153.0   | 417.0   | 1239.5  | 496.2   | 305.4   | 502.2   | 1162.4  |
| 107.5° | 578.5   | 925.9   | 1597.1  | 823.5   | 358.3   | 823.5   | 1597.1  | 925.9   | 578.5   | 889.6   | 1533.1  |
| 110°   | 925.6   | 1294.2  | 1743.2  | 1128.3  | 726.7   | 1128.3  | 1743.2  | 1294.2  | 925.6   | 1221.9  | 1607.1  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 112.5° | 1205.0 | 1442.3 | 1703.0 | 1251.1 | 1006.1 | 1251.1 | 1703.0 | 1442.3 | 1205.0 | 1348.9 | 1539.5 |
| 115°   | 1309.0 | 1421.2 | 1521.0 | 1246.7 | 1116.1 | 1246.7 | 1521.0 | 1421.2 | 1309.0 | 1317.2 | 1374.3 |
| 117.5° | 1264.5 | 1300.6 | 1313.5 | 1170.6 | 1122.5 | 1170.6 | 1313.5 | 1300.6 | 1264.5 | 1184.2 | 1166.9 |
| 120°   | 1141.8 | 1127.0 | 1106.4 | 1058.4 | 1059.0 | 1058.4 | 1106.4 | 1127.0 | 1141.8 | 1033.9 | 974.2  |
| 122.5° | 987.6  | 955.8  | 935.0  | 944.4  | 972.2  | 944.4  | 935.0  | 955.8  | 987.6  | 879.6  | 834.9  |
| 125°   | 837.3  | 805.5  | 814.6  | 847.0  | 875.1  | 847.0  | 814.6  | 805.5  | 837.3  | 746.5  | 735.6  |
| 127.5° | 710.6  | 695.8  | 727.8  | 764.4  | 788.3  | 764.4  | 727.8  | 695.8  | 710.6  | 653.4  | 665.8  |
| 130°   | 619.8  | 623.8  | 666.4  | 697.0  | 712.2  | 697.0  | 666.4  | 623.8  | 619.8  | 592.3  | 621.7  |
| 132.5° | 563.1  | 579.7  | 620.2  | 646.5  | 655.3  | 646.5  | 620.2  | 579.7  | 563.1  | 554.9  | 590.6  |
| 135°   | 527.4  | 552.2  | 588.8  | 606.0  | 608.7  | 606.0  | 588.8  | 552.2  | 527.4  | 529.9  | 563.1  |
| 137.5° | 506.6  | 531.3  | 559.1  | 572.5  | 568.5  | 572.5  | 559.1  | 531.3  | 506.6  | 513.2  | 538.3  |
| 140°   | 494.1  | 518.9  | 531.6  | 547.0  | 543.4  | 547.0  | 531.6  | 518.9  | 494.1  | 498.3  | 517.4  |
| 142.5° | 481.7  | 504.4  | 510.8  | 521.9  | 518.0  | 521.9  | 510.8  | 504.4  | 481.7  | 485.9  | 498.6  |
| 145°   | 475.6  | 492.3  | 487.8  | 502.8  | 497.1  | 502.8  | 487.8  | 492.3  | 475.6  | 477.5  | 484.1  |
| 147.5° | 465.1  | 477.5  | 471.1  | 484.1  | 478.4  | 484.1  | 471.1  | 477.5  | 465.1  | 465.1  | 467.5  |
| 150°   | 452.6  | 461.1  | 452.3  | 467.5  | 466.0  | 467.5  | 452.3  | 461.1  | 452.6  | 450.6  | 452.9  |
| 152.5° | 436.0  | 444.5  | 436.0  | 453.2  | 451.5  | 453.2  | 436.0  | 444.5  | 436.0  | 433.9  | 436.3  |
| 155°   | 421.8  | 426.0  | 421.8  | 439.0  | 439.3  | 439.0  | 421.8  | 426.0  | 421.8  | 421.5  | 422.1  |
| 157.5° | 411.8  | 414.2  | 412.1  | 427.3  | 427.6  | 427.3  | 412.1  | 414.2  | 411.8  | 411.8  | 412.1  |
| 160°   | 402.5  | 406.8  | 404.9  | 417.9  | 418.2  | 417.9  | 404.9  | 406.8  | 402.5  | 404.3  | 404.6  |
| 162.5° | 398.8  | 398.8  | 397.3  | 410.3  | 410.9  | 410.3  | 397.3  | 398.8  | 398.8  | 398.8  | 401.0  |
| 165°   | 393.4  | 395.5  | 391.8  | 400.9  | 403.7  | 400.9  | 391.8  | 395.5  | 393.4  | 395.2  | 395.2  |
| 167.5° | 391.8  | 389.8  | 390.4  | 397.6  | 400.4  | 397.6  | 390.4  | 389.8  | 391.8  | 393.7  | 393.7  |
| 170°   | 387.9  | 388.2  | 386.8  | 394.0  | 396.8  | 394.0  | 386.8  | 388.2  | 387.9  | 390.1  | 391.8  |
| 172.5° | 388.9  | 388.9  | 385.6  | 390.7  | 395.5  | 390.7  | 385.6  | 388.9  | 388.9  | 390.7  | 392.7  |
| 175°   | 389.5  | 387.7  | 386.1  | 389.2  | 394.0  | 389.2  | 386.1  | 387.7  | 389.5  | 389.2  | 389.2  |
| 177.5° | 387.4  | 388.0  | 388.6  | 391.5  | 398.5  | 391.5  | 388.6  | 388.0  | 387.4  | 389.2  | 389.2  |
| 180°   | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  |



