

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:

Luminaire Tested: EHBR1-60-UNV-TA-L950-UPL18

Issue Date: 3/20/2026

**Test Information**

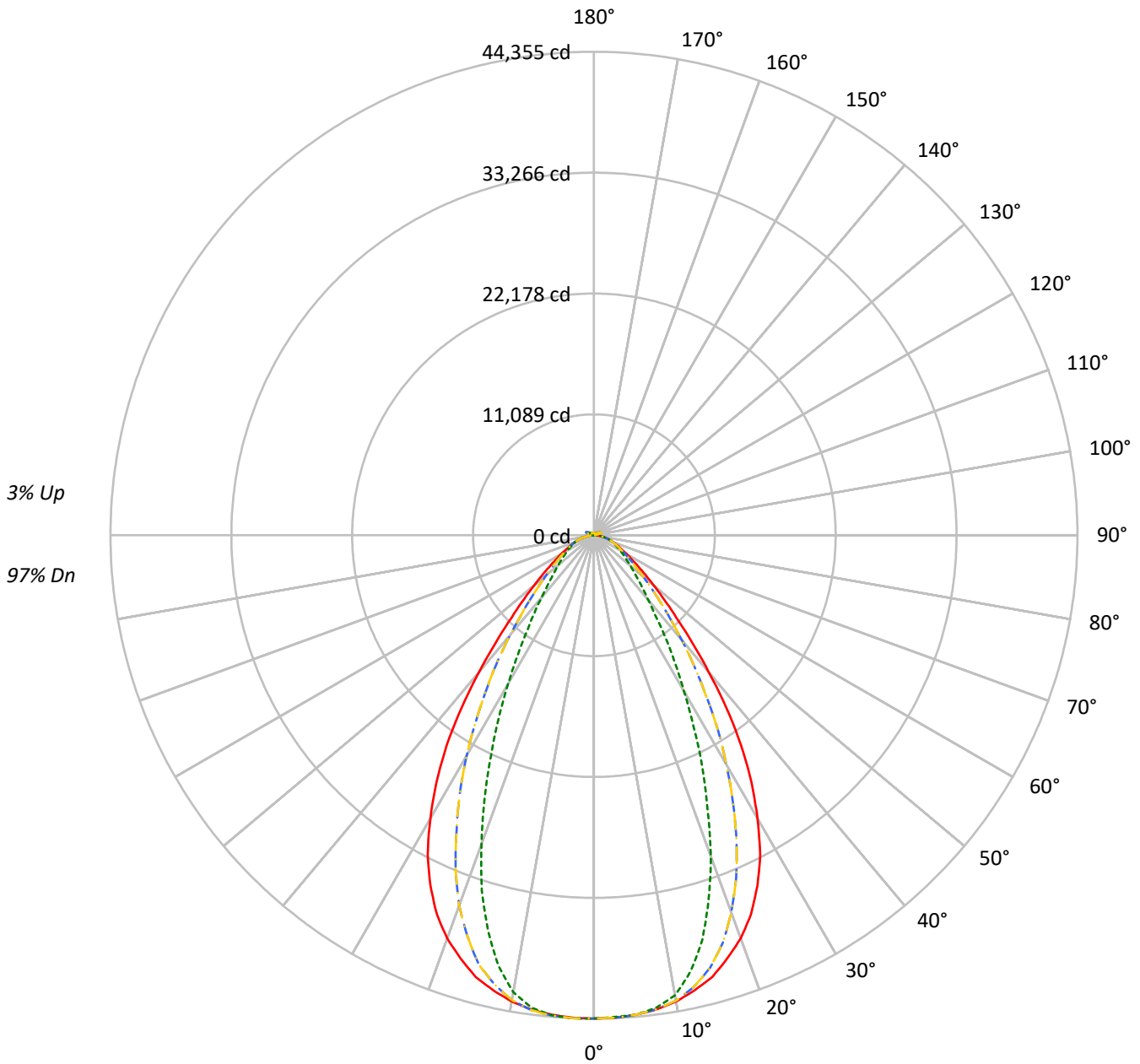
Test Method: LM-79-2019  
Report Number: REPORT IS A COMBINATION OF REPORTS P1431894 AND P1431635  
Test Lab: INNOVATION CENTER  
Issue Date: 3/20/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: EHBR1-60-UNV-TA-L950-UPL18  
Description: Elevate Round Highbay at, 60000 lumens, 5000K 90CRI LEDs with TA lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 56794.0 lumens  
Efficiency: N/A  
Efficacy: 165.9 lumens/watt  
Spacing Criteria (0/90/45): 1.07 / 0.8 / 0.93  
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')  
CIE Type: Direct  
  
Input Watts (W): 342.3  
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:  
CATALOG NUMBER: EHBR1-60-UNV-TA-L950-UPL18

### Luminous Intensity Polar Plot



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



TEST NUMBER:

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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   | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 104 | 104 | 104 | 99 | 99 | 99 | 99 | 99 | 99 | 97 |
| 1   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 100 | 98  | 96  | 96  | 94  | 92  | 92 | 90 | 89 | 89 | 89 | 89 | 87 |
| 2   | 104 | 97  | 92  | 88  | 101 | 95  | 91  | 87  | 92  | 88  | 84  | 88  | 85  | 82  | 85 | 82 | 80 | 80 | 80 | 80 | 78 |
| 3   | 97  | 89  | 83  | 78  | 94  | 87  | 81  | 77  | 84  | 79  | 75  | 81  | 77  | 74  | 78 | 75 | 72 | 72 | 72 | 72 | 70 |
| 4   | 91  | 81  | 75  | 69  | 88  | 80  | 74  | 69  | 77  | 72  | 68  | 75  | 70  | 66  | 72 | 69 | 65 | 65 | 65 | 65 | 63 |
| 5   | 85  | 75  | 68  | 63  | 83  | 74  | 67  | 62  | 71  | 66  | 61  | 69  | 64  | 60  | 67 | 63 | 60 | 60 | 60 | 60 | 58 |
| 6   | 80  | 69  | 62  | 57  | 78  | 68  | 61  | 57  | 66  | 60  | 56  | 64  | 59  | 55  | 63 | 58 | 55 | 55 | 55 | 55 | 53 |
| 7   | 75  | 64  | 57  | 52  | 74  | 63  | 57  | 52  | 62  | 56  | 51  | 60  | 55  | 51  | 59 | 54 | 50 | 50 | 50 | 50 | 49 |
| 8   | 71  | 60  | 53  | 48  | 69  | 59  | 52  | 48  | 58  | 52  | 47  | 56  | 51  | 47  | 55 | 50 | 47 | 47 | 47 | 47 | 45 |
| 9   | 67  | 56  | 49  | 44  | 66  | 55  | 49  | 44  | 54  | 48  | 44  | 53  | 47  | 44  | 52 | 47 | 43 | 43 | 43 | 43 | 42 |
| 10  | 64  | 52  | 46  | 41  | 62  | 52  | 46  | 41  | 51  | 45  | 41  | 50  | 44  | 41  | 49 | 44 | 40 | 40 | 40 | 40 | 39 |

