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

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: STREETWORKS

Report Number: P1440200

Luminaire Tested: **MPB-A2-D-U-ASYM-U-7030**

Issue Date: 04/14/2026

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1440200 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 04/14/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | STREETWORKS |
| Catalog Number: | MPB-A2-D-U-ASYM-U-7030 |
| Description: | BRECKENRIDGE POST TOP LUMINAIRE w/ ASYMMETRIC DISTRIBUTION 03000K CCT 70 CRI LIGHT ENGINE |
| Light Source: | (1) 03000K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

Luminaire Equipment:

| Sample No. | Condition | Description |
|---|---|---|
| a | good | reflector |
| b | good | lens |
| c | good | housing |
| d | good | cord |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 2275.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 108.4 lumens/watt |
| Luminous Opening: | Vertical Cylinder (Dia: 1' x H: 0.57') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U3 - G3 |

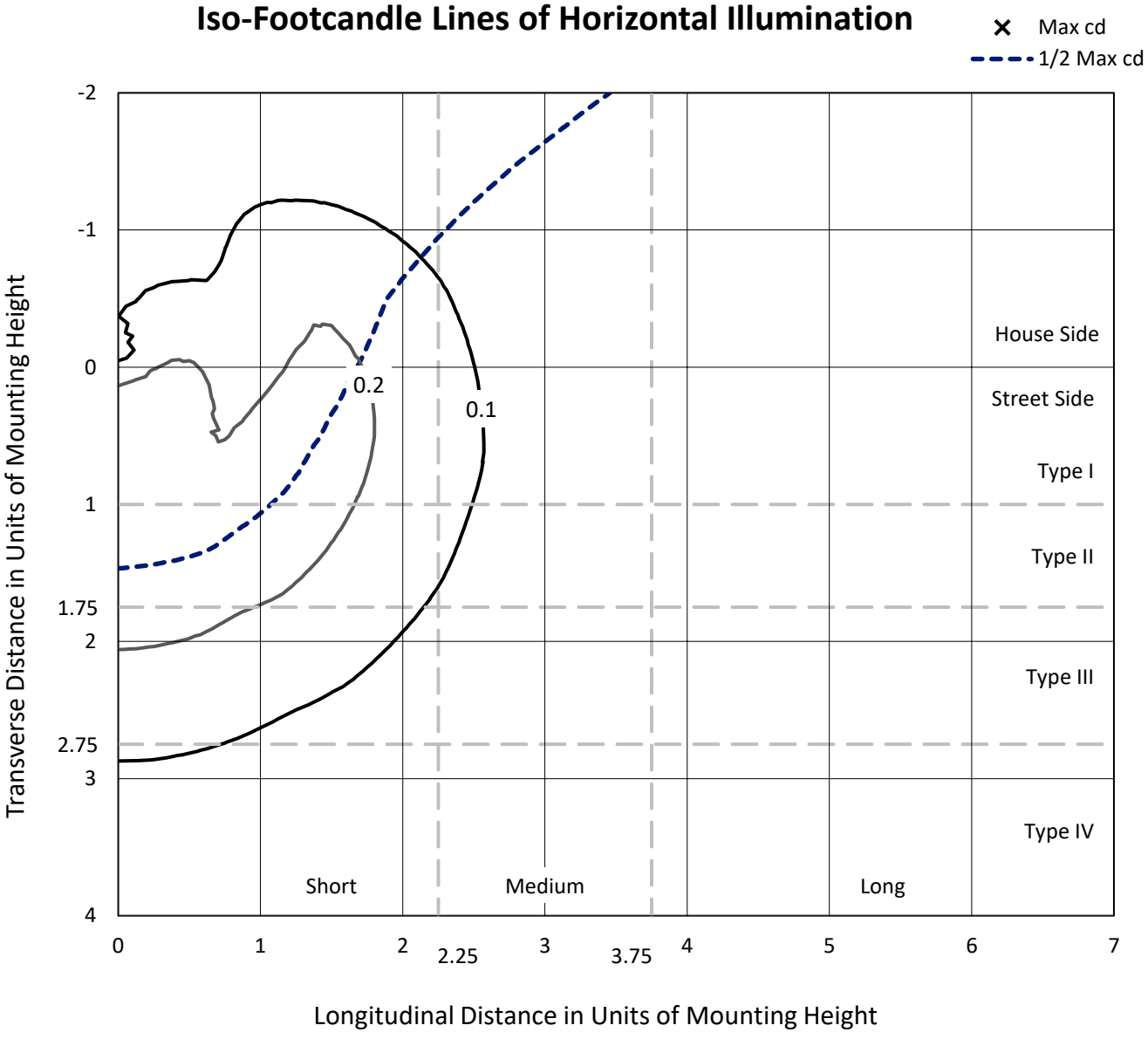
| | |
|---|---|
| Input Watts (W): | 21 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.95 |
| Total Harmonic Distortion (THDi): | 12.5% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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## Iso-Footcandle Lines of Horizontal Illumination