TEST NUMBER: P1432881

CATALOG NUMBER: EHBR1-18-UNV-TASM-L850-UPL40

**CANDELA DISTRIBUTION (continued):**

|        | 247.5°  | 270°    | 292.5°  | 315°    | 337.5°  | 360°    |
|--------|---------|---------|---------|---------|---------|---------|
| 0°     | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 | 16122.3 |
| 2.5°   | 15654.0 | 15643.7 | 15654.0 | 15763.5 | 15905.8 | 16112.9 |
| 5°     | 15290.3 | 15233.5 | 15290.3 | 15411.5 | 15673.1 | 16067.3 |
| 7.5°   | 14866.7 | 14833.8 | 14866.7 | 15069.7 | 15400.0 | 15958.2 |
| 10°    | 14420.9 | 14346.2 | 14420.9 | 14650.0 | 15039.7 | 15791.6 |
| 12.5°  | 13871.3 | 13772.3 | 13871.3 | 14108.0 | 14599.5 | 15525.8 |
| 15°    | 13172.3 | 13085.5 | 13172.3 | 13435.0 | 14005.1 | 15132.8 |
| 17.5°  | 12422.3 | 12343.6 | 12422.3 | 12650.5 | 13278.3 | 14579.0 |
| 20°    | 11480.2 | 11418.5 | 11480.2 | 11803.1 | 12419.2 | 13865.2 |
| 22.5°  | 10491.9 | 10434.2 | 10491.9 | 10778.8 | 11420.0 | 12970.3 |
| 25°    | 9329.2  | 9297.8  | 9329.2  | 9649.6  | 10229.5 | 11923.7 |
| 27.5°  | 8072.7  | 8019.3  | 8072.7  | 8408.1  | 9000.3  | 10692.6 |
| 30°    | 6789.2  | 6700.6  | 6789.2  | 7089.1  | 7619.3  | 9325.3  |
| 32.5°  | 5533.6  | 5469.8  | 5533.6  | 5747.3  | 6301.5  | 7794.4  |
| 35°    | 4320.2  | 4256.3  | 4320.2  | 4513.3  | 5057.5  | 6381.9  |
| 37.5°  | 3366.3  | 3253.6  | 3366.3  | 3490.2  | 3932.0  | 5008.5  |
| 40°    | 2553.1  | 2534.9  | 2553.1  | 2709.1  | 2991.7  | 3896.6  |
| 42.5°  | 2078.4  | 2029.1  | 2078.4  | 2145.5  | 2357.1  | 2952.4  |
| 45°    | 1705.4  | 1686.0  | 1705.4  | 1756.2  | 1898.3  | 2307.9  |
| 47.5°  | 1466.6  | 1475.0  | 1466.6  | 1499.2  | 1605.6  | 1879.5  |
| 50°    | 1288.5  | 1293.6  | 1288.5  | 1303.9  | 1374.9  | 1578.7  |
| 52.5°  | 1157.2  | 1152.7  | 1157.2  | 1158.8  | 1202.9  | 1356.2  |
| 55°    | 1041.1  | 1035.4  | 1041.1  | 1037.9  | 1070.5  | 1168.7  |
| 57.5°  | 939.6   | 943.8   | 939.6   | 935.1   | 952.6   | 1026.4  |
| 60°    | 848.9   | 852.8   | 848.9   | 845.6   | 857.1   | 900.3   |
| 62.5°  | 772.4   | 774.8   | 772.4   | 772.1   | 770.0   | 803.2   |
| 65°    | 704.1   | 706.9   | 704.1   | 700.5   | 697.1   | 712.6   |
| 67.5°  | 638.8   | 638.8   | 638.8   | 632.4   | 627.3   | 642.4   |
| 70°    | 577.4   | 577.1   | 577.4   | 567.2   | 563.3   | 567.8   |
| 72.5°  | 503.6   | 510.9   | 503.6   | 496.1   | 495.8   | 496.4   |
| 75°    | 432.0   | 440.5   | 432.0   | 427.2   | 421.7   | 426.2   |
| 77.5°  | 359.4   | 372.5   | 359.4   | 355.5   | 352.8   | 349.8   |
| 80°    | 285.1   | 299.3   | 285.1   | 278.5   | 274.6   | 279.7   |
| 82.5°  | 210.7   | 221.3   | 210.7   | 202.6   | 202.3   | 204.7   |
| 85°    | 125.4   | 142.4   | 125.4   | 118.2   | 120.9   | 118.2   |
| 87.5°  | 40.2    | 51.4    | 40.2    | 38.4    | 42.3    | 41.5    |
| 90°    | 44.8    | 27.8    | 44.8    | 76.5    | 49.0    | 27.8    |
| 92.5°  | 68.1    | 40.5    | 68.1    | 123.1   | 63.8    | 36.2    |
| 95°    | 78.6    | 46.9    | 78.6    | 171.7   | 85.0    | 53.5    |
| 97.5°  | 87.0    | 59.8    | 87.0    | 197.1   | 104.0   | 83.1    |
| 100°   | 101.9   | 78.9    | 101.9   | 307.3   | 127.6   | 110.7   |
| 102.5° | 216.2   | 134.0   | 216.2   | 652.2   | 239.8   | 167.8   |
| 105°   | 455.4   | 231.3   | 455.4   | 1162.4  | 502.2   | 305.4   |
| 107.5° | 815.2   | 400.7   | 815.2   | 1533.1  | 889.6   | 578.5   |
| 110°   | 1081.9  | 747.8   | 1081.9  | 1607.1  | 1221.9  | 925.6   |