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

|     | 0°     | 90°    | 180°   | 270°   |
|-----|--------|--------|--------|--------|
| 0°  | 208207 | 208207 | 208207 | 208207 |
| 5°  | 206809 | 206831 | 206809 | 207049 |
| 10° | 204393 | 201719 | 204393 | 200399 |
| 15° | 199939 | 183128 | 199939 | 178923 |
| 20° | 191474 | 152604 | 191474 | 146662 |
| 25° | 177626 | 118018 | 177626 | 111903 |
| 30° | 156031 | 86025  | 156031 | 81651  |
| 35° | 128234 | 62010  | 128234 | 57962  |
| 40° | 94502  | 44613  | 94502  | 43236  |
| 45° | 66003  | 35154  | 66003  | 33937  |
| 50° | 47771  | 29166  | 47771  | 28724  |
| 55° | 36178  | 25473  | 36178  | 25129  |
| 60° | 28828  | 22973  | 28828  | 23135  |
| 65° | 24226  | 21485  | 24226  | 21691  |
| 70° | 21536  | 20404  | 21536  | 20605  |
| 75° | 19035  | 19035  | 19035  | 19220  |
| 80° | 15604  | 17194  | 15604  | 17194  |
| 85° | 9997   | 11917  | 9997   | 12267  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 69154 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 4186.9  | 7.4       |
| 10°-20°   | 11252.8 | 19.8      |
| 20°-30°   | 13683.4 | 24.1      |
| 30°-40°   | 11146.1 | 19.6      |
| 40°-50°   | 6692.1  | 11.8      |
| 50°-60°   | 3851.4  | 6.8       |
| 60°-70°   | 2410.3  | 4.2       |
| 70°-80°   | 1419.6  | 2.5       |
| 80°-90°   | 418.2   | 0.7       |
| 90°-100°  | 45.3    | 0.1       |
| 100°-110° | 299.1   | 0.5       |
| 110°-120° | 553.1   | 1.0       |
| 120°-130° | 328.6   | 0.6       |
| 130°-140° | 200.2   | 0.4       |
| 140°-150° | 140.8   | 0.2       |
| 150°-160° | 93.3    | 0.2       |
| 160°-170° | 54.5    | 0.1       |
| 170°-180° | 18.4    | 0.0       |
| 0°-30°    | 29123.1 | 51.3      |
| 0°-40°    | 40269.2 | 70.9      |
| 0°-60°    | 50812.7 | 89.5      |
| 0°-90°    | 55060.8 | 96.9      |
| 90°-120°  | 897.4   | 1.6       |
| 90°-150°  | 1567.0  | 2.8       |
| 90°-180°  | 1733.0  | 3.1       |
| 0°-180°   | 56794.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°    | 90°   | 180°  | 270°  | 360°  | Flux  |
|------|-------|-------|-------|-------|-------|-------|
| 0°   | 44336 | 44336 | 44336 | 44336 | 44336 |       |
| 5°   | 44157 | 44162 | 44157 | 44208 | 44157 | 4192  |
| 15°  | 41946 | 38419 | 41946 | 37537 | 41946 | 11760 |
| 25°  | 35472 | 23568 | 35472 | 22347 | 35472 | 16171 |
| 35°  | 23536 | 11381 | 23536 | 10638 | 23536 | 14532 |
| 45°  | 10679 | 5688  | 10679 | 5491  | 10679 | 8507  |
| 55°  | 4889  | 3442  | 4889  | 3396  | 4889  | 4496  |
| 65°  | 2529  | 2243  | 2529  | 2264  | 2529  | 2556  |
| 75°  | 1341  | 1341  | 1341  | 1354  | 1341  | 1416  |
| 85°  | 344   | 410   | 344   | 422   | 344   | 377   |
| 90°  | 12    | 14    | 12    | 13    | 12    | 21    |
| 95°  | 24    | 23    | 24    | 22    | 24    | 26    |
| 105° | 137   | 106   | 137   | 70    | 137   | 185   |
| 115° | 588   | 480   | 588   | 503   | 588   | 536   |
| 125° | 376   | 348   | 376   | 395   | 376   | 346   |
| 135° | 240   | 256   | 240   | 277   | 240   | 190   |
| 145° | 220   | 215   | 220   | 231   | 220   | 138   |
| 155° | 197   | 195   | 197   | 210   | 197   | 92    |
| 165° | 189   | 191   | 189   | 198   | 189   | 54    |
| 175° | 191   | 196   | 191   | 199   | 191   | 18    |
| 180° | 195   | 195   | 195   | 195   | 195   |       |



TEST NUMBER:

CATALOG NUMBER: EHBR1-60-UNV-TA-L950-UPL18

**CANDELA DISTRIBUTION (FULL):**

|        | 0°      | 22.5°   | 45°     | 67.5°   | 90°     | 112.5°  | 135°    | 157.5°  | 180°    | 202.5°  | 225°    |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°     | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 |
| 2.5°   | 44314.9 | 44304.7 | 44295.4 | 44278.7 | 44238.7 | 44278.7 | 44295.4 | 44304.7 | 44314.9 | 44342.8 | 44354.9 |
| 5°     | 44157.1 | 44197.0 | 44155.2 | 44164.5 | 44161.7 | 44164.5 | 44155.2 | 44197.0 | 44157.1 | 44184.9 | 44235.0 |
| 7.5°   | 43881.2 | 43873.8 | 43859.9 | 43805.1 | 43712.2 | 43805.1 | 43859.9 | 43873.8 | 43881.2 | 43915.6 | 43950.9 |
| 10°    | 43426.2 | 43456.0 | 43357.6 | 43013.1 | 42857.9 | 43013.1 | 43357.6 | 43456.0 | 43426.2 | 43482.0 | 43303.7 |
| 12.5°  | 42751.1 | 42823.6 | 42425.2 | 41530.0 | 40985.0 | 41530.0 | 42425.2 | 42823.6 | 42751.1 | 42800.4 | 42193.0 |
| 15°    | 41946.1 | 41885.7 | 41100.1 | 39218.7 | 38419.2 | 39218.7 | 41100.1 | 41885.7 | 41946.1 | 41885.7 | 40770.5 |
| 17.5°  | 40692.4 | 40779.7 | 39255.0 | 36484.9 | 35008.5 | 36484.9 | 39255.0 | 40779.7 | 40692.4 | 40721.2 | 38604.0 |
| 20°    | 39353.4 | 39380.3 | 36836.9 | 32938.6 | 31364.6 | 32938.6 | 36836.9 | 39380.3 | 39353.4 | 39191.8 | 36143.2 |
| 22.5°  | 37649.4 | 37659.6 | 34065.9 | 29273.4 | 27243.4 | 29273.4 | 34065.9 | 37659.6 | 37649.4 | 37380.1 | 33146.6 |
| 25°    | 35471.8 | 35551.7 | 30947.7 | 25558.9 | 23568.0 | 25558.9 | 30947.7 | 35551.7 | 35471.8 | 35165.4 | 29817.5 |
| 27.5°  | 33026.8 | 33081.6 | 27618.6 | 21838.0 | 19768.2 | 21838.0 | 27618.6 | 33081.6 | 33026.8 | 32692.5 | 26635.2 |
| 30°    | 30012.5 | 30363.5 | 24275.6 | 18439.3 | 16546.9 | 18439.3 | 24275.6 | 30363.5 | 30012.5 | 29974.4 | 23354.4 |
| 32.5°  | 26899.9 | 27521.1 | 21124.0 | 15409.3 | 13787.0 | 15409.3 | 21124.0 | 27521.1 | 26899.9 | 27077.2 | 20084.8 |
| 35°    | 23535.5 | 24233.8 | 17853.4 | 12810.2 | 11381.0 | 12810.2 | 17853.4 | 24233.8 | 23535.5 | 23764.9 | 17084.5 |
| 37.5°  | 19968.7 | 21036.6 | 15081.5 | 10611.1 | 9236.9  | 10611.1 | 15081.5 | 21036.6 | 19968.7 | 20401.5 | 14445.4 |
| 40°    | 16379.6 | 17528.4 | 12452.6 | 8822.7  | 7732.5  | 8822.7  | 12452.6 | 17528.4 | 16379.6 | 17084.5 | 11927.0 |
| 42.5°  | 13297.7 | 14178.8 | 10277.8 | 7374.1  | 6662.8  | 7374.1  | 10277.8 | 14178.8 | 13297.7 | 13797.2 | 9830.2  |
| 45°    | 10679.0 | 11188.8 | 8504.2  | 6255.1  | 5687.7  | 6255.1  | 8504.2  | 11188.8 | 10679.0 | 11142.3 | 8135.5  |
| 47.5°  | 8718.7  | 9035.4  | 7000.8  | 5405.4  | 4968.1  | 5405.4  | 7000.8  | 9035.4  | 8718.7  | 8865.4  | 6794.6  |
| 50°    | 7119.6  | 7292.3  | 5885.5  | 4684.8  | 4346.8  | 4684.8  | 5885.5  | 7292.3  | 7119.6  | 7209.7  | 5691.4  |
| 52.5°  | 5907.8  | 5993.2  | 4936.5  | 4111.9  | 3863.9  | 4111.9  | 4936.5  | 5993.2  | 5907.8  | 5921.7  | 4850.1  |
| 55°    | 4889.1  | 4909.5  | 4214.0  | 3615.1  | 3442.4  | 3615.1  | 4214.0  | 4909.5  | 4889.1  | 4892.8  | 4143.5  |
| 57.5°  | 4094.2  | 4124.0  | 3621.6  | 3216.7  | 3073.7  | 3216.7  | 3621.6  | 4124.0  | 4094.2  | 4100.7  | 3588.1  |
| 60°    | 3465.6  | 3485.0  | 3129.4  | 2857.3  | 2761.7  | 2857.3  | 3129.4  | 3485.0  | 3465.6  | 3457.2  | 3109.9  |
| 62.5°  | 2950.2  | 2987.3  | 2734.8  | 2546.2  | 2484.9  | 2546.2  | 2734.8  | 2987.3  | 2950.2  | 2958.6  | 2733.8  |
| 65°    | 2528.6  | 2552.7  | 2396.7  | 2264.0  | 2242.6  | 2264.0  | 2396.7  | 2552.7  | 2528.6  | 2549.0  | 2404.2  |
| 67.5°  | 2182.2  | 2210.1  | 2105.2  | 2027.1  | 2005.8  | 2027.1  | 2105.2  | 2210.1  | 2182.2  | 2198.9  | 2107.0  |
| 70°    | 1889.7  | 1889.7  | 1833.0  | 1789.4  | 1790.3  | 1789.4  | 1833.0  | 1889.7  | 1889.7  | 1892.5  | 1843.3  |
| 72.5°  | 1602.8  | 1612.9  | 1574.9  | 1561.9  | 1567.5  | 1561.9  | 1574.9  | 1612.9  | 1602.8  | 1638.0  | 1586.1  |
| 75°    | 1340.9  | 1352.0  | 1332.5  | 1325.1  | 1340.9  | 1325.1  | 1332.5  | 1352.0  | 1340.9  | 1359.5  | 1336.3  |
| 77.5°  | 1070.7  | 1091.2  | 1088.4  | 1097.7  | 1127.3  | 1097.7  | 1088.4  | 1091.2  | 1070.7  | 1098.6  | 1104.1  |
| 80°    | 820.9   | 838.5   | 839.5   | 862.7   | 904.5   | 862.7   | 839.5   | 838.5   | 820.9   | 838.5   | 852.5   |
| 82.5°  | 577.6   | 588.8   | 596.1   | 635.1   | 671.4   | 635.1   | 596.1   | 588.8   | 577.6   | 587.9   | 606.3   |
| 85°    | 343.6   | 334.3   | 347.3   | 371.5   | 409.6   | 371.5   | 347.3   | 334.3   | 343.6   | 343.6   | 352.9   |
| 87.5°  | 109.5   | 106.8   | 105.8   | 129.1   | 147.6   | 129.1   | 105.8   | 106.8   | 109.5   | 113.3   | 117.9   |
| 90°    | 12.4    | 21.9    | 34.3    | 20.0    | 14.2    | 20.0    | 34.3    | 21.9    | 12.4    | 20.9    | 36.1    |
| 92.5°  | 16.2    | 28.5    | 55.2    | 30.5    | 19.0    | 30.5    | 55.2    | 28.5    | 16.2    | 28.5    | 51.4    |
| 95°    | 23.8    | 38.1    | 77.1    | 35.2    | 22.8    | 35.2    | 77.1    | 38.1    | 23.8    | 35.2    | 65.7    |
| 97.5°  | 37.2    | 46.6    | 88.5    | 39.0    | 28.5    | 39.0    | 88.5    | 46.6    | 37.2    | 43.8    | 74.2    |
| 100°   | 49.5    | 57.1    | 138.1   | 45.7    | 37.1    | 45.7    | 138.1   | 57.1    | 49.5    | 49.5    | 136.2   |
| 102.5° | 75.3    | 107.6   | 293.3   | 97.1    | 61.9    | 97.1    | 293.3   | 107.6   | 75.3    | 97.1    | 316.2   |
| 105°   | 137.1   | 225.7   | 522.8   | 204.8   | 105.6   | 204.8   | 522.8   | 225.7   | 137.1   | 222.8   | 557.1   |
| 107.5° | 260.0   | 400.0   | 689.4   | 366.6   | 181.8   | 366.6   | 689.4   | 400.0   | 260.0   | 416.2   | 718.0   |
| 110°   | 416.2   | 549.5   | 722.8   | 486.6   | 338.0   | 486.6   | 722.8   | 549.5   | 416.2   | 581.8   | 783.7   |