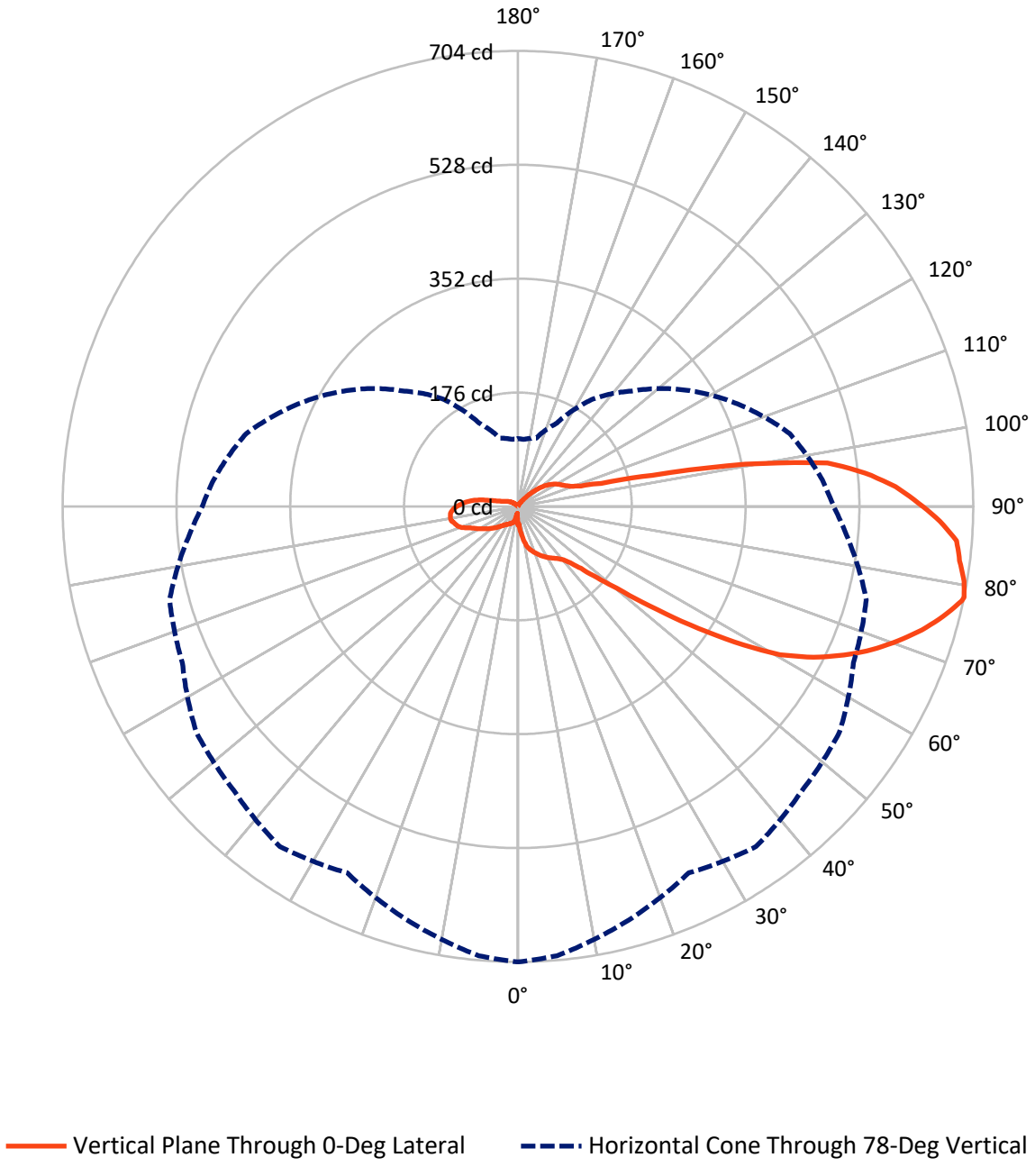

Based on 15 foot mounting height. Maximum calculated value = 0.3 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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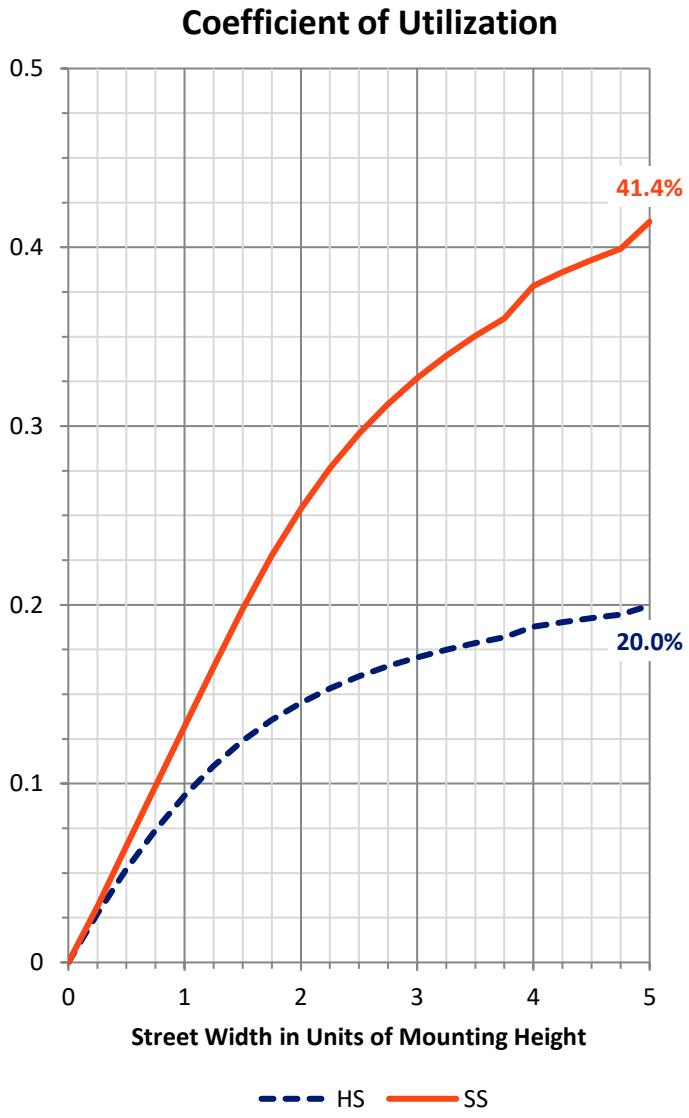
REPORT NUMBER: P1440200
CATALOG NUMBER: MPB-A2-D-U-ASYM-U-7030

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 515.9 | 198.7 | 714.7 |
| | % Fixture | 22.7 | 8.7 | 31.4 |
| **Street Side** | Lumens | 1139.2 | 422.0 | 1561.2 |
| | % Fixture | 50.1 | 18.5 | 68.6 |
| **Total** | Lumens | 1655.1 | 620.8 | 2275.9 |
| | % Fixture | 72.7 | 27.3 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 3.0 | 0.1 |
| 10°-20° | 13.7 | 0.6 |
| 20°-30° | 28.0 | 1.2 |
| 30°-40° | 44.0 | 1.9 |
| 40°-50° | 82.3 | 3.6 |
| 50°-60° | 209.7 | 9.2 |
| 60°-70° | 360.2 | 15.8 |
| 70°-80° | 454.6 | 20.0 |
| 80°-90° | 459.8 | 20.2 |
| 90°-100° | 369.0 | 16.2 |
| 100°-110° | 137.9 | 6.1 |
| 110°-120° | 56.2 | 2.5 |
| 120°-130° | 36.8 | 1.6 |
| 130°-140° | 16.6 | 0.7 |
| 140°-150° | 3.9 | 0.2 |
| 150°-160° | 0.3 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 1655.1 | 72.7 |
| 0°-180° | 2275.9 | 100.0 |



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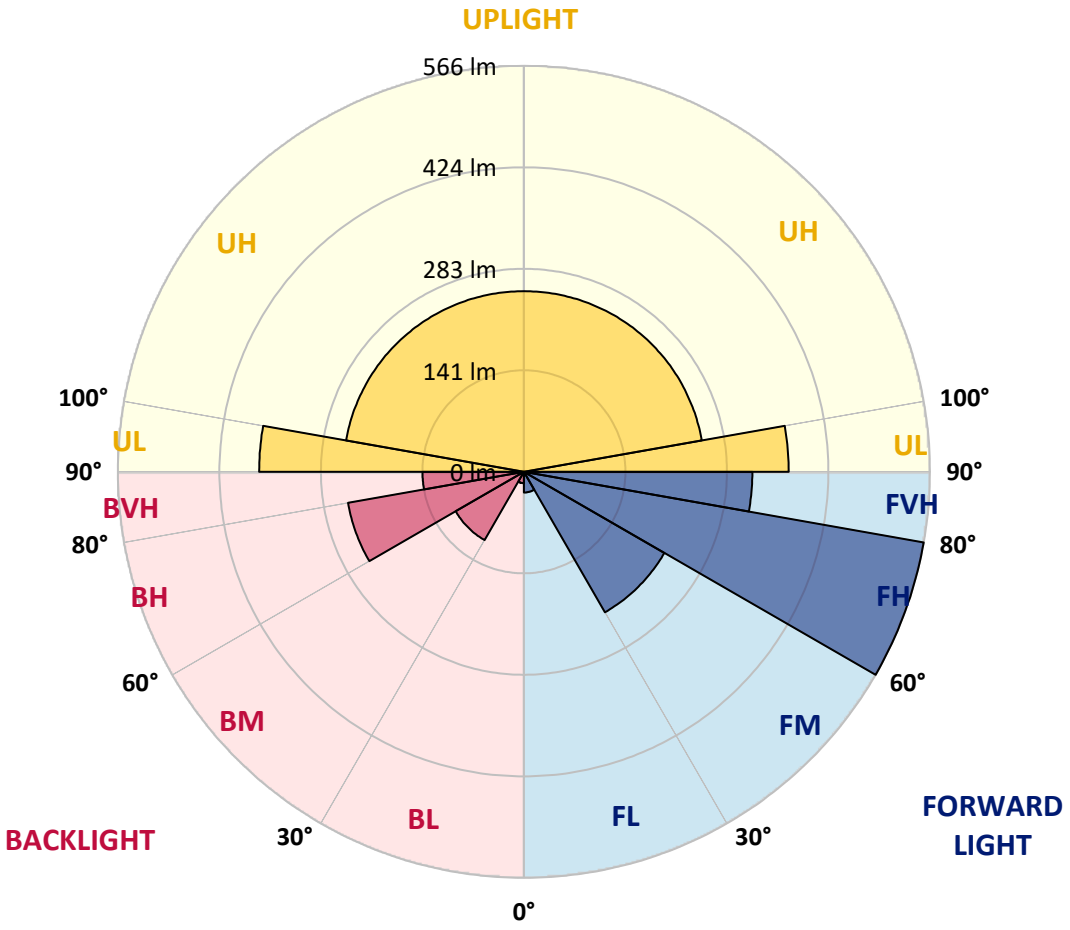
Scaled Data Report

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## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 28.8 | 1.3 | | | |
| FM | (30°-60°) | 226.1 | 9.9 | | | |
| FH | (60°-80°) | 565.9 | 24.9 | | | G0/660 |
| FVH | (80°-90°) | 318.4 | 14.0 | | | G3/500 |
| BL | (0°-30°) | 15.8 | 0.7 | B0/110 | | |
| BM | (30°-60°) | 109.9 | 4.8 | B0/220 | | |
| BH | (60°-80°) | 248.9 | 10.9 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 141.4 | 6.2 | | | G2/225 |
| UL | (90°-100°) | 369.0 | 16.2 | | U3/500 | |
| UH | (100°-180°) | 251.7 | 11.1 | | U3/500 | |