TEST NUMBER: P1432881

CATALOG NUMBER: EHBR1-18-UNV-TASM-L850-UPL40

**CANDELA DISTRIBUTION (continued):**

|        | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|--------|--------|--------|--------|--------|--------|--------|
| 112.5° | 1162.4 | 1010.3 | 1162.4 | 1539.5 | 1348.9 | 1205.0 |
| 115°   | 1118.0 | 1063.1 | 1118.0 | 1374.3 | 1317.2 | 1309.0 |
| 117.5° | 1020.5 | 1027.2 | 1020.5 | 1166.9 | 1184.2 | 1264.5 |
| 120°   | 908.3  | 951.0  | 908.3  | 974.2  | 1033.9 | 1141.8 |
| 122.5° | 804.9  | 855.8  | 804.9  | 834.9  | 879.6  | 987.6  |
| 125°   | 716.0  | 767.1  | 716.0  | 735.6  | 746.5  | 837.3  |
| 127.5° | 654.6  | 688.8  | 654.6  | 665.8  | 653.4  | 710.6  |
| 130°   | 606.3  | 635.9  | 606.3  | 621.7  | 592.3  | 619.8  |
| 132.5° | 572.7  | 591.7  | 572.7  | 590.6  | 554.9  | 563.1  |
| 135°   | 543.3  | 560.0  | 543.3  | 563.1  | 529.9  | 527.4  |
| 137.5° | 518.3  | 532.8  | 518.3  | 538.3  | 513.2  | 506.6  |
| 140°   | 495.7  | 508.0  | 495.7  | 517.4  | 498.3  | 494.1  |
| 142.5° | 472.7  | 481.1  | 472.7  | 498.6  | 485.9  | 481.7  |
| 145°   | 456.3  | 462.7  | 456.3  | 484.1  | 477.5  | 475.6  |
| 147.5° | 442.1  | 446.4  | 442.1  | 467.5  | 465.1  | 465.1  |
| 150°   | 427.9  | 432.1  | 427.9  | 452.9  | 450.6  | 452.6  |
| 152.5° | 413.4  | 417.9  | 413.4  | 436.3  | 433.9  | 436.0  |
| 155°   | 403.3  | 407.9  | 403.3  | 422.1  | 421.5  | 421.8  |
| 157.5° | 397.6  | 400.4  | 397.6  | 412.1  | 411.8  | 411.8  |
| 160°   | 392.2  | 394.6  | 392.2  | 404.6  | 404.3  | 402.5  |
| 162.5° | 386.4  | 388.9  | 386.4  | 401.0  | 398.8  | 398.8  |
| 165°   | 385.0  | 385.3  | 385.0  | 395.2  | 395.2  | 393.4  |
| 167.5° | 383.1  | 385.3  | 383.1  | 393.7  | 393.7  | 391.8  |
| 170°   | 383.4  | 383.7  | 383.4  | 391.8  | 390.1  | 387.9  |
| 172.5° | 384.0  | 384.3  | 384.0  | 392.7  | 390.7  | 388.9  |
| 175°   | 382.6  | 382.9  | 382.6  | 389.2  | 389.2  | 389.5  |
| 177.5° | 385.0  | 385.3  | 385.0  | 389.2  | 389.2  | 387.4  |
| 180°   | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  | 388.0  |



TEST NUMBER: P1432881  
 CATALOG NUMBER: EHBR1-18-UNV-TASM-L850-UPL40

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 14.81            | 15.79 | 15.46 | 16.42 | 17.15 | 14.13          | 15.11 | 14.78 | 15.74 | 16.47 |
|                 | 3H   | 16.36            | 17.22 | 17.02 | 17.87 | 18.63 | 15.97          | 16.84 | 16.63 | 17.49 | 18.25 |
|                 | 4H   | 16.99            | 17.80 | 17.67 | 18.46 | 19.24 | 16.75          | 17.56 | 17.43 | 18.22 | 19.00 |
|                 | 6H   | 17.46            | 18.21 | 18.15 | 18.88 | 19.67 | 17.39          | 18.14 | 18.08 | 18.81 | 19.60 |
|                 | 8H   | 17.61            | 18.32 | 18.31 | 19.01 | 19.80 | 17.61          | 18.32 | 18.31 | 19.00 | 19.80 |
|                 | 12H  | 17.68            | 18.36 | 18.39 | 19.04 | 19.85 | 17.73          | 18.41 | 18.44 | 19.09 | 19.90 |
| 4H              | 2H   | 15.22            | 16.03 | 15.90 | 16.69 | 17.47 | 14.70          | 15.51 | 15.38 | 16.17 | 16.95 |
|                 | 3H   | 17.01            | 17.68 | 17.70 | 18.38 | 19.17 | 16.75          | 17.42 | 17.44 | 18.12 | 18.91 |
|                 | 4H   | 17.78            | 18.39 | 18.49 | 19.09 | 19.92 | 17.65          | 18.26 | 18.36 | 18.96 | 19.79 |
|                 | 6H   | 18.39            | 18.92 | 19.12 | 19.64 | 20.48 | 18.42          | 18.94 | 19.15 | 19.67 | 20.51 |
|                 | 8H   | 18.59            | 19.08 | 19.32 | 19.80 | 20.64 | 18.69          | 19.18 | 19.42 | 19.90 | 20.75 |
|                 | 12H  | 18.69            | 19.12 | 19.44 | 19.87 | 20.72 | 18.85          | 19.29 | 19.60 | 20.04 | 20.88 |
| 8H              | 4H   | 18.03            | 18.51 | 18.76 | 19.24 | 20.08 | 17.93          | 18.42 | 18.66 | 19.14 | 19.98 |
|                 | 6H   | 18.77            | 19.16 | 19.53 | 19.93 | 20.78 | 18.83          | 19.23 | 19.59 | 20.00 | 20.84 |
|                 | 8H   | 19.04            | 19.39 | 19.81 | 20.16 | 21.03 | 19.19          | 19.54 | 19.96 | 20.31 | 21.17 |
|                 | 12H  | 19.21            | 19.51 | 19.98 | 20.27 | 21.20 | 19.43          | 19.74 | 20.20 | 20.49 | 21.42 |
| 12H             | 4H   | 18.03            | 18.46 | 18.78 | 19.21 | 20.06 | 17.93          | 18.37 | 18.68 | 19.12 | 19.97 |
|                 | 6H   | 18.81            | 19.16 | 19.59 | 19.94 | 20.80 | 18.88          | 19.23 | 19.65 | 20.00 | 20.87 |
|                 | 8H   | 19.12            | 19.43 | 19.89 | 20.19 | 21.12 | 19.28          | 19.59 | 20.05 | 20.34 | 21.27 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-4

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L850-N

Data in this report applies to families of products including EHBR-60-L850-N

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2506-472-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 08/05/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Metalux  
 Catalog Number: **EHBR-60-L850-N**  
 Description: Elevate Round Highbay at, 60000 lumens, 5000K 80CRI LEDs with N lens

**Spectral Parameters**

CCT (K): 4875  
 CIE u': 0.2124  
 CIE v': 0.4871  
 Duv: 0.0005  
 CIE x: 0.3488  
 CIE y: 0.3555  
 CIE z: 0.2957  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 573  
 Purity: 11.33556  
 Rf: 80  
 Rg: 102.3

|           |      |      |      |
|-----------|------|------|------|
| CRI (Ra): | 82.3 |      |      |
| R1:       | 85.0 | R9:  | 43.9 |
| R2:       | 83.1 | R10: | 57.4 |
| R3:       | 78.8 | R11: | 83.1 |
| R4:       | 84.0 | R12: | 51.0 |
| R5:       | 83.0 | R13: | 83.4 |
| R6:       | 76.3 | R14: | 87.4 |
| R7:       | 86.8 | R15: | 83.4 |
| R8:       | 81.7 |      |      |