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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° | 541.9 | 606.6 | 692.3 | 522.8 | 456.1 | 522.8  | 692.3 | 606.6  | 541.9 | 648.5  | 765.6 |
| 115°   | 588.5 | 592.3 | 618.0 | 502.8 | 479.9 | 502.8  | 618.0 | 592.3  | 588.5 | 639.0  | 683.7 |
| 117.5° | 568.5 | 532.3 | 524.7 | 459.0 | 464.6 | 459.0  | 524.7 | 532.3  | 568.5 | 584.7  | 590.5 |
| 120°   | 513.2 | 464.7 | 438.1 | 408.5 | 429.4 | 408.5  | 438.1 | 464.7  | 513.2 | 506.6  | 497.1 |
| 122.5° | 443.7 | 395.2 | 375.2 | 362.8 | 387.5 | 362.8  | 375.2 | 395.2  | 443.7 | 429.4  | 420.0 |
| 125°   | 376.1 | 335.2 | 330.4 | 322.8 | 347.5 | 322.8  | 330.4 | 335.2  | 376.1 | 361.9  | 366.6 |
| 127.5° | 319.0 | 293.3 | 299.0 | 295.2 | 312.3 | 295.2  | 299.0 | 293.3  | 319.0 | 312.4  | 327.5 |
| 130°   | 279.0 | 265.7 | 279.9 | 274.2 | 288.5 | 274.2  | 279.9 | 265.7  | 279.0 | 280.9  | 300.8 |
| 132.5° | 254.2 | 250.4 | 267.5 | 259.9 | 269.4 | 259.9  | 267.5 | 250.4  | 254.2 | 262.8  | 280.9 |
| 135°   | 239.9 | 239.9 | 256.1 | 247.5 | 256.1 | 247.5  | 256.1 | 239.9  | 239.9 | 251.3  | 267.5 |
| 137.5° | 231.3 | 234.1 | 245.6 | 237.0 | 243.7 | 237.0  | 245.6 | 234.1  | 231.3 | 242.7  | 255.1 |
| 140°   | 226.5 | 228.4 | 237.0 | 227.4 | 234.1 | 227.4  | 237.0 | 228.4  | 226.5 | 237.9  | 243.6 |
| 142.5° | 221.7 | 223.6 | 229.3 | 218.8 | 222.6 | 218.8  | 229.3 | 223.6  | 221.7 | 233.1  | 236.0 |
| 145°   | 219.8 | 220.8 | 223.6 | 212.1 | 215.0 | 212.1  | 223.6 | 220.8  | 219.8 | 228.4  | 226.4 |
| 147.5° | 215.9 | 215.9 | 216.9 | 207.4 | 210.2 | 207.4  | 216.9 | 215.9  | 215.9 | 221.7  | 219.7 |
| 150°   | 211.2 | 210.3 | 211.2 | 201.6 | 204.4 | 201.6  | 211.2 | 210.3  | 211.2 | 215.0  | 212.1 |
| 152.5° | 203.6 | 202.6 | 204.5 | 195.9 | 198.7 | 195.9  | 204.5 | 202.6  | 203.6 | 207.4  | 205.4 |
| 155°   | 196.9 | 196.9 | 198.7 | 192.0 | 194.8 | 192.0  | 198.7 | 196.9  | 196.9 | 199.8  | 199.7 |
| 157.5° | 194.0 | 194.0 | 195.9 | 191.0 | 193.8 | 191.0  | 195.9 | 194.0  | 194.0 | 195.9  | 196.8 |
| 160°   | 191.1 | 192.0 | 193.9 | 190.0 | 192.9 | 190.0  | 193.9 | 192.0  | 191.1 | 193.9  | 194.8 |
| 162.5° | 190.1 | 191.0 | 192.9 | 189.1 | 191.9 | 189.1  | 192.9 | 191.0  | 190.1 | 191.0  | 192.0 |
| 165°   | 189.1 | 190.1 | 192.0 | 189.0 | 190.8 | 189.0  | 192.0 | 190.1  | 189.1 | 190.1  | 190.9 |
| 167.5° | 189.1 | 190.0 | 191.9 | 189.9 | 191.8 | 189.9  | 191.9 | 190.0  | 189.1 | 188.1  | 190.9 |
| 170°   | 187.2 | 189.1 | 191.9 | 190.8 | 191.8 | 190.8  | 191.9 | 189.1  | 187.2 | 188.1  | 189.9 |
| 172.5° | 189.1 | 190.9 | 193.7 | 192.7 | 193.6 | 192.7  | 193.7 | 190.9  | 189.1 | 190.0  | 190.8 |
| 175°   | 190.9 | 191.9 | 194.6 | 193.6 | 195.5 | 193.6  | 194.6 | 191.9  | 190.9 | 190.8  | 192.7 |
| 177.5° | 190.8 | 192.8 | 195.6 | 195.5 | 197.3 | 195.5  | 195.6 | 192.8  | 190.8 | 191.8  | 194.6 |
| 180°   | 194.6 | 194.6 | 194.6 | 194.6 | 194.6 | 194.6  | 194.6 | 194.6  | 194.6 | 194.6  | 194.6 |



