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: P1433707

Luminaire Tested: EHBR1-12-UNV-ASM-L940-UPL12

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: | P1433707 |
| | REPORT IS A COMBINATION OF REPORTS P1431644 AND P1431635 |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/20/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | EHBR1-12-UNV-ASM-L940-UPL12 |
| Description: | Elevate Round Highbay at, 12000 lumens, 4000K 90CRI LEDs with ASM lens |
| Light Source: | - |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 12580.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 174.5 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): | 72.1 |
| 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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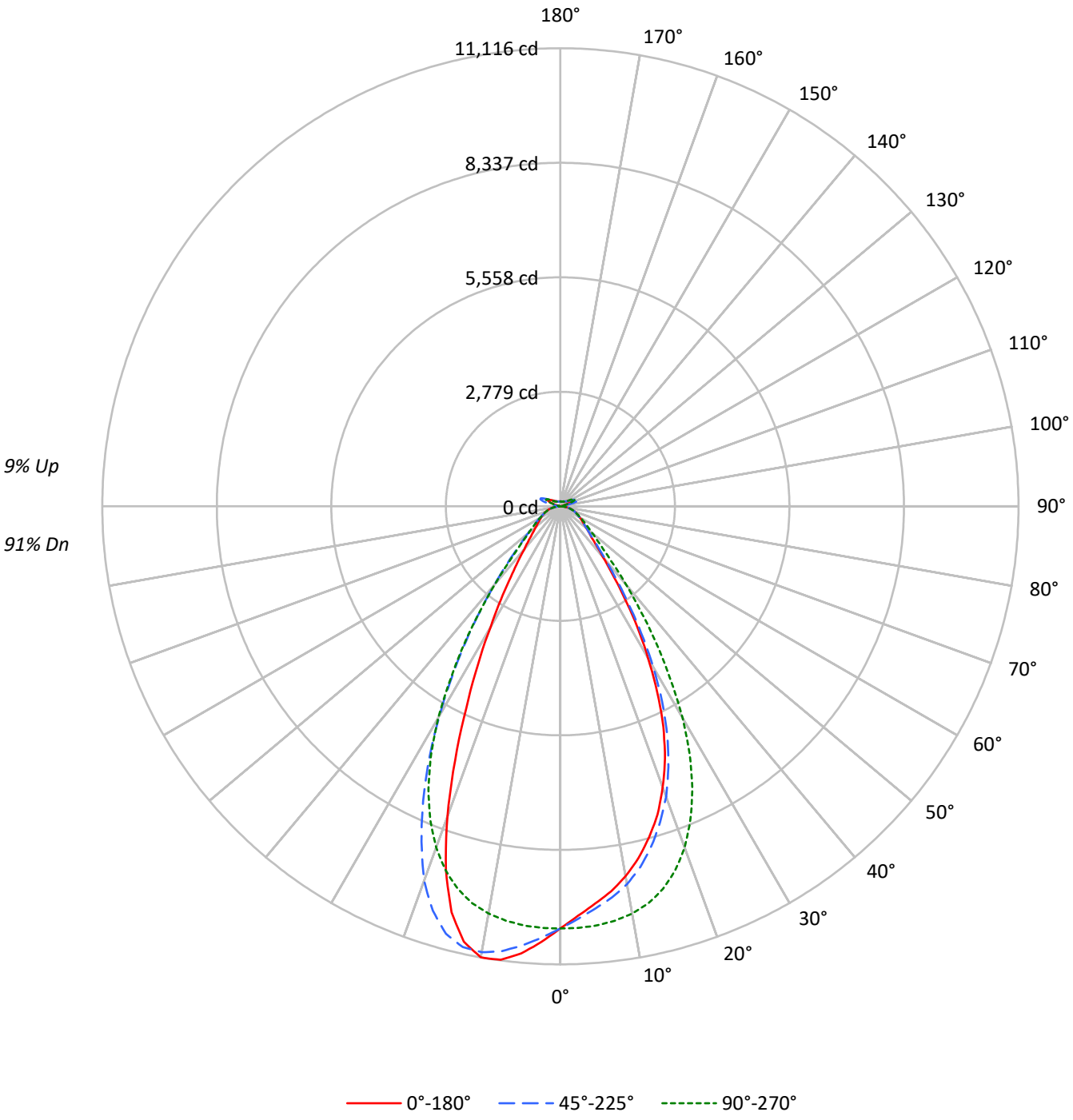
Scaled Data Report

TEST NUMBER: P1433707
CATALOG NUMBER: EHBR1-12-UNV-ASM-L940-UPL12

## Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER: P1433707
CATALOG NUMBER: EHBR1-12-UNV-ASM-L940-UPL12

## 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 | 85 | 82 |
| 2 | 103 | 97 | 92 | 87 | 99 | 94 | 90 | 86 | 89 | 86 | 83 | 85 | 82 | 79 | 81 | 79 | 76 | 74 |
| 3 | 96 | 88 | 82 | 78 | 93 | 86 | 81 | 76 | 82 | 78 | 74 | 79 | 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 | 74 | 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 | 55 | 51 | 58 | 53 | 50 | 48 |
| 8 | 71 | 61 | 54 | 49 | 69 | 60 | 53 | 49 | 58 | 52 | 48 | 56 | 51 | 47 | 54 | 50 | 47 | 45 |
| 9 | 68 | 57 | 50 | 46 | 66 | 56 | 50 | 45 | 54 | 49 | 45 | 53 | 48 | 44 | 51 | 47 | 43 | 42 |
| 10 | 64 | 53 | 47 | 43 | 63 | 53 | 46 | 42 | 51 | 46 | 42 | 50 | 45 | 41 | 48 | 44 | 41 | 39 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° | 135° | 180° |
|---|---|---|---|---|---|
| 0° | 48108 | 48108 | 48108 | 48108 | 48108 |
| 5° | 45333 | 45864 | 47815 | 50108 | 51010 |
| 10° | 42905 | 43813 | 47227 | 51717 | 52319 |
| 15° | 39633 | 40691 | 45833 | 51186 | 48621 |
| 20° | 35301 | 36490 | 42865 | 47050 | 38987 |
| 25° | 29584 | 30703 | 37939 | 39465 | 27013 |
| 30° | 22135 | 23418 | 30805 | 30498 | 17574 |
| 35° | 14736 | 15625 | 22094 | 21737 | 11381 |
| 40° | 9293 | 9932 | 14285 | 14377 | 7844 |
| 45° | 6621 | 6896 | 9063 | 9453 | 6077 |
| 50° | 5515 | 5559 | 6731 | 6906 | 5163 |
| 55° | 4868 | 4879 | 5495 | 5641 | 4704 |
| 60° | 4508 | 4469 | 4758 | 4859 | 4481 |
| 65° | 4303 | 4263 | 4338 | 4422 | 4321 |
| 70° | 4179 | 4107 | 4111 | 4189 | 4234 |
| 75° | 3973 | 3853 | 3844 | 3980 | 4095 |
| 80° | 3614 | 3363 | 3378 | 3614 | 3868 |
| 85° | 2633 | 2185 | 2185 | 2499 | 2761 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
Vertical Angle: 45°
Luminance: 12743 cd/sqm

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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1433707
CATALOG NUMBER: EHBR1-12-UNV-ASM-L940-UPL12