**Test Conditions**

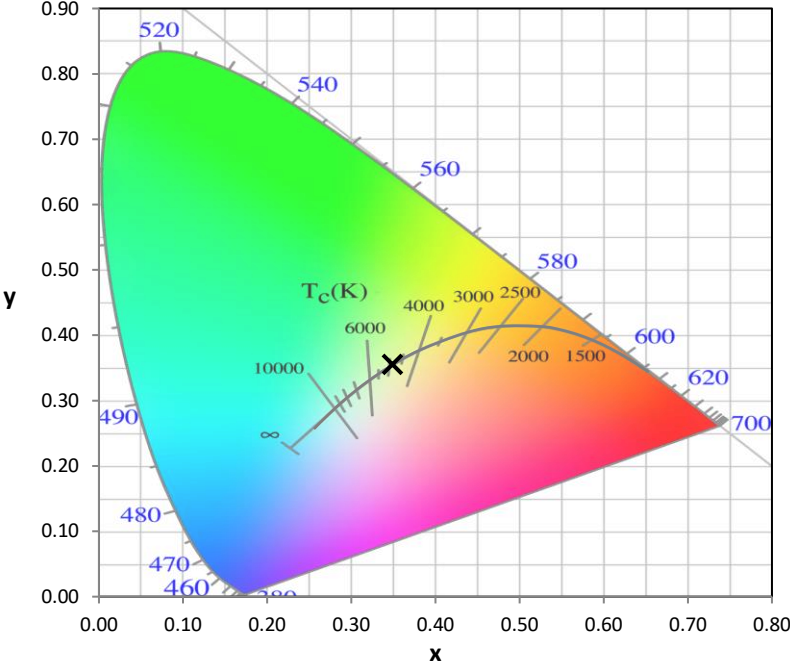
Stabilization Time: 39M  
 Operation Time: 1H 39M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-4

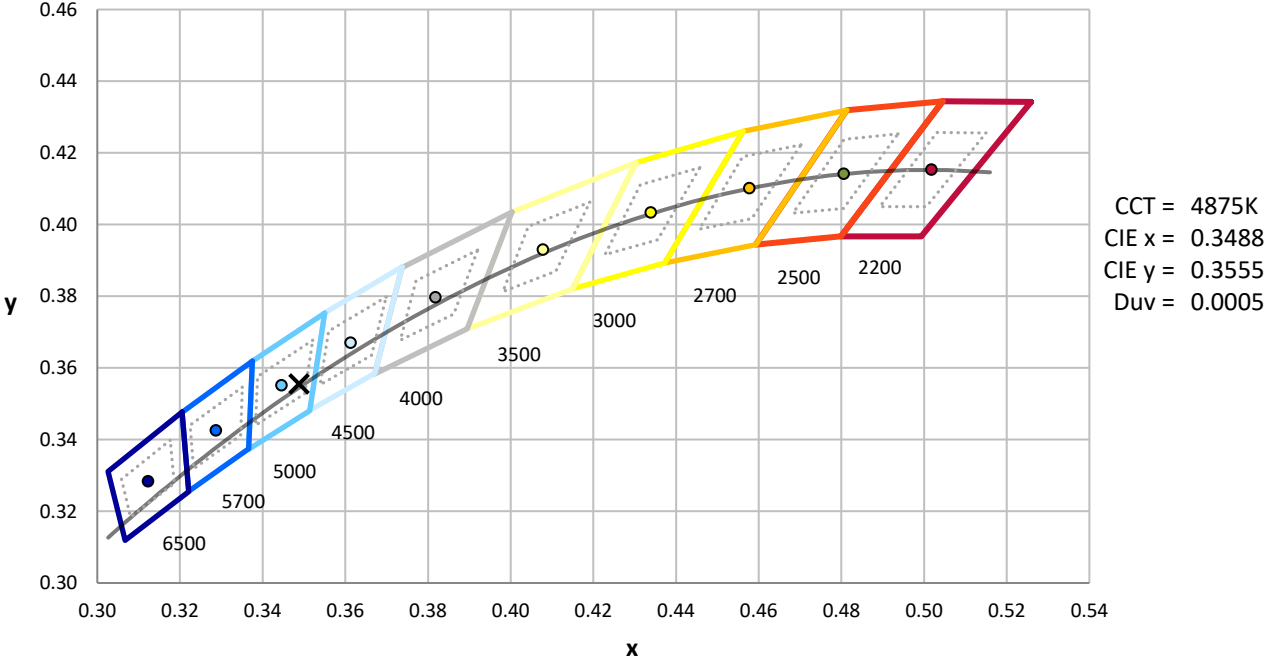
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 6/16/2025        | 12/16/2025           |
| Power Meter                    | XITRON INXT2011004    | 1/21/2025        | 1/21/2026            |
| AC Power Source                | CHROMA 61603 IN0063   | 10/22/2024       | 10/22/2025           |
| DC Power Source                | AGILENT E3634A IN0208 | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | ONSET IN0085          | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | ONSET IN0046          | 10/22/2024       | 10/22/2025           |

REPORT NUMBER: SP1-2506-472-4

CIE 1931 Chromaticity Diagram



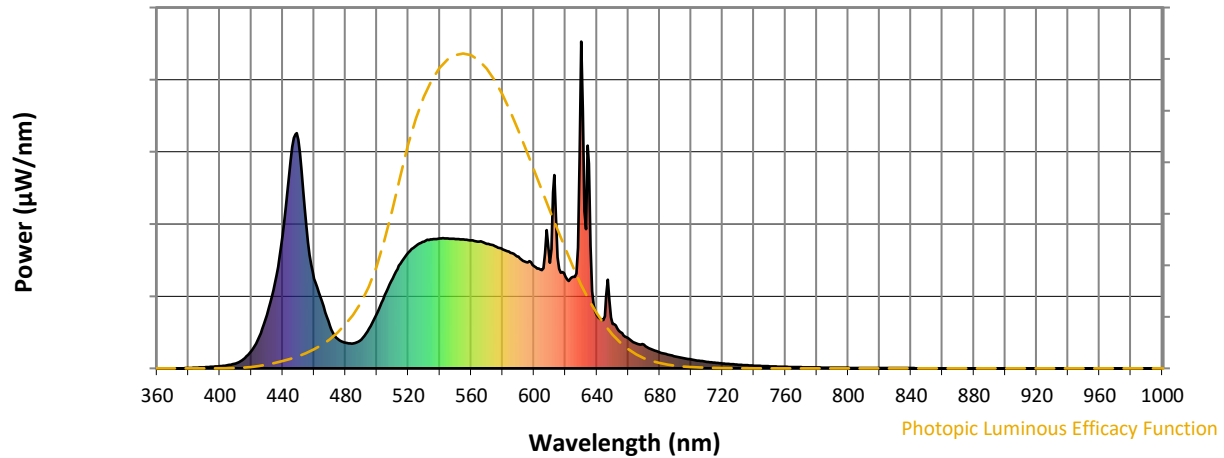
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-4