**BUG Rating: B1-U3-G3**
Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | *29.0* | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 |
| 2.5° | *26.5* | 26.8 | 27.1 | 28.4 | 29.7 | 30.3 | 30.9 | 30.3 | 30.0 | 30.3 | 29.7 |
| 5° | *37.6* | 37.0 | 36.7 | 36.4 | 36.7 | 36.4 | 35.7 | 34.8 | 33.5 | 31.9 | 30.3 |
| 7.5° | *46.2* | 46.6 | 46.6 | 45.6 | 45.0 | 44.0 | 42.1 | 39.9 | 38.3 | 37.6 | 36.4 |
| 10° | *55.8* | 56.1 | 55.8 | 54.5 | 52.9 | 51.0 | 48.8 | 45.9 | 43.4 | 41.5 | 40.2 |
| 12.5° | *63.8* | 63.1 | 62.8 | 62.2 | 60.3 | 58.4 | 55.5 | 52.6 | 49.7 | 46.9 | 45.0 |
| 15° | *68.9* | 68.2 | 67.6 | 67.0 | 65.7 | 64.1 | 61.2 | 58.0 | 55.5 | 52.0 | 50.1 |
| 17.5° | *72.7* | 72.4 | 71.7 | 71.4 | 70.2 | 68.2 | 65.4 | 62.8 | 60.0 | 56.1 | 54.2 |
| 20° | *76.9* | 76.2 | 75.9 | 74.9 | 74.0 | 72.4 | 69.5 | 67.0 | 64.1 | 60.3 | 57.7 |
| 22.5° | *80.4* | 80.0 | 80.0 | 79.1 | 78.1 | 76.2 | 73.7 | 71.1 | 67.9 | 63.8 | 61.2 |
| 25° | *84.5* | 84.2 | 83.9 | 83.2 | 82.3 | 80.0 | 77.2 | 74.6 | 71.1 | 67.0 | 64.4 |
| 27.5° | *88.0* | 87.4 | 87.1 | 86.4 | 85.5 | 83.2 | 80.4 | 77.5 | 74.0 | 69.2 | 67.0 |
| 30° | *91.8* | 91.2 | 90.6 | 89.6 | 88.3 | 86.1 | 83.2 | 80.0 | 76.2 | 71.4 | 68.9 |
| 32.5° | *95.0* | 94.4 | 93.4 | 92.8 | 90.9 | 88.6 | 85.5 | 82.0 | 77.8 | 72.7 | 70.5 |
| 35° | *98.5* | 97.9 | 96.9 | 96.3 | 94.4 | 91.5 | 88.0 | 83.9 | 79.7 | 74.3 | 71.4 |
| 37.5° | *102.4* | 102.0 | 101.1 | 100.1 | 98.2 | 95.3 | 91.2 | 87.1 | 82.6 | 76.5 | 74.0 |
| 40° | *108.7* | 108.1 | 106.8 | 107.1 | 104.9 | 102.4 | 97.9 | 94.4 | 89.0 | 82.0 | 79.4 |
| 42.5° | *118.9* | 118.3 | 118.0 | 118.0 | 118.0 | 114.8 | 111.0 | 108.7 | 103.3 | 94.4 | 90.6 |
| 45° | *136.5* | 135.8 | 135.8 | 137.4 | 139.0 | 137.1 | 132.7 | 131.1 | 125.3 | 115.1 | 109.4 |
| 47.5° | *164.2* | 162.3 | 164.9 | 166.1 | 167.7 | 167.4 | 162.3 | 164.5 | 154.7 | 142.5 | 135.2 |
| 50° | *198.3* | 201.5 | 205.4 | 207.9 | 212.7 | 208.9 | 203.4 | 205.7 | 196.4 | 179.2 | 169.3 |
| 52.5° | *255.4* | 256.4 | 257.7 | 257.0 | 266.9 | 263.4 | 251.9 | 258.0 | 244.3 | 228.0 | 217.5 |
| 55° | *322.7* | 325.9 | 325.6 | 317.9 | 333.6 | 327.2 | 318.6 | 321.8 | 306.8 | 281.9 | 269.5 |
| 57.5° | *395.4* | 401.8 | 400.5 | 387.8 | 398.3 | 393.5 | 384.6 | 380.4 | 360.7 | 335.1 | 319.8 |
| 60° | *465.3* | 464.0 | 462.1 | 439.1 | 452.8 | 440.4 | 433.4 | 424.4 | 404.7 | 374.7 | 355.9 |
| 62.5° | *513.4* | 511.2 | 504.8 | 478.6 | 493.6 | 483.7 | 469.1 | 455.0 | 435.0 | 404.7 | 385.5 |
| 65° | *554.2* | 552.0 | 545.0 | 523.9 | 537.6 | 520.4 | 506.7 | 485.0 | 464.9 | 428.9 | 410.7 |
| 67.5° | *590.9* | 588.3 | 577.2 | 552.9 | 568.6 | 552.6 | 537.6 | 511.8 | 495.2 | 453.5 | 435.0 |
| 70° | *623.1* | 624.1 | 609.7 | 583.9 | 594.7 | 578.1 | 568.6 | 536.7 | 521.1 | 476.1 | 458.6 |
| 72.5° | *653.4* | 651.5 | 634.3 | 606.5 | 618.6 | 600.5 | 589.6 | 554.9 | 539.9 | 493.3 | 473.5 |
| 75° | *679.2* | 677.9 | 655.0 | 623.7 | 637.4 | 615.4 | 607.2 | 567.0 | 552.0 | 506.4 | 485.7 |
| 77.5° | *701.9* | 693.6 | 663.9 | 630.1 | 644.8 | 619.0 | 607.5 | 567.6 | 553.6 | 508.6 | 489.2 |
| 78° | *704.1* | *697.1* | *662.0* | *625.0* | *641.9* | *621.2* | *607.5* | *572.4* | *557.7* | *510.2* | *488.2* |
| 80° | *699.6* | 689.7 | 656.6 | 624.7 | 643.2 | 611.6 | 600.5 | 556.1 | 550.4 | 510.2 | 490.4 |
| 82.5° | *688.2* | 677.9 | 641.3 | 615.4 | 634.9 | 608.4 | 595.4 | 552.6 | 551.0 | 507.3 | 488.5 |
| 85° | *680.5* | 670.0 | 629.5 | 607.2 | 626.6 | 599.2 | 586.4 | 548.8 | 547.2 | 504.5 | 484.4 |
| 87.5° | *653.1* | 645.1 | 604.0 | 584.5 | 606.5 | 584.8 | 572.7 | 535.1 | 530.9 | 489.2 | 467.5 |
| 90° | *619.3* | 613.2 | 573.0 | 553.6 | 575.3 | 556.1 | 545.9 | 509.3 | 504.2 | 463.3 | 444.5 |
| 92.5° | *584.8* | 577.8 | 542.1 | 521.7 | 541.1 | 523.6 | 515.6 | 481.2 | 474.8 | 432.7 | 416.1 |
| 95° | *539.2* | 534.8 | 503.8 | 484.7 | 503.2 | 487.6 | 479.6 | 450.6 | 442.3 | 405.0 | 392.9 |
| 97.5° | *483.4* | 473.9 | 452.5 | 430.8 | 451.2 | 443.9 | 435.0 | 413.0 | 408.5 | 375.3 | 362.6 |
| 100° | *357.8* | 362.6 | 353.0 | 337.1 | 370.2 | 367.0 | 369.3 | 353.6 | 354.0 | 327.2 | 314.1 |
| 102.5° | *213.0* | 213.7 | 209.2 | 211.4 | 226.4 | 236.9 | 237.9 | 230.9 | 240.8 | 224.8 | 218.4 |
| 105° | *133.6* | 132.3 | 129.8 | 129.5 | 135.2 | 139.4 | 139.4 | 135.2 | 138.1 | 133.9 | 130.7 |
| 107.5° | *102.7* | 100.8 | 100.4 | 97.6 | 102.4 | 102.7 | 102.7 | 99.2 | 99.5 | 94.4 | 92.5 |

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REPORT NUMBER: P1440200
CATALOG NUMBER: MPB-A2-D-U-ASYM-U-7030

**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 110° | 88.6 | 87.4 | 87.1 | 85.5 | 88.0 | 88.3 | 88.0 | 85.1 | 83.9 | 80.0 | 77.8 |
| 112.5° | 81.6 | 80.7 | 80.0 | 78.4 | 81.0 | 81.0 | 80.7 | 78.1 | 76.2 | 72.1 | 69.5 |
| 115° | 76.5 | 75.6 | 74.9 | 73.7 | 75.6 | 75.6 | 74.9 | 73.3 | 71.7 | 67.9 | 66.0 |
| 117.5° | 72.4 | 71.4 | 70.8 | 69.5 | 71.4 | 71.1 | 70.8 | 69.2 | 67.9 | 64.1 | 61.9 |
| 120° | 68.2 | 67.3 | 67.0 | 65.7 | 67.3 | 67.0 | 66.0 | 65.1 | 63.1 | 60.0 | 58.0 |
| 122.5° | 62.8 | 62.2 | 61.9 | 61.5 | 62.5 | 62.2 | 62.2 | 60.9 | 59.0 | 55.5 | 53.6 |
| 125° | 57.4 | 56.8 | 56.4 | 55.8 | 57.1 | 57.1 | 57.1 | 55.8 | 53.9 | 50.7 | 49.1 |
| 127.5° | 51.0 | 50.4 | 50.4 | 50.4 | 51.3 | 51.7 | 51.7 | 50.7 | 49.1 | 46.2 | 44.0 |
| 130° | 43.4 | 43.0 | 43.7 | 43.7 | 44.3 | 45.0 | 45.6 | 45.0 | 43.4 | 40.2 | 38.6 |
| 132.5° | 35.7 | 35.7 | 36.4 | 36.7 | 37.6 | 37.6 | 38.6 | 37.9 | 36.7 | 33.5 | 31.9 |
| 135° | 28.7 | 28.7 | 29.0 | 29.3 | 30.3 | 30.6 | 31.3 | 30.9 | 29.3 | 26.8 | 25.5 |
| 137.5° | 22.0 | 21.7 | 22.0 | 22.6 | 23.3 | 23.0 | 23.3 | 23.0 | 21.4 | 19.5 | 18.2 |
| 140° | 15.6 | 15.6 | 15.9 | 15.9 | 16.3 | 16.9 | 16.9 | 16.3 | 15.0 | 13.7 | 13.1 |
| 142.5° | 11.5 | 11.5 | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 | 11.5 | 10.8 | 10.2 | 9.2 |
| 145° | 8.6 | 8.9 | 8.9 | 8.6 | 8.6 | 8.9 | 8.9 | 8.6 | 8.0 | 7.3 | 6.7 |
| 147.5° | 6.7 | 6.4 | 6.7 | 6.4 | 6.4 | 6.4 | 6.4 | 5.7 | 5.4 | 5.1 | 4.5 |
| 150° | 4.5 | 4.5 | 4.5 | 4.1 | 4.1 | 3.8 | 3.8 | 3.5 | 2.9 | 2.9 | 2.6 |
| 152.5° | 2.2 | 2.2 | 1.9 | 1.6 | 1.6 | 1.6 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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**CANDELA DISTRIBUTION (continued):**

