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-ASM-L950-UPL40

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: | |
| | REPORT IS A COMBINATION OF REPORTS P1431906 AND P1431635 |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | EHBR1-60-UNV-ASM-L950-UPL40 |
| Description: | Elevate Round Highbay at, 60000 lumens, 5000K 90CRI LEDs with ASM lens |
| Light Source: | - |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 58787.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 162.8 lumens/watt |
| Spacing Criteria (0/90/45): | 0.84 / 0.99 / 0.92 |
| Luminous Opening: | Vertical Cylinder (Dia: 1.71' x H: 0.1') |
| CIE Type: | Direct |

| | |
|---|---|
| Input Watts (W): | 361 |
| 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 |

Cooper Lighting Solutions Photometric Lab
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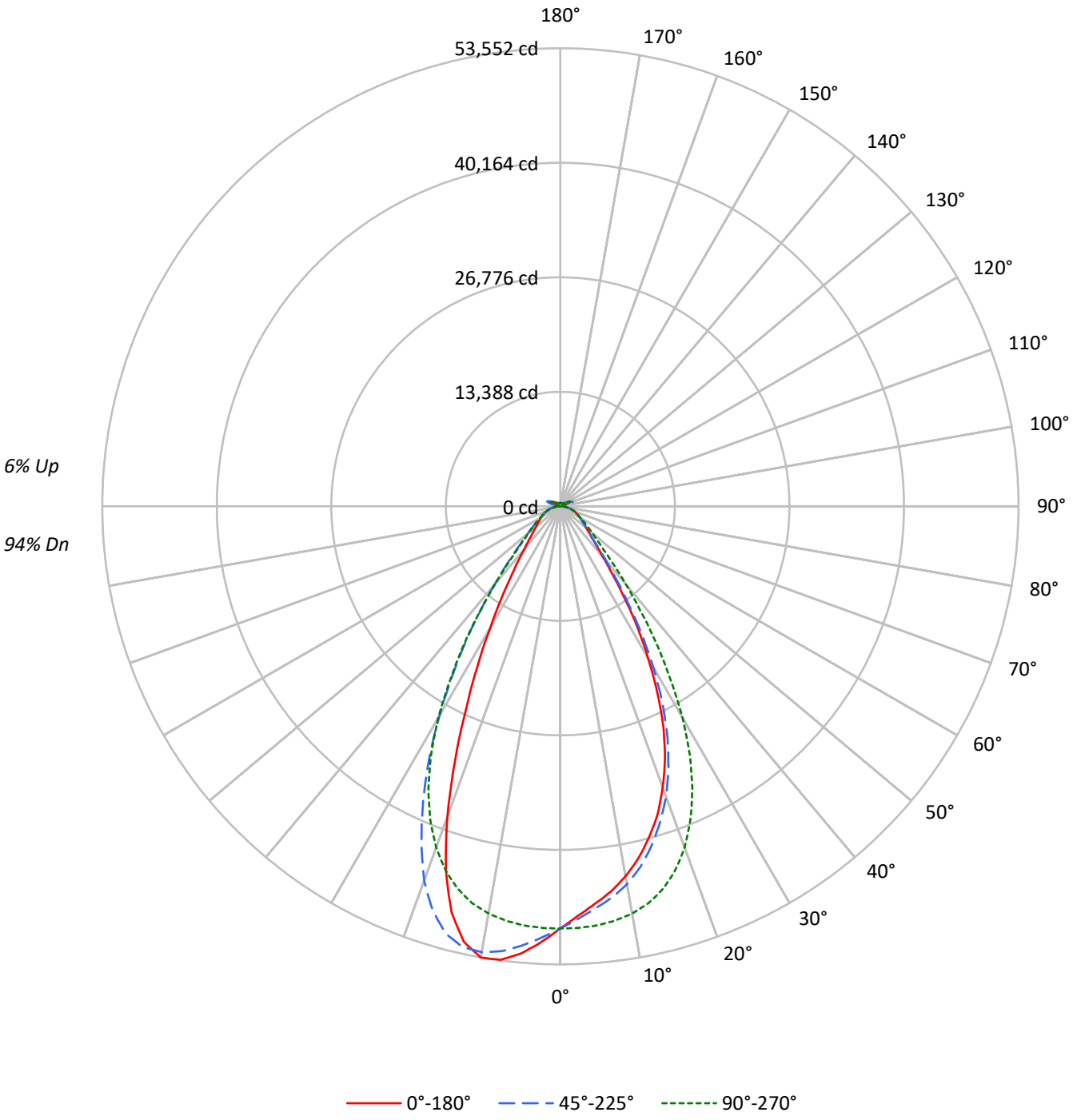
Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-60-UNV-ASM-L950-UPL40

## Luminous Intensity Polar Plot



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Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-60-UNV-ASM-L950-UPL40

## 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 | 118 | 118 | 118 | 118 | 114 | 114 | 114 | 114 | 108 | 108 | 108 | 102 | 102 | 102 | 96 | 96 | 96 | 94 |
| 1 | 110 | 107 | 104 | 101 | 107 | 104 | 101 | 99 | 99 | 97 | 95 | 94 | 92 | 91 | 90 | 88 | 87 | 85 |
| 2 | 103 | 97 | 92 | 88 | 100 | 95 | 91 | 87 | 91 | 87 | 84 | 87 | 84 | 81 | 83 | 81 | 79 | 76 |
| 3 | 97 | 89 | 83 | 78 | 94 | 87 | 82 | 77 | 84 | 79 | 75 | 80 | 77 | 73 | 77 | 74 | 71 | 69 |
| 4 | 91 | 82 | 76 | 70 | 89 | 80 | 74 | 70 | 77 | 72 | 68 | 75 | 70 | 67 | 72 | 68 | 65 | 63 |
| 5 | 86 | 76 | 69 | 64 | 83 | 74 | 68 | 63 | 72 | 66 | 62 | 69 | 65 | 61 | 67 | 63 | 60 | 58 |
| 6 | 81 | 70 | 64 | 59 | 79 | 69 | 63 | 58 | 67 | 61 | 57 | 65 | 60 | 56 | 63 | 59 | 55 | 54 |
| 7 | 76 | 66 | 59 | 54 | 74 | 65 | 58 | 54 | 63 | 57 | 53 | 61 | 56 | 52 | 59 | 55 | 51 | 50 |
| 8 | 72 | 61 | 55 | 50 | 70 | 60 | 54 | 50 | 59 | 53 | 49 | 57 | 52 | 48 | 56 | 51 | 48 | 46 |
| 9 | 68 | 57 | 51 | 46 | 67 | 57 | 50 | 46 | 55 | 50 | 46 | 54 | 49 | 45 | 53 | 48 | 45 | 43 |
| 10 | 65 | 54 | 48 | 43 | 63 | 53 | 47 | 43 | 52 | 47 | 43 | 51 | 46 | 42 | 50 | 45 | 42 | 40 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° | 135° | 180° |
|---|---|---|---|---|---|
| 0° | 231765 | 231765 | 231765 | 231765 | 231765 |
| 5° | 218400 | 220953 | 230354 | 241402 | 245745 |
| 10° | 206697 | 211075 | 227522 | 249153 | 252054 |
| 15° | 190932 | 196032 | 220805 | 246597 | 234237 |
| 20° | 170067 | 175795 | 206508 | 226671 | 187826 |
| 25° | 142523 | 147918 | 182776 | 190126 | 130137 |
| 30° | 106636 | 112819 | 148407 | 146925 | 84664 |
| 35° | 70990 | 75276 | 106442 | 104723 | 54830 |
| 40° | 44770 | 47845 | 68819 | 69262 | 37792 |
| 45° | 31899 | 33226 | 43665 | 45541 | 29273 |
| 50° | 26571 | 26782 | 32426 | 33271 | 24875 |
| 55° | 23454 | 23509 | 26474 | 27173 | 22660 |
| 60° | 21716 | 21531 | 22925 | 23410 | 21585 |
| 65° | 20729 | 20543 | 20898 | 21305 | 20818 |
| 70° | 20133 | 19786 | 19808 | 20187 | 20398 |
| 75° | 19140 | 18562 | 18523 | 19180 | 19732 |
| 80° | 17416 | 16203 | 16272 | 17416 | 18629 |
| 85° | 12680 | 10530 | 10530 | 12034 | 13300 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
Vertical Angle: 45°
Luminance: 61390 cd/sqm