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 89                       | NR            | 620    | 280                      | NR            | 750    | 6                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 121                      | NR            | 625    | 280                      | NR            | 755    | 5                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 168                      | NR            | 630    | 1000                     | NR            | 760    | 5                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 224                      | NR            | 635    | 626                      | NR            | 765    | 4                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 275                      | NR            | 640    | 163                      | NR            | 770    | 4                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 321                      | NR            | 645    | 160                      | NR            | 775    | 3                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 354                      | NR            | 650    | 136                      | NR            | 780    | 3                        | NR            | 910    | 0                        | NR            |
| 395    | 5                        | NR            | 525    | 375                      | NR            | 655    | 111                      | NR            | 785    | 2                        | NR            | 915    | 0                        | NR            |
| 400    | 7                        | NR            | 530    | 388                      | NR            | 660    | 93                       | NR            | 790    | 2                        | NR            | 920    | 0                        | NR            |
| 405    | 10                       | NR            | 535    | 395                      | NR            | 665    | 76                       | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 15                       | NR            | 540    | 397                      | NR            | 670    | 72                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 28                       | NR            | 545    | 398                      | NR            | 675    | 57                       | NR            | 805    | 1                        | NR            | 935    | 0                        | NR            |
| 420    | 53                       | NR            | 550    | 396                      | NR            | 680    | 49                       | NR            | 810    | 1                        | NR            | 940    | 0                        | NR            |
| 425    | 97                       | NR            | 555    | 395                      | NR            | 685    | 42                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 163                      | NR            | 560    | 392                      | NR            | 690    | 37                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 261                      | NR            | 565    | 388                      | NR            | 695    | 32                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 409                      | NR            | 570    | 381                      | NR            | 700    | 27                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 637                      | NR            | 575    | 374                      | NR            | 705    | 23                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 699                      | NR            | 580    | 365                      | NR            | 710    | 20                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 436                      | NR            | 585    | 354                      | NR            | 715    | 17                       | NR            | 845    | 0                        | NR            | 975    | 0                        | NR            |
| 460    | 274                      | NR            | 590    | 342                      | NR            | 720    | 15                       | NR            | 850    | 0                        | NR            | 980    | 0                        | NR            |
| 465    | 205                      | NR            | 595    | 325                      | NR            | 725    | 13                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 130                      | NR            | 600    | 313                      | NR            | 730    | 11                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 90                       | NR            | 605    | 301                      | NR            | 735    | 10                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 78                       | NR            | 610    | 323                      | NR            | 740    | 8                        | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 77                       | NR            | 615    | 340                      | NR            | 745    | 7                        | NR            | 875    | 0                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2506-472-4