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 974.1 | 7.7 |
| 10°-20° | 2650.0 | 21.1 |
| 20°-30° | 3107.9 | 24.7 |
| 30°-40° | 2161.4 | 17.2 |
| 40°-50° | 1074.1 | 8.5 |
| 50°-60° | 642.4 | 5.1 |
| 60°-70° | 452.2 | 3.6 |
| 70°-80° | 291.3 | 2.3 |
| 80°-90° | 94.5 | 0.8 |
| 90°-100° | 30.2 | 0.2 |
| 100°-110° | 197.0 | 1.6 |
| 110°-120° | 363.9 | 2.9 |
| 120°-130° | 216.3 | 1.7 |
| 130°-140° | 130.8 | 1.0 |
| 140°-150° | 90.6 | 0.7 |
| 150°-160° | 59.1 | 0.5 |
| 160°-170° | 34.0 | 0.3 |
| 170°-180° | 11.3 | 0.1 |
| 0°-30° | 6732.0 | 53.5 |
| 0°-40° | 8893.4 | 70.7 |
| 0°-60° | 10609.9 | 84.3 |
| 0°-90° | 11447.8 | 91.0 |
| 90°-120° | 591.0 | 4.7 |
| 90°-150° | 1028.7 | 8.2 |
| 90°-180° | 1133.0 | 9.0 |
| 0°-180° | 12580.9 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 45° | 90° | 135° | 180° | Flux |
|---|---|---|---|---|---|---|
| 0° | 10244 | 10244 | 10244 | 10244 | 10244 | |
| 5° | 9679 | 9793 | 10209 | 10699 | 10891 | 908 |
| 15° | 8315 | 8537 | 9616 | 10739 | 10200 | 2319 |
| 25° | 5908 | 6131 | 7576 | 7881 | 5394 | 2666 |
| 35° | 2704 | 2868 | 4055 | 3990 | 2089 | 1723 |
| 45° | 1071 | 1116 | 1466 | 1530 | 983 | 866 |
| 55° | 658 | 659 | 743 | 762 | 636 | 597 |
| 65° | 449 | 445 | 453 | 462 | 451 | 446 |
| 75° | 280 | 271 | 271 | 280 | 288 | 295 |
| 85° | 90 | 75 | 75 | 86 | 95 | 93 |
| 90° | 8 | 23 | 8 | 24 | 10 | 8 |
| 95° | 14 | 51 | 16 | 44 | 15 | 14 |
| 105° | 69 | 344 | 90 | 367 | 46 | 92 |
| 115° | 314 | 406 | 387 | 450 | 331 | 290 |
| 125° | 227 | 218 | 248 | 241 | 260 | 207 |
| 135° | 166 | 167 | 157 | 175 | 181 | 130 |
| 145° | 138 | 144 | 142 | 145 | 148 | 87 |
| 155° | 122 | 126 | 126 | 126 | 132 | 57 |
| 165° | 117 | 120 | 119 | 119 | 123 | 33 |
| 175° | 117 | 118 | 119 | 118 | 121 | 11 |
| 180° | 118 | 118 | 118 | 118 | 118 | |

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Scaled Data Report

TEST NUMBER: P1433707
CATALOG NUMBER: EHBR1-12-UNV-ASM-L940-UPL12

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|---|---|---|---|---|---|---|---|---|---|
| 0° | 10244.2 | 10244.2 | 10244.2 | 10244.2 | 10244.2 | 10244.2 | 10244.2 | 10244.2 | 10244.2 |
| 2.5° | 9940.1 | 9946.6 | 10016.2 | 10106.7 | 10238.2 | 10370.6 | 10477.8 | 10548.5 | 10583.4 |
| 5° | 9679.4 | 9715.6 | 9792.6 | 9958.7 | 10209.3 | 10474.3 | 10698.9 | 10845.9 | 10891.4 |
| 7.5° | 9425.5 | 9446.4 | 9575.4 | 9785.3 | 10139.9 | 10552.9 | 10886.6 | 11058.1 | 11100.0 |
| 10° | 9115.7 | 9163.1 | 9308.7 | 9556.4 | 10034.0 | 10602.5 | 10988.0 | 11110.9 | 11115.9 |
| 12.5° | 8751.0 | 8813.8 | 8964.3 | 9276.6 | 9865.2 | 10584.8 | 10954.0 | 10913.7 | 10822.0 |
| 15° | 8314.7 | 8369.7 | 8536.7 | 8899.0 | 9615.5 | 10480.1 | 10738.6 | 10410.4 | 10200.4 |
| 17.5° | 7843.2 | 7893.2 | 8038.2 | 8437.2 | 9263.5 | 10284.2 | 10289.2 | 9639.6 | 9243.6 |
| 20° | 7255.4 | 7294.6 | 7499.8 | 7891.2 | 8810.0 | 9969.9 | 9670.2 | 8482.4 | 8013.0 |
| 22.5° | 6630.0 | 6666.7 | 6848.9 | 7256.4 | 8241.4 | 9546.1 | 8808.3 | 7318.1 | 6677.8 |
| 25° | 5907.8 | 5927.9 | 6131.4 | 6499.9 | 7576.4 | 9026.9 | 7881.1 | 6049.5 | 5394.4 |
| 27.5° | 5095.5 | 5129.5 | 5342.5 | 5718.8 | 6794.2 | 8368.8 | 6893.7 | 4943.4 | 4339.0 |
| 30° | 4257.6 | 4313.9 | 4504.4 | 4841.4 | 5925.4 | 7525.1 | 5866.2 | 3936.8 | 3380.3 |
| 32.5° | 3475.6 | 3516.1 | 3651.9 | 4004.0 | 4952.5 | 6698.2 | 4879.4 | 3154.4 | 2683.0 |
| 35° | 2704.5 | 2745.0 | 2867.8 | 3213.5 | 4055.1 | 5663.6 | 3989.6 | 2478.6 | 2088.8 |
| 37.5° | 2067.3 | 2139.0 | 2217.7 | 2498.4 | 3182.4 | 4686.0 | 3180.4 | 1995.9 | 1694.3 |
| 40° | 1610.7 | 1622.3 | 1721.4 | 1900.9 | 2475.9 | 3664.0 | 2491.9 | 1593.2 | 1359.6 |
| 42.5° | 1289.3 | 1320.6 | 1363.3 | 1497.8 | 1876.0 | 2801.7 | 1958.6 | 1307.6 | 1154.9 |
| 45° | 1071.3 | 1083.6 | 1115.8 | 1206.2 | 1466.4 | 2061.7 | 1529.5 | 1103.2 | 983.2 |
| 47.5° | 937.2 | 931.8 | 952.6 | 1020.2 | 1194.3 | 1593.4 | 1239.6 | 946.3 | 862.1 |
| 50° | 822.0 | 818.7 | 828.5 | 873.6 | 1003.1 | 1222.7 | 1029.3 | 826.0 | 769.5 |
| 52.5° | 732.5 | 735.3 | 736.3 | 764.3 | 861.8 | 997.1 | 876.5 | 736.1 | 698.1 |
| 55° | 657.9 | 661.6 | 659.4 | 680.2 | 742.6 | 838.3 | 762.3 | 661.9 | 635.7 |
| 57.5° | 599.7 | 597.0 | 594.1 | 605.3 | 652.2 | 711.1 | 661.9 | 598.8 | 581.3 |
| 60° | 541.9 | 539.4 | 537.3 | 544.5 | 572.0 | 615.8 | 584.1 | 543.6 | 538.7 |
| 62.5° | 492.4 | 490.8 | 490.6 | 489.3 | 510.4 | 538.0 | 516.5 | 494.1 | 489.7 |
| 65° | 449.1 | 447.4 | 445.0 | 443.0 | 452.8 | 478.5 | 461.6 | 449.5 | 451.0 |
| 67.5° | 405.9 | 405.9 | 401.8 | 398.6 | 408.2 | 421.7 | 414.3 | 407.4 | 409.2 |
| 70° | 366.7 | 366.9 | 360.4 | 357.8 | 360.7 | 375.2 | 367.6 | 368.7 | 371.5 |
| 72.5° | 324.7 | 320.0 | 315.3 | 315.0 | 315.5 | 326.5 | 324.0 | 326.4 | 329.4 |
| 75° | 279.9 | 274.5 | 271.4 | 267.9 | 270.8 | 279.3 | 280.4 | 283.7 | 288.5 |
| 77.5° | 236.6 | 228.4 | 225.9 | 224.2 | 222.3 | 231.9 | 235.5 | 239.9 | 247.1 |
| 80° | 190.1 | 181.1 | 176.9 | 174.4 | 177.7 | 182.1 | 190.1 | 193.4 | 203.5 |
| 82.5° | 140.6 | 133.9 | 128.7 | 128.5 | 130.1 | 134.1 | 141.0 | 147.1 | 152.9 |
| 85° | 90.5 | 79.7 | 75.1 | 76.9 | 75.1 | 81.2 | 85.9 | 93.2 | 94.9 |
| 87.5° | 32.7 | 25.5 | 24.4 | 26.9 | 26.3 | 28.2 | 32.2 | 35.1 | 35.3 |
| 90° | 8.3 | 13.3 | 22.7 | 14.5 | 8.3 | 14.2 | 24.3 | 13.6 | 9.6 |
| 92.5° | 12.1 | 20.2 | 36.5 | 18.9 | 10.8 | 19.1 | 34.4 | 18.0 | 12.8 |
| 95° | 14.0 | 23.3 | 50.9 | 25.2 | 16.0 | 23.5 | 43.7 | 19.8 | 15.3 |
| 97.5° | 17.9 | 25.8 | 58.4 | 30.8 | 24.8 | 29.2 | 49.4 | 21.1 | 18.4 |
| 100° | 23.5 | 30.2 | 90.9 | 37.9 | 32.9 | 32.9 | 90.0 | 24.2 | 20.9 |
| 102.5° | 39.8 | 64.0 | 192.9 | 71.1 | 49.8 | 64.4 | 208.5 | 48.3 | 25.2 |
| 105° | 68.6 | 134.7 | 343.7 | 148.7 | 90.5 | 147.0 | 366.8 | 123.9 | 46.2 |
| 107.5° | 118.6 | 241.1 | 453.3 | 263.2 | 171.2 | 274.0 | 472.5 | 244.1 | 106.9 |
| 110° | 221.3 | 319.9 | 475.3 | 361.4 | 273.8 | 382.9 | 515.7 | 334.2 | 215.8 |

Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER: P1433707
CATALOG NUMBER: EHBR1-12-UNV-ASM-L940-UPL12

**CANDELA DISTRIBUTION (continued):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 298.9 | 343.7 | 455.3 | 398.9 | 356.4 | 426.7 | 503.8 | 370.5 | *298.3* |
| 115° | 314.5 | 330.5 | 406.5 | 389.5 | 387.3 | 420.5 | 450.0 | 369.2 | *330.9* |
| 117.5° | 303.8 | 301.8 | 345.2 | 350.3 | 374.1 | 384.8 | 388.7 | 346.7 | *332.8* |
| 120° | 281.4 | 268.6 | 288.2 | 305.9 | 337.8 | 333.4 | 327.6 | 313.5 | *314.0* |
| 122.5° | 253.1 | 238.1 | 247.1 | 260.4 | 292.4 | 282.9 | 276.9 | 280.0 | *288.3* |
| 125° | 227.0 | 211.9 | 217.9 | 221.2 | 247.9 | 238.5 | 241.4 | 251.2 | *259.7* |
| 127.5° | 203.9 | 193.7 | 197.2 | 193.7 | 210.6 | 206.2 | 215.8 | 226.8 | *234.1* |
| 130° | 188.3 | 179.5 | 184.3 | 175.7 | 183.8 | 184.9 | 197.6 | 207.0 | *211.6* |
| 132.5° | 175.3 | 169.7 | 175.2 | 164.8 | 167.1 | 172.0 | 184.0 | 192.2 | *194.9* |
| 135° | 165.9 | 161.1 | 167.1 | 157.5 | 156.7 | 163.8 | 174.8 | 180.1 | *181.1* |
| 137.5° | 158.0 | 153.8 | 160.1 | 152.8 | 150.6 | 157.7 | 166.0 | 170.3 | *169.2* |
| 140° | 150.8 | 147.3 | 154.0 | 148.4 | 147.1 | 154.2 | 157.9 | 162.8 | *161.9* |
| 142.5° | 143.2 | 140.7 | 148.6 | 144.8 | 143.6 | 150.1 | 152.0 | 155.4 | *154.4* |
| 145° | 137.9 | 136.0 | 144.4 | 142.3 | 141.9 | 146.6 | 145.2 | 149.8 | *148.3* |
| 147.5° | 133.3 | 132.0 | 139.6 | 138.7 | 138.7 | 142.3 | 140.4 | 144.4 | *142.8* |
| 150° | 129.3 | 128.0 | 135.4 | 134.5 | 135.2 | 137.7 | 135.0 | 139.6 | *139.3* |
| 152.5° | 125.3 | 123.8 | 130.5 | 129.7 | 130.3 | 132.9 | 130.3 | 135.6 | *135.1* |
| 155° | 122.5 | 121.1 | 126.5 | 126.1 | 126.3 | 127.6 | 126.3 | 131.5 | *131.7* |
| 157.5° | 120.6 | 119.5 | 123.8 | 123.6 | 123.6 | 124.4 | 123.8 | 128.4 | *128.6* |
| 160° | 119.1 | 118.2 | 121.9 | 121.7 | 121.2 | 122.4 | 122.0 | 126.0 | *126.2* |
| 162.5° | 117.7 | 116.8 | 120.9 | 120.3 | 120.3 | 120.3 | 120.2 | 124.1 | *124.5* |
| 165° | 116.7 | 116.5 | 119.5 | 119.5 | 119.1 | 119.7 | 118.9 | 121.7 | *122.7* |
| 167.5° | 116.7 | 116.2 | 119.3 | 119.3 | 118.9 | 118.2 | 118.6 | 121.0 | *122.0* |
| 170° | 116.5 | 116.4 | 118.9 | 118.4 | 117.8 | 117.9 | 117.7 | 120.2 | *121.1* |
| 172.5° | 116.9 | 116.7 | 119.4 | 118.8 | 118.3 | 118.3 | 117.7 | 119.4 | *121.2* |
| 175° | 116.6 | 116.5 | 118.5 | 118.5 | 118.7 | 118.2 | 118.0 | 119.3 | *120.9* |
| 177.5° | 117.5 | 117.3 | 118.5 | 118.5 | 118.0 | 118.4 | 118.8 | 120.1 | *122.3* |
| 180° | 118.4 | 118.4 | 118.4 | 118.4 | 118.4 | 118.4 | 118.4 | 118.4 | *118.4* |