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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-60-UNV-ASM-L950-UPL40

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 4692.7 | 8.0 |
| 10°-20° | 12766.7 | 21.7 |
| 20°-30° | 14972.8 | 25.5 |
| 30°-40° | 10412.6 | 17.7 |
| 40°-50° | 5174.6 | 8.8 |
| 50°-60° | 3094.9 | 5.3 |
| 60°-70° | 2178.3 | 3.7 |
| 70°-80° | 1403.2 | 2.4 |
| 80°-90° | 452.1 | 0.8 |
| 90°-100° | 97.4 | 0.2 |
| 100°-110° | 631.3 | 1.1 |
| 110°-120° | 1165.4 | 2.0 |
| 120°-130° | 693.4 | 1.2 |
| 130°-140° | 420.4 | 0.7 |
| 140°-150° | 291.9 | 0.5 |
| 150°-160° | 191.6 | 0.3 |
| 160°-170° | 111.1 | 0.2 |
| 170°-180° | 37.2 | 0.1 |
| 0°-30° | 32432.2 | 55.2 |
| 0°-40° | 42844.8 | 72.9 |
| 0°-60° | 51114.3 | 86.9 |
| 0°-90° | 55148.0 | 93.8 |
| 90°-120° | 1894.2 | 3.2 |
| 90°-150° | 3299.9 | 5.6 |
| 90°-180° | 3640.0 | 6.2 |
| 0°-180° | 58787.9 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 45° | 90° | 135° | 180° | Flux |
|---|---|---|---|---|---|---|
| 0° | 49353 | 49353 | 49353 | 49353 | 49353 | |
| 5° | 46632 | 47177 | 49184 | 51543 | 52470 | 4374 |
| 15° | 40057 | 41126 | 46324 | 51735 | 49142 | 11171 |
| 25° | 28462 | 29539 | 36500 | 37968 | 25988 | 12842 |
| 35° | 13029 | 13816 | 19536 | 19220 | 10063 | 8300 |
| 45° | 5161 | 5376 | 7065 | 7368 | 4736 | 4172 |
| 55° | 3170 | 3177 | 3578 | 3672 | 3062 | 2876 |
| 65° | 2164 | 2144 | 2181 | 2224 | 2173 | 2149 |
| 75° | 1348 | 1308 | 1305 | 1351 | 1390 | 1423 |
| 85° | 436 | 362 | 362 | 414 | 457 | 449 |
| 90° | 27 | 73 | 27 | 79 | 33 | 34 |
| 95° | 45 | 163 | 52 | 141 | 52 | 44 |
| 105° | 220 | 1100 | 290 | 1175 | 150 | 294 |
| 115° | 1007 | 1301 | 1240 | 1441 | 1061 | 928 |
| 125° | 728 | 698 | 795 | 774 | 834 | 663 |
| 135° | 532 | 537 | 504 | 562 | 583 | 417 |
| 145° | 445 | 466 | 458 | 468 | 478 | 282 |
| 155° | 398 | 410 | 409 | 409 | 427 | 186 |
| 165° | 382 | 390 | 389 | 389 | 403 | 109 |
| 175° | 384 | 390 | 391 | 390 | 400 | 37 |
| 180° | 391 | 391 | 391 | 391 | 391 | |

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Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-60-UNV-ASM-L950-UPL40

