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: P1432589

Luminaire Tested: EHBR1-18-UNV-TASM-L835-UPL18

Issue Date: 3/20/2026

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P1432589 |
| | REPORT IS A COMBINATION OF REPORTS P1431678 AND P1431635 |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | EHBR1-18-UNV-TASM-L835-UPL18 |
| Description: | Elevate Round Highbay at, 18000 lumens, 3500K 80CRI LEDs with TASM lens |
| Light Source: | - |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 19585.2 lumens |
| Efficiency: | N/A |
| Efficacy: | 183.7 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: | Direct |

| | |
|---|---|
| Input Watts (W): | 106.6 |
| 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 |

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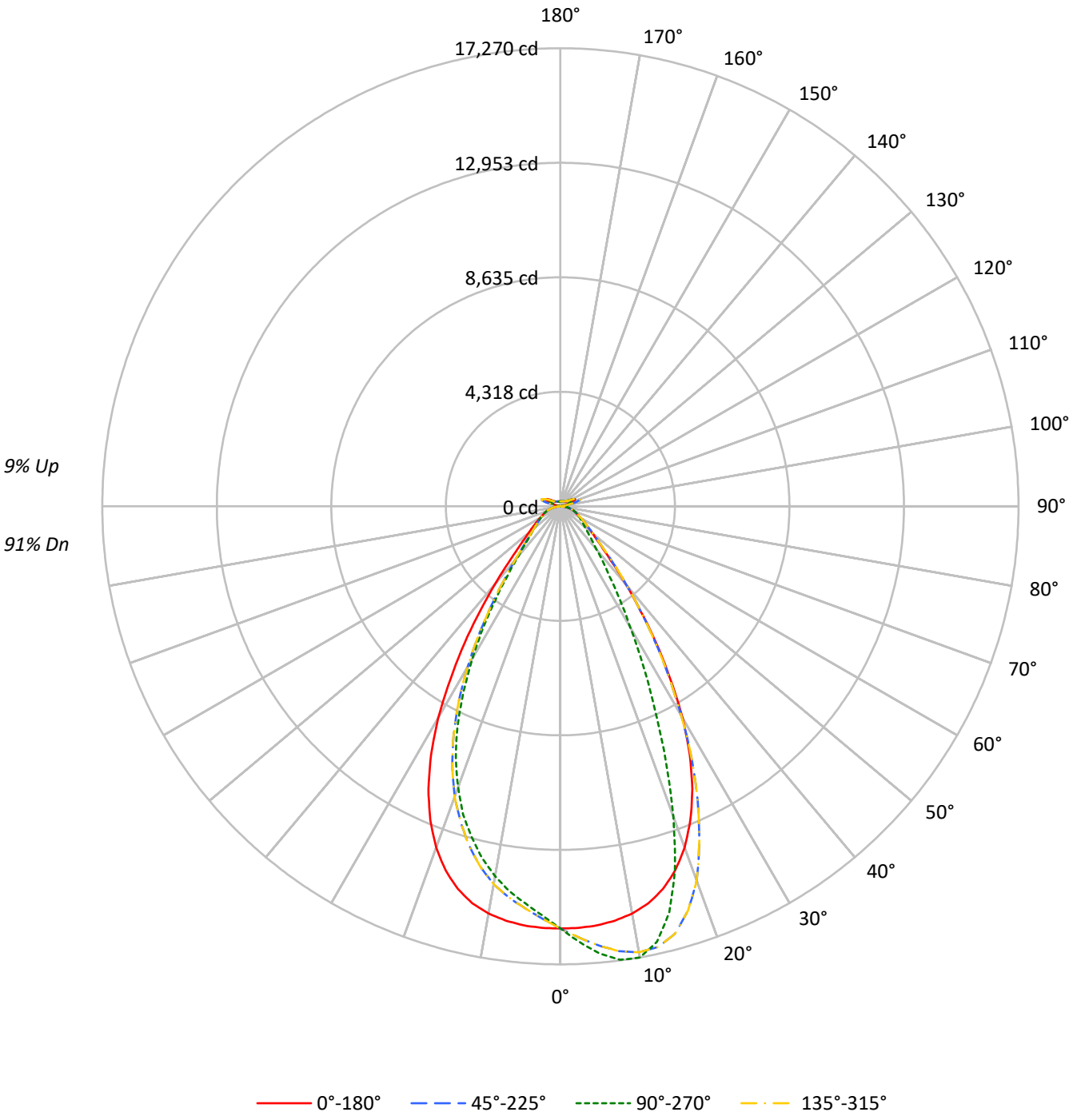
## Luminous Intensity Polar Plot



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## COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| RF | 20 | | | | 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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 100 | 100 | 100 | 94 | 94 | 94 | 91 |
| 1 | 110 | 106 | 103 | 100 | 106 | 103 | 100 | 98 | 97 | 95 | 93 | 92 | 90 | 89 | 87 | 86 | 84 | 82 |
| 2 | 103 | 97 | 92 | 87 | 99 | 94 | 90 | 86 | 89 | 86 | 82 | 85 | 82 | 79 | 81 | 78 | 76 | 74 |
| 3 | 96 | 88 | 82 | 78 | 93 | 86 | 81 | 76 | 82 | 78 | 74 | 78 | 75 | 72 | 75 | 72 | 69 | 67 |
| 4 | 90 | 81 | 75 | 70 | 88 | 79 | 73 | 69 | 76 | 71 | 67 | 73 | 69 | 65 | 70 | 66 | 63 | 61 |
| 5 | 85 | 75 | 68 | 63 | 82 | 73 | 67 | 62 | 71 | 65 | 61 | 68 | 63 | 60 | 65 | 61 | 58 | 56 |
| 6 | 80 | 70 | 63 | 58 | 78 | 68 | 62 | 57 | 66 | 60 | 56 | 63 | 59 | 55 | 61 | 57 | 54 | 52 |
| 7 | 75 | 65 | 58 | 53 | 73 | 64 | 57 | 53 | 61 | 56 | 52 | 59 | 54 | 51 | 57 | 53 | 50 | 48 |
| 8 | 71 | 60 | 54 | 49 | 69 | 59 | 53 | 49 | 58 | 52 | 48 | 56 | 51 | 47 | 54 | 50 | 46 | 45 |
| 9 | 67 | 57 | 50 | 46 | 66 | 56 | 50 | 45 | 54 | 49 | 45 | 53 | 48 | 44 | 51 | 47 | 43 | 42 |
| 10 | 64 | 53 | 47 | 43 | 62 | 52 | 46 | 42 | 51 | 46 | 42 | 50 | 45 | 41 | 48 | 44 | 41 | 39 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° | 270° |
|---|---|---|---|---|
| 0° | 74742 | 74742 | 74742 | 74742 |
| 5° | 74287 | 79250 | 74287 | 70432 |
| 10° | 73373 | 81284 | 73373 | 66657 |
| 15° | 71207 | 75539 | 71207 | 61574 |
| 20° | 66596 | 60571 | 66596 | 54845 |
| 25° | 58943 | 41968 | 58943 | 45962 |
| 30° | 47859 | 27303 | 47859 | 34389 |
| 35° | 34326 | 17682 | 34326 | 22894 |
| 40° | 22193 | 12187 | 22193 | 14438 |
| 45° | 14081 | 9440 | 14081 | 10287 |
| 50° | 10457 | 8022 | 10457 | 8568 |
| 55° | 8538 | 7308 | 8538 | 7564 |
| 60° | 7393 | 6962 | 7393 | 7003 |
| 65° | 6739 | 6713 | 6739 | 6685 |
| 70° | 6388 | 6578 | 6388 | 6493 |
| 75° | 5974 | 6364 | 5974 | 6172 |
| 80° | 5248 | 6007 | 5248 | 5617 |
| 85° | 3395 | 4289 | 3395 | 4091 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
Vertical Angle: 45°
Luminance: 19797 cd/sqm