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Scaled Data Report

TEST NUMBER: P1433707
CATALOG NUMBER: EHBR1-12-UNV-ASM-L940-UPL12

**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 | 13.23 | 14.31 | 13.75 | 14.80 | 15.34 | 14.00 | 15.07 | 14.52 | 15.57 | 16.11 |
| | 3H | 15.05 | 16.00 | 15.58 | 16.51 | 17.10 | 15.56 | 16.51 | 16.09 | 17.02 | 17.61 |
| | 4H | 15.78 | 16.67 | 16.34 | 17.20 | 17.80 | 16.20 | 17.09 | 16.76 | 17.62 | 18.22 |
| | 6H | 16.35 | 17.17 | 16.92 | 17.71 | 18.32 | 16.70 | 17.52 | 17.26 | 18.06 | 18.67 |
| | 8H | 16.53 | 17.31 | 17.11 | 17.87 | 18.49 | 16.85 | 17.63 | 17.43 | 18.19 | 18.81 |
| | 12H | 16.63 | 17.37 | 17.21 | 17.92 | 18.57 | 16.93 | 17.67 | 17.52 | 18.22 | 18.87 |
| 4H | 2H | 13.74 | 14.64 | 14.30 | 15.16 | 15.76 | 14.37 | 15.27 | 14.93 | 15.79 | 16.39 |
| | 3H | 15.78 | 16.52 | 16.35 | 17.09 | 17.71 | 16.18 | 16.92 | 16.75 | 17.49 | 18.11 |
| | 4H | 16.65 | 17.31 | 17.23 | 17.89 | 18.54 | 16.97 | 17.63 | 17.55 | 18.21 | 18.86 |
| | 6H | 17.34 | 17.91 | 17.95 | 18.52 | 19.19 | 17.60 | 18.17 | 18.21 | 18.78 | 19.45 |
| | 8H | 17.56 | 18.10 | 18.18 | 18.70 | 19.38 | 17.80 | 18.34 | 18.42 | 18.94 | 19.62 |
| | 12H | 17.70 | 18.17 | 18.33 | 18.80 | 19.48 | 17.92 | 18.39 | 18.55 | 19.02 | 19.70 |
| 8H | 4H | 16.90 | 17.44 | 17.52 | 18.04 | 18.72 | 17.21 | 17.74 | 17.82 | 18.35 | 19.02 |
| | 6H | 17.72 | 18.15 | 18.37 | 18.81 | 19.49 | 17.97 | 18.41 | 18.62 | 19.06 | 19.74 |
| | 8H | 18.02 | 18.41 | 18.69 | 19.07 | 19.76 | 18.25 | 18.64 | 18.92 | 19.30 | 20.00 |
| | 12H | 18.22 | 18.56 | 18.88 | 19.20 | 19.97 | 18.44 | 18.77 | 19.10 | 19.42 | 20.19 |
| 12H | 4H | 16.91 | 17.38 | 17.54 | 18.02 | 18.69 | 17.22 | 17.69 | 17.85 | 18.32 | 19.00 |
| | 6H | 17.76 | 18.15 | 18.42 | 18.81 | 19.50 | 18.01 | 18.40 | 18.68 | 19.06 | 19.76 |
| | 8H | 18.10 | 18.44 | 18.76 | 19.09 | 19.85 | 18.34 | 18.68 | 19.00 | 19.32 | 20.09 |

Cooper Lighting Solutions Photometric Lab
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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: SP1-2506-472-7

Test Date: 08/04/2025

Luminaire Tested: EHBR-60-L940-N

Data in this report applies to families of products including EHBR-60-L940-N

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

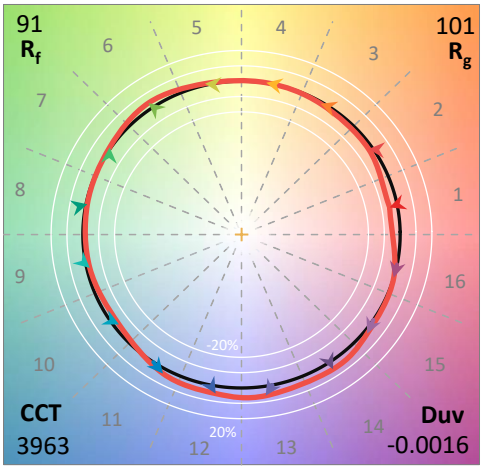
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2506-472-7 |
| 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-L940-N** |
| Description: | Elevate Round Highbay at, 60000 lumens, 4000K 90CRI LEDs with N lens |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3963 |
| CIE u': | 0.2267 |
| CIE v': | 0.5003 |
| Duv: | -0.0016 |
| CIE x: | 0.3810 |
| CIE y: | 0.3738 |
| CIE z: | 0.2453 |
| Peak Wavelength (nm): | 630 |
| Dominant Wavelength (nm): | 580 |
| Purity: | 26.49712 |
| Rf: | 90.7 |
| Rg: | 101 |

| | |
|---|---|
| CRI (Ra): | 93.4 |
| R1: | 95.2 |
| R2: | 95.1 |
| R3: | 93.3 |
| R4: | 94.5 |
| R5: | 94.2 |
| R6: | 92.9 |
| R7: | 94.0 |
| R8: | 87.7 |
| R9: | 66.4 |
| R10: | 86.6 |
| R11: | 94.4 |
| R12: | 75.4 |
| R13: | 95.0 |
| R14: | 95.4 |
| R15: | 92.8 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 44M |
| Operation Time: | 1H 44M |
| 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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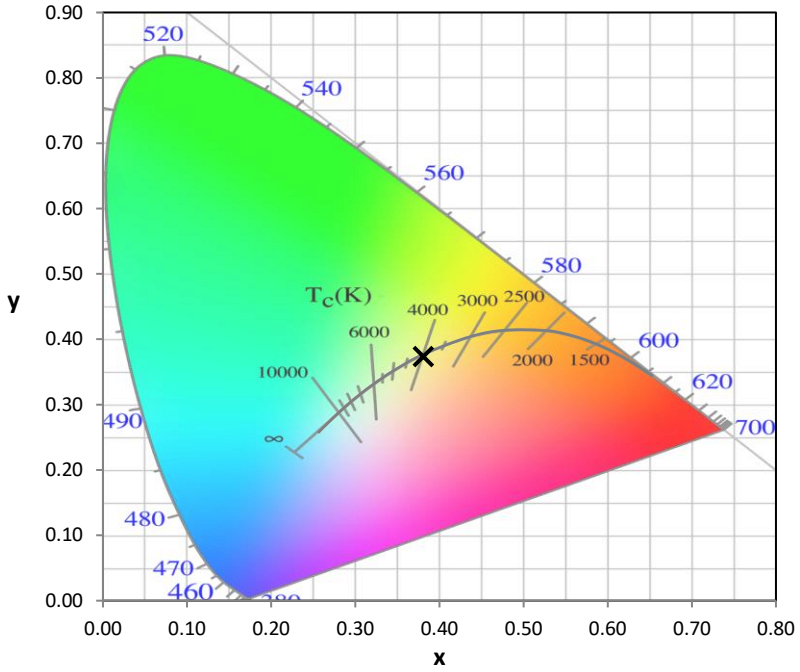
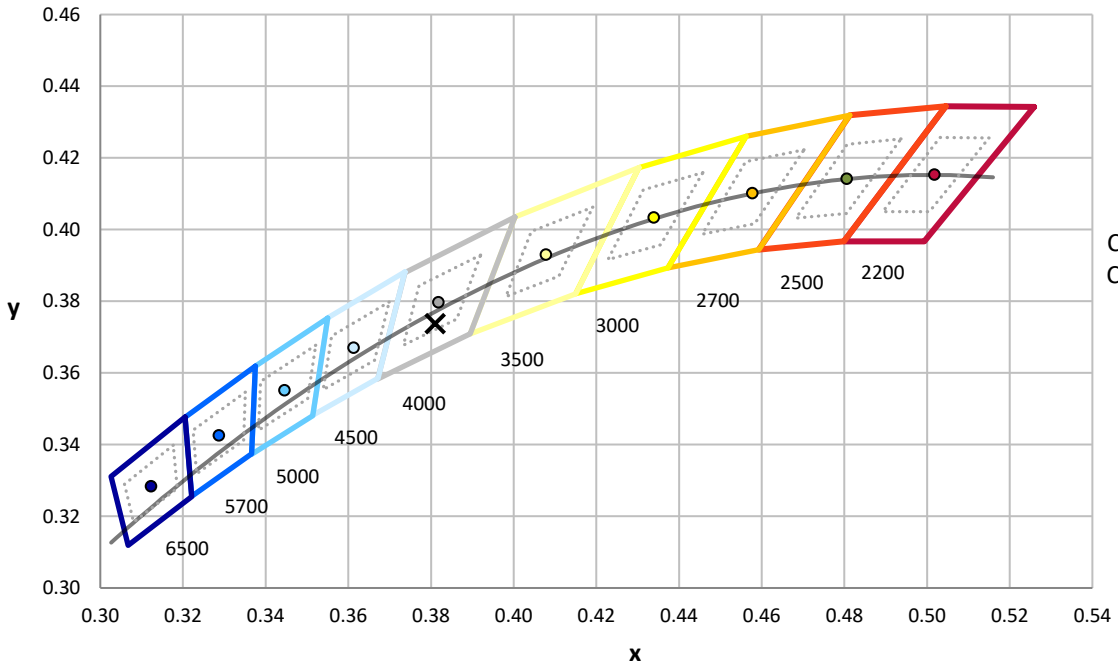
## CIE 1931 Chromaticity Diagram