TEST NUMBER:

CATALOG NUMBER: EHBR1-60-UNV-TA-L950-UPL18

**CANDELA DISTRIBUTION (continued):**

|        | 247.5°  | 270°    | 292.5°  | 315°    | 337.5°  | 360°    |
|--------|---------|---------|---------|---------|---------|---------|
| 0°     | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 | 44336.3 |
| 2.5°   | 44335.4 | 44352.1 | 44335.4 | 44354.9 | 44342.8 | 44314.9 |
| 5°     | 44215.5 | 44208.2 | 44215.5 | 44235.0 | 44184.9 | 44157.1 |
| 7.5°   | 43751.2 | 43721.5 | 43751.2 | 43950.9 | 43915.6 | 43881.2 |
| 10°    | 42781.8 | 42577.5 | 42781.8 | 43303.7 | 43482.0 | 43426.2 |
| 12.5°  | 41091.7 | 40458.5 | 41091.7 | 42193.0 | 42800.4 | 42751.1 |
| 15°    | 38624.4 | 37537.0 | 38624.4 | 40770.5 | 41885.7 | 41946.1 |
| 17.5°  | 35431.9 | 34187.6 | 35431.9 | 38604.0 | 40721.2 | 40692.4 |
| 20°    | 31959.8 | 30143.4 | 31959.8 | 36143.2 | 39191.8 | 39353.4 |
| 22.5°  | 28168.3 | 26212.7 | 28168.3 | 33146.6 | 37380.1 | 37649.4 |
| 25°    | 24386.1 | 22346.9 | 24386.1 | 29817.5 | 35165.4 | 35471.8 |
| 27.5°  | 20850.9 | 18910.2 | 20850.9 | 26635.2 | 32692.5 | 33026.8 |
| 30°    | 17577.5 | 15705.5 | 17577.5 | 23354.4 | 29974.4 | 30012.5 |
| 32.5°  | 14840.1 | 12984.6 | 14840.1 | 20084.8 | 27077.2 | 26899.9 |
| 35°    | 12176.8 | 10638.1 | 12176.8 | 17084.5 | 23764.9 | 23535.5 |
| 37.5°  | 10169.2 | 8935.9  | 10169.2 | 14445.4 | 20401.5 | 19968.7 |
| 40°    | 8481.9  | 7493.9  | 8481.9  | 11927.0 | 17084.5 | 16379.6 |
| 42.5°  | 7090.8  | 6351.7  | 7090.8  | 9830.2  | 13797.2 | 13297.7 |
| 45°    | 6046.1  | 5490.9  | 6046.1  | 8135.5  | 11142.3 | 10679.0 |
| 47.5°  | 5276.3  | 4825.1  | 5276.3  | 6794.6  | 8865.4  | 8718.7  |
| 50°    | 4591.0  | 4280.9  | 4591.0  | 5691.4  | 7209.7  | 7119.6  |
| 52.5°  | 4038.5  | 3813.8  | 4038.5  | 4850.1  | 5921.7  | 5907.8  |
| 55°    | 3578.9  | 3395.9  | 3578.9  | 4143.5  | 4892.8  | 4889.1  |
| 57.5°  | 3178.6  | 3060.7  | 3178.6  | 3588.1  | 4100.7  | 4094.2  |
| 60°    | 2822.0  | 2781.2  | 2822.0  | 3109.9  | 3457.2  | 3465.6  |
| 62.5°  | 2549.0  | 2488.6  | 2549.0  | 2733.8  | 2958.6  | 2950.2  |
| 65°    | 2277.9  | 2264.0  | 2277.9  | 2404.2  | 2549.0  | 2528.6  |
| 67.5°  | 2032.7  | 2020.6  | 2032.7  | 2107.0  | 2198.9  | 2182.2  |
| 70°    | 1798.7  | 1808.0  | 1798.7  | 1843.3  | 1892.5  | 1889.7  |
| 72.5°  | 1572.2  | 1574.0  | 1572.2  | 1586.1  | 1638.0  | 1602.8  |
| 75°    | 1353.9  | 1353.9  | 1353.9  | 1336.3  | 1359.5  | 1340.9  |
| 77.5°  | 1116.1  | 1144.0  | 1116.1  | 1104.1  | 1098.6  | 1070.7  |
| 80°    | 877.5   | 904.5   | 877.5   | 852.5   | 838.5   | 820.9   |
| 82.5°  | 636.1   | 679.7   | 636.1   | 606.3   | 587.9   | 577.6   |
| 85°    | 394.7   | 421.6   | 394.7   | 352.9   | 343.6   | 343.6   |
| 87.5°  | 148.6   | 162.5   | 148.6   | 117.9   | 113.3   | 109.5   |
| 90°    | 19.0    | 13.3    | 19.0    | 36.1    | 20.9    | 12.4    |
| 92.5°  | 25.7    | 18.0    | 25.7    | 51.4    | 28.5    | 16.2    |
| 95°    | 28.5    | 21.8    | 28.5    | 65.7    | 35.2    | 23.8    |
| 97.5°  | 30.5    | 26.7    | 30.5    | 74.2    | 43.8    | 37.2    |
| 100°   | 35.2    | 31.4    | 35.2    | 136.2   | 49.5    | 49.5    |
| 102.5° | 71.4    | 38.0    | 71.4    | 316.2   | 97.1    | 75.3    |
| 105°   | 186.7   | 69.5    | 186.7   | 557.1   | 222.8   | 137.1   |
| 107.5° | 369.5   | 161.9   | 369.5   | 718.0   | 416.2   | 260.0   |
| 110°   | 506.6   | 327.5   | 506.6   | 783.7   | 581.8   | 416.2   |



TEST NUMBER:

CATALOG NUMBER: EHBR1-60-UNV-TA-L950-UPL18

**CANDELA DISTRIBUTION (continued):**

|        | 247.5° | 270°  | 292.5° | 315°  | 337.5° | 360°  |
|--------|--------|-------|--------|-------|--------|-------|
| 112.5° | 561.8  | 453.2 | 561.8  | 765.6 | 648.5  | 541.9 |
| 115°   | 560.0  | 502.7 | 560.0  | 683.7 | 639.0  | 588.5 |
| 117.5° | 525.7  | 505.6 | 525.7  | 590.5 | 584.7  | 568.5 |
| 120°   | 476.1  | 477.0 | 476.1  | 497.1 | 506.6  | 513.2 |
| 122.5° | 424.7  | 438.9 | 424.7  | 420.0 | 429.4  | 443.7 |
| 125°   | 380.8  | 395.2 | 380.8  | 366.6 | 361.9  | 376.1 |
| 127.5° | 344.7  | 356.0 | 344.7  | 327.5 | 312.4  | 319.0 |
| 130°   | 314.2  | 321.8 | 314.2  | 300.8 | 280.9  | 279.0 |
| 132.5° | 293.2  | 297.0 | 293.2  | 280.9 | 262.8  | 254.2 |
| 135°   | 275.1  | 277.0 | 275.1  | 267.5 | 251.3  | 239.9 |
| 137.5° | 260.8  | 259.9 | 260.8  | 255.1 | 242.7  | 231.3 |
| 140°   | 251.2  | 249.4 | 251.2  | 243.6 | 237.9  | 226.5 |
| 142.5° | 240.7  | 239.8 | 240.7  | 236.0 | 233.1  | 221.7 |
| 145°   | 234.0  | 231.2 | 234.0  | 226.4 | 228.4  | 219.8 |
| 147.5° | 226.4  | 224.5 | 226.4  | 219.7 | 221.7  | 215.9 |
| 150°   | 220.7  | 220.6 | 220.7  | 212.1 | 215.0  | 211.2 |
| 152.5° | 214.0  | 214.9 | 214.0  | 205.4 | 207.4  | 203.6 |
| 155°   | 209.1  | 210.1 | 209.1  | 199.7 | 199.8  | 196.9 |
| 157.5° | 205.3  | 206.3 | 205.3  | 196.8 | 195.9  | 194.0 |
| 160°   | 202.4  | 203.3 | 202.4  | 194.8 | 193.9  | 191.1 |
| 162.5° | 200.4  | 201.3 | 200.4  | 192.0 | 191.0  | 190.1 |
| 165°   | 196.6  | 198.5 | 196.6  | 190.9 | 190.1  | 189.1 |
| 167.5° | 195.7  | 197.5 | 195.7  | 190.9 | 188.1  | 189.1 |
| 170°   | 194.6  | 196.5 | 194.6  | 189.9 | 188.1  | 187.2 |
| 172.5° | 194.6  | 197.4 | 194.6  | 190.8 | 190.0  | 189.1 |
| 175°   | 195.5  | 199.3 | 195.5  | 192.7 | 190.8  | 190.9 |
| 177.5° | 197.4  | 202.1 | 197.4  | 194.6 | 191.8  | 190.8 |
| 180°   | 194.6  | 194.6 | 194.6  | 194.6 | 194.6  | 194.6 |



TEST NUMBER: CATALOG  
 CATALOG NUMBER: EHBR1-60-UNV-TA-L950-UPL18

**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 | 21.56            | 22.78 | 21.98 | 23.16 | 23.55 | 19.83          | 21.04 | 20.25 | 21.42 | 21.82 |
|                 | 3H   | 22.73            | 23.80 | 23.16 | 24.20 | 24.64 | 21.43          | 22.51 | 21.87 | 22.91 | 23.35 |
|                 | 4H   | 23.18            | 24.19 | 23.64 | 24.60 | 25.06 | 22.09          | 23.09 | 22.54 | 23.51 | 23.97 |
|                 | 6H   | 23.50            | 24.43 | 23.97 | 24.86 | 25.33 | 22.60          | 23.53 | 23.07 | 23.96 | 24.43 |
|                 | 8H   | 23.59            | 24.46 | 24.07 | 24.91 | 25.40 | 22.77          | 23.65 | 23.25 | 24.10 | 24.58 |
|                 | 12H  | 23.62            | 24.46 | 24.11 | 24.90 | 25.41 | 22.86          | 23.70 | 23.35 | 24.14 | 24.65 |
| 4H              | 2H   | 21.82            | 22.83 | 22.28 | 23.24 | 23.70 | 20.38          | 21.39 | 20.84 | 21.80 | 22.26 |
|                 | 3H   | 23.22            | 24.05 | 23.69 | 24.52 | 24.99 | 22.19          | 23.02 | 22.66 | 23.48 | 23.96 |
|                 | 4H   | 23.81            | 24.55 | 24.30 | 25.03 | 25.55 | 22.96          | 23.70 | 23.45 | 24.18 | 24.70 |
|                 | 6H   | 24.25            | 24.89 | 24.77 | 25.40 | 25.93 | 23.59          | 24.23 | 24.10 | 24.73 | 25.27 |
|                 | 8H   | 24.37            | 24.97 | 24.89 | 25.47 | 26.02 | 23.80          | 24.40 | 24.32 | 24.90 | 25.44 |
|                 | 12H  | 24.43            | 24.96 | 24.97 | 25.50 | 26.05 | 23.92          | 24.45 | 24.46 | 24.99 | 25.54 |
| 8H              | 4H   | 23.97            | 24.57 | 24.49 | 25.07 | 25.62 | 23.20          | 23.80 | 23.72 | 24.30 | 24.85 |
|                 | 6H   | 24.51            | 25.00 | 25.07 | 25.56 | 26.11 | 23.94          | 24.43 | 24.50 | 24.98 | 25.54 |
|                 | 8H   | 24.69            | 25.13 | 25.27 | 25.70 | 26.26 | 24.22          | 24.66 | 24.79 | 25.23 | 25.79 |
|                 | 12H  | 24.81            | 25.19 | 25.37 | 25.74 | 26.38 | 24.41          | 24.79 | 24.98 | 25.34 | 25.98 |
| 12H             | 4H   | 23.96            | 24.49 | 24.50 | 25.03 | 25.58 | 23.20          | 23.73 | 23.74 | 24.27 | 24.82 |
|                 | 6H   | 24.53            | 24.97 | 25.10 | 25.54 | 26.10 | 23.97          | 24.41 | 24.54 | 24.98 | 25.54 |
|                 | 8H   | 24.75            | 25.14 | 25.32 | 25.68 | 26.33 | 24.29          | 24.68 | 24.86 | 25.23 | 25.87 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-8

Test Date: 08/04/2025

Luminaire Tested: EHBR-60-L950-N

Data in this report applies to families of products including EHBR-60-L950-N

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2506-472-8  
 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-L950-N**  
 Description: Elevate Round Highbay at, 60000 lumens, 5000K 90CRI LEDs with N lens

**Spectral Parameters**

CCT (K): 4901  
 CIE u': 0.2131  
 CIE v': 0.4853  
 Duv: -0.0008  
 CIE x: 0.3477  
 CIE y: 0.3520  
 CIE z: 0.3003  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 574  
 Purity: 9.953987  
 Rf: 90.7  
 Rg: 100.5

|           |      |      |      |
|-----------|------|------|------|
| CRI (Ra): | 94.3 |      |      |
| R1:       | 95.8 | R9:  | 72.3 |
| R2:       | 96.5 | R10: | 89.1 |
| R3:       | 94.4 | R11: | 94.9 |
| R4:       | 95.3 | R12: | 68.4 |
| R5:       | 94.1 | R13: | 96.4 |
| R6:       | 92.5 | R14: | 96.4 |
| R7:       | 95.5 | R15: | 93.9 |
| R8:       | 90.1 |      |      |



**Test Conditions**

Stabilization Time: 35M  
 Operation Time: 1H 35M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-8

| 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: SP1-2506-472-8

CIE 1931 Chromaticity Diagram



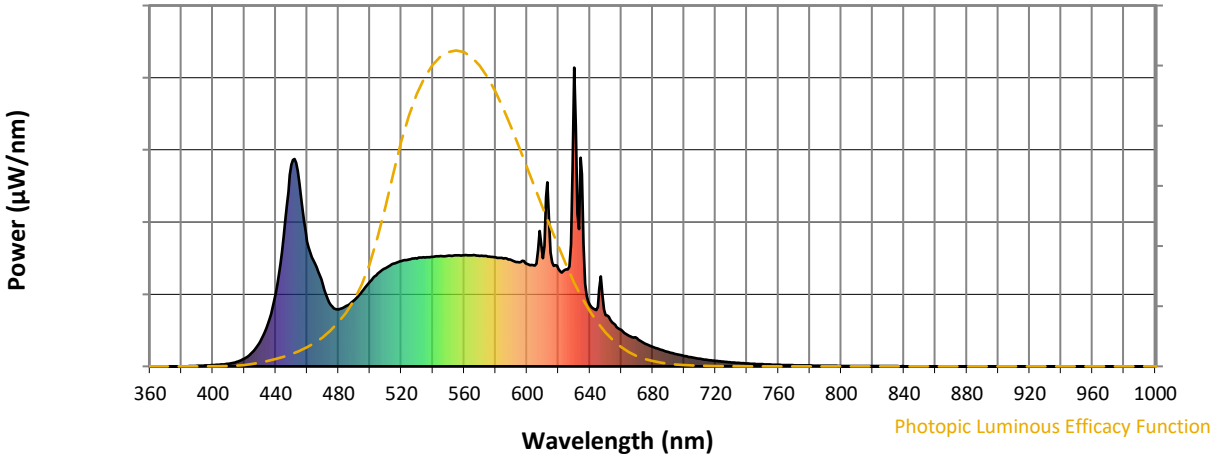
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-8