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**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 1513.3 | 7.7 |
| 10°-20° | 4117.1 | 21.0 |
| 20°-30° | 4828.5 | 24.7 |
| 30°-40° | 3358.0 | 17.1 |
| 40°-50° | 1668.7 | 8.5 |
| 50°-60° | 998.1 | 5.1 |
| 60°-70° | 702.5 | 3.6 |
| 70°-80° | 452.5 | 2.3 |
| 80°-90° | 146.9 | 0.8 |
| 90°-100° | 47.9 | 0.2 |
| 100°-110° | 312.9 | 1.6 |
| 110°-120° | 578.0 | 3.0 |
| 120°-130° | 343.5 | 1.8 |
| 130°-140° | 207.8 | 1.1 |
| 140°-150° | 143.8 | 0.7 |
| 150°-160° | 93.9 | 0.5 |
| 160°-170° | 53.9 | 0.3 |
| 170°-180° | 17.9 | 0.1 |
| 0°-30° | 10459.0 | 53.4 |
| 0°-40° | 13817.0 | 70.5 |
| 0°-60° | 16483.8 | 84.2 |
| 0°-90° | 17785.7 | 90.8 |
| 90°-120° | 938.7 | 4.8 |
| 90°-150° | 1633.8 | 8.3 |
| 90°-180° | 1799.0 | 9.2 |
| 0°-180° | 19585.2 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 90° | 180° | 270° | 360° | Flux |
|---|---|---|---|---|---|---|
| 0° | 15916 | 15916 | 15916 | 15916 | 15916 | |
| 5° | 15861 | 16921 | 15861 | 15038 | 15861 | 1505 |
| 15° | 14939 | 15848 | 14939 | 12918 | 14939 | 4175 |
| 25° | 11771 | 8381 | 11771 | 9179 | 11771 | 5329 |
| 35° | 6300 | 3245 | 6300 | 4202 | 6300 | 3933 |
| 45° | 2278 | 1527 | 2278 | 1664 | 2278 | 1864 |
| 55° | 1154 | 988 | 1154 | 1022 | 1154 | 1055 |
| 65° | 703 | 701 | 703 | 698 | 703 | 706 |
| 75° | 421 | 448 | 421 | 435 | 421 | 442 |
| 85° | 117 | 147 | 117 | 141 | 117 | 130 |
| 90° | 13 | 15 | 13 | 13 | 13 | 12 |
| 95° | 25 | 24 | 25 | 22 | 25 | 27 |
| 105° | 144 | 73 | 144 | 109 | 144 | 194 |
| 115° | 615 | 526 | 615 | 500 | 615 | 561 |
| 125° | 394 | 412 | 394 | 361 | 394 | 362 |
| 135° | 249 | 288 | 249 | 264 | 249 | 197 |
| 145° | 225 | 235 | 225 | 219 | 225 | 141 |
| 155° | 200 | 209 | 200 | 194 | 200 | 94 |
| 165° | 189 | 195 | 189 | 185 | 189 | 54 |
| 175° | 188 | 192 | 188 | 185 | 188 | 18 |
| 180° | 188 | 188 | 188 | 188 | 188 | |

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TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-TASM-L835-UPL18

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 15915.7 | 15915.7 | 15915.7 | 15915.7 | *15915.7* | 15915.7 | 15915.7 | 15915.7 | 15915.7 | 15915.7 | 15915.7 |
| 2.5° | 15906.3 | 16112.0 | 16278.5 | 16388.4 | *16442.7* | 16388.4 | 16278.5 | 16112.0 | 15906.3 | 15701.9 | 15561.4 |
| 5° | 15861.4 | 16273.2 | 16622.1 | 16850.4 | *16921.1* | 16850.4 | 16622.1 | 16273.2 | 15861.4 | 15472.2 | 15214.0 |
| 7.5° | 15753.6 | 16395.3 | 16913.7 | 17180.2 | *17245.2* | 17180.2 | 16913.7 | 16395.3 | 15753.6 | 15202.6 | 14876.5 |
| 10° | *15589.2* | *16472.3* | *17071.3* | *17262.2* | *17270.0* | *17262.2* | *17071.3* | *16472.3* | *15589.2* | *14846.9* | *14462.3* |
| 12.5° | 15326.8 | 16444.8 | 17018.4 | 16955.8 | *16813.3* | 16955.8 | 17018.4 | 16444.8 | 15326.8 | 14412.4 | 13927.2 |
| 15° | 14938.9 | 16282.1 | 16683.9 | 16173.8 | *15847.6* | 16173.8 | 16683.9 | 16282.1 | 14938.9 | 13825.6 | 13262.8 |
| 17.5° | 14392.1 | 15977.7 | 15985.5 | 14976.5 | *14361.0* | 14976.5 | 15985.5 | 15977.7 | 14392.1 | 13108.2 | 12488.3 |
| 20° | 13687.5 | 15489.5 | 15023.9 | 13178.4 | *12449.2* | 13178.4 | 15023.9 | 15489.5 | 13687.5 | 12260.0 | 11651.8 |
| 22.5° | 12804.1 | 14831.1 | 13684.7 | 11369.5 | *10374.7* | 11369.5 | 13684.7 | 14831.1 | 12804.1 | 11273.7 | 10640.6 |
| 25° | 11770.9 | 14024.4 | 12244.2 | 9398.5 | *8380.9* | 9398.5 | 12244.2 | 14024.4 | 11770.9 | 10098.4 | 9525.9 |
| 27.5° | 10555.6 | 13002.0 | 10710.3 | 7680.1 | *6741.2* | 7680.1 | 10710.3 | 13002.0 | 10555.6 | 8885.0 | 8300.3 |
| 30° | 9205.7 | 11691.2 | 9113.8 | 6116.3 | *5251.7* | 6116.3 | 9113.8 | 11691.2 | 9205.7 | 7521.7 | 6998.2 |
| 32.5° | 7694.5 | 10406.4 | 7580.7 | 4900.7 | *4168.4* | 4900.7 | 7580.7 | 10406.4 | 7694.5 | 6220.7 | 5673.7 |
| 35° | 6300.1 | 8799.0 | 6198.4 | 3850.8 | *3245.2* | 3850.8 | 6198.4 | 8799.0 | 6300.1 | 4992.6 | 4455.4 |
| 37.5° | 4944.3 | 7280.2 | 4941.1 | 3100.8 | *2632.3* | 3100.8 | 4941.1 | 7280.2 | 4944.3 | 3881.6 | 3445.5 |
| 40° | 3846.6 | 5692.5 | 3871.4 | 2475.3 | *2112.4* | 2475.3 | 3871.4 | 5692.5 | 3846.6 | 2953.3 | 2674.4 |
| 42.5° | 2914.6 | 4352.7 | 3042.9 | 2031.5 | *1794.3* | 2031.5 | 3042.9 | 4352.7 | 2914.6 | 2326.9 | 2118.0 |
| 45° | 2278.3 | 3203.1 | 2376.2 | 1714.0 | *1527.4* | 1714.0 | 2376.2 | 3203.1 | 2278.3 | 1874.0 | 1733.6 |
| 47.5° | 1855.4 | 2475.6 | 1925.8 | 1470.1 | *1339.4* | 1470.1 | 1925.8 | 2475.6 | 1855.4 | 1585.0 | 1480.0 |
| 50° | 1558.4 | 1899.6 | 1599.1 | 1283.3 | *1195.6* | 1283.3 | 1599.1 | 1899.6 | 1558.4 | 1357.3 | 1287.2 |
| 52.5° | 1338.8 | 1549.2 | 1361.8 | 1143.7 | *1084.5* | 1143.7 | 1361.8 | 1549.2 | 1338.8 | 1187.5 | 1144.0 |
| 55° | 1153.8 | 1302.4 | 1184.2 | 1028.5 | *987.6* | 1028.5 | 1184.2 | 1302.4 | 1153.8 | 1056.8 | 1024.6 |
| 57.5° | 1013.2 | 1104.8 | 1028.5 | 930.2 | *903.1* | 930.2 | 1028.5 | 1104.8 | 1013.2 | 940.4 | 923.1 |
| 60° | 888.7 | 956.8 | 907.6 | 844.6 | *836.9* | 844.6 | 907.6 | 956.8 | 888.7 | 846.1 | 834.7 |
| 62.5° | 792.9 | 835.9 | 802.5 | 767.6 | *760.7* | 767.6 | 802.5 | 835.9 | 792.9 | 760.2 | 762.2 |
| 65° | 703.4 | 743.4 | 717.2 | 698.4 | *700.7* | 698.4 | 717.2 | 743.4 | 703.4 | 688.2 | 691.5 |
| 67.5° | 634.2 | 655.0 | 643.7 | 633.0 | *635.6* | 633.0 | 643.7 | 655.0 | 634.2 | 619.3 | 624.3 |
| 70° | 560.5 | 582.9 | 571.3 | 572.7 | *577.2* | 572.7 | 571.3 | 582.9 | 560.5 | 556.0 | 559.9 |
| 72.5° | 490.0 | 507.4 | 503.5 | 507.1 | *511.8* | 507.1 | 503.5 | 507.4 | 490.0 | 489.4 | 489.7 |
| 75° | 420.8 | 433.9 | 435.7 | 440.8 | *448.3* | 440.8 | 435.7 | 433.9 | 420.8 | 416.3 | 421.7 |
| 77.5° | 345.3 | 360.2 | 365.9 | 372.8 | *383.8* | 372.8 | 365.9 | 360.2 | 345.3 | 348.3 | 350.9 |
| 80° | 276.1 | 283.0 | 295.5 | 300.5 | *316.0* | 300.5 | 295.5 | 283.0 | 276.1 | 271.0 | 274.9 |
| 82.5° | 202.1 | 208.3 | 219.1 | 228.6 | *237.6* | 228.6 | 219.1 | 208.3 | 202.1 | 199.7 | 200.0 |
| 85° | 116.7 | 126.3 | 133.4 | 144.8 | *147.4* | 144.8 | 133.4 | 126.3 | 116.7 | 119.4 | 116.7 |
| 87.5° | 40.9 | 43.8 | 50.1 | 54.6 | *54.9* | 54.6 | 50.1 | 43.8 | 40.9 | 41.8 | 37.9 |
| 90° | 13.2 | 22.4 | 38.6 | 21.6 | *15.3* | 21.6 | 38.6 | 22.4 | 13.2 | 23.2 | 36.1 |
| 92.5° | 17.2 | 30.4 | 54.5 | 28.6 | *20.3* | 28.6 | 54.5 | 30.4 | 17.2 | 30.1 | 57.9 |
| 95° | 25.4 | 37.3 | 69.4 | 31.5 | *24.2* | 31.5 | 69.4 | 37.3 | 25.4 | 40.0 | 80.8 |
| 97.5° | 39.4 | 46.3 | 78.4 | 33.6 | *29.3* | 33.6 | 78.4 | 46.3 | 39.4 | 49.0 | 92.7 |
| 100° | 52.3 | 52.3 | 143.0 | 38.5 | *33.3* | 38.5 | 143.0 | 52.3 | 52.3 | 60.2 | 144.4 |
| 102.5° | 79.1 | 102.2 | 331.2 | 76.7 | *40.1* | 76.7 | 331.2 | 102.2 | 79.1 | 112.9 | 306.4 |
| 105° | 143.7 | 233.4 | 582.6 | 196.9 | *73.3* | 196.9 | 582.6 | 233.4 | 143.7 | 236.1 | 545.9 |
| 107.5° | 271.9 | 435.2 | 750.6 | 387.8 | *169.7* | 387.8 | 750.6 | 435.2 | 271.9 | 418.0 | 720.1 |
| 110° | 434.9 | 608.1 | 819.1 | 530.9 | *342.6* | 530.9 | 819.1 | 608.1 | 434.9 | 574.1 | 754.9 |