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 |
| 2.5° | 29.0 | 27.7 | 27.1 | 23.9 | 21.0 | 18.8 | 17.9 | 17.9 | 18.5 | 18.5 |
| 5° | 28.7 | 24.9 | 21.4 | 19.1 | 16.9 | 15.0 | 13.4 | 12.1 | 10.8 | 10.8 |
| 7.5° | 34.8 | 30.9 | 27.4 | 23.6 | 20.7 | 17.9 | 15.3 | 14.0 | 12.4 | 12.1 |
| 10° | 38.3 | 35.4 | 31.9 | 28.4 | 24.9 | 21.7 | 18.8 | 16.6 | 15.6 | 15.6 |
| 12.5° | 43.0 | 39.5 | 36.0 | 32.8 | 29.3 | 26.1 | 23.6 | 22.0 | 20.4 | 20.1 |
| 15° | 47.8 | 43.7 | 39.5 | 36.4 | 32.8 | 29.7 | 27.1 | 25.5 | 24.9 | 24.6 |
| 17.5° | 51.7 | 47.2 | 42.7 | 38.9 | 35.1 | 31.6 | 28.7 | 27.1 | 26.1 | 26.1 |
| 20° | 55.2 | 50.4 | 45.3 | 41.1 | 37.0 | 33.2 | 30.0 | 28.4 | 27.1 | 27.1 |
| 22.5° | 58.7 | 52.9 | 48.2 | 43.7 | 38.6 | 34.8 | 31.6 | 29.3 | 28.1 | 28.1 |
| 25° | 61.5 | 55.8 | 50.4 | 45.9 | 40.5 | 36.4 | 33.2 | 30.9 | 29.3 | 29.3 |
| 27.5° | 64.1 | 58.4 | 52.9 | 47.8 | 42.4 | 37.9 | 34.8 | 31.9 | 30.3 | 30.3 |
| 30° | 66.0 | 60.6 | 54.8 | 49.7 | 44.0 | 39.5 | 36.4 | 33.2 | 31.6 | 31.6 |
| 32.5° | 67.6 | 62.2 | 56.8 | 51.7 | 45.6 | 41.5 | 37.9 | 34.8 | 33.2 | 32.8 |
| 35° | 68.6 | 63.5 | 58.4 | 53.3 | 47.2 | 43.0 | 39.5 | 36.4 | 34.4 | 34.4 |
| 37.5° | 70.8 | 64.7 | 60.0 | 54.8 | 48.8 | 45.0 | 41.8 | 38.6 | 36.7 | 36.4 |
| 40° | 75.6 | 68.9 | 63.1 | 57.4 | 51.3 | 47.5 | 44.0 | 41.1 | 39.2 | 38.9 |
| 42.5° | 86.7 | 78.1 | 70.5 | 62.5 | 55.5 | 51.0 | 46.9 | 44.0 | 41.8 | 41.5 |
| 45° | 103.6 | 93.1 | 82.9 | 72.7 | 63.5 | 56.8 | 51.3 | 47.8 | 45.0 | 45.0 |
| 47.5° | 130.4 | 116.1 | 100.4 | 87.4 | 75.3 | 65.4 | 57.7 | 52.0 | 48.5 | 48.5 |
| 50° | 162.9 | 145.7 | 126.3 | 109.4 | 90.9 | 76.9 | 66.3 | 57.7 | 52.3 | 51.7 |
| 52.5° | 205.0 | 184.0 | 158.5 | 135.5 | 111.6 | 91.8 | 77.2 | 65.1 | 56.4 | 55.5 |
| 55° | 252.6 | 235.3 | 197.7 | 169.0 | 136.5 | 110.0 | 88.3 | 71.7 | 60.3 | 59.3 |
| 57.5° | 302.9 | 278.7 | 237.6 | 199.9 | 160.7 | 127.2 | 100.8 | 78.8 | 65.4 | 63.5 |
| 60° | 339.0 | 312.5 | 268.2 | 225.5 | 178.6 | 141.3 | 110.7 | 84.8 | 69.8 | 68.2 |
| 62.5° | 370.2 | 339.6 | 291.8 | 242.7 | 193.2 | 151.5 | 117.3 | 88.6 | 74.6 | 72.7 |
| 65° | 395.4 | 362.9 | 311.9 | 259.6 | 206.3 | 161.0 | 122.8 | 94.1 | 80.4 | 77.5 |
| 67.5° | 416.1 | 382.3 | 331.3 | 274.6 | 219.4 | 172.2 | 129.1 | 98.5 | 87.7 | 84.5 |
| 70° | 436.2 | 400.8 | 347.3 | 290.2 | 232.5 | 181.8 | 135.2 | 104.6 | 92.2 | 92.8 |
| 72.5° | 453.5 | 417.4 | 361.0 | 302.0 | 242.4 | 190.7 | 138.4 | 107.5 | 98.2 | 97.9 |
| 75° | 468.1 | 429.9 | 370.9 | 311.9 | 250.6 | 197.7 | 140.0 | 108.7 | 102.0 | 100.8 |
| 77.5° | 473.9 | 438.8 | 379.2 | 319.5 | 256.7 | 204.7 | 141.3 | 108.7 | 103.6 | 103.6 |
| 78° | *472.3* | *435.0* | *374.7* | *314.1* | *252.6* | *202.8* | *141.9* | *109.4* | *104.0* | *104.9* |
| 80° | 478.0 | 441.0 | 376.9 | 317.6 | 256.1 | 205.4 | 139.7 | 108.4 | 104.0 | 105.9 |
| 82.5° | 476.7 | 436.6 | 375.0 | 314.4 | 251.6 | 200.6 | 136.5 | 106.2 | 101.7 | 105.6 |
| 85° | 470.7 | 430.5 | 368.9 | 307.7 | 245.9 | 194.5 | 131.7 | 103.0 | 99.5 | 104.6 |
| 87.5° | 456.3 | 415.5 | 357.2 | 296.9 | 235.7 | 185.3 | 127.2 | 99.8 | 96.6 | 101.1 |
| 90° | 430.2 | 395.7 | 339.9 | 280.3 | 222.9 | 176.0 | 122.1 | 95.7 | 92.8 | 96.0 |
| 92.5° | 402.4 | 370.2 | 320.8 | 263.7 | 208.6 | 165.8 | 116.7 | 90.2 | 86.1 | 88.6 |
| 95° | 379.2 | 350.1 | 302.3 | 246.8 | 195.2 | 155.9 | 109.4 | 84.5 | 79.4 | 81.6 |
| 97.5° | 351.4 | 321.8 | 277.4 | 226.4 | 178.9 | 143.2 | 99.8 | 75.6 | 70.5 | 72.7 |
| 100° | 304.5 | 283.5 | 240.1 | 195.8 | 155.6 | 123.1 | 87.1 | 64.4 | 59.0 | 60.9 |
| 102.5° | 211.1 | 196.8 | 166.8 | 137.4 | 109.7 | 89.3 | 63.8 | 48.2 | 43.7 | 45.0 |
| 105° | 125.3 | 116.7 | 101.1 | 86.7 | 72.1 | 59.0 | 44.3 | 36.4 | 32.8 | 33.8 |
| 107.5° | 89.6 | 84.8 | 74.6 | 63.1 | 53.3 | 44.6 | 34.8 | 29.7 | 27.1 | 27.4 |

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

Scaled Data Report

REPORT NUMBER: P1440200
CATALOG NUMBER: MPB-A2-D-U-ASYM-U-7030

**CANDELA DISTRIBUTION (continued):**

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|
| 110° | 74.9 | 69.5 | 60.9 | 52.3 | 44.3 | 36.7 | 29.3 | 25.8 | 23.6 | 23.9 |
| 112.5° | 67.3 | 62.5 | 55.2 | 46.9 | 39.5 | 32.5 | 25.8 | 22.6 | 21.0 | 21.0 |
| 115° | 63.8 | 58.4 | 51.0 | 43.0 | 35.7 | 29.0 | 23.3 | 20.4 | 18.8 | 19.1 |
| 117.5° | 59.6 | 54.8 | 47.8 | 39.9 | 32.5 | 26.1 | 21.0 | 18.5 | 16.9 | 16.9 |
| 120° | 55.8 | 50.7 | 44.3 | 37.0 | 29.7 | 23.6 | 18.8 | 16.6 | 15.0 | 15.3 |
| 122.5° | 51.7 | 46.9 | 40.8 | 34.1 | 26.8 | 21.4 | 16.9 | 14.3 | 13.1 | 13.1 |
| 125° | 46.9 | 42.7 | 37.3 | 30.9 | 23.9 | 18.8 | 14.7 | 12.4 | 11.2 | 11.2 |
| 127.5° | 42.1 | 38.3 | 33.2 | 27.1 | 21.0 | 16.3 | 12.8 | 10.5 | 9.2 | 9.2 |
| 130° | 36.4 | 33.2 | 28.7 | 23.3 | 17.5 | 13.4 | 10.5 | 8.6 | 7.7 | 7.7 |
| 132.5° | 30.3 | 27.1 | 23.3 | 18.8 | 14.0 | 10.8 | 8.3 | 7.0 | 6.1 | 6.1 |
| 135° | 23.9 | 21.4 | 17.9 | 14.0 | 10.5 | 8.0 | 6.4 | 5.4 | 4.8 | 4.8 |
| 137.5° | 17.2 | 15.0 | 12.8 | 9.9 | 7.7 | 5.7 | 4.8 | 4.1 | 3.5 | 3.5 |
| 140° | 12.1 | 10.2 | 8.9 | 7.0 | 5.4 | 4.1 | 3.2 | 2.9 | 2.6 | 2.6 |
| 142.5° | 8.6 | 7.3 | 6.4 | 5.1 | 3.5 | 2.9 | 2.6 | 2.2 | 1.9 | 1.9 |
| 145° | 6.1 | 5.1 | 4.1 | 3.5 | 2.2 | 1.9 | 1.6 | 1.6 | 1.3 | 1.3 |
| 147.5° | 3.8 | 3.2 | 2.6 | 1.9 | 1.3 | 1.0 | 1.0 | 1.0 | 0.6 | 0.6 |
| 150° | 1.9 | 1.3 | 1.3 | 1.0 | 0.3 | 0.6 | 0.3 | 0.6 | 0.3 | 0.3 |
| 152.5° | 0.6 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Streetworks