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

| $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360               | 0                           | NR                      | 490               | 221                         | NR                      | 620               | 326                         | NR                      | 750               | 7                           | NR                      | 880               | 0                           | NR                      |
| 365               | 0                           | NR                      | 495               | 250                         | NR                      | 625               | 325                         | NR                      | 755               | 6                           | NR                      | 885               | 0                           | NR                      |
| 370               | 0                           | NR                      | 500               | 284                         | NR                      | 630               | 1000                        | NR                      | 760               | 5                           | NR                      | 890               | 0                           | NR                      |
| 375               | 0                           | NR                      | 505               | 311                         | NR                      | 635               | 643                         | NR                      | 765               | 4                           | NR                      | 895               | 0                           | NR                      |
| 380               | 0                           | NR                      | 510               | 329                         | NR                      | 640               | 206                         | NR                      | 770               | 4                           | NR                      | 900               | 0                           | NR                      |
| 385               | 1                           | NR                      | 515               | 344                         | NR                      | 645               | 199                         | NR                      | 775               | 3                           | NR                      | 905               | 0                           | NR                      |
| 390               | 2                           | NR                      | 520               | 353                         | NR                      | 650               | 172                         | NR                      | 780               | 3                           | NR                      | 910               | 0                           | NR                      |
| 395               | 3                           | NR                      | 525               | 357                         | NR                      | 655               | 143                         | NR                      | 785               | 2                           | NR                      | 915               | 0                           | NR                      |
| 400               | 5                           | NR                      | 530               | 362                         | NR                      | 660               | 122                         | NR                      | 790               | 2                           | NR                      | 920               | 0                           | NR                      |
| 405               | 6                           | NR                      | 535               | 365                         | NR                      | 665               | 102                         | NR                      | 795               | 2                           | NR                      | 925               | 0                           | NR                      |
| 410               | 9                           | NR                      | 540               | 367                         | NR                      | 670               | 94                          | NR                      | 800               | 2                           | NR                      | 930               | 0                           | NR                      |
| 415               | 15                          | NR                      | 545               | 369                         | NR                      | 675               | 76                          | NR                      | 805               | 1                           | NR                      | 935               | 0                           | NR                      |
| 420               | 26                          | NR                      | 550               | 370                         | NR                      | 680               | 65                          | NR                      | 810               | 1                           | NR                      | 940               | 0                           | NR                      |
| 425               | 47                          | NR                      | 555               | 372                         | NR                      | 685               | 56                          | NR                      | 815               | 1                           | NR                      | 945               | 0                           | NR                      |
| 430               | 81                          | NR                      | 560               | 372                         | NR                      | 690               | 48                          | NR                      | 820               | 1                           | NR                      | 950               | 0                           | NR                      |
| 435               | 143                         | NR                      | 565               | 371                         | NR                      | 695               | 41                          | NR                      | 825               | 1                           | NR                      | 955               | 0                           | NR                      |
| 440               | 243                         | NR                      | 570               | 370                         | NR                      | 700               | 35                          | NR                      | 830               | 1                           | NR                      | 960               | 0                           | NR                      |
| 445               | 434                         | NR                      | 575               | 367                         | NR                      | 705               | 30                          | NR                      | 835               | 1                           | NR                      | 965               | 0                           | NR                      |
| 450               | 675                         | NR                      | 580               | 365                         | NR                      | 710               | 25                          | NR                      | 840               | 1                           | NR                      | 970               | 0                           | NR                      |
| 455               | 615                         | NR                      | 585               | 361                         | NR                      | 715               | 22                          | NR                      | 845               | 0                           | NR                      | 975               | 0                           | NR                      |
| 460               | 418                         | NR                      | 590               | 356                         | NR                      | 720               | 19                          | NR                      | 850               | 0                           | NR                      | 980               | 0                           | NR                      |
| 465               | 344                         | NR                      | 595               | 348                         | NR                      | 725               | 16                          | NR                      | 855               | 0                           | NR                      | 985               | 0                           | NR                      |
| 470               | 272                         | NR                      | 600               | 343                         | NR                      | 730               | 13                          | NR                      | 860               | 0                           | NR                      | 990               | 0                           | NR                      |
| 475               | 206                         | NR                      | 605               | 337                         | NR                      | 735               | 11                          | NR                      | 865               | 0                           | NR                      | 995               | 0                           | NR                      |
| 480               | 190                         | NR                      | 610               | 362                         | NR                      | 740               | 10                          | NR                      | 870               | 0                           | NR                      | 1000              | 0                           | NR                      |
| 485               | 202                         | NR                      | 615               | 381                         | NR                      | 745               | 8                           | NR                      | 875               | 0                           | NR                      |                   |                             |                         |

REPORT NUMBER: SP1-2506-472-8

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 2.04**

| $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) | $\lambda$<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>( $\phi$ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360               | 0                           | NR                      | 490               | 221                         | NR                      | 620               | 326                         | NR                      | 750               | 7                           | NR                      | 880               | 0                           | NR                      |
| 365               | 0                           | NR                      | 495               | 250                         | NR                      | 625               | 325                         | NR                      | 755               | 6                           | NR                      | 885               | 0                           | NR                      |
| 370               | 0                           | NR                      | 500               | 284                         | NR                      | 630               | 1000                        | NR                      | 760               | 5                           | NR                      | 890               | 0                           | NR                      |
| 375               | 0                           | NR                      | 505               | 311                         | NR                      | 635               | 643                         | NR                      | 765               | 4                           | NR                      | 895               | 0                           | NR                      |
| 380               | 0                           | NR                      | 510               | 329                         | NR                      | 640               | 206                         | NR                      | 770               | 4                           | NR                      | 900               | 0                           | NR                      |
| 385               | 1                           | NR                      | 515               | 344                         | NR                      | 645               | 199                         | NR                      | 775               | 3                           | NR                      | 905               | 0                           | NR                      |
| 390               | 2                           | NR                      | 520               | 353                         | NR                      | 650               | 172                         | NR                      | 780               | 3                           | NR                      | 910               | 0                           | NR                      |
| 395               | 3                           | NR                      | 525               | 357                         | NR                      | 655               | 143                         | NR                      | 785               | 2                           | NR                      | 915               | 0                           | NR                      |
| 400               | 5                           | NR                      | 530               | 362                         | NR                      | 660               | 122                         | NR                      | 790               | 2                           | NR                      | 920               | 0                           | NR                      |
| 405               | 6                           | NR                      | 535               | 365                         | NR                      | 665               | 102                         | NR                      | 795               | 2                           | NR                      | 925               | 0                           | NR                      |
| 410               | 9                           | NR                      | 540               | 367                         | NR                      | 670               | 94                          | NR                      | 800               | 2                           | NR                      | 930               | 0                           | NR                      |
| 415               | 15                          | NR                      | 545               | 369                         | NR                      | 675               | 76                          | NR                      | 805               | 1                           | NR                      | 935               | 0                           | NR                      |
| 420               | 26                          | NR                      | 550               | 370                         | NR                      | 680               | 65                          | NR                      | 810               | 1                           | NR                      | 940               | 0                           | NR                      |
| 425               | 47                          | NR                      | 555               | 372                         | NR                      | 685               | 56                          | NR                      | 815               | 1                           | NR                      | 945               | 0                           | NR                      |
| 430               | 81                          | NR                      | 560               | 372                         | NR                      | 690               | 48                          | NR                      | 820               | 1                           | NR                      | 950               | 0                           | NR                      |
| 435               | 143                         | NR                      | 565               | 371                         | NR                      | 695               | 41                          | NR                      | 825               | 1                           | NR                      | 955               | 0                           | NR                      |
| 440               | 243                         | NR                      | 570               | 370                         | NR                      | 700               | 35                          | NR                      | 830               | 1                           | NR                      | 960               | 0                           | NR                      |
| 445               | 434                         | NR                      | 575               | 367                         | NR                      | 705               | 30                          | NR                      | 835               | 1                           | NR                      | 965               | 0                           | NR                      |
| 450               | 675                         | NR                      | 580               | 365                         | NR                      | 710               | 25                          | NR                      | 840               | 1                           | NR                      | 970               | 0                           | NR                      |
| 455               | 615                         | NR                      | 585               | 361                         | NR                      | 715               | 22                          | NR                      | 845               | 0                           | NR                      | 975               | 0                           | NR                      |
| 460               | 418                         | NR                      | 590               | 356                         | NR                      | 720               | 19                          | NR                      | 850               | 0                           | NR                      | 980               | 0                           | NR                      |
| 465               | 344                         | NR                      | 595               | 348                         | NR                      | 725               | 16                          | NR                      | 855               | 0                           | NR                      | 985               | 0                           | NR                      |
| 470               | 272                         | NR                      | 600               | 343                         | NR                      | 730               | 13                          | NR                      | 860               | 0                           | NR                      | 990               | 0                           | NR                      |
| 475               | 206                         | NR                      | 605               | 337                         | NR                      | 735               | 11                          | NR                      | 865               | 0                           | NR                      | 995               | 0                           | NR                      |
| 480               | 190                         | NR                      | 610               | 362                         | NR                      | 740               | 10                          | NR                      | 870               | 0                           | NR                      | 1000              | 0                           | NR                      |
| 485               | 202                         | NR                      | 615               | 381                         | NR                      | 745               | 8                           | NR                      | 875               | 0                           | NR                      |                   |                             |                         |