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TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-TASM-L835-UPL18

**CANDELA DISTRIBUTION (continued):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 566.1 | 677.7 | 800.2 | 588.5 | *473.8* | 588.5 | 800.2 | 677.7 | 566.1 | 633.7 | 723.1 |
| 115° | 615.1 | 667.7 | 714.8 | 586.6 | *525.5* | 586.6 | 714.8 | 667.7 | 615.1 | 618.8 | 645.6 |
| 117.5° | 594.2 | 611.1 | 617.4 | 550.8 | *528.5* | 550.8 | 617.4 | 611.1 | 594.2 | 556.4 | 548.2 |
| 120° | 536.5 | 529.7 | 520.2 | 498.0 | *498.6* | 498.0 | 520.2 | 529.7 | 536.5 | 485.9 | 457.8 |
| 122.5° | 464.3 | 449.4 | 439.8 | 444.7 | *457.9* | 444.7 | 439.8 | 449.4 | 464.3 | 413.6 | 392.4 |
| 125° | 393.7 | 378.9 | 383.4 | 398.9 | *412.5* | 398.9 | 383.4 | 378.9 | 393.7 | 351.3 | 346.0 |
| 127.5° | 334.4 | 327.5 | 342.6 | 360.2 | *371.7* | 360.2 | 342.6 | 327.5 | 334.4 | 307.6 | 313.2 |
| 130° | 292.0 | 293.6 | 313.8 | 328.7 | *335.9* | 328.7 | 313.8 | 293.6 | 292.0 | 279.1 | 292.7 |
| 132.5° | 265.5 | 273.1 | 292.4 | 305.2 | *309.4* | 305.2 | 292.4 | 273.1 | 265.5 | 261.8 | 278.4 |
| 135° | 248.9 | 260.2 | 277.7 | 286.0 | *287.5* | 286.0 | 277.7 | 260.2 | 248.9 | 250.2 | 265.5 |
| 137.5° | 239.2 | 250.6 | 263.9 | 270.4 | *268.7* | 270.4 | 263.9 | 250.6 | 239.2 | 242.5 | 254.2 |
| 140° | 233.6 | 244.9 | 250.9 | 258.4 | *257.1* | 258.4 | 250.9 | 244.9 | 233.6 | 235.5 | 244.6 |
| 142.5° | 227.9 | 238.3 | 241.3 | 246.8 | *245.1* | 246.8 | 241.3 | 238.3 | 227.9 | 229.9 | 235.8 |
| 145° | 225.3 | 232.9 | 230.6 | 237.9 | *235.4* | 237.9 | 230.6 | 232.9 | 225.3 | 225.9 | 229.2 |
| 147.5° | 220.2 | 225.9 | 222.9 | 229.2 | *226.8* | 229.2 | 222.9 | 225.9 | 220.2 | 220.2 | 221.6 |
| 150° | 214.6 | 218.6 | 214.3 | 221.6 | *221.1* | 221.6 | 214.3 | 218.6 | 214.6 | 213.6 | 214.9 |
| 152.5° | 206.9 | 210.9 | 206.9 | 215.2 | *214.5* | 215.2 | 206.9 | 210.9 | 206.9 | 206.0 | 207.2 |
| 155° | 200.5 | 202.6 | 200.5 | 208.8 | *209.1* | 208.8 | 200.5 | 202.6 | 200.5 | 200.2 | 200.8 |
| 157.5° | 196.2 | 197.4 | 196.5 | 203.8 | *204.1* | 203.8 | 196.5 | 197.4 | 196.2 | 196.2 | 196.5 |
| 160° | 192.5 | 194.4 | 193.7 | 200.0 | *200.2* | 200.0 | 193.7 | 194.4 | 192.5 | 193.2 | 193.5 |
| 162.5° | 191.0 | 191.0 | 190.6 | 196.9 | *197.4* | 196.9 | 190.6 | 191.0 | 191.0 | 191.0 | 192.0 |
| 165° | 188.9 | 190.0 | 188.5 | 193.1 | *194.7* | 193.1 | 188.5 | 190.0 | 188.9 | 189.7 | 189.7 |
| 167.5° | 188.5 | 187.5 | 188.1 | 192.1 | *193.7* | 192.1 | 188.1 | 187.5 | 188.5 | 189.2 | 189.2 |
| 170° | 186.9 | 187.2 | 186.8 | 190.6 | *192.2* | 190.6 | 186.8 | 187.2 | 186.9 | 187.8 | 188.5 |
| 172.5° | 187.8 | 187.8 | 186.7 | 189.6 | *192.1* | 189.6 | 186.7 | 187.8 | 187.8 | 188.4 | 189.4 |
| 175° | 188.4 | 187.6 | 187.3 | 189.1 | *191.7* | 189.1 | 187.3 | 187.6 | 188.4 | 188.1 | 188.1 |
| 177.5° | 187.3 | 187.9 | 188.5 | 190.5 | *193.9* | 190.5 | 188.5 | 187.9 | 187.3 | 188.1 | 188.1 |
| 180° | 187.9 | 187.9 | 187.9 | 187.9 | *187.9* | 187.9 | 187.9 | 187.9 | 187.9 | 187.9 | 187.9 |

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Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-TASM-L835-UPL18