Report Number: SP3-2602-694-3

Test Date: 04/02/2026

Luminaire Tested: MPB-A2-D-U-SYM-7030

Data in this report applies to families of products including MPB*

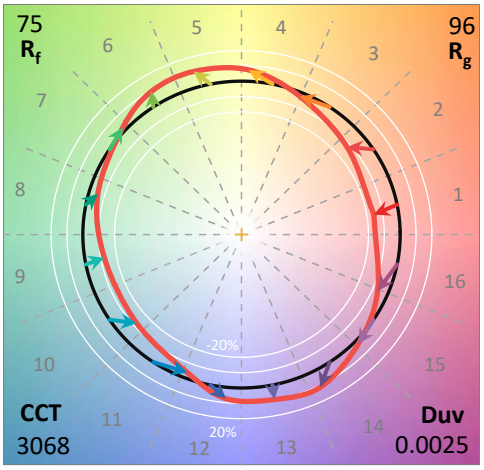
Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP3-2602-694-3 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP3 - 3M SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 04/02/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Streetworks |
| Catalog Number: | **MPB-A2-D-U-SYM-7030** |
| Description: | MPB Breckenridge 20W DECORATIVE POSTTOP SYMMETRIC DISTRIBUTION |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3068 | CRI (Ra): | 72.2 | | |
| CIE u': | 0.2473 | R1: | 68.9 | R9: | -29.3 |
| CIE v': | 0.5235 | R2: | 80.4 | R10: | 54.9 |
| Duv: | 0.0025 | R3: | 91.3 | R11: | 66.0 |
| CIE x: | 0.4358 | R4: | 70.3 | R12: | 45.5 |
| CIE y: | 0.4100 | R5: | 67.7 | R13: | 70.6 |
| CIE z: | 0.1542 | R6: | 72.8 | R14: | 94.9 |
| Peak Wavelength (nm): | 595 | R7: | 79.6 | R15: | 60.6 |
| Dominant Wavelength (nm): | 581 | R8: | 46.8 | | |
| Purity: | 53.8707 | | | | |
| Rf: | 75 | | | | |
| Rg: | 95.5 | | | | |




## Test Conditions

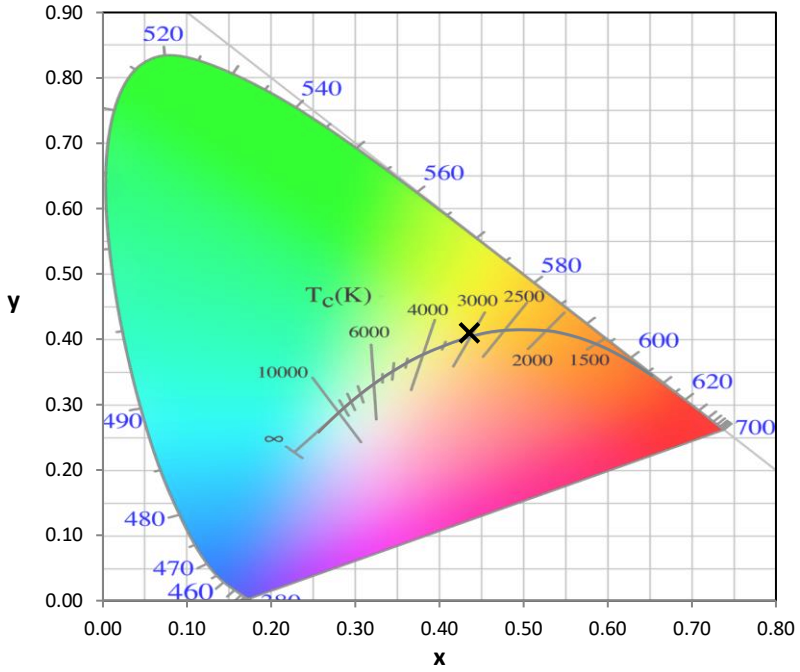
| | |
|---|---|
| Stabilization Time: | 28M |
| Operation Time: | 1H 28M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP3-2602-694-3

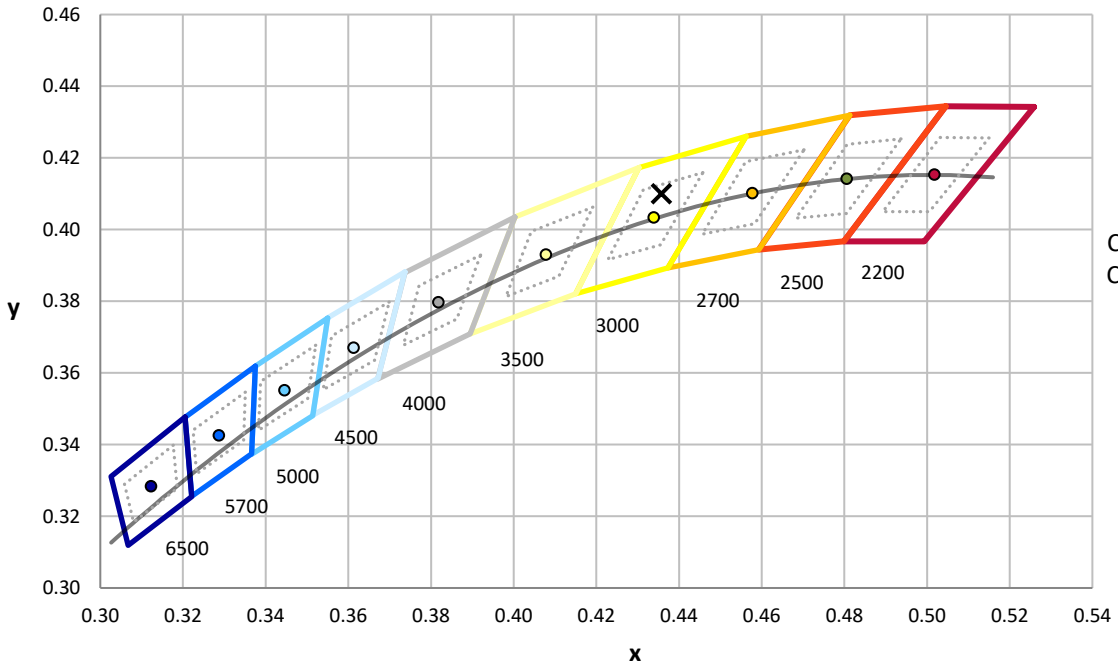
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 1/10/2026 | 7/10/2026 |
| Power Meter | XITRON INXT2011006 | 10/21/2025 | 10/21/2026 |
| AC Power Source | CHROMA 61604 IN6064A | 10/20/2025 | 10/20/2026 |
| DC Power Source | EYSIGHT N5770A IN0534 | 10/20/2025 | 10/20/2026 |
| Sphere Thermometer | TANDD IN4036E | 10/21/2025 | 10/21/2026 |
| | | | |