**Scotopic Flux vs. Wavelength**



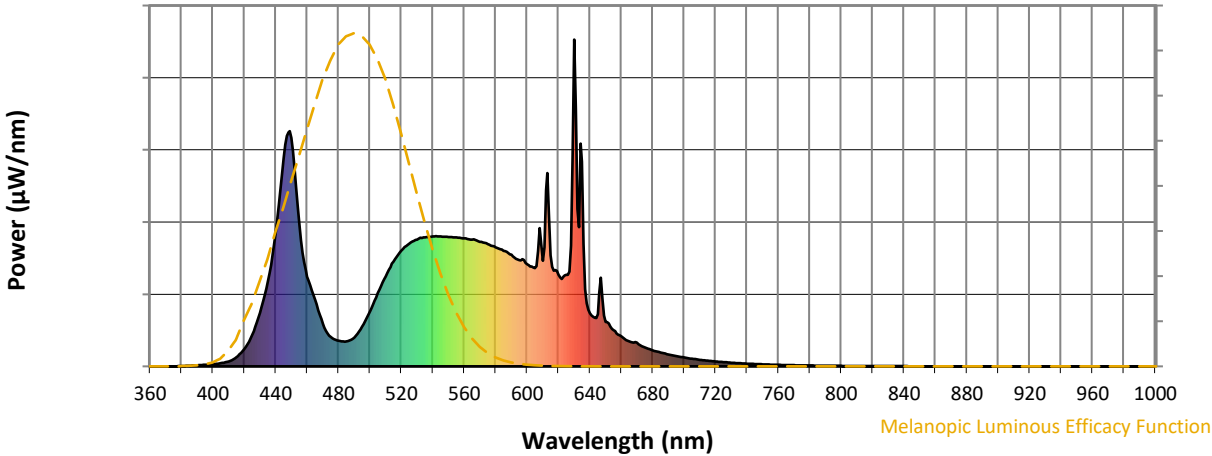
**Scotopic Lumens: NR**

**S/P: 1.82**

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 89                       | NR            | 620    | 280                      | NR            | 750    | 6                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 121                      | NR            | 625    | 280                      | NR            | 755    | 5                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 168                      | NR            | 630    | 1000                     | NR            | 760    | 5                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 224                      | NR            | 635    | 626                      | NR            | 765    | 4                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 275                      | NR            | 640    | 163                      | NR            | 770    | 4                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 321                      | NR            | 645    | 160                      | NR            | 775    | 3                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 354                      | NR            | 650    | 136                      | NR            | 780    | 3                        | NR            | 910    | 0                        | NR            |
| 395    | 5                        | NR            | 525    | 375                      | NR            | 655    | 111                      | NR            | 785    | 2                        | NR            | 915    | 0                        | NR            |
| 400    | 7                        | NR            | 530    | 388                      | NR            | 660    | 93                       | NR            | 790    | 2                        | NR            | 920    | 0                        | NR            |
| 405    | 10                       | NR            | 535    | 395                      | NR            | 665    | 76                       | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 15                       | NR            | 540    | 397                      | NR            | 670    | 72                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 28                       | NR            | 545    | 398                      | NR            | 675    | 57                       | NR            | 805    | 1                        | NR            | 935    | 0                        | NR            |
| 420    | 53                       | NR            | 550    | 396                      | NR            | 680    | 49                       | NR            | 810    | 1                        | NR            | 940    | 0                        | NR            |
| 425    | 97                       | NR            | 555    | 395                      | NR            | 685    | 42                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 163                      | NR            | 560    | 392                      | NR            | 690    | 37                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 261                      | NR            | 565    | 388                      | NR            | 695    | 32                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 409                      | NR            | 570    | 381                      | NR            | 700    | 27                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 637                      | NR            | 575    | 374                      | NR            | 705    | 23                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 699                      | NR            | 580    | 365                      | NR            | 710    | 20                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 436                      | NR            | 585    | 354                      | NR            | 715    | 17                       | NR            | 845    | 0                        | NR            | 975    | 0                        | NR            |
| 460    | 274                      | NR            | 590    | 342                      | NR            | 720    | 15                       | NR            | 850    | 0                        | NR            | 980    | 0                        | NR            |
| 465    | 205                      | NR            | 595    | 325                      | NR            | 725    | 13                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 130                      | NR            | 600    | 313                      | NR            | 730    | 11                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 90                       | NR            | 605    | 301                      | NR            | 735    | 10                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 78                       | NR            | 610    | 323                      | NR            | 740    | 8                        | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 77                       | NR            | 615    | 340                      | NR            | 745    | 7                        | NR            | 875    | 0                        | NR            |        |                          |               |

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Melanopic Flux vs. Wavelength



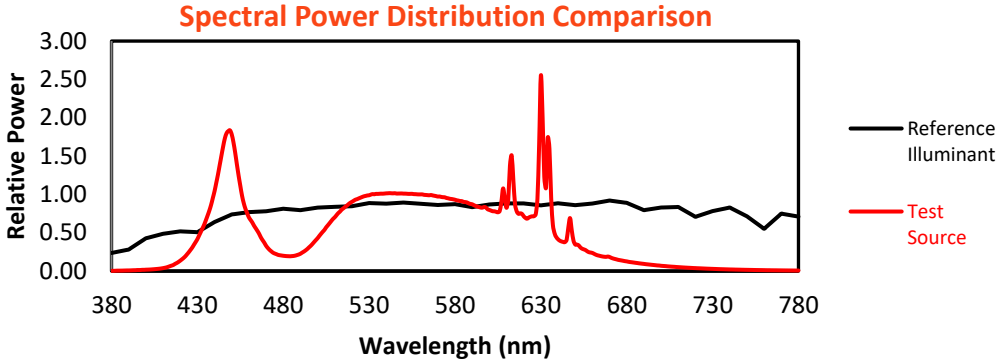
Melanopic Lumens: NR

M/P: 3.71

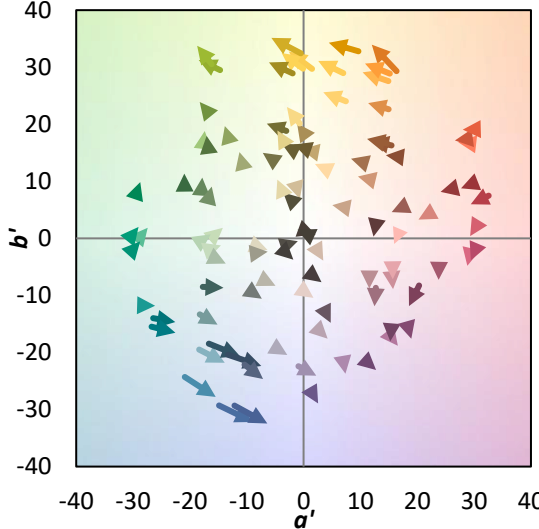
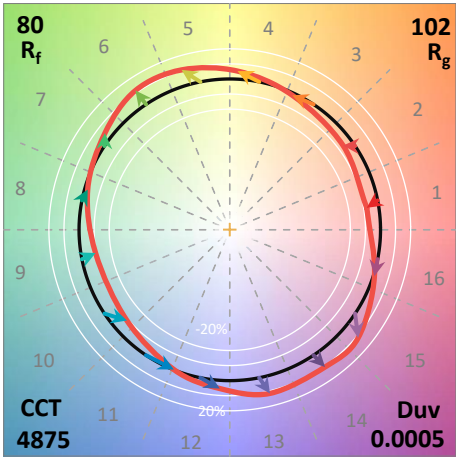
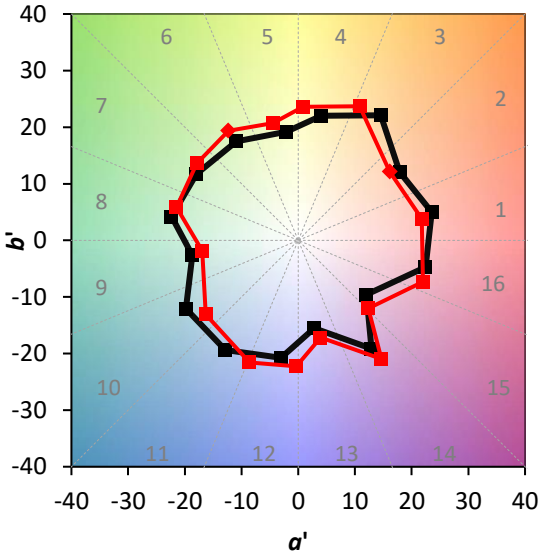
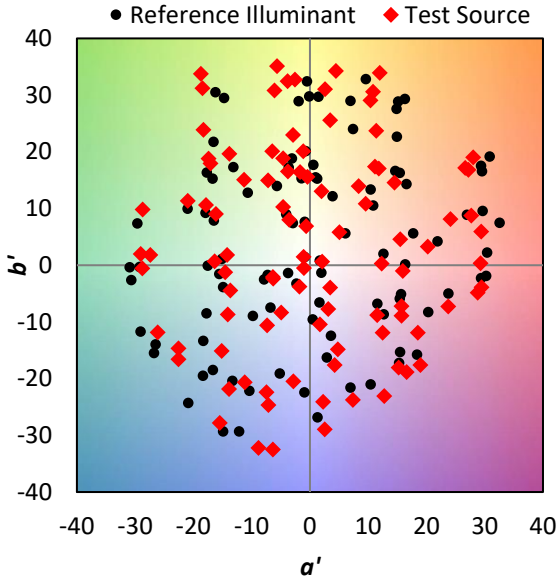
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 89                       | NR            | 620    | 280                      | NR            | 750    | 6                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 121                      | NR            | 625    | 280                      | NR            | 755    | 5                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 168                      | NR            | 630    | 1000                     | NR            | 760    | 5                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 224                      | NR            | 635    | 626                      | NR            | 765    | 4                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 275                      | NR            | 640    | 163                      | NR            | 770    | 4                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 321                      | NR            | 645    | 160                      | NR            | 775    | 3                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 354                      | NR            | 650    | 136                      | NR            | 780    | 3                        | NR            | 910    | 0                        | NR            |
| 395    | 5                        | NR            | 525    | 375                      | NR            | 655    | 111                      | NR            | 785    | 2                        | NR            | 915    | 0                        | NR            |
| 400    | 7                        | NR            | 530    | 388                      | NR            | 660    | 93                       | NR            | 790    | 2                        | NR            | 920    | 0                        | NR            |
| 405    | 10                       | NR            | 535    | 395                      | NR            | 665    | 76                       | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 15                       | NR            | 540    | 397                      | NR            | 670    | 72                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 28                       | NR            | 545    | 398                      | NR            | 675    | 57                       | NR            | 805    | 1                        | NR            | 935    | 0                        | NR            |
| 420    | 53                       | NR            | 550    | 396                      | NR            | 680    | 49                       | NR            | 810    | 1                        | NR            | 940    | 0                        | NR            |
| 425    | 97                       | NR            | 555    | 395                      | NR            | 685    | 42                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 163                      | NR            | 560    | 392                      | NR            | 690    | 37                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 261                      | NR            | 565    | 388                      | NR            | 695    | 32                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 409                      | NR            | 570    | 381                      | NR            | 700    | 27                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 637                      | NR            | 575    | 374                      | NR            | 705    | 23                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 699                      | NR            | 580    | 365                      | NR            | 710    | 20                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 436                      | NR            | 585    | 354                      | NR            | 715    | 17                       | NR            | 845    | 0                        | NR            | 975    | 0                        | NR            |
| 460    | 274                      | NR            | 590    | 342                      | NR            | 720    | 15                       | NR            | 850    | 0                        | NR            | 980    | 0                        | NR            |
| 465    | 205                      | NR            | 595    | 325                      | NR            | 725    | 13                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 130                      | NR            | 600    | 313                      | NR            | 730    | 11                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 90                       | NR            | 605    | 301                      | NR            | 735    | 10                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 78                       | NR            | 610    | 323                      | NR            | 740    | 8                        | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 77                       | NR            | 615    | 340                      | NR            | 745    | 7                        | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 80$   
 $R_g = 102.3$   
 $CIE R_a = 82.3$   
 $R_9 = 43.9$