**CANDELA DISTRIBUTION (continued):**

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|---|---|---|---|---|---|---|
| 0° | 15915.7 | 15915.7 | 15915.7 | 15915.7 | 15915.7 | 15915.7 |
| 2.5° | 15453.4 | 15443.2 | 15453.4 | 15561.4 | 15701.9 | 15906.3 |
| 5° | 15094.3 | 15038.3 | 15094.3 | 15214.0 | 15472.2 | 15861.4 |
| 7.5° | 14676.2 | 14643.7 | 14676.2 | 14876.5 | 15202.6 | 15753.6 |
| 10° | *14236.0* | *14162.3* | *14236.0* | *14462.3* | *14846.9* | *15589.2* |
| 12.5° | 13693.5 | 13595.8 | 13693.5 | 13927.2 | 14412.4 | 15326.8 |
| 15° | 13003.4 | 12917.8 | 13003.4 | 13262.8 | 13825.6 | 14938.9 |
| 17.5° | 12263.0 | 12185.4 | 12263.0 | 12488.3 | 13108.2 | 14392.1 |
| 20° | 11333.1 | 11272.2 | 11333.1 | 11651.8 | 12260.0 | 13687.5 |
| 22.5° | 10357.5 | 10300.5 | 10357.5 | 10640.6 | 11273.7 | 12804.1 |
| 25° | 9209.6 | 9178.6 | 9209.6 | 9525.9 | 10098.4 | 11770.9 |
| 27.5° | 7969.3 | 7916.5 | 7969.3 | 8300.3 | 8885.0 | 10555.6 |
| 30° | 6702.2 | 6614.7 | 6702.2 | 6998.2 | 7521.7 | 9205.7 |
| 32.5° | 5462.7 | 5399.7 | 5462.7 | 5673.7 | 6220.7 | 7694.5 |
| 35° | 4264.8 | 4201.8 | 4264.8 | 4455.4 | 4992.6 | 6300.1 |
| 37.5° | 3323.2 | 3211.9 | 3323.2 | 3445.5 | 3881.6 | 4944.3 |
| 40° | 2520.4 | 2502.4 | 2520.4 | 2674.4 | 2953.3 | 3846.6 |
| 42.5° | 2051.8 | 2003.1 | 2051.8 | 2118.0 | 2326.9 | 2914.6 |
| 45° | 1683.5 | 1664.4 | 1683.5 | 1733.6 | 1874.0 | 2278.3 |
| 47.5° | 1447.8 | 1456.1 | 1447.8 | 1480.0 | 1585.0 | 1855.4 |
| 50° | 1272.0 | 1277.0 | 1272.0 | 1287.2 | 1357.3 | 1558.4 |
| 52.5° | 1142.4 | 1138.0 | 1142.4 | 1144.0 | 1187.5 | 1338.8 |
| 55° | 1027.8 | 1022.2 | 1027.8 | 1024.6 | 1056.8 | 1153.8 |
| 57.5° | 927.5 | 931.7 | 927.5 | 923.1 | 940.4 | 1013.2 |
| 60° | 838.0 | 841.9 | 838.0 | 834.7 | 846.1 | 888.7 |
| 62.5° | 762.5 | 764.9 | 762.5 | 762.2 | 760.2 | 792.9 |
| 65° | 695.1 | 697.8 | 695.1 | 691.5 | 688.2 | 703.4 |
| 67.5° | 630.6 | 630.6 | 630.6 | 624.3 | 619.3 | 634.2 |
| 70° | 570.0 | 569.7 | 570.0 | 559.9 | 556.0 | 560.5 |
| 72.5° | 497.2 | 504.3 | 497.2 | 489.7 | 489.4 | 490.0 |
| 75° | 426.5 | 434.8 | 426.5 | 421.7 | 416.3 | 420.8 |
| 77.5° | 354.8 | 367.7 | 354.8 | 350.9 | 348.3 | 345.3 |
| 80° | 281.4 | 295.5 | 281.4 | 274.9 | 271.0 | 276.1 |
| 82.5° | 208.0 | 218.5 | 208.0 | 200.0 | 199.7 | 202.1 |
| 85° | 123.8 | 140.6 | 123.8 | 116.7 | 119.4 | 116.7 |
| 87.5° | 39.7 | 50.7 | 39.7 | 37.9 | 41.8 | 40.9 |
| 90° | 21.1 | 13.2 | 21.1 | 36.1 | 23.2 | 13.2 |
| 92.5° | 32.1 | 19.2 | 32.1 | 57.9 | 30.1 | 17.2 |
| 95° | 37.0 | 22.1 | 37.0 | 80.8 | 40.0 | 25.4 |
| 97.5° | 41.0 | 28.4 | 41.0 | 92.7 | 49.0 | 39.4 |
| 100° | 48.0 | 37.3 | 48.0 | 144.4 | 60.2 | 52.3 |
| 102.5° | 101.6 | 63.2 | 101.6 | 306.4 | 112.9 | 79.1 |
| 105° | 214.0 | 108.9 | 214.0 | 545.9 | 236.1 | 143.7 |
| 107.5° | 382.9 | 188.4 | 382.9 | 720.1 | 418.0 | 271.9 |
| 110° | 508.1 | 351.4 | 508.1 | 754.9 | 574.1 | 434.9 |

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-TASM-L835-UPL18

**CANDELA DISTRIBUTION (continued):**

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|---|---|---|---|---|---|---|
| 112.5° | 545.9 | 474.7 | 545.9 | 723.1 | 633.7 | 566.1 |
| 115° | 525.1 | 499.5 | 525.1 | 645.6 | 618.8 | 615.1 |
| 117.5° | 479.3 | 482.6 | 479.3 | 548.2 | 556.4 | 594.2 |
| 120° | 426.7 | 446.8 | 426.7 | 457.8 | 485.9 | 536.5 |
| 122.5° | 378.3 | 402.1 | 378.3 | 392.4 | 413.6 | 464.3 |
| 125° | 336.5 | 360.6 | 336.5 | 346.0 | 351.3 | 393.7 |
| 127.5° | 307.7 | 323.9 | 307.7 | 313.2 | 307.6 | 334.4 |
| 130° | 285.1 | 299.1 | 285.1 | 292.7 | 279.1 | 292.0 |
| 132.5° | 269.5 | 278.5 | 269.5 | 278.4 | 261.8 | 265.5 |
| 135° | 255.9 | 263.6 | 255.9 | 265.5 | 250.2 | 248.9 |
| 137.5° | 244.3 | 251.0 | 244.3 | 254.2 | 242.5 | 239.2 |
| 140° | 234.0 | 239.7 | 234.0 | 244.6 | 235.5 | 233.6 |
| 142.5° | 223.3 | 227.3 | 223.3 | 235.8 | 229.9 | 227.9 |
| 145° | 216.0 | 219.0 | 216.0 | 229.2 | 225.9 | 225.3 |
| 147.5° | 209.7 | 211.6 | 209.7 | 221.6 | 220.2 | 220.2 |
| 150° | 203.3 | 205.2 | 203.3 | 214.9 | 213.6 | 214.6 |
| 152.5° | 196.6 | 198.9 | 196.6 | 207.2 | 206.0 | 206.9 |
| 155° | 192.2 | 194.4 | 192.2 | 200.8 | 200.2 | 200.5 |
| 157.5° | 189.9 | 191.4 | 189.9 | 196.5 | 196.2 | 196.2 |
| 160° | 187.7 | 189.1 | 187.7 | 193.5 | 193.2 | 192.5 |
| 162.5° | 185.4 | 186.7 | 185.4 | 192.0 | 191.0 | 191.0 |
| 165° | 184.9 | 185.2 | 184.9 | 189.7 | 189.7 | 188.9 |
| 167.5° | 184.2 | 185.2 | 184.2 | 189.2 | 189.2 | 188.5 |
| 170° | 184.5 | 184.8 | 184.5 | 188.5 | 187.8 | 186.9 |
| 172.5° | 185.1 | 185.4 | 185.1 | 189.4 | 188.4 | 187.8 |
| 175° | 184.8 | 185.1 | 184.8 | 188.1 | 188.1 | 188.4 |
| 177.5° | 186.1 | 186.4 | 186.1 | 188.1 | 188.1 | 187.3 |
| 180° | 187.9 | 187.9 | 187.9 | 187.9 | 187.9 | 187.9 |