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|---|---|---|---|---|---|---|---|---|---|
| 0° | 49352.7 | 49352.7 | 49352.7 | 49352.7 | 49352.7 | 49352.7 | 49352.7 | 49352.7 | 49352.7 |
| 2.5° | 47887.7 | 47919.1 | 48254.2 | 48690.0 | 49324.0 | 49961.6 | 50478.0 | 50818.5 | 50987.0 |
| 5° | 46631.9 | 46805.9 | 47177.0 | 47977.5 | 49184.2 | 50461.3 | 51543.2 | 52251.1 | 52470.5 |
| 7.5° | 45408.4 | 45509.3 | 46130.3 | 47141.8 | 48850.1 | 50839.8 | 52447.4 | 53273.7 | 53475.5 |
| 10° | 43915.7 | 44144.3 | 44845.8 | 46038.7 | 48340.2 | 51078.6 | 52936.0 | 53528.2 | 53552.3 |
| 12.5° | 42159.2 | 42461.8 | 43186.4 | 44691.2 | 47526.8 | 50993.5 | 52772.2 | 52577.8 | 52136.4 |
| 15° | 40056.6 | 40322.2 | 41126.5 | 42871.8 | 46323.7 | 50489.1 | 51734.7 | 50153.2 | 49141.7 |
| 17.5° | 37785.6 | 38026.2 | 38724.9 | 40647.1 | 44628.3 | 49545.2 | 49569.3 | 46440.3 | 44532.1 |
| 20° | 34953.7 | 35142.5 | 36130.9 | 38017.0 | 42443.3 | 48031.1 | 46587.4 | 40864.6 | 38603.7 |
| 22.5° | 31940.5 | 32117.3 | 32995.5 | 34958.4 | 39704.0 | 45989.7 | 42435.1 | 35255.5 | 32170.9 |
| 25° | 28461.8 | 28558.1 | 29539.0 | 31314.0 | 36500.2 | 43488.2 | 37968.0 | 29143.9 | 25988.2 |
| 27.5° | 24548.1 | 24711.9 | 25738.3 | 27551.2 | 32731.8 | 40317.6 | 33211.2 | 23815.2 | 20903.8 |
| 30° | 20511.4 | 20782.5 | 21700.6 | 23323.8 | 28546.0 | 36253.1 | 28261.0 | 18965.9 | 16285.0 |
| 32.5° | 16743.9 | 16939.2 | 17593.5 | 19289.8 | 23859.6 | 32269.1 | 23507.0 | 15196.6 | 12925.6 |
| 35° | 13029.2 | 13224.5 | 13815.8 | 15481.6 | 19536.0 | 27284.6 | 19220.4 | 11940.9 | 10063.2 |
| 37.5° | 9959.5 | 10304.7 | 10684.2 | 12036.2 | 15331.7 | 22575.1 | 15321.6 | 9615.3 | 8162.4 |
| 40° | 7759.8 | 7815.3 | 8292.8 | 9158.1 | 11928.0 | 17651.8 | 12004.8 | 7675.6 | 6550.3 |
| 42.5° | 6211.5 | 6362.4 | 6567.8 | 7215.6 | 9037.9 | 13497.5 | 9435.8 | 6299.5 | 5563.7 |
| 45° | 5161.1 | 5220.4 | 5375.9 | 5810.9 | 7064.8 | 9932.7 | 7368.3 | 5314.8 | 4736.3 |
| 47.5° | 4515.2 | 4489.3 | 4589.3 | 4915.0 | 5753.4 | 7676.5 | 5971.9 | 4558.7 | 4153.3 |
| 50° | 3960.0 | 3944.2 | 3991.4 | 4208.9 | 4832.6 | 5890.4 | 4958.5 | 3979.4 | 3707.3 |
| 52.5° | 3528.7 | 3542.6 | 3547.2 | 3682.4 | 4151.5 | 4804.0 | 4222.7 | 3546.2 | 3363.0 |
| 55° | 3169.6 | 3187.2 | 3177.0 | 3277.0 | 3577.7 | 4038.6 | 3672.1 | 3189.1 | 3062.3 |
| 57.5° | 2889.2 | 2876.3 | 2862.4 | 2916.0 | 3141.9 | 3426.0 | 3189.1 | 2884.6 | 2800.3 |
| 60° | 2610.6 | 2598.6 | 2588.4 | 2623.6 | 2755.9 | 2966.9 | 2814.3 | 2619.0 | 2594.9 |
| 62.5° | 2371.9 | 2364.5 | 2363.6 | 2357.1 | 2458.9 | 2592.1 | 2488.5 | 2380.2 | 2358.9 |
| 65° | 2163.6 | 2155.4 | 2144.2 | 2134.1 | 2181.3 | 2305.2 | 2223.8 | 2165.5 | 2172.9 |
| 67.5° | 1955.4 | 1955.4 | 1936.0 | 1920.3 | 1966.6 | 2031.3 | 1996.2 | 1962.8 | 1971.2 |
| 70° | 1766.6 | 1767.5 | 1736.1 | 1724.1 | 1738.0 | 1807.4 | 1771.3 | 1775.9 | 1789.8 |
| 72.5° | 1564.0 | 1541.8 | 1518.6 | 1517.7 | 1519.6 | 1573.3 | 1561.2 | 1572.3 | 1587.1 |
| 75° | 1348.3 | 1322.4 | 1307.6 | 1291.0 | 1304.8 | 1345.5 | 1351.1 | 1366.9 | 1390.0 |
| 77.5° | 1140.1 | 1100.3 | 1088.3 | 1080.0 | 1070.7 | 1117.0 | 1134.5 | 1155.9 | 1190.1 |
| 80° | 916.2 | 872.7 | 852.4 | 840.3 | 856.0 | 877.3 | 916.2 | 931.9 | 980.0 |
| 82.5° | 677.4 | 645.0 | 620.0 | 619.2 | 626.5 | 645.9 | 679.3 | 708.9 | 736.7 |
| 85° | 435.8 | 384.1 | 361.9 | 370.2 | 361.9 | 391.4 | 413.6 | 448.9 | 457.1 |
| 87.5° | 157.3 | 123.1 | 117.5 | 129.5 | 126.8 | 136.0 | 155.4 | 169.4 | 170.3 |
| 90° | 26.9 | 43.0 | 73.0 | 47.0 | 26.9 | 45.9 | 78.9 | 45.6 | 33.4 |
| 92.5° | 38.9 | 65.0 | 117.1 | 60.9 | 34.9 | 61.9 | 110.9 | 59.6 | 43.5 |
| 95° | 45.0 | 75.0 | 163.1 | 81.0 | 51.9 | 75.9 | 140.9 | 65.6 | 51.5 |
| 97.5° | 57.9 | 83.0 | 187.1 | 99.0 | 79.9 | 93.9 | 159.0 | 69.7 | 61.5 |
| 100° | 75.9 | 97.0 | 291.3 | 122.0 | 106.0 | 106.0 | 289.0 | 79.6 | 69.5 |
| 102.5° | 128.0 | 205.1 | 617.6 | 228.1 | 160.0 | 207.0 | 668.4 | 156.6 | 83.5 |
| 105° | 220.1 | 431.4 | 1100.1 | 476.4 | 290.2 | 471.2 | 1175.0 | 398.9 | 150.5 |
| 107.5° | 380.3 | 771.7 | 1451.4 | 842.7 | 548.5 | 877.7 | 1513.2 | 783.3 | 344.7 |
| 110° | 708.6 | 1024.0 | 1521.4 | 1157.0 | 876.8 | 1226.1 | 1651.4 | 1071.6 | 693.1 |

Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER:
CATALOG NUMBER: EHBR1-60-UNV-ASM-L950-UPL40