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**Melanopic Flux vs. Wavelength**



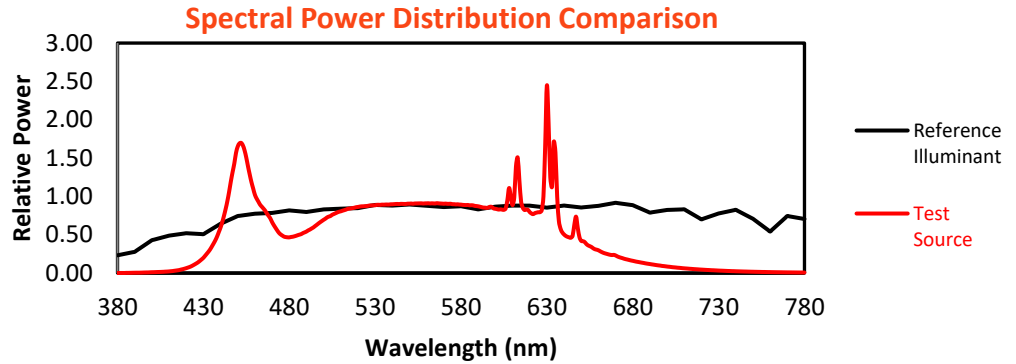
**Melanopic Lumens: NR**

**M/P: 4.41**

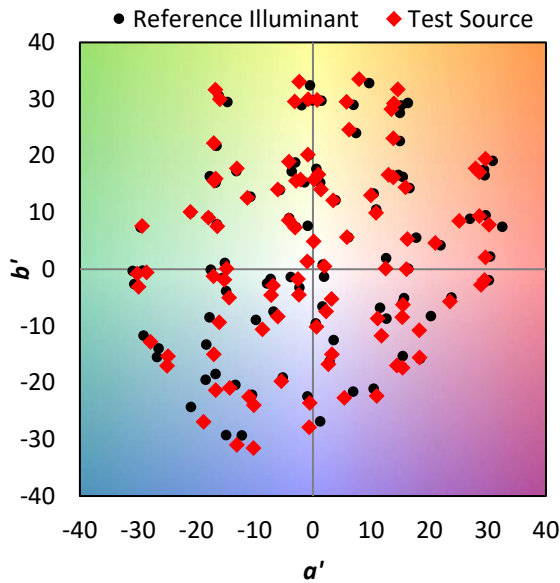
| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 221                      | NR            | 620    | 326                      | NR            | 750    | 7                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 250                      | NR            | 625    | 325                      | NR            | 755    | 6                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 284                      | NR            | 630    | 1000                     | NR            | 760    | 5                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 311                      | NR            | 635    | 643                      | NR            | 765    | 4                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 329                      | NR            | 640    | 206                      | NR            | 770    | 4                        | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 344                      | NR            | 645    | 199                      | NR            | 775    | 3                        | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 353                      | NR            | 650    | 172                      | NR            | 780    | 3                        | NR            | 910    | 0                        | NR            |
| 395    | 3                        | NR            | 525    | 357                      | NR            | 655    | 143                      | NR            | 785    | 2                        | NR            | 915    | 0                        | NR            |
| 400    | 5                        | NR            | 530    | 362                      | NR            | 660    | 122                      | NR            | 790    | 2                        | NR            | 920    | 0                        | NR            |
| 405    | 6                        | NR            | 535    | 365                      | NR            | 665    | 102                      | NR            | 795    | 2                        | NR            | 925    | 0                        | NR            |
| 410    | 9                        | NR            | 540    | 367                      | NR            | 670    | 94                       | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 15                       | NR            | 545    | 369                      | NR            | 675    | 76                       | NR            | 805    | 1                        | NR            | 935    | 0                        | NR            |
| 420    | 26                       | NR            | 550    | 370                      | NR            | 680    | 65                       | NR            | 810    | 1                        | NR            | 940    | 0                        | NR            |
| 425    | 47                       | NR            | 555    | 372                      | NR            | 685    | 56                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 81                       | NR            | 560    | 372                      | NR            | 690    | 48                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 143                      | NR            | 565    | 371                      | NR            | 695    | 41                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 243                      | NR            | 570    | 370                      | NR            | 700    | 35                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 434                      | NR            | 575    | 367                      | NR            | 705    | 30                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 675                      | NR            | 580    | 365                      | NR            | 710    | 25                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 615                      | NR            | 585    | 361                      | NR            | 715    | 22                       | NR            | 845    | 0                        | NR            | 975    | 0                        | NR            |
| 460    | 418                      | NR            | 590    | 356                      | NR            | 720    | 19                       | NR            | 850    | 0                        | NR            | 980    | 0                        | NR            |
| 465    | 344                      | NR            | 595    | 348                      | NR            | 725    | 16                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 272                      | NR            | 600    | 343                      | NR            | 730    | 13                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 206                      | NR            | 605    | 337                      | NR            | 735    | 11                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 190                      | NR            | 610    | 362                      | NR            | 740    | 10                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 202                      | NR            | 615    | 381                      | NR            | 745    | 8                        | NR            | 875    | 0                        | NR            |        |                          |               |