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

Scaled Data Report

TEST NUMBER: P1432589
CATALOG NUMBER: EHBR1-18-UNV-TASM-L835-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 | 15.43 | 16.50 | 15.95 | 17.00 | 17.54 | 14.75 | 15.82 | 15.27 | 16.32 | 16.86 |
| | 3H | 16.97 | 17.93 | 17.51 | 18.44 | 19.03 | 16.59 | 17.55 | 17.13 | 18.06 | 18.65 |
| | 4H | 17.61 | 18.50 | 18.17 | 19.03 | 19.63 | 17.37 | 18.26 | 17.93 | 18.79 | 19.40 |
| | 6H | 18.09 | 18.91 | 18.66 | 19.45 | 20.07 | 18.01 | 18.83 | 18.59 | 19.38 | 19.99 |
| | 8H | 18.24 | 19.01 | 18.82 | 19.58 | 20.20 | 18.24 | 19.01 | 18.82 | 19.57 | 20.20 |
| | 12H | 18.31 | 19.05 | 18.90 | 19.61 | 20.25 | 18.36 | 19.10 | 18.95 | 19.66 | 20.30 |
| 4H | 2H | 15.84 | 16.73 | 16.40 | 17.26 | 17.86 | 15.32 | 16.21 | 15.88 | 16.74 | 17.34 |
| | 3H | 17.64 | 18.37 | 18.21 | 18.95 | 19.57 | 17.37 | 18.11 | 17.94 | 18.69 | 19.31 |
| | 4H | 18.41 | 19.07 | 19.00 | 19.66 | 20.31 | 18.28 | 18.94 | 18.87 | 19.53 | 20.18 |
| | 6H | 19.02 | 19.59 | 19.64 | 20.20 | 20.88 | 19.05 | 19.62 | 19.67 | 20.23 | 20.91 |
| | 8H | 19.22 | 19.75 | 19.84 | 20.36 | 21.04 | 19.32 | 19.85 | 19.94 | 20.46 | 21.14 |
| | 12H | 19.32 | 19.79 | 19.96 | 20.43 | 21.11 | 19.49 | 19.96 | 20.12 | 20.60 | 21.28 |
| 8H | 4H | 18.66 | 19.19 | 19.28 | 19.80 | 20.48 | 18.56 | 19.09 | 19.18 | 19.70 | 20.38 |
| | 6H | 19.40 | 19.83 | 20.05 | 20.49 | 21.17 | 19.46 | 19.90 | 20.11 | 20.55 | 21.24 |
| | 8H | 19.67 | 20.05 | 20.34 | 20.72 | 21.42 | 19.82 | 20.20 | 20.48 | 20.87 | 21.57 |
| | 12H | 19.84 | 20.18 | 20.50 | 20.82 | 21.59 | 20.06 | 20.40 | 20.73 | 21.05 | 21.82 |
| 12H | 4H | 18.67 | 19.14 | 19.30 | 19.77 | 20.46 | 18.57 | 19.04 | 19.20 | 19.68 | 20.36 |
| | 6H | 19.44 | 19.83 | 20.11 | 20.49 | 21.19 | 19.51 | 19.89 | 20.18 | 20.56 | 21.26 |
| | 8H | 19.76 | 20.10 | 20.42 | 20.74 | 21.51 | 19.91 | 20.25 | 20.57 | 20.89 | 21.67 |

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

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-3

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L835-N

Data in this report applies to families of products including EHBR-60-L835-N

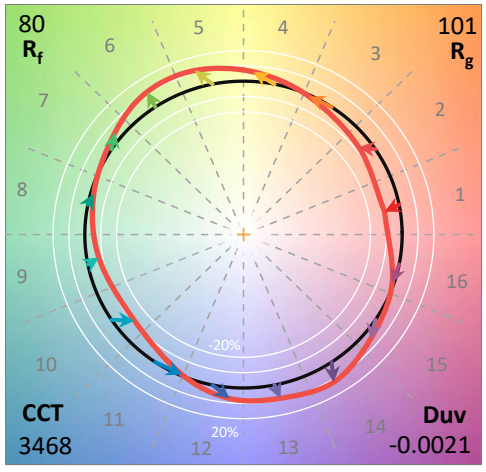
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2506-472-3 |
| 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-L835-N** |
| Description: | Elevate Round Highbay at, 60000 lumens, 3500K 80CRI LEDs with N lens |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3468 | CRI (Ra): | 82.1 | | |
| CIE u': | 0.2375 | R1: | 82.9 | R9: | 27.6 |
| CIE v': | 0.5091 | R2: | 85.6 | R10: | 63.8 |
| Duv: | -0.0021 | R3: | 85.9 | R11: | 81.2 |
| CIE x: | 0.4049 | R4: | 82.8 | R12: | 57.2 |
| CIE y: | 0.3856 | R5: | 81.0 | R13: | 82.6 |
| CIE z: | 0.2095 | R6: | 79.7 | R14: | 91.0 |
| Peak Wavelength (nm): | 630 | R7: | 86.5 | R15: | 79.4 |
| Dominant Wavelength (nm): | 581 | R8: | 72.1 | | |
| Purity: | 37.24544 | | | | |
| Rf: | 80.1 | | | | |
| Rg: | 101 | | | | |




## Test Conditions

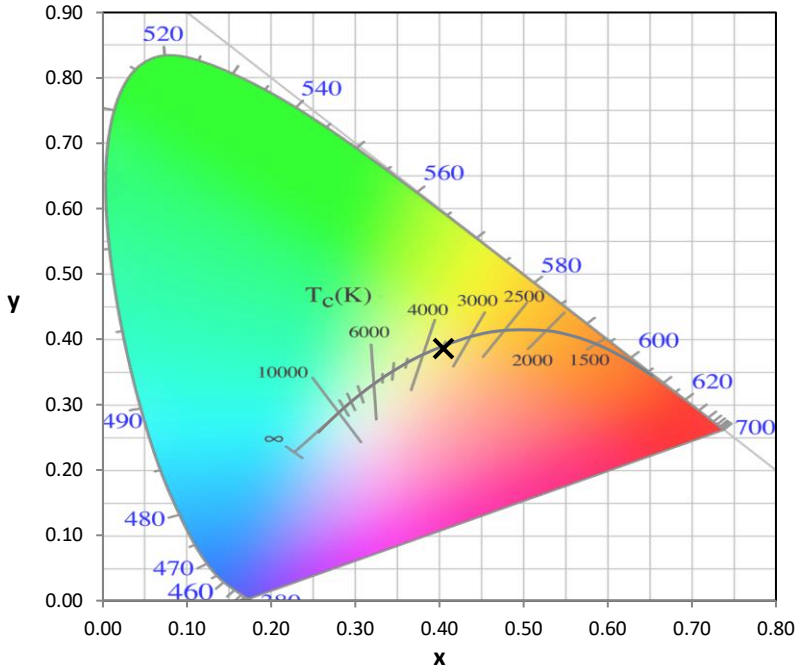
| | |
|---|---|
| Stabilization Time: | 39M |
| Operation Time: | 1H 39M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP1-2506-472-3

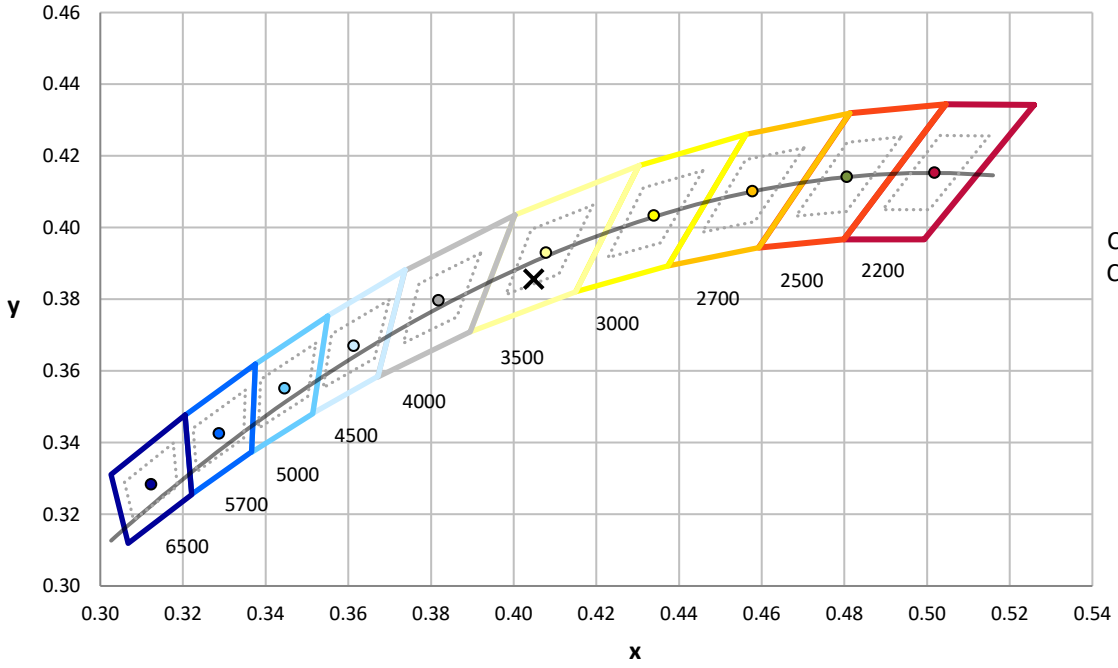
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 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: SP1-2506-472-3