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




CCT = 3963K
CIE x = 0.3810
CIE y = 0.3738
Duv = -0.0016

Point lies inside the ANSI 4000K 4-step quadrangle

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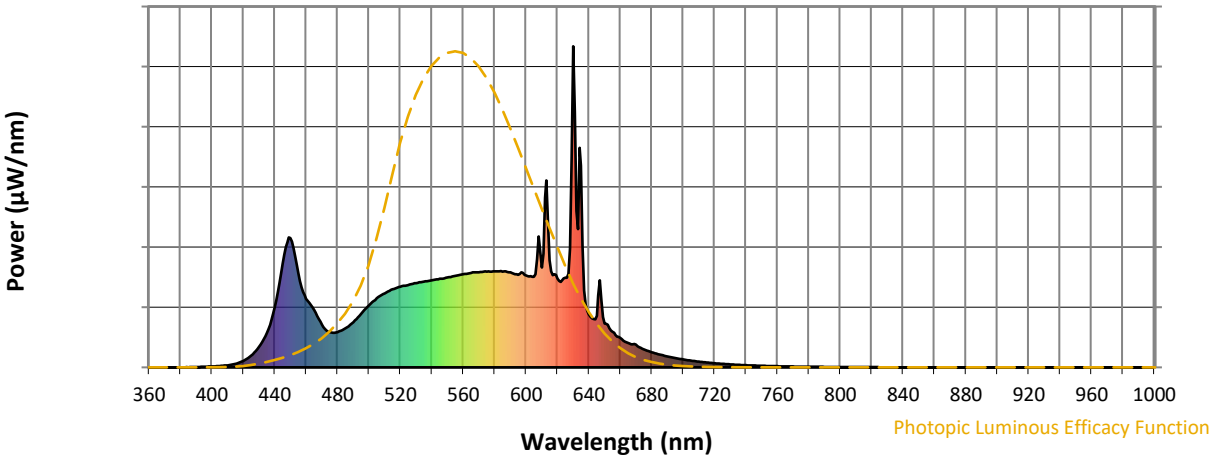
## Photopic Flux vs. Wavelength




## 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 | 141 | NR | 620 | 276 | NR | 750 | 5 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 167 | NR | 625 | 279 | NR | 755 | 4 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 193 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 215 | NR | 635 | 628 | NR | 765 | 3 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 230 | NR | 640 | 164 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 243 | NR | 645 | 161 | NR | 775 | 2 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 251 | NR | 650 | 137 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 256 | NR | 655 | 111 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 262 | NR | 660 | 92 | NR | 790 | 1 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 267 | NR | 665 | 76 | NR | 795 | 1 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 271 | NR | 670 | 71 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 276 | NR | 675 | 56 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 280 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 37 | NR | 555 | 285 | NR | 685 | 40 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 63 | NR | 560 | 290 | NR | 690 | 34 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 108 | NR | 565 | 294 | NR | 695 | 29 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 186 | NR | 570 | 296 | NR | 700 | 25 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 323 | NR | 575 | 298 | NR | 705 | 21 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 403 | NR | 580 | 299 | NR | 710 | 18 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 293 | NR | 585 | 298 | NR | 715 | 15 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 296 | NR | 720 | 13 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 180 | NR | 595 | 288 | NR | 725 | 11 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 132 | NR | 600 | 286 | NR | 730 | 9 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 109 | NR | 605 | 282 | NR | 735 | 8 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 110 | NR | 610 | 311 | NR | 740 | 7 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 121 | NR | 615 | 334 | NR | 745 | 6 | NR | 875 | 0 | NR | | | |

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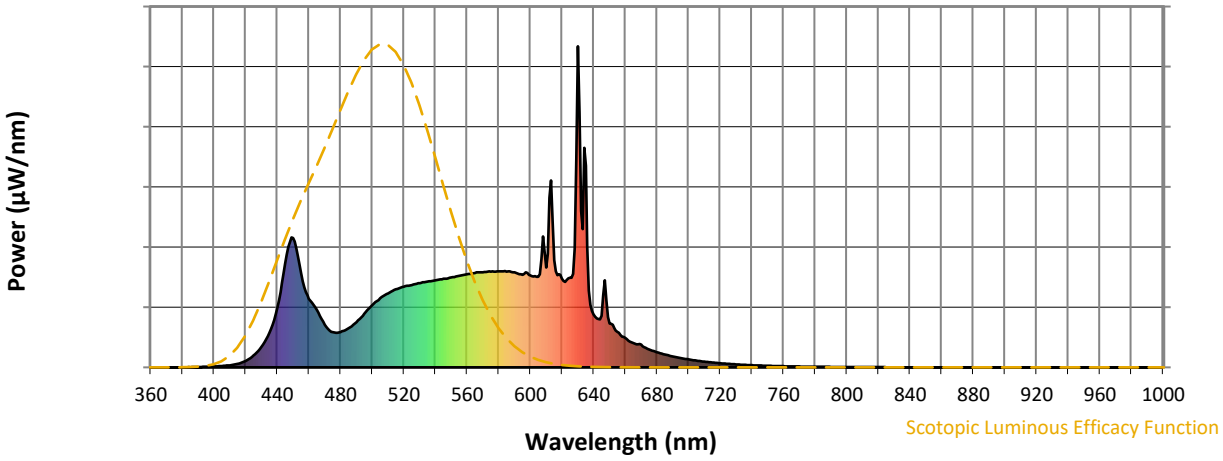
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.76**

| 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 | 141 | NR | 620 | 276 | NR | 750 | 5 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 167 | NR | 625 | 279 | NR | 755 | 4 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 193 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 215 | NR | 635 | 628 | NR | 765 | 3 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 230 | NR | 640 | 164 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 243 | NR | 645 | 161 | NR | 775 | 2 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 251 | NR | 650 | 137 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 256 | NR | 655 | 111 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 262 | NR | 660 | 92 | NR | 790 | 1 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 267 | NR | 665 | 76 | NR | 795 | 1 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 271 | NR | 670 | 71 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 276 | NR | 675 | 56 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 280 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 37 | NR | 555 | 285 | NR | 685 | 40 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 63 | NR | 560 | 290 | NR | 690 | 34 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 108 | NR | 565 | 294 | NR | 695 | 29 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 186 | NR | 570 | 296 | NR | 700 | 25 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 323 | NR | 575 | 298 | NR | 705 | 21 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 403 | NR | 580 | 299 | NR | 710 | 18 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 293 | NR | 585 | 298 | NR | 715 | 15 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 296 | NR | 720 | 13 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 180 | NR | 595 | 288 | NR | 725 | 11 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 132 | NR | 600 | 286 | NR | 730 | 9 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 109 | NR | 605 | 282 | NR | 735 | 8 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 110 | NR | 610 | 311 | NR | 740 | 7 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 121 | NR | 615 | 334 | NR | 745 | 6 | NR | 875 | 0 | NR | | | |