**Summary**

$R_f = 90.7$   
 $R_g = 100.5$   
 $CIE R_a = 94.3$   
 $R_9 = 72.3$

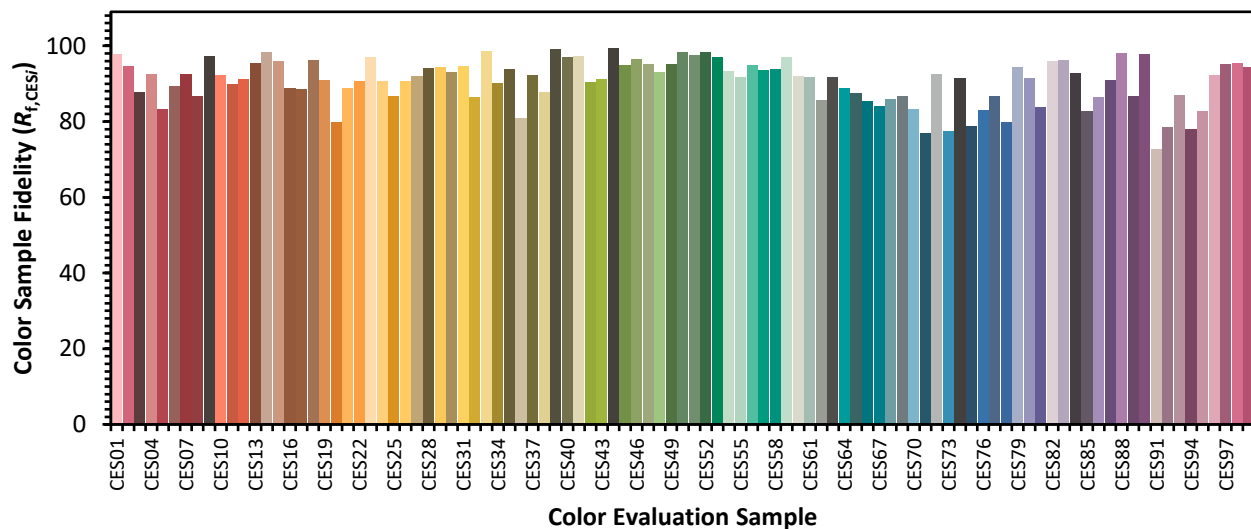


**Color Vector Graphics**

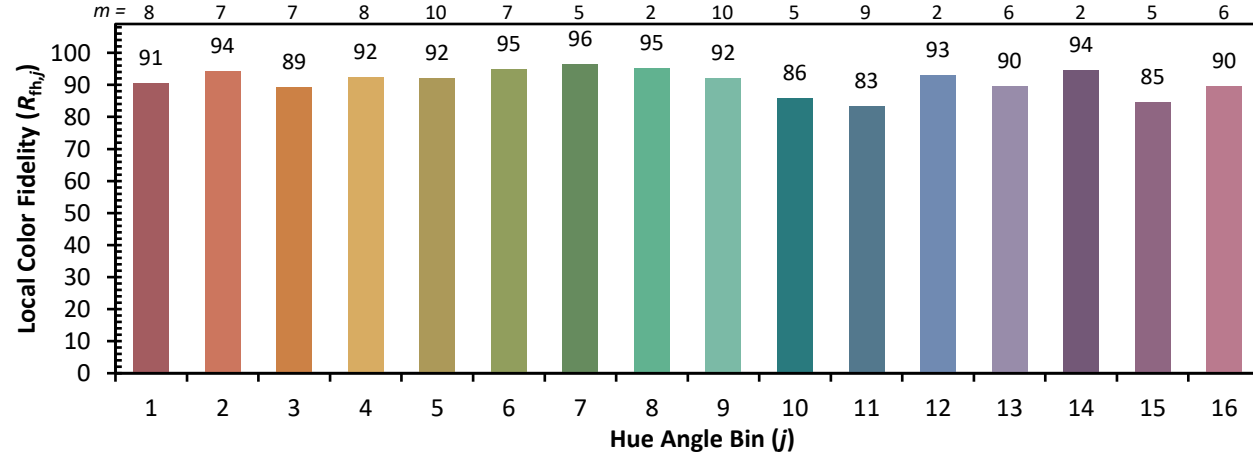


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

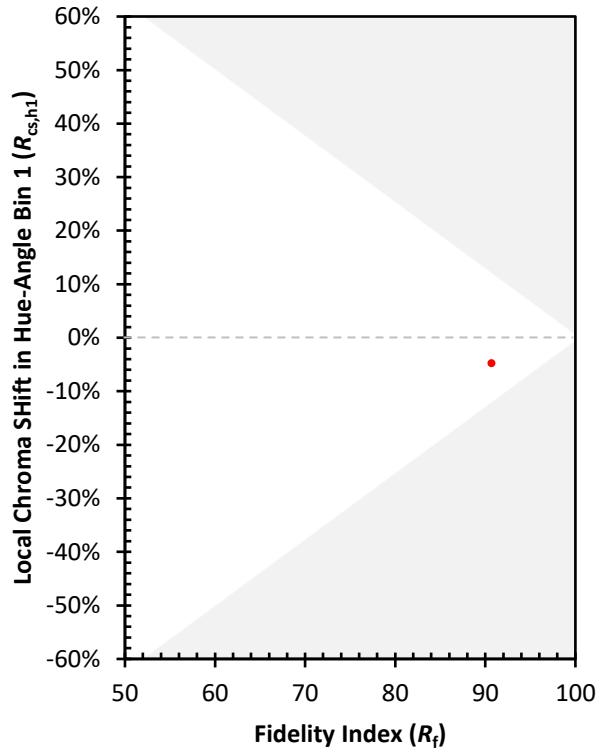
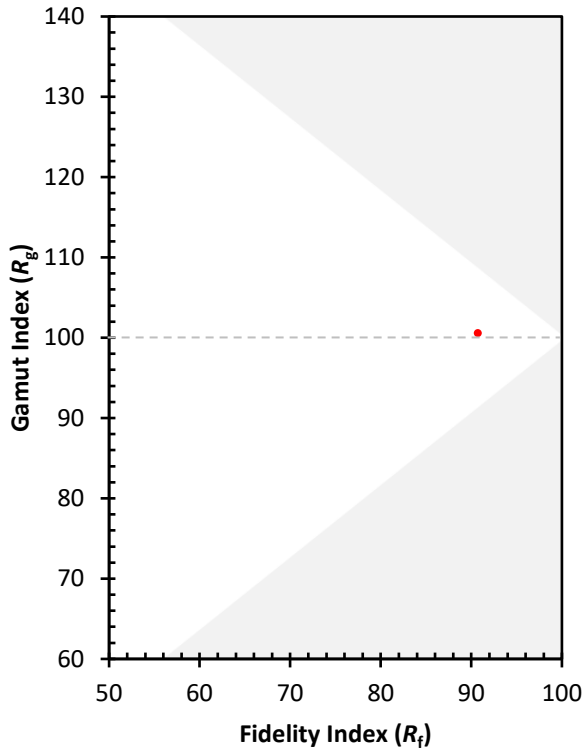
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 91 | CES51 = 98 | CES76 = 83 |
| CES02 = 61 | CES27 = 92 | CES52 = 98 | CES77 = 87 |
| CES03 = 31 | CES28 = 94 | CES53 = 97 | CES78 = 80 |
| CES04 = 69 | CES29 = 94 | CES54 = 93 | CES79 = 94 |
| CES05 = 48 | CES30 = 93 | CES55 = 92 | CES80 = 91 |
| CES06 = 50 | CES31 = 95 | CES56 = 95 | CES81 = 84 |
| CES07 = 41 | CES32 = 86 | CES57 = 94 | CES82 = 96 |
| CES08 = 40 | CES33 = 99 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 90 | CES59 = 97 | CES84 = 93 |
| CES10 = 73 | CES35 = 94 | CES60 = 92 | CES85 = 83 |
| CES11 = 56 | CES36 = 81 | CES61 = 92 | CES86 = 86 |
| CES12 = 62 | CES37 = 92 | CES62 = 86 | CES87 = 91 |
| CES13 = 43 | CES38 = 88 | CES63 = 92 | CES88 = 98 |
| CES14 = 74 | CES39 = 99 | CES64 = 89 | CES89 = 87 |
| CES15 = 71 | CES40 = 97 | CES65 = 88 | CES90 = 98 |
| CES16 = 47 | CES41 = 97 | CES66 = 85 | CES91 = 73 |
| CES17 = 48 | CES42 = 90 | CES67 = 84 | CES92 = 79 |
| CES18 = 56 | CES43 = 91 | CES68 = 86 | CES93 = 87 |
| CES19 = 70 | CES44 = 99 | CES69 = 87 | CES94 = 78 |
| CES20 = 65 | CES45 = 95 | CES70 = 83 | CES95 = 83 |
| CES21 = 85 | CES46 = 97 | CES71 = 77 | CES96 = 92 |
| CES22 = 77 | CES47 = 95 | CES72 = 92 | CES97 = 95 |
| CES23 = 91 | CES48 = 93 | CES73 = 77 | CES98 = 95 |
| CES24 = 90 | CES49 = 95 | CES74 = 92 | CES99 = 94 |
| CES25 = 70 | CES50 = 98 | CES75 = 79 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)