**CANDELA DISTRIBUTION (continued):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 956.9 | 1100.1 | 1457.4 | 1277.2 | 1141.0 | 1366.2 | 1613.4 | 1187.8 | *957.4* |
| 115° | 1006.9 | 1058.1 | 1301.2 | 1247.1 | 1240.1 | 1346.2 | 1441.2 | 1183.7 | *1061.4* |
| 117.5° | 972.9 | 965.9 | 1105.0 | 1122.0 | 1198.0 | 1232.1 | 1245.0 | 1111.7 | *1067.5* |
| 120° | 900.8 | 859.8 | 922.8 | 979.8 | 1082.0 | 1067.9 | 1049.7 | 1005.6 | *1007.4* |
| 122.5° | 810.7 | 762.6 | 791.6 | 834.6 | 936.7 | 906.6 | 887.6 | 898.4 | *925.3* |
| 125° | 727.5 | 678.5 | 698.4 | 709.4 | 794.6 | 764.5 | 774.4 | 806.3 | *834.2* |
| 127.5° | 653.4 | 620.5 | 632.4 | 621.3 | 675.4 | 661.3 | 692.3 | 728.1 | *752.0* |
| 130° | 603.5 | 575.4 | 591.3 | 564.2 | 590.2 | 593.2 | 634.2 | 665.1 | *680.0* |
| 132.5° | 562.3 | 544.3 | 563.0 | 530.0 | 537.0 | 552.2 | 591.1 | 618.0 | *626.9* |
| 135° | 532.3 | 517.1 | 537.0 | 506.9 | 504.0 | 526.2 | 562.0 | 578.9 | *582.8* |
| 137.5° | 507.2 | 494.1 | 514.9 | 491.8 | 484.9 | 507.0 | 534.0 | 547.9 | *544.7* |
| 140° | 485.0 | 473.9 | 495.8 | 477.8 | 473.8 | 496.0 | 507.9 | 523.8 | *521.7* |
| 142.5° | 460.8 | 452.9 | 478.7 | 466.7 | 462.7 | 482.9 | 488.9 | 500.7 | *497.6* |
| 145° | 444.7 | 438.6 | 465.6 | 458.7 | 457.6 | 472.7 | 467.8 | 482.7 | *478.5* |
| 147.5° | 430.5 | 426.5 | 450.4 | 447.6 | 447.6 | 458.7 | 452.7 | 465.6 | *461.4* |
| 150° | 418.3 | 414.3 | 437.3 | 434.5 | 436.4 | 444.4 | 435.6 | 450.4 | *450.3* |
| 152.5° | 406.1 | 401.2 | 422.3 | 419.3 | 421.4 | 429.3 | 421.4 | 438.3 | *437.2* |
| 155° | 397.9 | 393.0 | 410.1 | 408.3 | 409.2 | 413.2 | 409.2 | 426.1 | *427.0* |
| 157.5° | 392.7 | 388.8 | 401.9 | 401.0 | 401.0 | 404.0 | 401.9 | 416.9 | *417.8* |
| 160° | 388.6 | 385.7 | 396.7 | 395.8 | 394.8 | 398.8 | 397.7 | 410.6 | *411.5* |
| 162.5° | 384.5 | 381.5 | 394.6 | 392.6 | 392.6 | 392.6 | 392.5 | 405.4 | *407.2* |
| 165° | 382.3 | 381.4 | 390.4 | 390.4 | 389.4 | 391.3 | 389.2 | 399.1 | *403.0* |
| 167.5° | 382.3 | 380.3 | 390.3 | 390.3 | 389.2 | 387.3 | 389.1 | 397.8 | *401.7* |
| 170° | 382.1 | 381.2 | 389.2 | 388.2 | 386.1 | 387.1 | 387.0 | 395.7 | *399.5* |
| 172.5° | 384.0 | 383.1 | 392.0 | 390.0 | 388.9 | 388.9 | 387.7 | 394.4 | *400.3* |
| 175° | 383.9 | 383.0 | 389.9 | 389.9 | 390.8 | 389.8 | 389.5 | 394.3 | *400.2* |
| 177.5° | 386.8 | 385.9 | 389.9 | 389.9 | 388.8 | 390.7 | 392.5 | 397.2 | *405.1* |
| 180° | 390.7 | 390.7 | 390.7 | 390.7 | 390.7 | 390.7 | 390.7 | 390.7 | *390.7* |

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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: CATALOG
CATALOG NUMBER: EHBR1-60-UNV-ASM-L950-UPL40

**CIE UGR TABLE:**

| Reflectances: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ceiling | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| | Wall | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| | Reference plane | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 18.92 | 20.03 | 19.39 | 20.47 | 20.95 | 19.68 | 20.80 | 20.16 | 21.24 | 21.71 |
| | 3H | 20.73 | 21.72 | 21.22 | 22.18 | 22.70 | 21.24 | 22.23 | 21.73 | 22.69 | 23.21 |
| | 4H | 21.47 | 22.39 | 21.98 | 22.87 | 23.41 | 21.89 | 22.81 | 22.40 | 23.29 | 23.83 |
| | 6H | 22.04 | 22.89 | 22.56 | 23.38 | 23.93 | 22.39 | 23.24 | 22.91 | 23.73 | 24.27 |
| | 8H | 22.22 | 23.03 | 22.76 | 23.54 | 24.09 | 22.54 | 23.35 | 23.08 | 23.86 | 24.41 |
| | 12H | 22.32 | 23.09 | 22.86 | 23.59 | 24.17 | 22.62 | 23.39 | 23.16 | 23.89 | 24.47 |
| 4H | 2H | 19.43 | 20.36 | 19.95 | 20.83 | 21.37 | 20.06 | 20.99 | 20.58 | 21.46 | 22.00 |
| | 3H | 21.47 | 22.24 | 22.00 | 22.76 | 23.31 | 21.87 | 22.63 | 22.39 | 23.16 | 23.71 |
| | 4H | 22.34 | 23.02 | 22.88 | 23.56 | 24.15 | 22.66 | 23.34 | 23.20 | 23.88 | 24.47 |
| | 6H | 23.03 | 23.62 | 23.60 | 24.18 | 24.79 | 23.29 | 23.88 | 23.86 | 24.44 | 25.05 |
| | 8H | 23.26 | 23.81 | 23.83 | 24.37 | 24.98 | 23.50 | 24.05 | 24.07 | 24.61 | 25.22 |
| | 12H | 23.39 | 23.88 | 23.98 | 24.47 | 25.09 | 23.61 | 24.10 | 24.20 | 24.69 | 25.31 |
| 8H | 4H | 22.60 | 23.15 | 23.17 | 23.71 | 24.32 | 22.90 | 23.45 | 23.47 | 24.01 | 24.63 |
| | 6H | 23.41 | 23.86 | 24.02 | 24.47 | 25.09 | 23.66 | 24.11 | 24.27 | 24.72 | 25.34 |
| | 8H | 23.71 | 24.11 | 24.34 | 24.73 | 25.37 | 23.95 | 24.35 | 24.57 | 24.97 | 25.60 |
| | 12H | 23.92 | 24.27 | 24.53 | 24.87 | 25.58 | 24.13 | 24.48 | 24.75 | 25.08 | 25.79 |
| 12H | 4H | 22.60 | 23.09 | 23.19 | 23.68 | 24.30 | 22.91 | 23.40 | 23.50 | 23.99 | 24.61 |
| | 6H | 23.45 | 23.85 | 24.08 | 24.47 | 25.11 | 23.71 | 24.11 | 24.33 | 24.73 | 25.36 |
| | 8H | 23.80 | 24.15 | 24.42 | 24.75 | 25.46 | 24.04 | 24.39 | 24.66 | 24.99 | 25.70 |

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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: SP1-2506-472-8