## CIE 1931 Chromaticity Diagram




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

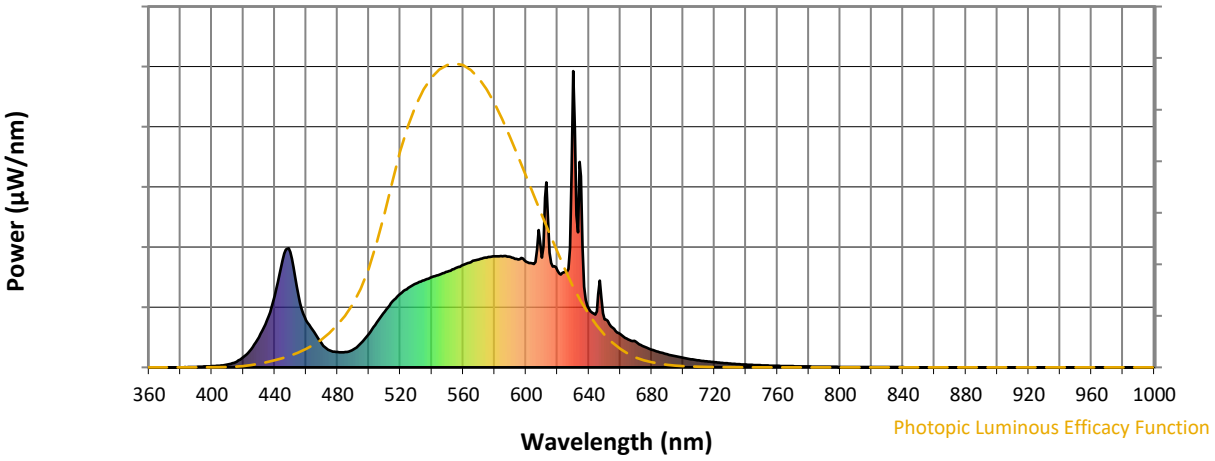



CCT = 3468K
CIE x = 0.4049
CIE y = 0.3856
Duv = -0.0021

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-3

## Photopic Flux vs. Wavelength

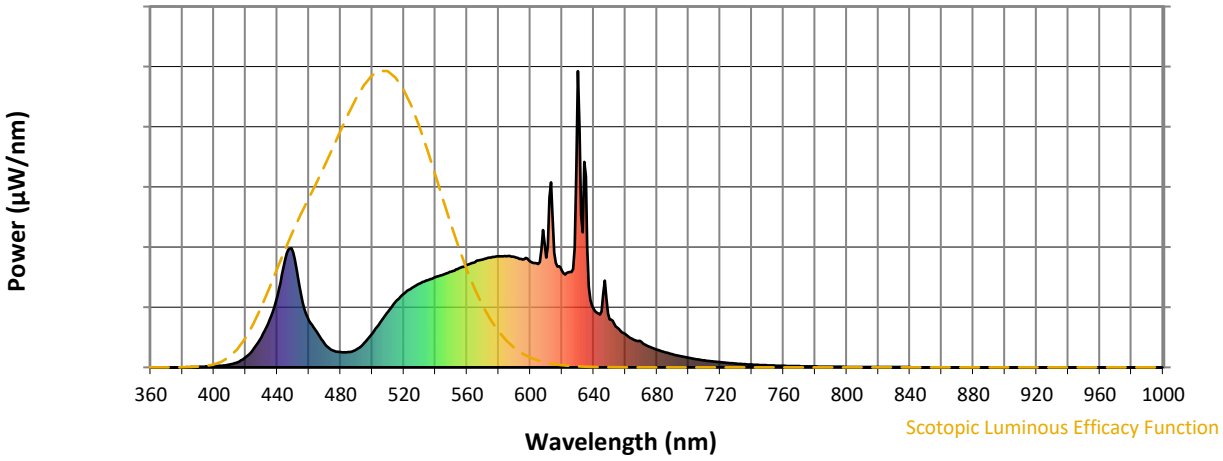



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 327 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 82 | NR | 625 | 322 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 114 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 152 | NR | 635 | 645 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 189 | NR | 640 | 197 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 222 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 248 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 268 | NR | 655 | 134 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 283 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 294 | NR | 665 | 94 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 305 | NR | 670 | 87 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 314 | NR | 675 | 70 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 323 | NR | 680 | 60 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 62 | NR | 555 | 335 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 102 | NR | 560 | 346 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 159 | NR | 565 | 356 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 241 | NR | 570 | 364 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 363 | NR | 575 | 371 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 389 | NR | 580 | 375 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 375 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 158 | NR | 590 | 373 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 120 | NR | 595 | 364 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 357 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 349 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 51 | NR | 610 | 371 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 51 | NR | 615 | 387 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-3

## Scotopic Flux vs. Wavelength

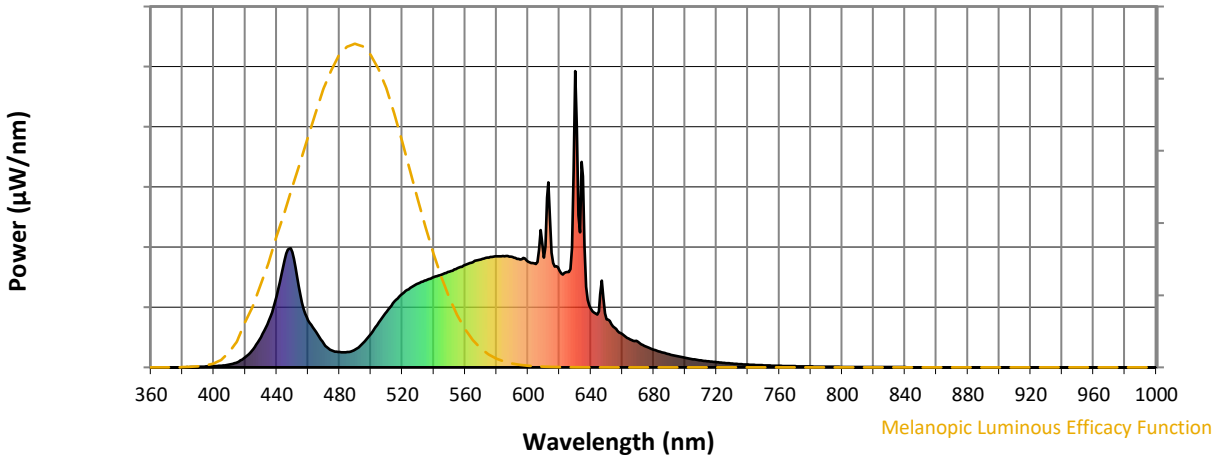



**Scotopic Lumens: NR** **S/P: 1.43**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 327 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 82 | NR | 625 | 322 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 114 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 152 | NR | 635 | 645 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 189 | NR | 640 | 197 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 222 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 248 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 268 | NR | 655 | 134 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 283 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 294 | NR | 665 | 94 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 305 | NR | 670 | 87 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 314 | NR | 675 | 70 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 323 | NR | 680 | 60 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 62 | NR | 555 | 335 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 102 | NR | 560 | 346 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 159 | NR | 565 | 356 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 241 | NR | 570 | 364 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 363 | NR | 575 | 371 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 389 | NR | 580 | 375 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 375 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 158 | NR | 590 | 373 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 120 | NR | 595 | 364 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 357 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 349 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 51 | NR | 610 | 371 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 51 | NR | 615 | 387 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-3

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.75**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 327 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 82 | NR | 625 | 322 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 114 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 152 | NR | 635 | 645 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 189 | NR | 640 | 197 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 222 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 248 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 268 | NR | 655 | 134 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 283 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 294 | NR | 665 | 94 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 305 | NR | 670 | 87 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 314 | NR | 675 | 70 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 323 | NR | 680 | 60 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 62 | NR | 555 | 335 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 102 | NR | 560 | 346 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 159 | NR | 565 | 356 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 241 | NR | 570 | 364 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 363 | NR | 575 | 371 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 389 | NR | 580 | 375 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 375 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 158 | NR | 590 | 373 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 120 | NR | 595 | 364 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 357 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 349 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 51 | NR | 610 | 371 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 51 | NR | 615 | 387 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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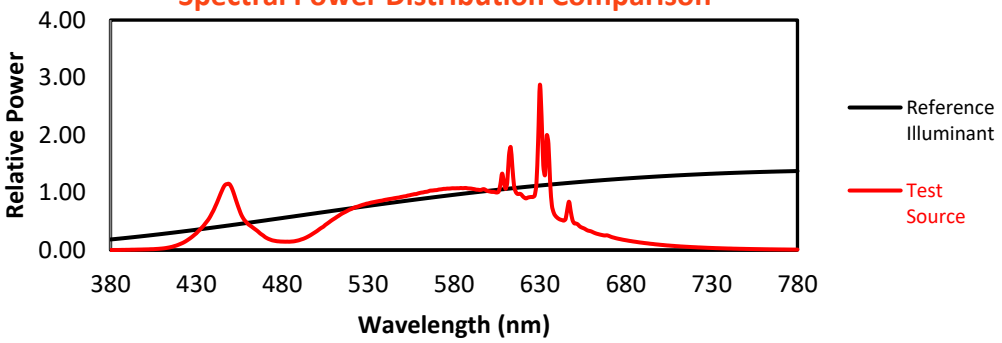
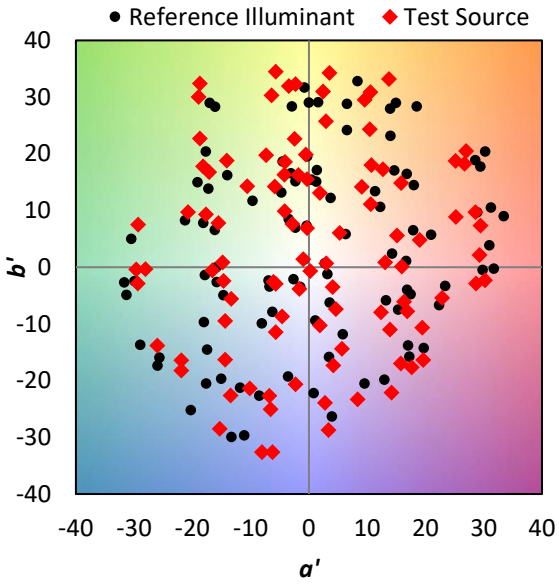
## Summary