**Color Vector Graphics**

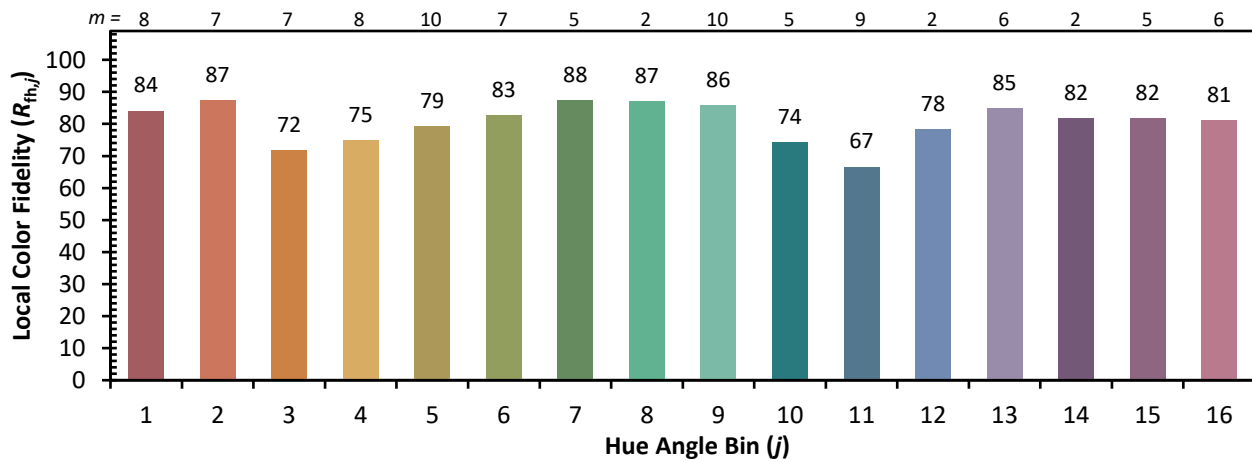
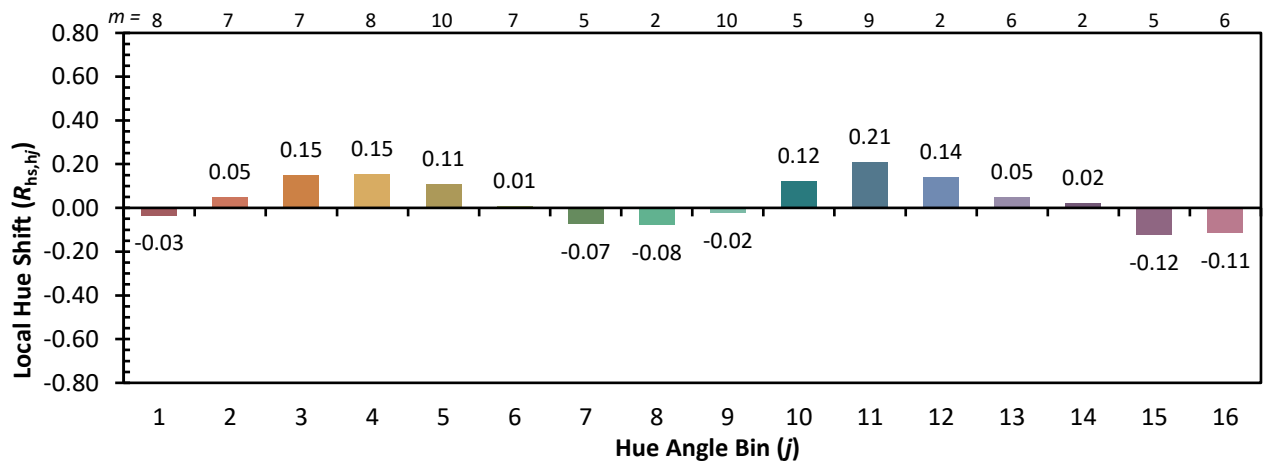
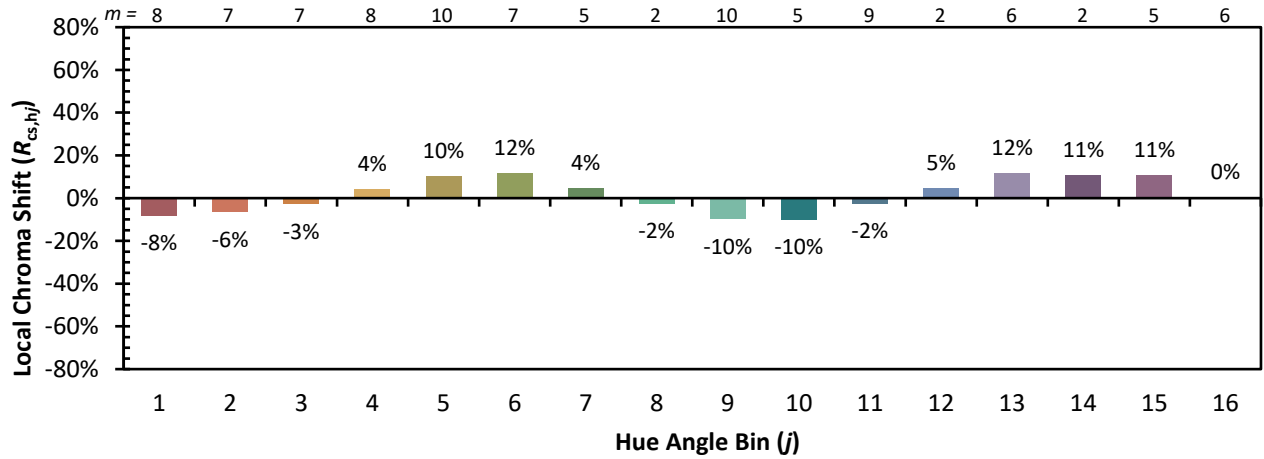