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

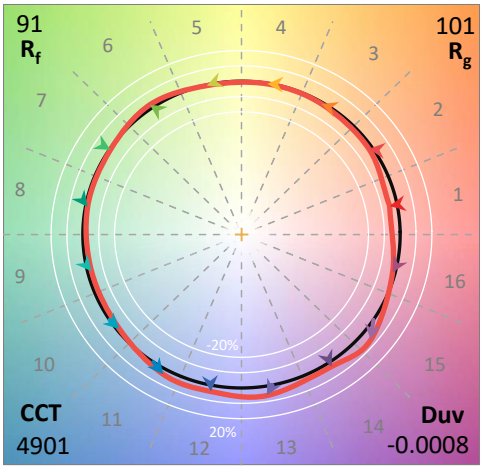
## Test Information

| | |
|---|---|
| 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 |

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| 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 |

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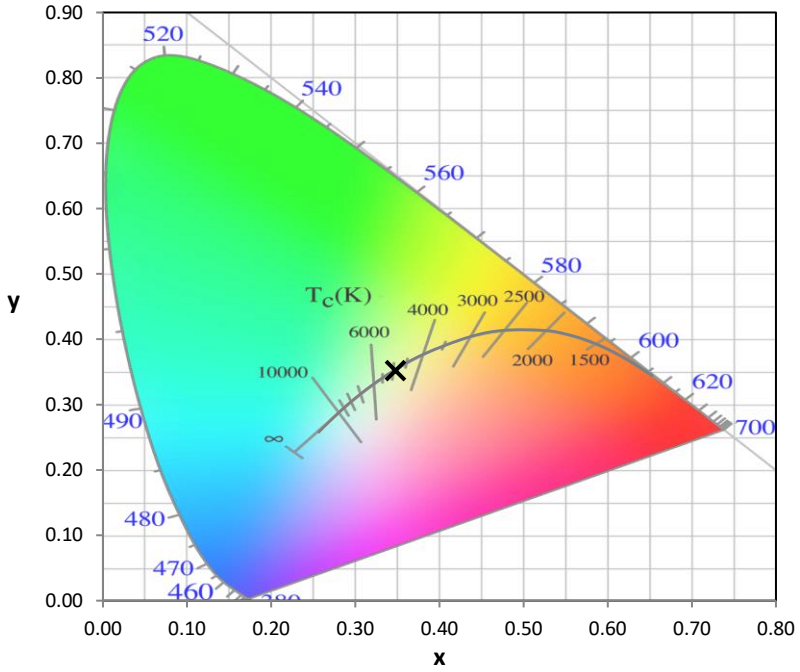
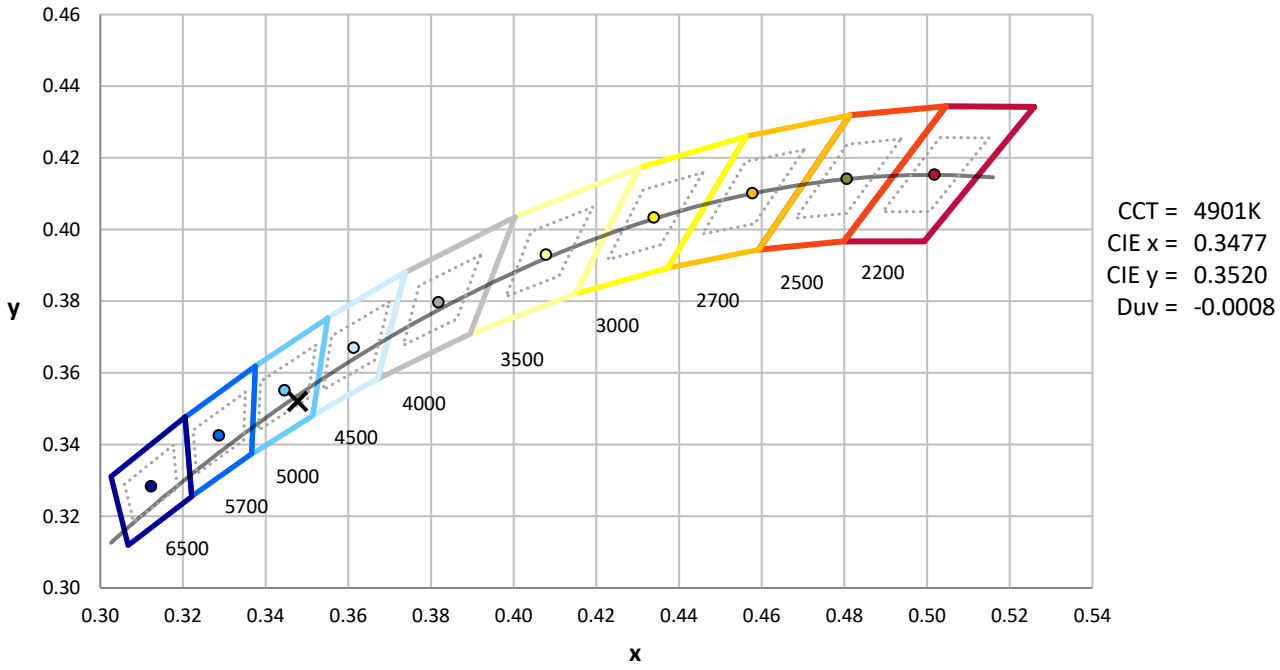
**CIE 1931 Chromaticity Diagram**




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




Point lies inside the ANSI 5000K 4-step quadrangle

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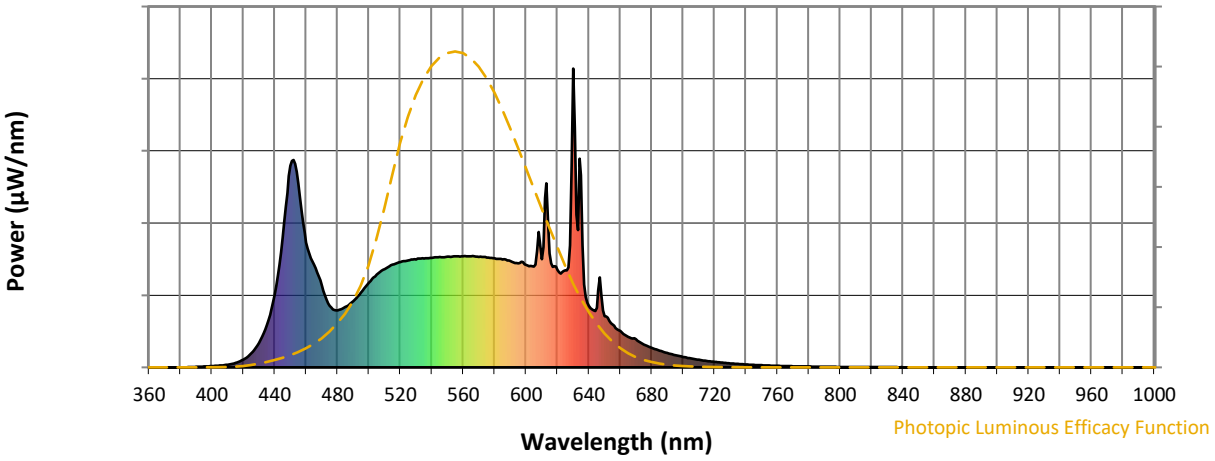
## Photopic Flux vs. Wavelength