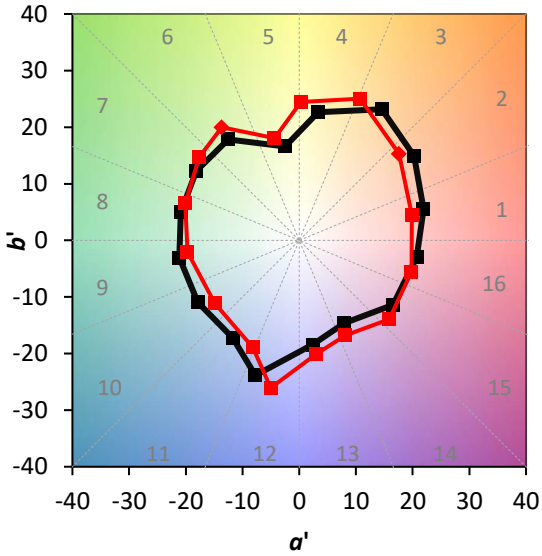
$R_f$ = 80.1
$R_g$ = 101
CIE $R_a$ = 82.1
$R_9$ = 27.6

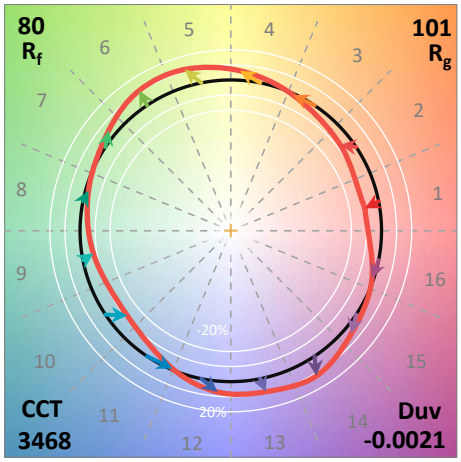
## Spectral Power Distribution Comparison

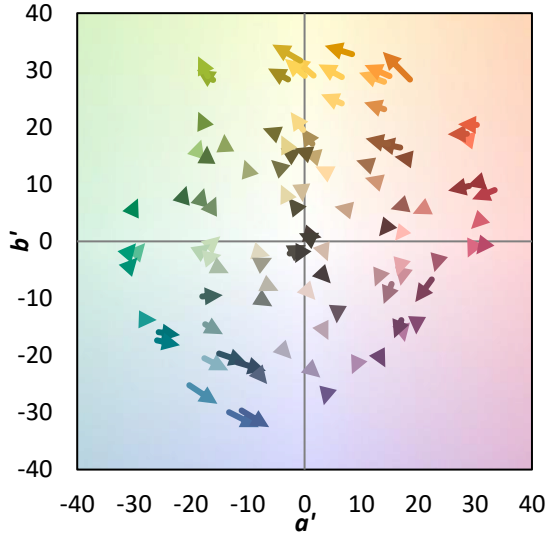



## Color Vector Graphics



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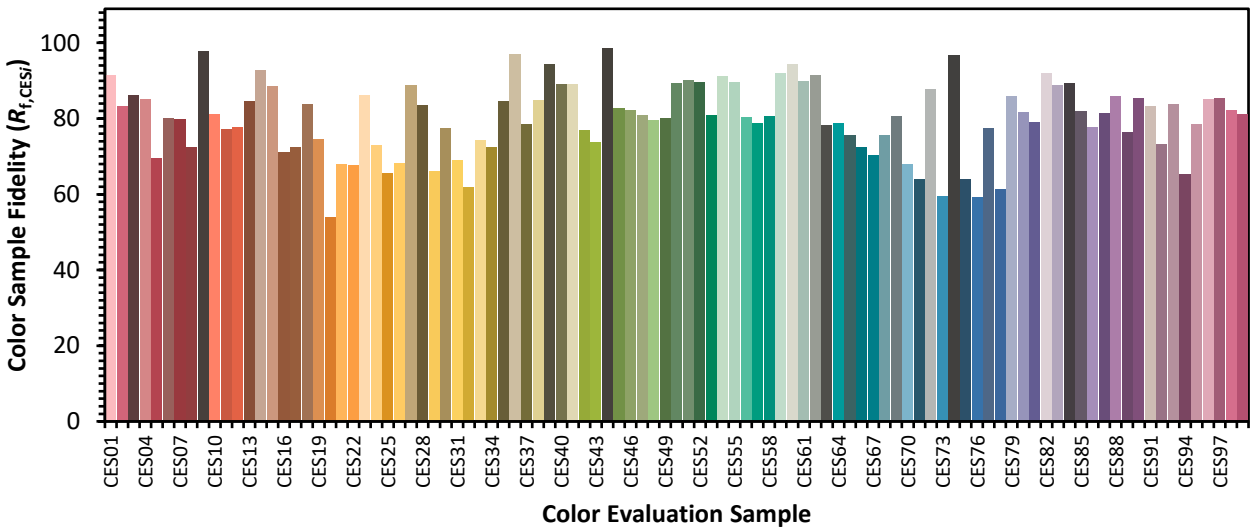
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 59 |
| CES02 = 62 | CES27 = 89 | CES52 = 90 | CES77 = 78 |
| CES03 = 31 | CES28 = 84 | CES53 = 81 | CES78 = 61 |
| CES04 = 70 | CES29 = 66 | CES54 = 91 | CES79 = 86 |
| CES05 = 49 | CES30 = 77 | CES55 = 90 | CES80 = 82 |
| CES06 = 51 | CES31 = 69 | CES56 = 80 | CES81 = 79 |
| CES07 = 42 | CES32 = 62 | CES57 = 79 | CES82 = 92 |
| CES08 = 41 | CES33 = 74 | CES58 = 81 | CES83 = 89 |
| CES09 = 29 | CES34 = 72 | CES59 = 92 | CES84 = 89 |
| CES10 = 75 | CES35 = 85 | CES60 = 94 | CES85 = 82 |
| CES11 = 58 | CES36 = 97 | CES61 = 90 | CES86 = 78 |
| CES12 = 64 | CES37 = 79 | CES62 = 92 | CES87 = 82 |
| CES13 = 43 | CES38 = 85 | CES63 = 78 | CES88 = 86 |
| CES14 = 74 | CES39 = 94 | CES64 = 79 | CES89 = 76 |
| CES15 = 71 | CES40 = 89 | CES65 = 76 | CES90 = 85 |
| CES16 = 47 | CES41 = 89 | CES66 = 73 | CES91 = 83 |
| CES17 = 49 | CES42 = 77 | CES67 = 70 | CES92 = 73 |
| CES18 = 56 | CES43 = 74 | CES68 = 76 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 81 | CES94 = 65 |
| CES20 = 66 | CES45 = 83 | CES70 = 68 | CES95 = 79 |
| CES21 = 86 | CES46 = 82 | CES71 = 64 | CES96 = 85 |
| CES22 = 78 | CES47 = 81 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 80 | CES73 = 60 | CES98 = 82 |
| CES24 = 91 | CES49 = 80 | CES74 = 97 | CES99 = 81 |
| CES25 = 72 | CES50 = 89 | CES75 = 64 | |