REPORT NUMBER: SP3-2602-694-3

## CIE 1931 Chromaticity Diagram




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

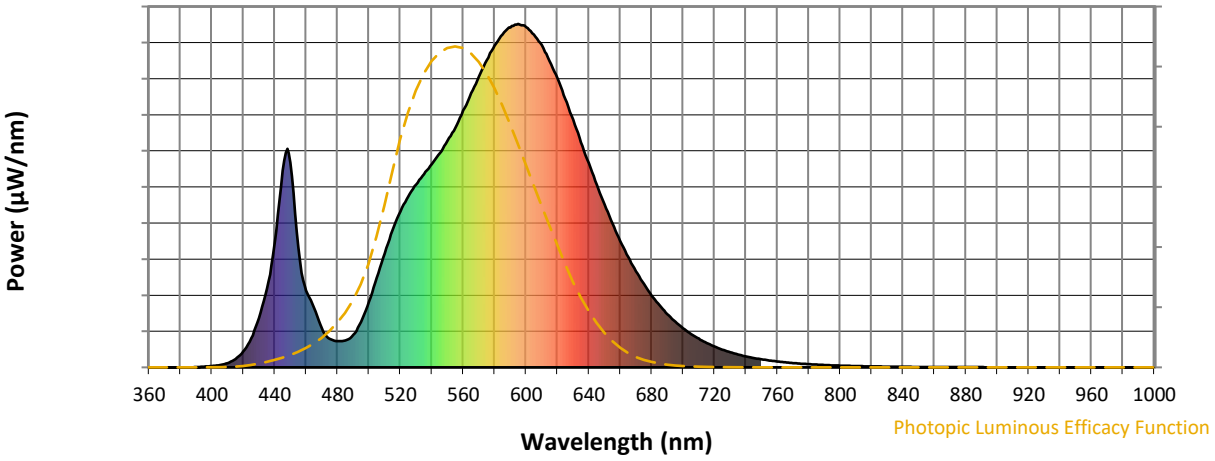



CCT = 3068K
CIE x = 0.4358
CIE y = 0.4100
Duv = 0.0025

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP3-2602-694-3

## Photopic Flux vs. Wavelength

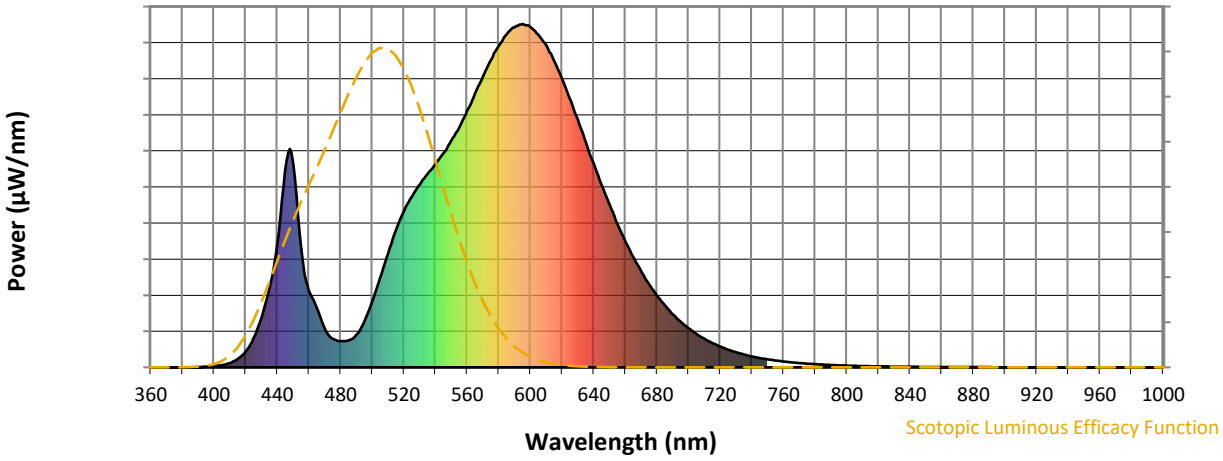



## Photopic Lumens: NR

| 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 | 95 | NR | 620 | 841 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 132 | NR | 625 | 781 | NR | 755 | 20 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 192 | NR | 630 | 721 | NR | 760 | 17 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 261 | NR | 635 | 655 | NR | 765 | 15 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 332 | NR | 640 | 595 | NR | 770 | 13 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 399 | NR | 645 | 531 | NR | 775 | 11 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 453 | NR | 650 | 474 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 497 | NR | 655 | 418 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 532 | NR | 660 | 367 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 563 | NR | 665 | 322 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 592 | NR | 670 | 280 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 24 | NR | 545 | 624 | NR | 675 | 243 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 47 | NR | 550 | 659 | NR | 680 | 209 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 85 | NR | 555 | 698 | NR | 685 | 181 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 144 | NR | 560 | 748 | NR | 690 | 155 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 229 | NR | 565 | 798 | NR | 695 | 133 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 361 | NR | 570 | 846 | NR | 700 | 114 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 895 | NR | 705 | 97 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 596 | NR | 580 | 936 | NR | 710 | 83 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 350 | NR | 585 | 969 | NR | 715 | 71 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 224 | NR | 590 | 990 | NR | 720 | 61 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 173 | NR | 595 | 1000 | NR | 725 | 52 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 113 | NR | 600 | 990 | NR | 730 | 44 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 83 | NR | 605 | 969 | NR | 735 | 38 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 939 | NR | 740 | 32 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 78 | NR | 615 | 892 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP3-2602-694-3

## Scotopic Flux vs. Wavelength

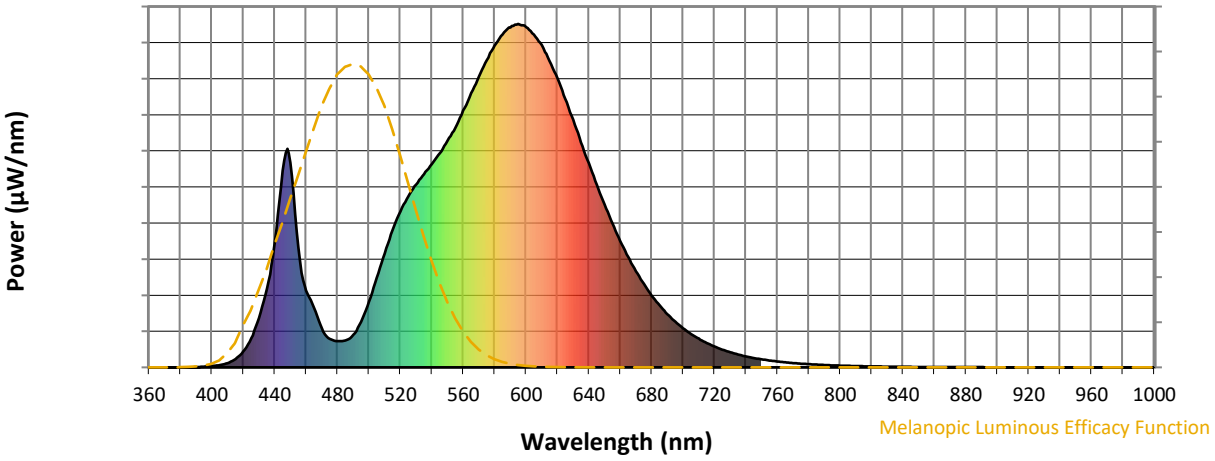



**Scotopic Lumens: NR** **S/P: 1.21**

| 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 | 95 | NR | 620 | 841 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 132 | NR | 625 | 781 | NR | 755 | 20 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 192 | NR | 630 | 721 | NR | 760 | 17 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 261 | NR | 635 | 655 | NR | 765 | 15 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 332 | NR | 640 | 595 | NR | 770 | 13 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 399 | NR | 645 | 531 | NR | 775 | 11 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 453 | NR | 650 | 474 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 497 | NR | 655 | 418 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 532 | NR | 660 | 367 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 563 | NR | 665 | 322 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 592 | NR | 670 | 280 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 24 | NR | 545 | 624 | NR | 675 | 243 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 47 | NR | 550 | 659 | NR | 680 | 209 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 85 | NR | 555 | 698 | NR | 685 | 181 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 144 | NR | 560 | 748 | NR | 690 | 155 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 229 | NR | 565 | 798 | NR | 695 | 133 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 361 | NR | 570 | 846 | NR | 700 | 114 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 895 | NR | 705 | 97 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 596 | NR | 580 | 936 | NR | 710 | 83 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 350 | NR | 585 | 969 | NR | 715 | 71 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 224 | NR | 590 | 990 | NR | 720 | 61 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 173 | NR | 595 | 1000 | NR | 725 | 52 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 113 | NR | 600 | 990 | NR | 730 | 44 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 83 | NR | 605 | 969 | NR | 735 | 38 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 939 | NR | 740 | 32 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 78 | NR | 615 | 892 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP3-2602-694-3

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.16**

| 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 | 95 | NR | 620 | 841 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 132 | NR | 625 | 781 | NR | 755 | 20 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 192 | NR | 630 | 721 | NR | 760 | 17 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 261 | NR | 635 | 655 | NR | 765 | 15 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 332 | NR | 640 | 595 | NR | 770 | 13 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 399 | NR | 645 | 531 | NR | 775 | 11 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 453 | NR | 650 | 474 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 497 | NR | 655 | 418 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 532 | NR | 660 | 367 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 563 | NR | 665 | 322 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 592 | NR | 670 | 280 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 24 | NR | 545 | 624 | NR | 675 | 243 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 47 | NR | 550 | 659 | NR | 680 | 209 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 85 | NR | 555 | 698 | NR | 685 | 181 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 144 | NR | 560 | 748 | NR | 690 | 155 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 229 | NR | 565 | 798 | NR | 695 | 133 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 361 | NR | 570 | 846 | NR | 700 | 114 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 895 | NR | 705 | 97 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 596 | NR | 580 | 936 | NR | 710 | 83 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 350 | NR | 585 | 969 | NR | 715 | 71 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 224 | NR | 590 | 990 | NR | 720 | 61 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 173 | NR | 595 | 1000 | NR | 725 | 52 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 113 | NR | 600 | 990 | NR | 730 | 44 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 83 | NR | 605 | 969 | NR | 735 | 38 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 939 | NR | 740 | 32 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 78 | NR | 615 | 892 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