## 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 | 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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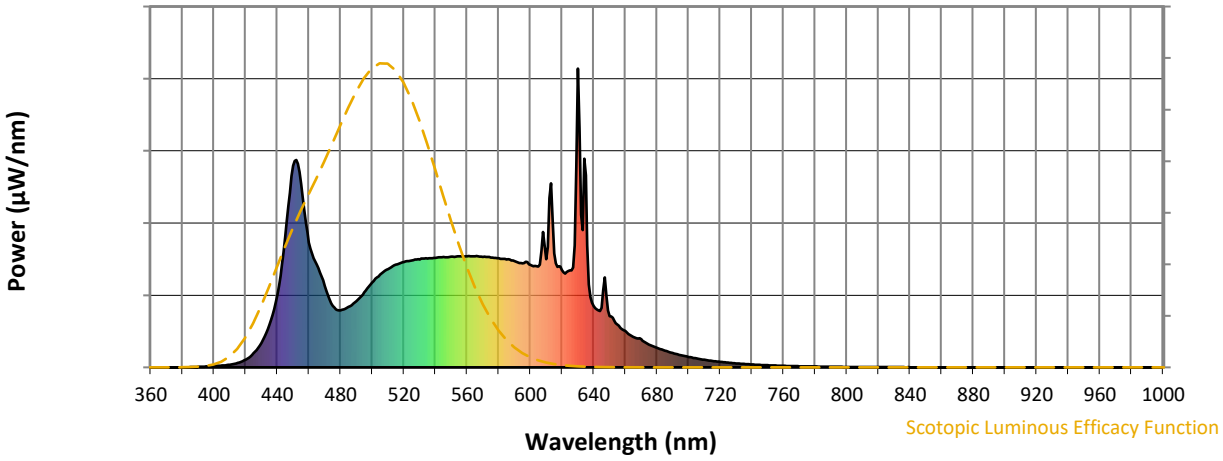
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 2.04**

| 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 | 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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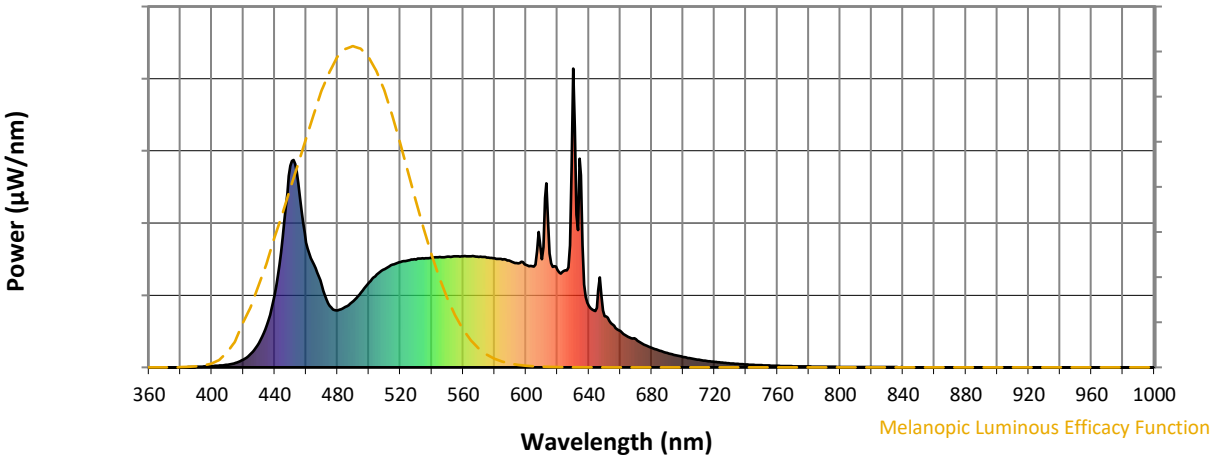
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 4.41**

| λ (nm) | Power W^/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 | 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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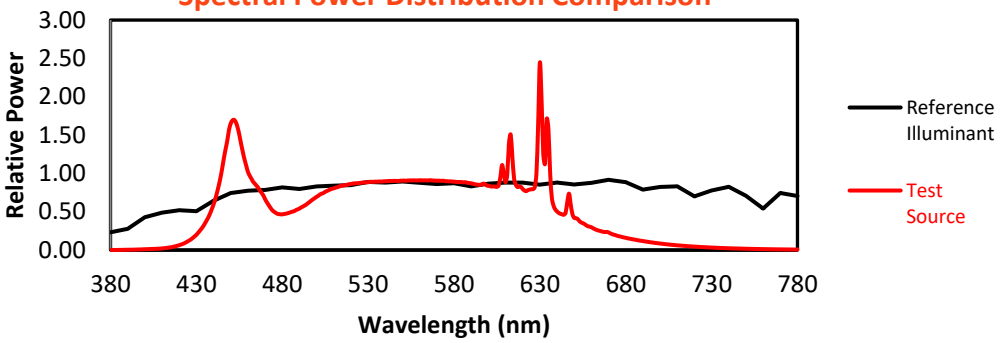
# TM-30-18

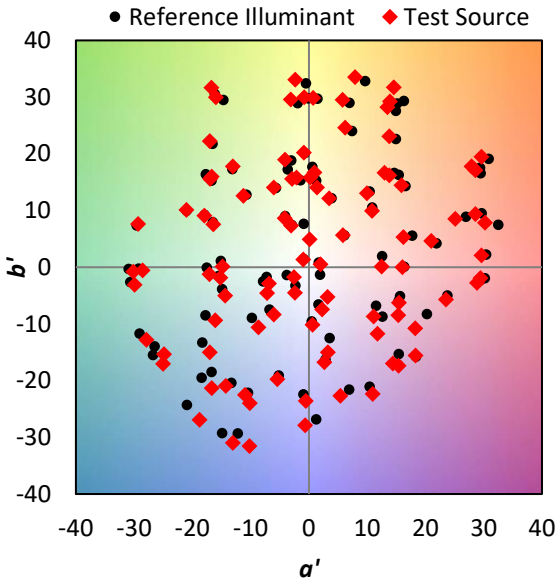
## Summary

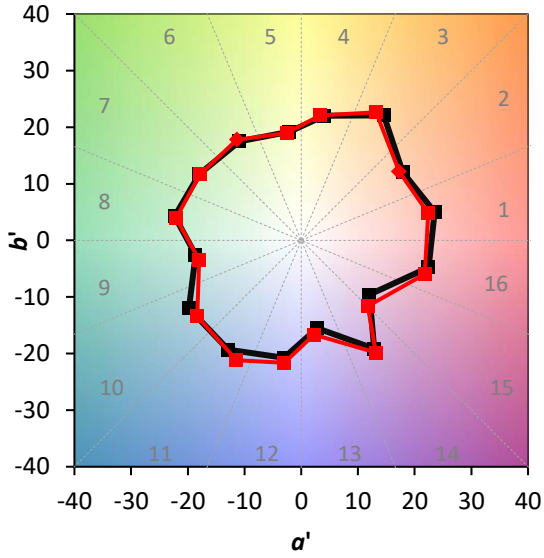
$R_f$ = 90.7
$R_g$ = 100.5
CIE $R_a$ = 94.3
$R_9$ = 72.3