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

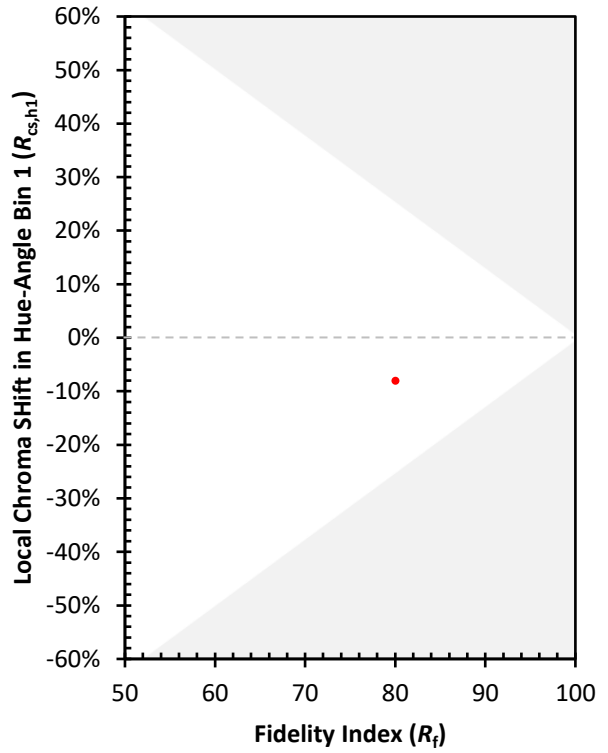
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 67 | CES51 = 92 | CES76 = 54 |
| CES02 = 60 | CES27 = 88 | CES52 = 91 | CES77 = 71 |
| CES03 = 31 | CES28 = 81 | CES53 = 82 | CES78 = 55 |
| CES04 = 69 | CES29 = 66 | CES54 = 92 | CES79 = 81 |
| CES05 = 47 | CES30 = 80 | CES55 = 90 | CES80 = 75 |
| CES06 = 50 | CES31 = 69 | CES56 = 81 | CES81 = 79 |
| CES07 = 40 | CES32 = 61 | CES57 = 80 | CES82 = 90 |
| CES08 = 39 | CES33 = 76 | CES58 = 81 | CES83 = 87 |
| CES09 = 29 | CES34 = 68 | CES59 = 93 | CES84 = 87 |
| CES10 = 73 | CES35 = 82 | CES60 = 94 | CES85 = 82 |
| CES11 = 56 | CES36 = 95 | CES61 = 91 | CES86 = 83 |
| CES12 = 62 | CES37 = 75 | CES62 = 89 | CES87 = 78 |
| CES13 = 42 | CES38 = 87 | CES63 = 80 | CES88 = 85 |
| CES14 = 74 | CES39 = 94 | CES64 = 79 | CES89 = 81 |
| CES15 = 71 | CES40 = 87 | CES65 = 75 | CES90 = 86 |
| CES16 = 46 | CES41 = 91 | CES66 = 72 | CES91 = 80 |
| CES17 = 48 | CES42 = 71 | CES67 = 69 | CES92 = 77 |
| CES18 = 56 | CES43 = 72 | CES68 = 75 | CES93 = 86 |
| CES19 = 70 | CES44 = 99 | CES69 = 80 | CES94 = 71 |
| CES20 = 65 | CES45 = 81 | CES70 = 66 | CES95 = 79 |
| CES21 = 85 | CES46 = 83 | CES71 = 59 | CES96 = 86 |
| CES22 = 77 | CES47 = 83 | CES72 = 87 | CES97 = 85 |
| CES23 = 91 | CES48 = 83 | CES73 = 56 | CES98 = 82 |
| CES24 = 90 | CES49 = 82 | CES74 = 95 | CES99 = 84 |
| CES25 = 71 | CES50 = 91 | CES75 = 58 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)