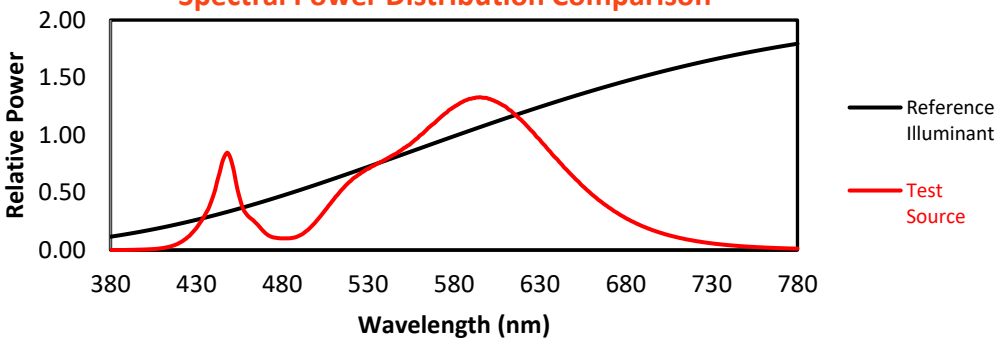
REPORT NUMBER: SP3-2602-694-3

# TM-30-18

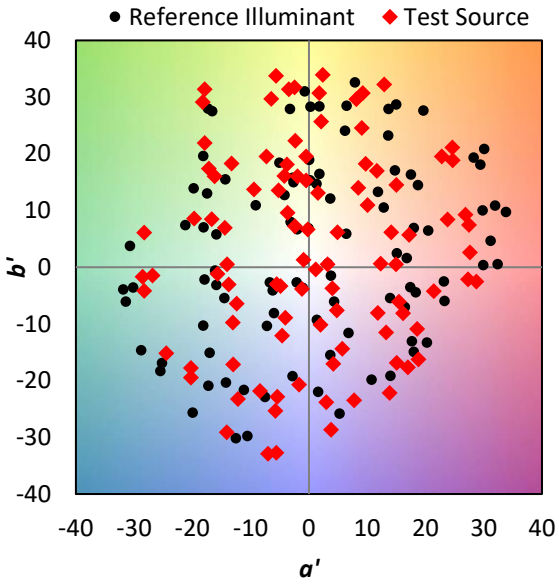
## Summary

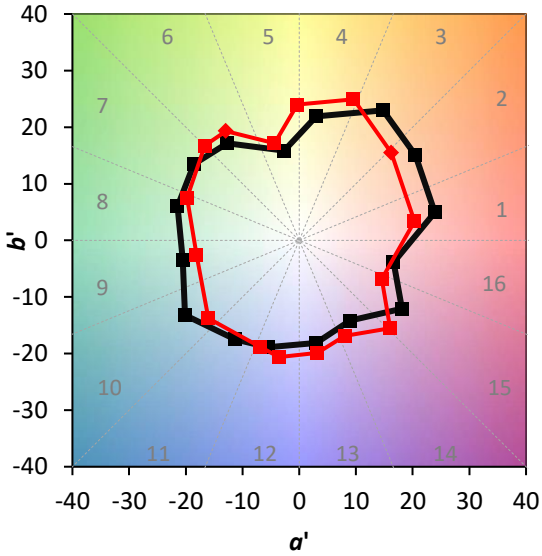
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$R_g$ = 95.5
CIE $R_a$ = 72.2
$R_9$ = -29.3

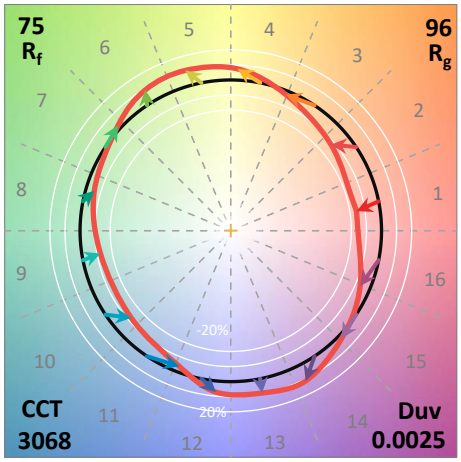
## Spectral Power Distribution Comparison

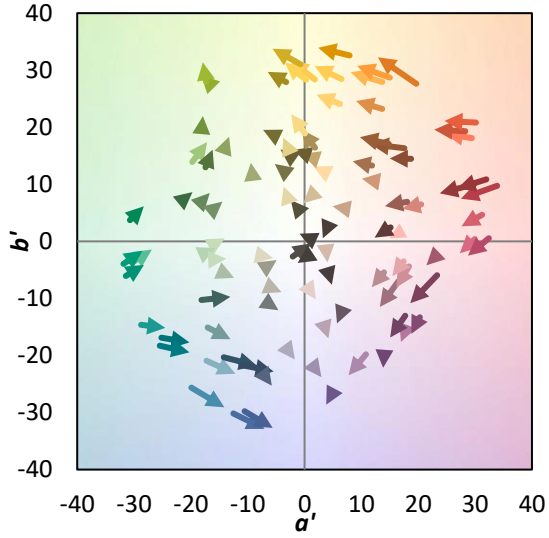



## Color Vector Graphics



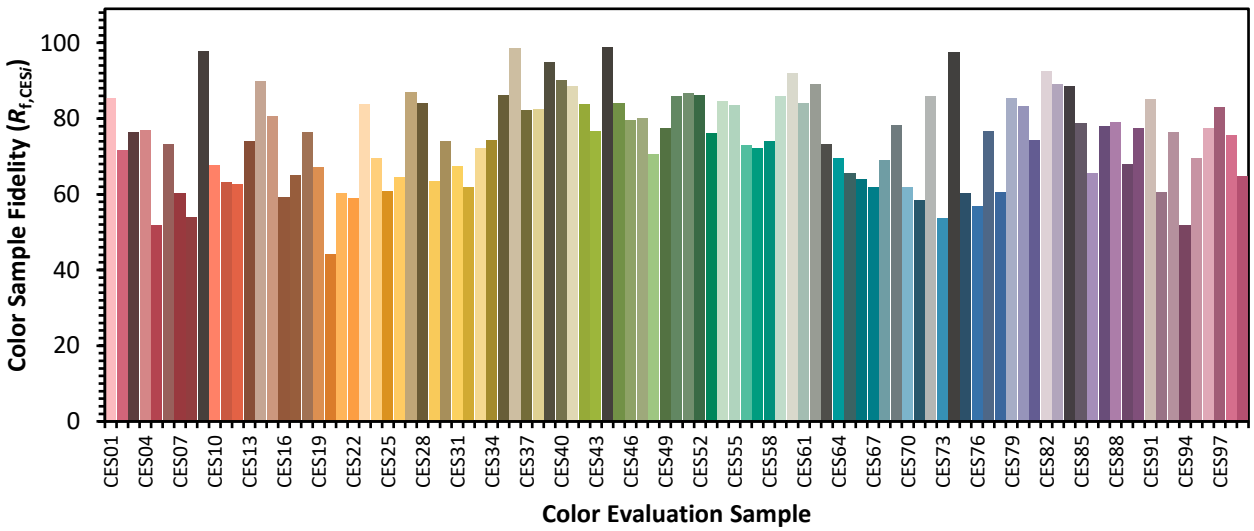



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**Individual Sample Fidelity Index ($R_{f,i}$)**