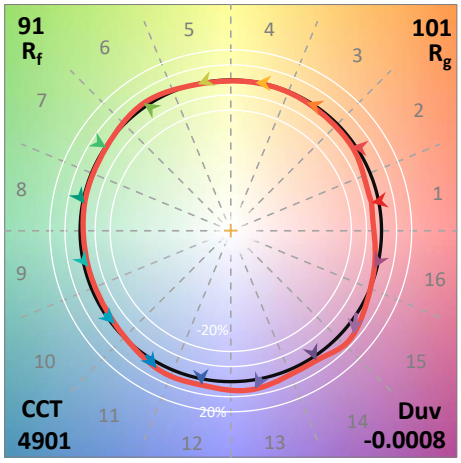
## Spectral Power Distribution Comparison

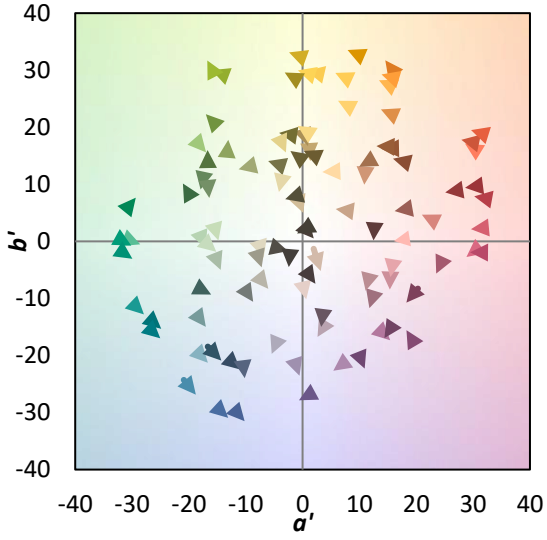



## Color Vector Graphics



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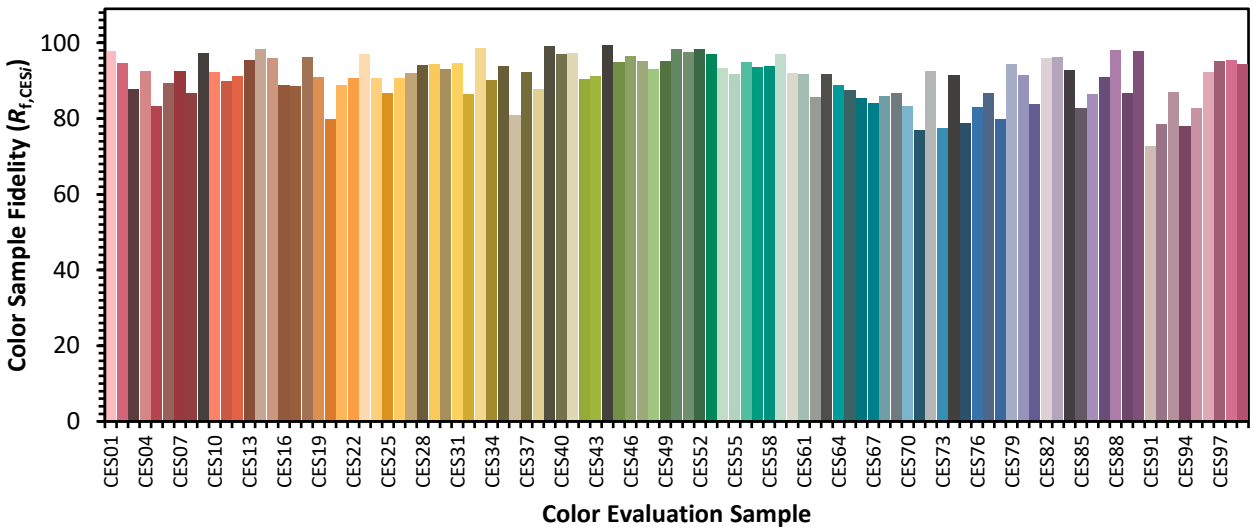
## Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|---|---|---|---|
| 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 | |