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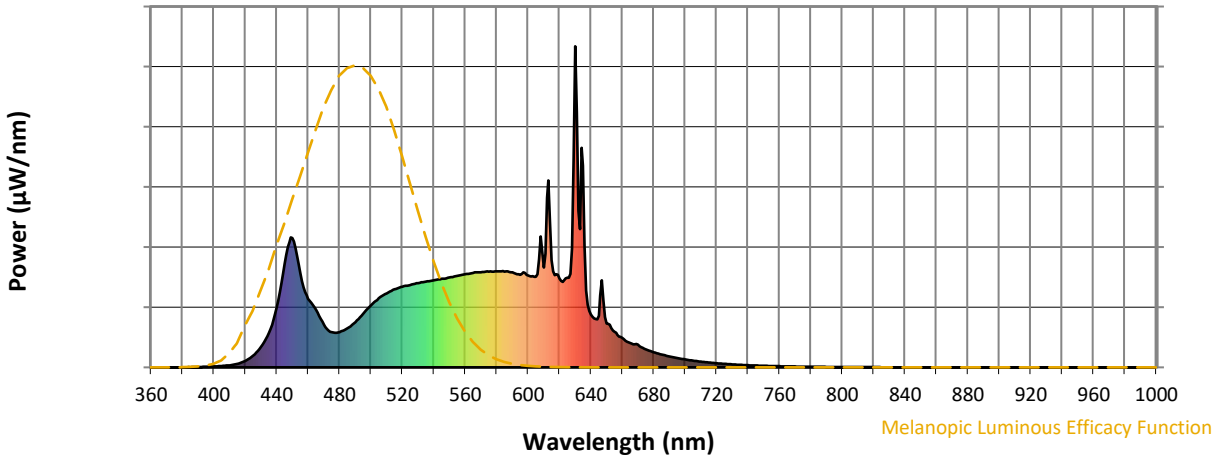
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.64**

| 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 | 141 | NR | 620 | 276 | NR | 750 | 5 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 167 | NR | 625 | 279 | NR | 755 | 4 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 193 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 215 | NR | 635 | 628 | NR | 765 | 3 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 230 | NR | 640 | 164 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 243 | NR | 645 | 161 | NR | 775 | 2 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 251 | NR | 650 | 137 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 256 | NR | 655 | 111 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 262 | NR | 660 | 92 | NR | 790 | 1 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 267 | NR | 665 | 76 | NR | 795 | 1 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 271 | NR | 670 | 71 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 276 | NR | 675 | 56 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 280 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 37 | NR | 555 | 285 | NR | 685 | 40 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 63 | NR | 560 | 290 | NR | 690 | 34 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 108 | NR | 565 | 294 | NR | 695 | 29 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 186 | NR | 570 | 296 | NR | 700 | 25 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 323 | NR | 575 | 298 | NR | 705 | 21 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 403 | NR | 580 | 299 | NR | 710 | 18 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 293 | NR | 585 | 298 | NR | 715 | 15 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 214 | NR | 590 | 296 | NR | 720 | 13 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 180 | NR | 595 | 288 | NR | 725 | 11 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 132 | NR | 600 | 286 | NR | 730 | 9 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 109 | NR | 605 | 282 | NR | 735 | 8 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 110 | NR | 610 | 311 | NR | 740 | 7 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 121 | NR | 615 | 334 | NR | 745 | 6 | NR | 875 | 0 | NR | | | |

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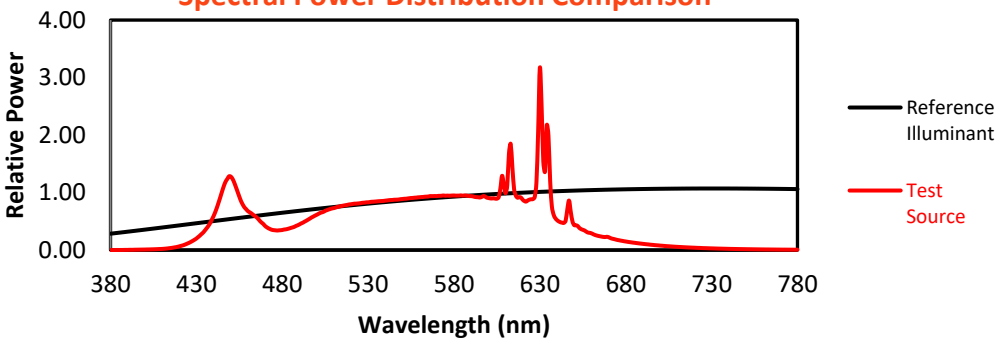
# TM-30-18

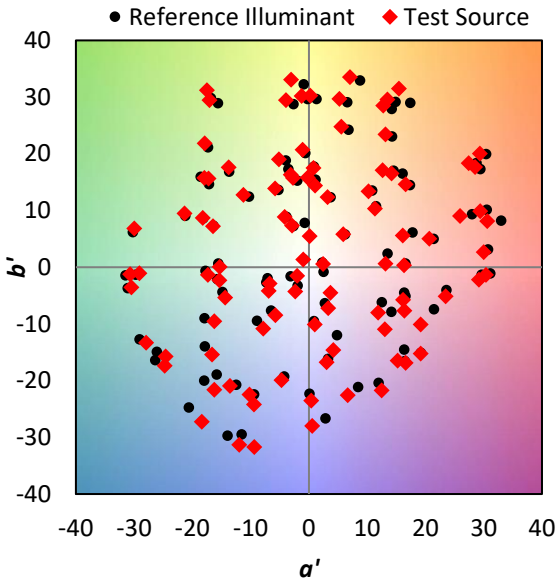
## Summary

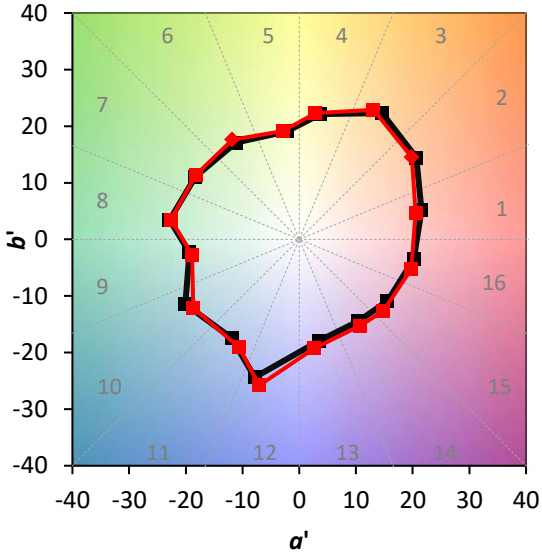
$R_f$ = 90.7
$R_g$ = 101
CIE $R_a$ = 93.4
$R_9$ = 66.4