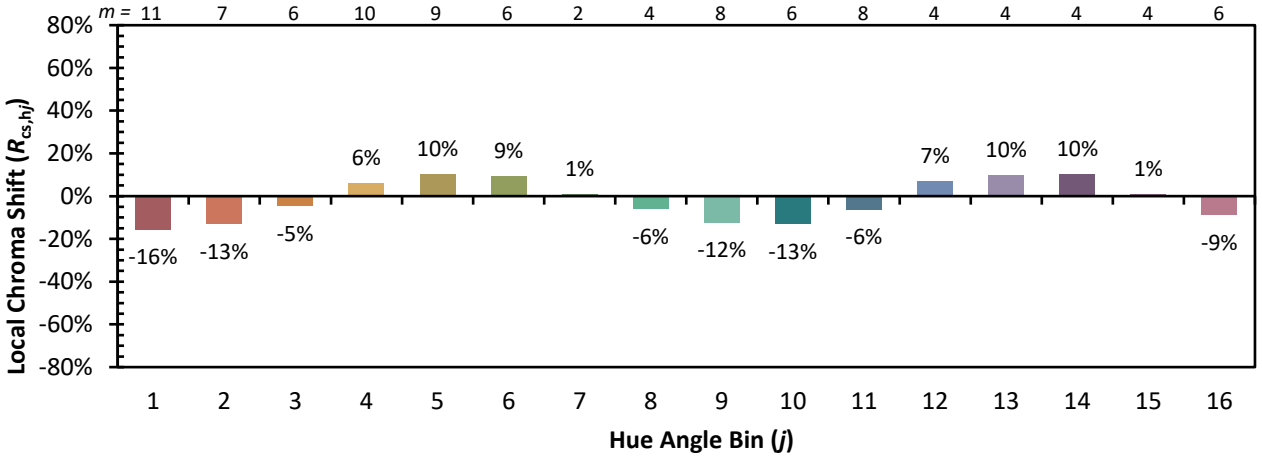
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 64 | CES51 = 87 | CES76 = 57 |
| CES02 = 62 | CES27 = 87 | CES52 = 86 | CES77 = 77 |
| CES03 = 31 | CES28 = 84 | CES53 = 76 | CES78 = 60 |
| CES04 = 71 | CES29 = 63 | CES54 = 84 | CES79 = 85 |
| CES05 = 49 | CES30 = 74 | CES55 = 83 | CES80 = 83 |
| CES06 = 51 | CES31 = 68 | CES56 = 73 | CES81 = 74 |
| CES07 = 41 | CES32 = 62 | CES57 = 72 | CES82 = 93 |
| CES08 = 40 | CES33 = 72 | CES58 = 74 | CES83 = 89 |
| CES09 = 29 | CES34 = 74 | CES59 = 86 | CES84 = 89 |
| CES10 = 76 | CES35 = 86 | CES60 = 92 | CES85 = 79 |
| CES11 = 59 | CES36 = 99 | CES61 = 84 | CES86 = 66 |
| CES12 = 65 | CES37 = 82 | CES62 = 89 | CES87 = 78 |
| CES13 = 43 | CES38 = 83 | CES63 = 73 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 69 | CES89 = 68 |
| CES15 = 71 | CES40 = 90 | CES65 = 66 | CES90 = 77 |
| CES16 = 47 | CES41 = 88 | CES66 = 64 | CES91 = 85 |
| CES17 = 50 | CES42 = 84 | CES67 = 62 | CES92 = 61 |
| CES18 = 56 | CES43 = 77 | CES68 = 69 | CES93 = 76 |
| CES19 = 72 | CES44 = 99 | CES69 = 78 | CES94 = 52 |
| CES20 = 66 | CES45 = 84 | CES70 = 62 | CES95 = 69 |
| CES21 = 87 | CES46 = 80 | CES71 = 58 | CES96 = 78 |
| CES22 = 79 | CES47 = 80 | CES72 = 86 | CES97 = 83 |
| CES23 = 92 | CES48 = 71 | CES73 = 54 | CES98 = 76 |
| CES24 = 91 | CES49 = 78 | CES74 = 97 | CES99 = 65 |
| CES25 = 73 | CES50 = 86 | CES75 = 60 | |

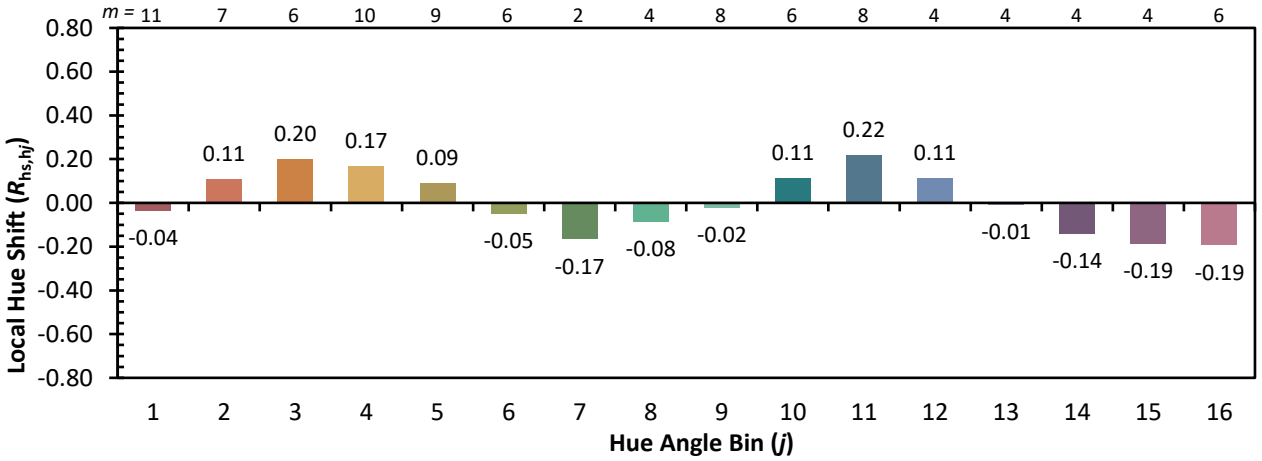


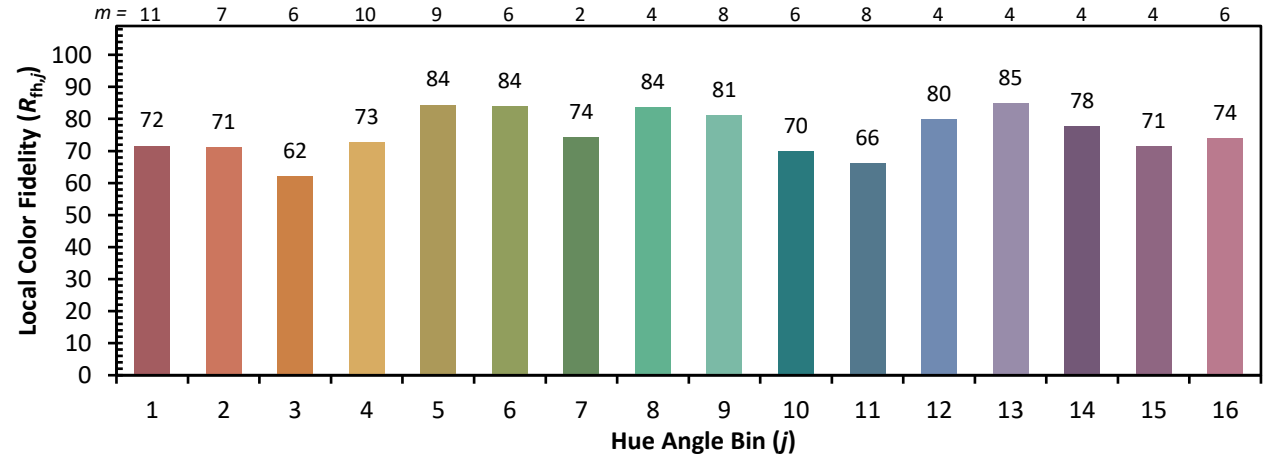
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## Color Rendition by Hue-Angle Bin



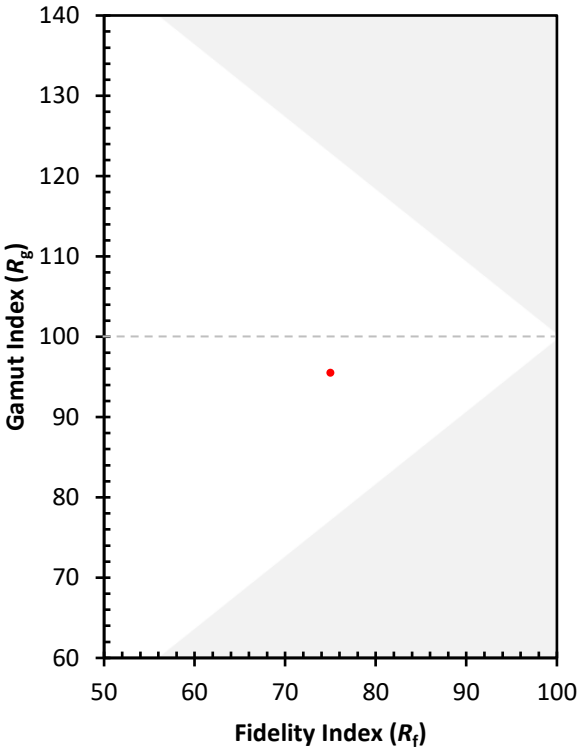



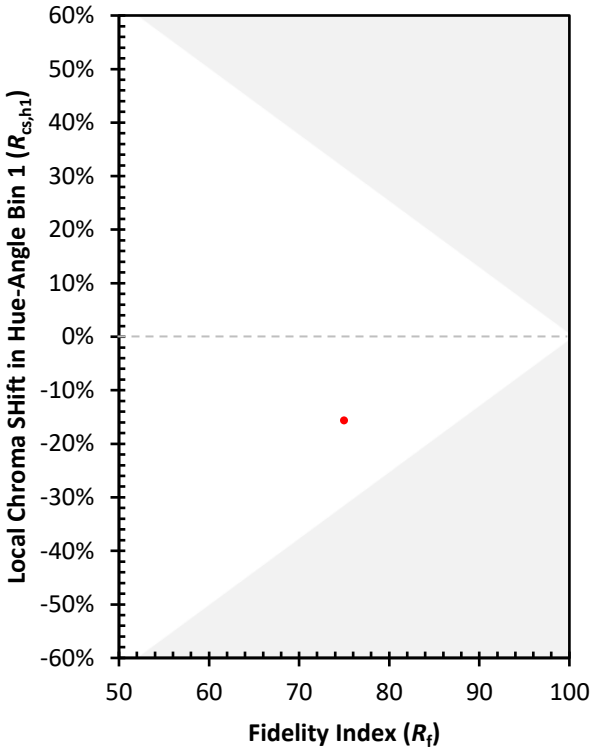



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## Measure Comparisons




(END OF REPORT)