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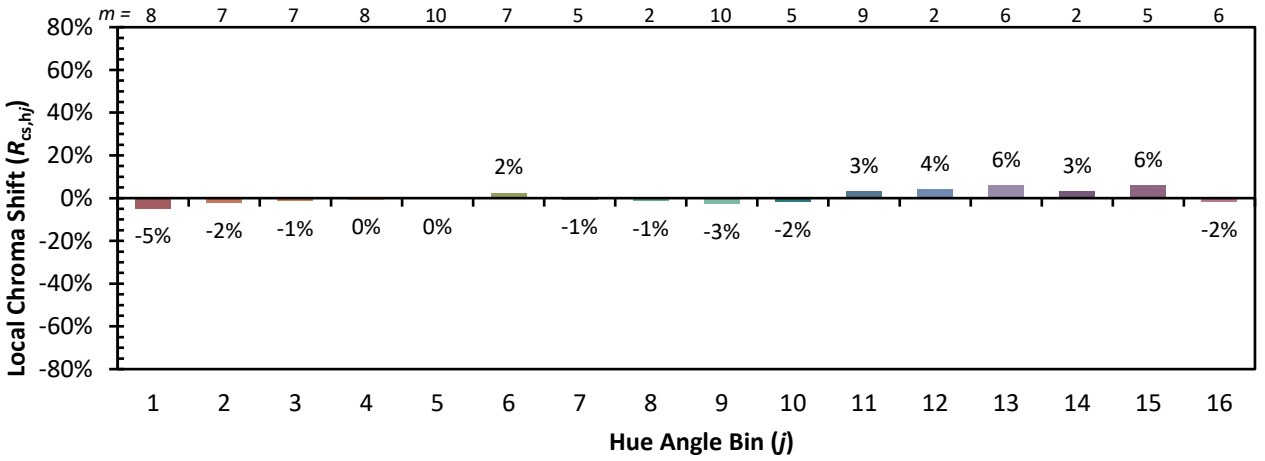
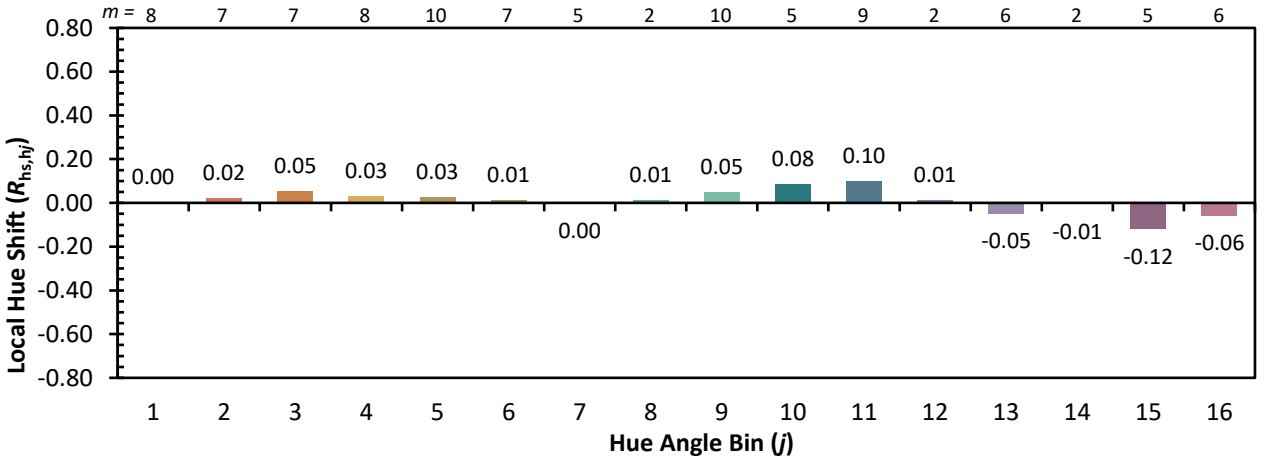
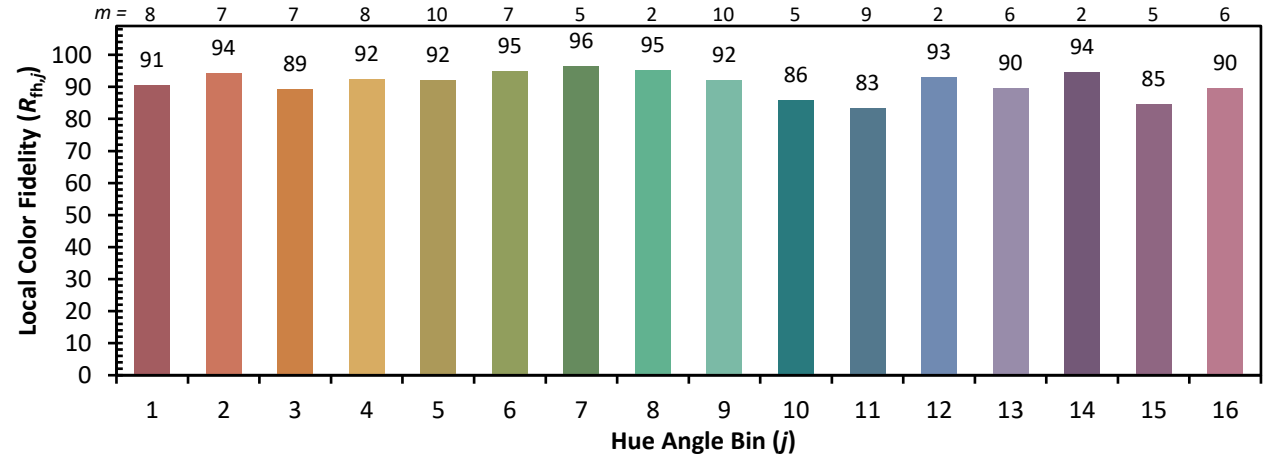
## Color Rendition by Hue-Angle Bin



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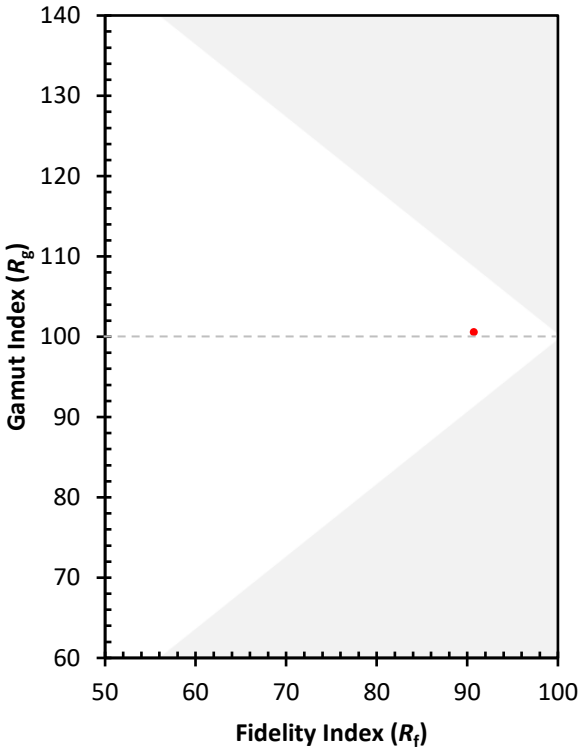
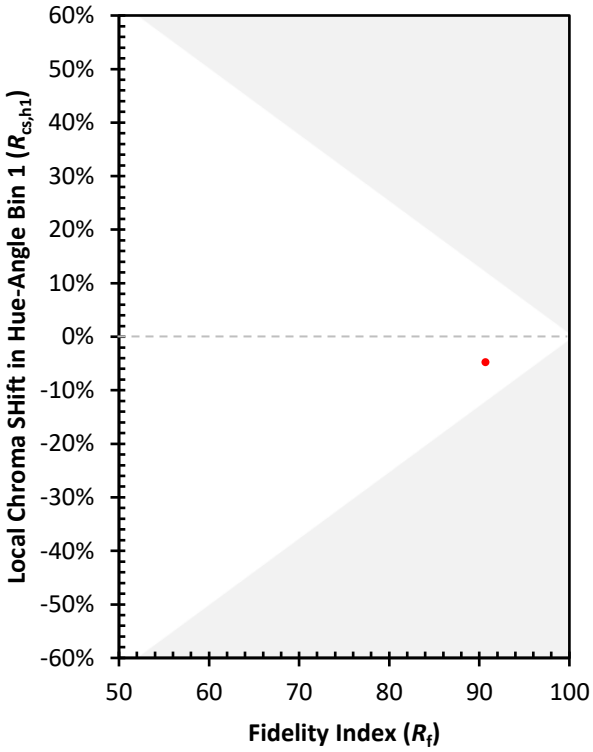
## Measure Comparisons

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