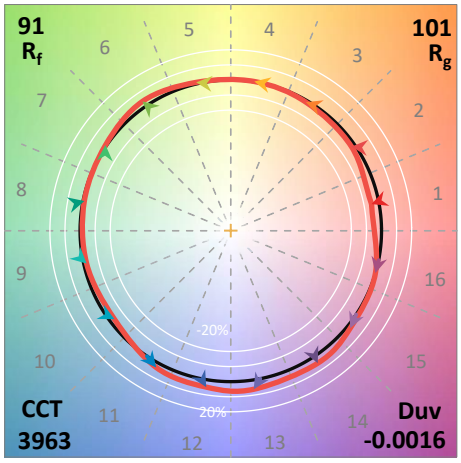
## Spectral Power Distribution Comparison

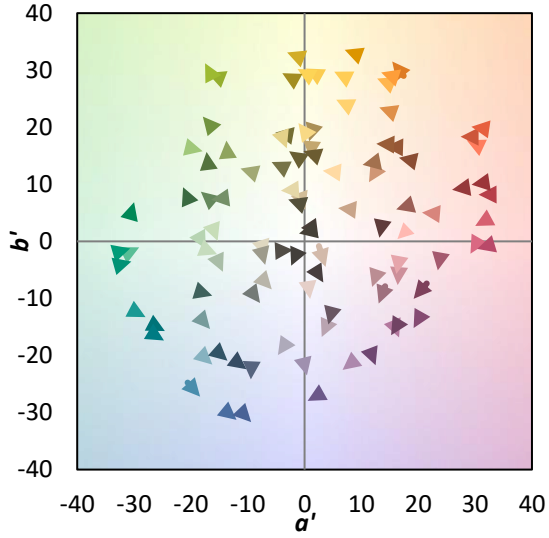



## Color Vector Graphics



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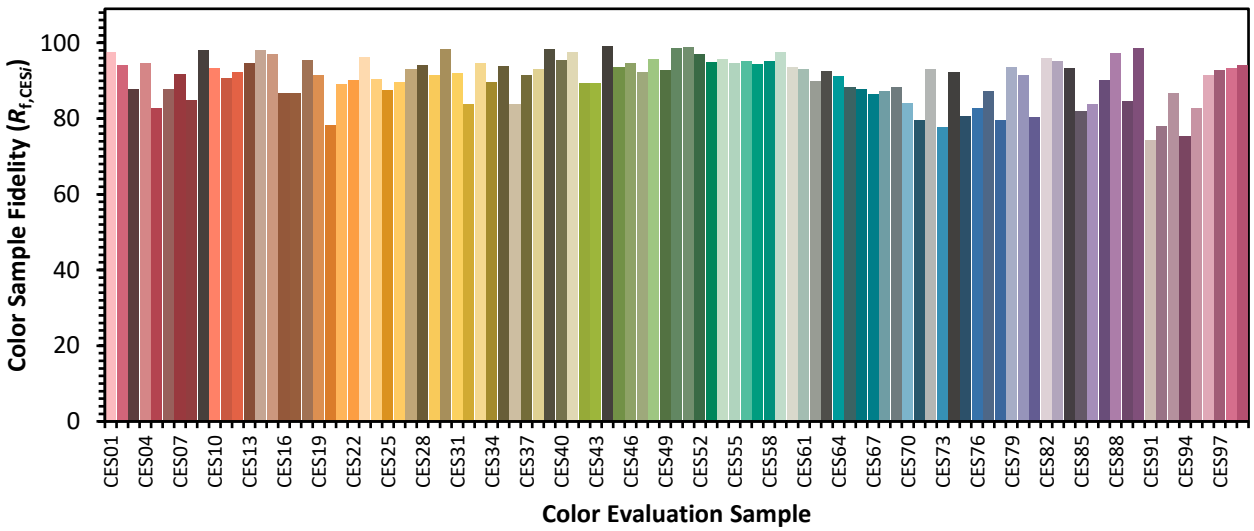
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 90 | CES51 = 99 | CES76 = 83 |
| CES02 = 62 | CES27 = 93 | CES52 = 97 | CES77 = 87 |
| CES03 = 31 | CES28 = 94 | CES53 = 95 | CES78 = 79 |
| CES04 = 69 | CES29 = 91 | CES54 = 96 | CES79 = 94 |
| CES05 = 49 | CES30 = 98 | CES55 = 95 | CES80 = 91 |
| CES06 = 50 | CES31 = 92 | CES56 = 95 | CES81 = 80 |
| CES07 = 42 | CES32 = 84 | CES57 = 94 | CES82 = 96 |
| CES08 = 41 | CES33 = 95 | CES58 = 95 | CES83 = 95 |
| CES09 = 29 | CES34 = 90 | CES59 = 98 | CES84 = 93 |
| CES10 = 74 | CES35 = 94 | CES60 = 93 | CES85 = 82 |
| CES11 = 57 | CES36 = 84 | CES61 = 93 | CES86 = 84 |
| CES12 = 63 | CES37 = 92 | CES62 = 90 | CES87 = 90 |
| CES13 = 43 | CES38 = 93 | CES63 = 92 | CES88 = 97 |
| CES14 = 74 | CES39 = 98 | CES64 = 91 | CES89 = 84 |
| CES15 = 71 | CES40 = 96 | CES65 = 88 | CES90 = 99 |
| CES16 = 47 | CES41 = 98 | CES66 = 88 | CES91 = 74 |
| CES17 = 49 | CES42 = 89 | CES67 = 87 | CES92 = 78 |
| CES18 = 56 | CES43 = 89 | CES68 = 87 | CES93 = 87 |
| CES19 = 71 | CES44 = 99 | CES69 = 88 | CES94 = 75 |
| CES20 = 66 | CES45 = 93 | CES70 = 84 | CES95 = 83 |
| CES21 = 85 | CES46 = 95 | CES71 = 80 | CES96 = 91 |
| CES22 = 78 | CES47 = 92 | CES72 = 93 | CES97 = 93 |
| CES23 = 91 | CES48 = 96 | CES73 = 78 | CES98 = 93 |
| CES24 = 90 | CES49 = 93 | CES74 = 92 | CES99 = 94 |
| CES25 = 71 | CES50 = 99 | CES75 = 81 | |