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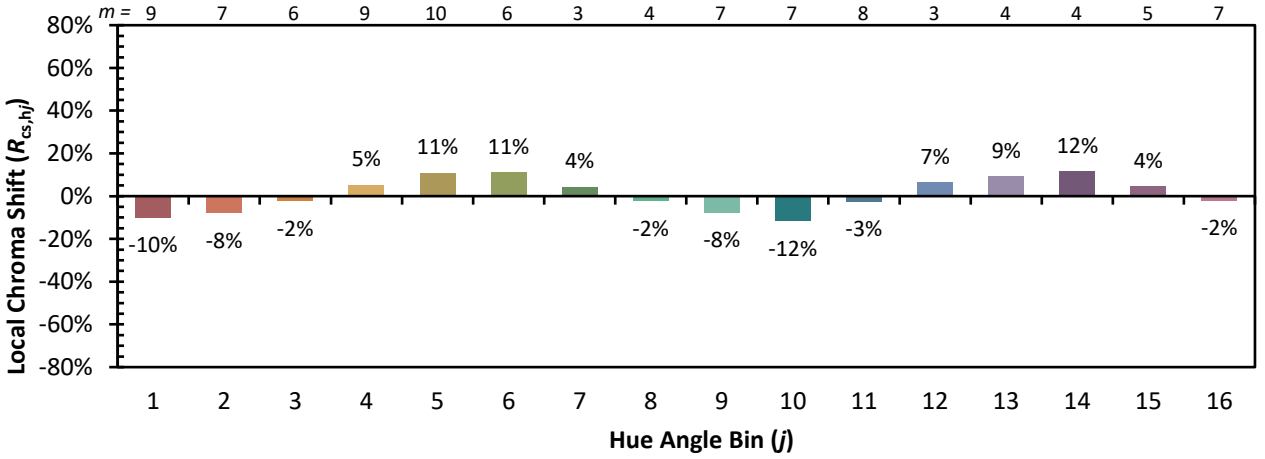
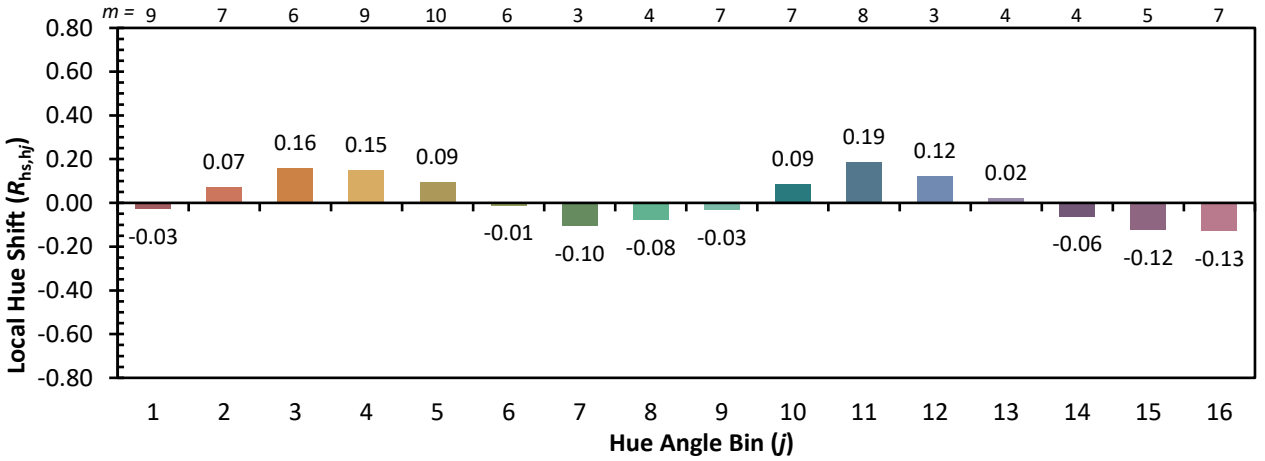
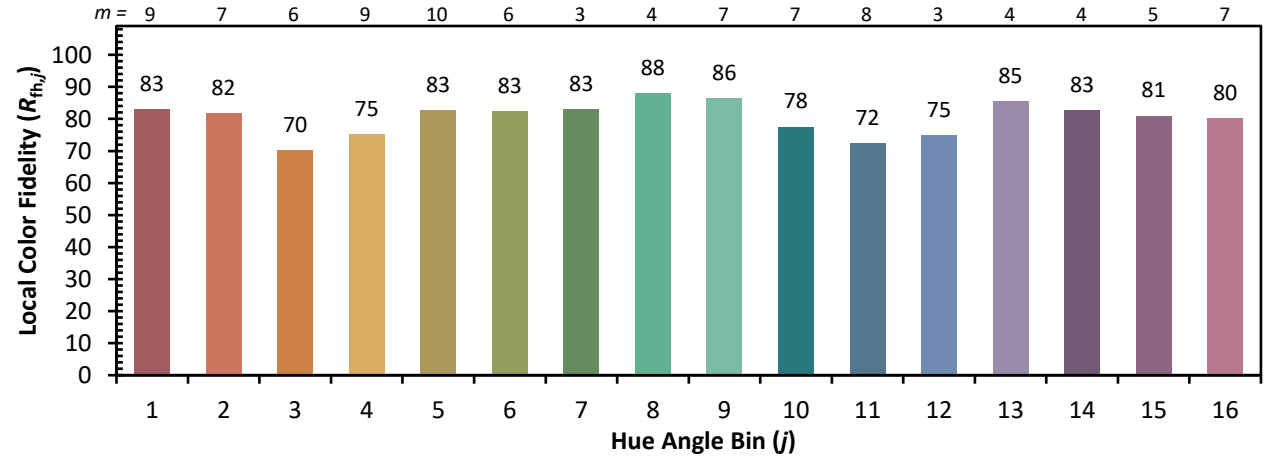
## Color Rendition by Hue-Angle Bin



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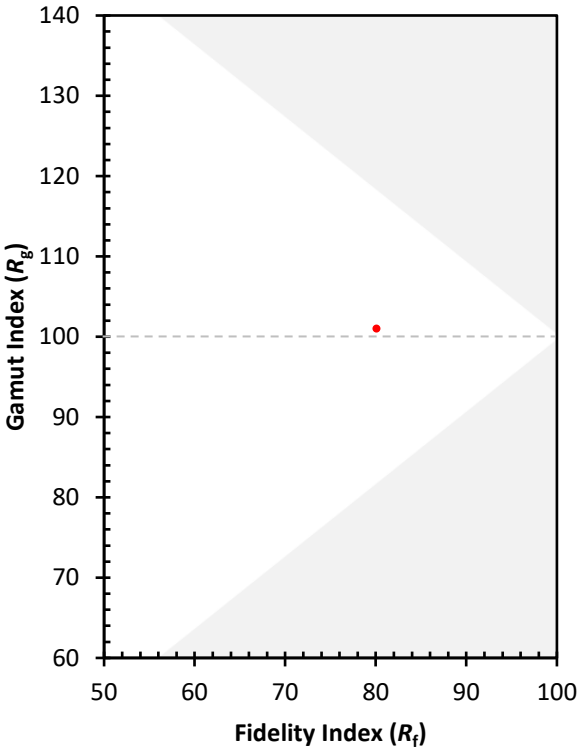
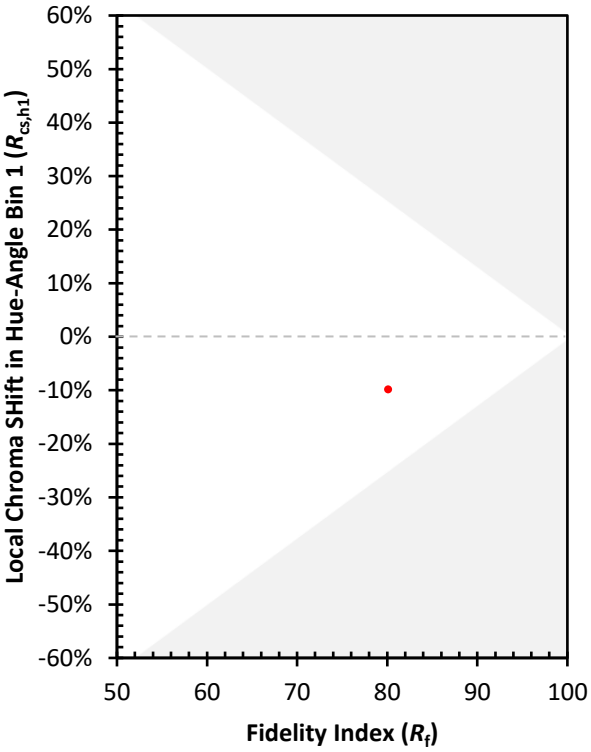
## Measure Comparisons




(END OF REPORT)