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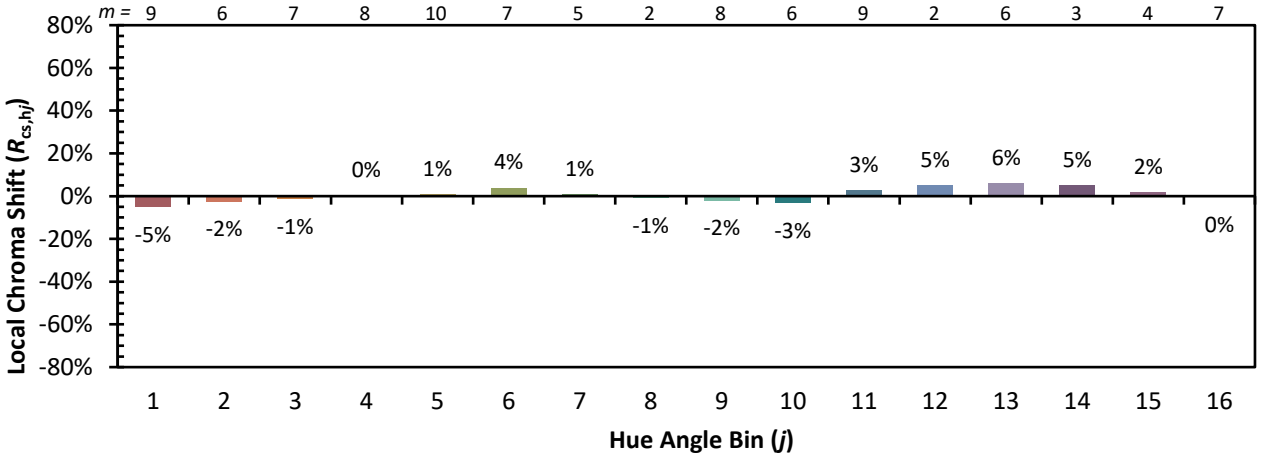
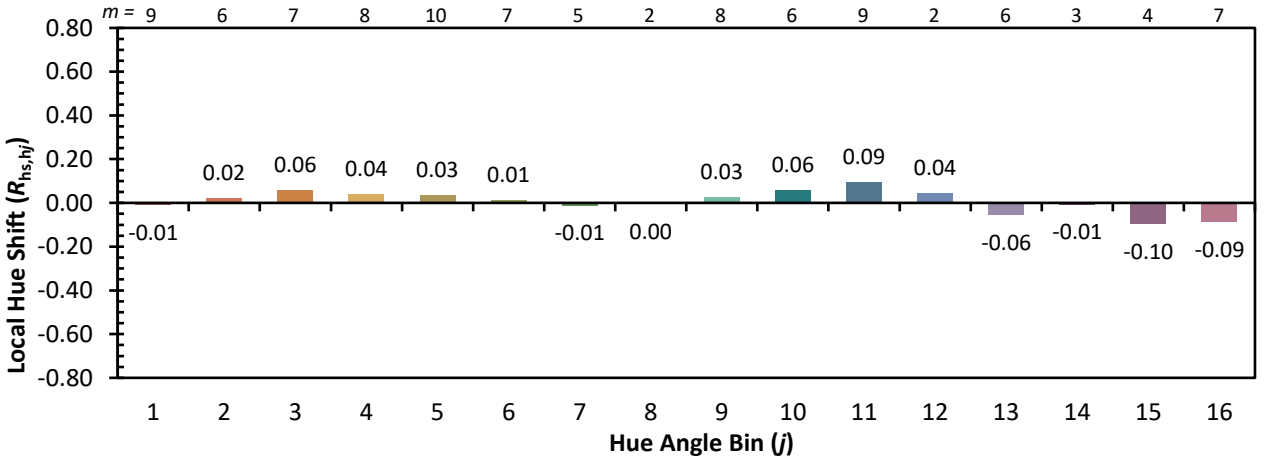
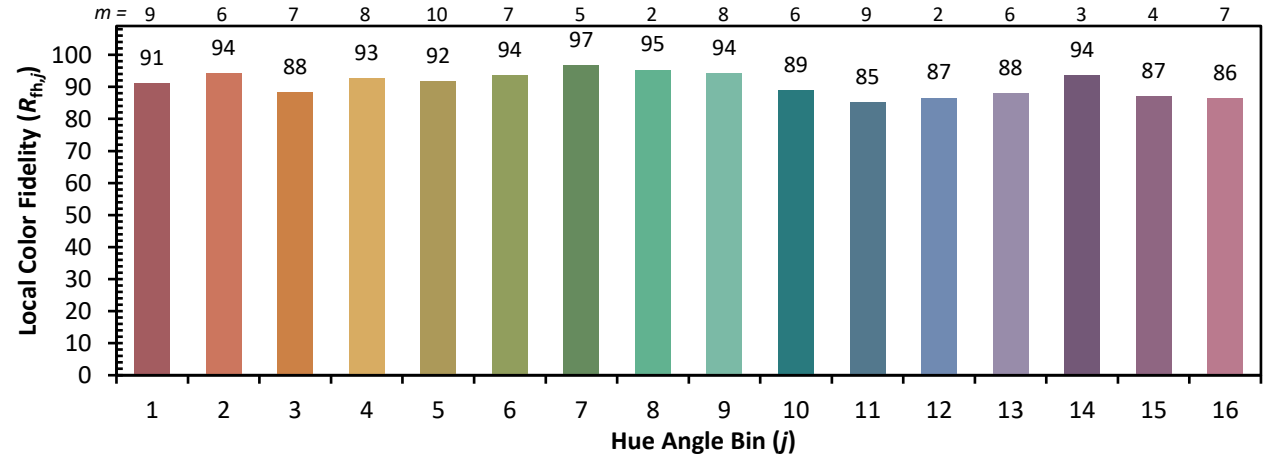
## Color Rendition by Hue-Angle Bin



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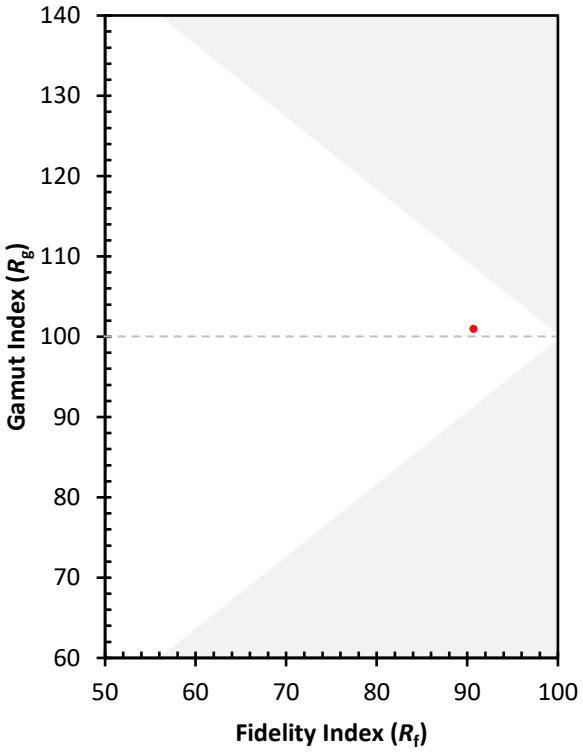
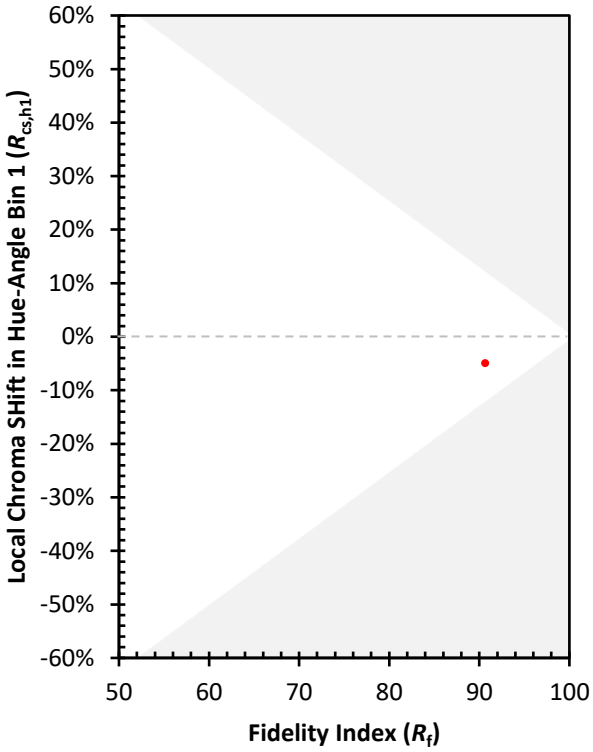
## Measure Comparisons




(END OF REPORT)