

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: EHBR1-12-UNV-N-L840-UPL24

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: REPORT IS A COMBINATION OF REPORTS P1431655 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-12-UNV-N-L840-UPL24
Description: Elevate Round Highbay at, 12000 lumens, 4000K 80CRI LEDs with N lens
Light Source: -
Ballast/Driver: -

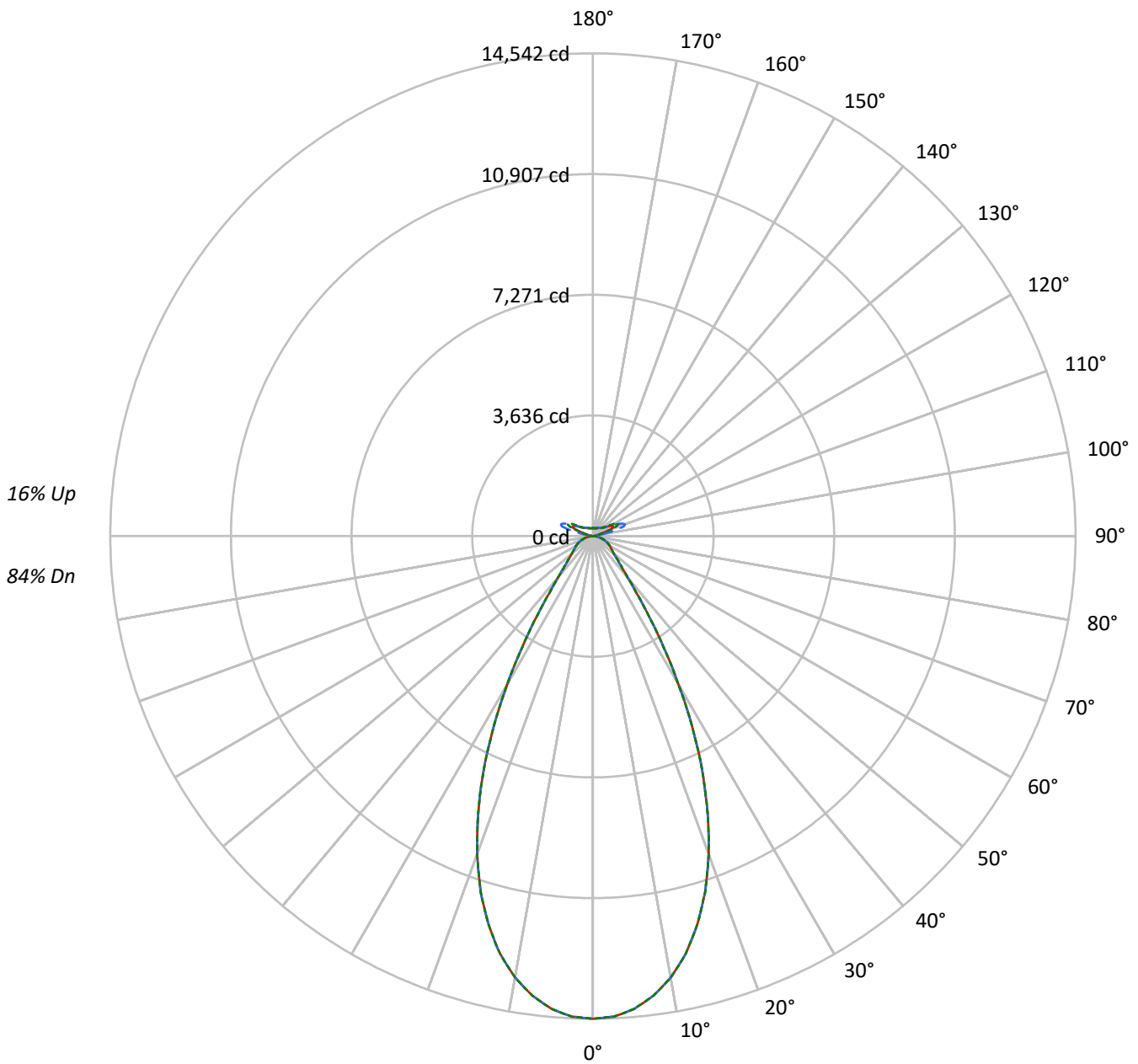
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14826.4 lumens
Efficiency: N/A
Efficacy: 182.6 lumens/watt
Spacing Criteria (0/90/45): 0.82 / 0.82 / 0.8
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 81.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER:
CATALOG NUMBER: EHBR1-12-UNV-N-L840-UPL24

Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270°



TEST NUMBER:

CATALOG NUMBER: EHBR1-12-UNV-N-L840-UPL24

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 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 115 | 115 | 115 | 115 | 111 | 111 | 111 | 111 | 102 | 102 | 102 | 95 | 95 | 95 | 87 | 87 | 87 | 87 | 87 | 87 | 84 |
| 1 | 108 | 105 | 102 | 99 | 104 | 101 | 98 | 96 | 94 | 92 | 90 | 88 | 86 | 85 | 82 | 81 | 79 | 79 | 79 | 79 | 77 |
| 2 | 102 | 96 | 91 | 87 | 98 | 93 | 88 | 85 | 87 | 83 | 80 | 81 | 79 | 76 | 76 | 74 | 72 | 72 | 72 | 72 | 70 |
| 3 | 95 | 88 | 82 | 77 | 92 | 85 | 80 | 76 | 80 | 76 | 72 | 76 | 72 | 69 | 71 | 69 | 66 | 66 | 66 | 66 | 64 |
| 4 | 90 | 81 | 75 | 70 | 87 | 79 | 73 | 69 | 75 | 70 | 66 | 71 | 67 | 64 | 67 | 64 | 61 | 61 | 61 | 61 | 59 |
| 5 | 85 | 75 | 68 | 64 | 82 | 73 | 67 | 63 | 69 | 64 | 61 | 66 | 62 | 59 | 63 | 59 | 57 | 57 | 57 | 57 | 55 |
| 6 | 80 | 70 | 63 | 58 | 77 | 68 | 62 | 58 | 65 | 60 | 56 | 62 | 58 | 54 | 59 | 56 | 53 | 53 | 53 | 53 | 51 |
| 7 | 75 | 65 | 59 | 54 | 73 | 64 | 58 | 53 | 61 | 56 | 52 | 58 | 54 | 51 | 56 | 52 | 49 | 49 | 49 | 49 | 48 |
| 8 | 72 | 61 | 55 | 50 | 69 | 60 | 54 | 50 | 57 | 52 | 49 | 55 | 51 | 47 | 53 | 49 | 46 | 46 | 46 | 46 | 45 |
| 9 | 68 | 58 | 51 | 47 | 66 | 56 | 51 | 46 | 54 | 49 | 45 | 52 | 48 | 45 | 50 | 46 | 44 | 44 | 44 | 44 | 42 |
| 10 | 65 | 54 | 48 | 44 | 63 | 53 | 48 | 44 | 51 | 46 | 43 | 50 | 45 | 42 | 48 | 44 | 41 | 41 | 41 | 41 | 40 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 68288 | 68288 | 68288 |
| 5° | 66963 | 66963 | 66963 |
| 10° | 63556 | 63556 | 63556 |
| 15° | 57827 | 57827 | 57827 |
| 20° | 49603 | 49603 | 49603 |
| 25° | 39021 | 39021 | 39021 |
| 30° | 26778 | 26778 | 26778 |
| 35° | 15907 | 15907 | 15907 |
| 40° | 9412 | 9412 | 9412 |
| 45° | 6756 | 6756 | 6756 |
| 50° | 5554 | 5554 | 5554 |
| 55° | 5047 | 5047 | 5047 |
| 60° | 4831 | 4831 | 4831 |
| 65° | 4608 | 4608 | 4608 |
| 70° | 4285 | 4285 | 4285 |
| 75° | 3874 | 3874 | 3874 |
| 80° | 3216 | 3216 | 3216 |
| 85° | 2037 | 2037 | 2037 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6756 cd/sqm



TEST NUMBER:

CATALOG NUMBER: EHBR1-12-UNV-N-L840-UPL24

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1339.5 | 9.0 |
| 10°-20° | 3362.4 | 22.7 |
| 20°-30° | 3515.7 | 23.7 |
| 30°-40° | 1904.9 | 12.8 |
| 40°-50° | 876.4 | 5.9 |
| 50°-60° | 617.6 | 4.2 |
| 60°-70° | 475.3 | 3.2 |
| 70°-80° | 288.1 | 1.9 |
| 80°-90° | 85.4 | 0.6 |
| 90°-100° | 67.4 | 0.5 |
| 100°-110° | 421.8 | 2.8 |
| 110°-120° | 754.4 | 5.1 |
| 120°-130° | 442.6 | 3.0 |
| 130°-140° | 271.5 | 1.8 |
| 140°-150° | 188.3 | 1.3 |
| 150°-160° | 122.4 | 0.8 |
| 160°-170° | 69.7 | 0.5 |
| 170°-180° | 23.0 | 0.2 |
| 0°-30° | 8217.6 | 55.4 |
| 0°-40° | 10122.5 | 68.3 |
| 0°-60° | 11616.4 | 78.3 |
| 0°-90° | 12465.3 | 84.1 |
| 90°-120° | 1243.6 | 8.4 |
| 90°-150° | 2146.0 | 14.5 |
| 90°-180° | 2361.0 | 15.9 |
| 0°-180° | 14826.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 14542 | 14542 | 14542 | 14542 | 14542 | |
| 5° | 14298 | 14298 | 14298 | 14298 | 14298 | 1340 |
| 15° | 12132 | 12132 | 12132 | 12132 | 12132 | 3362 |
| 25° | 7792 | 7792 | 7792 | 7792 | 7792 | 3516 |
| 35° | 2920 | 2920 | 2920 | 2920 | 2920 | 1905 |
| 45° | 1093 | 1093 | 1093 | 1093 | 1093 | 876 |
| 55° | 682 | 682 | 682 | 682 | 682 | 618 |
| 65° | 481 | 481 | 481 | 481 | 481 | 475 |
| 75° | 273 | 273 | 273 | 273 | 273 | 288 |
| 85° | 70 | 70 | 70 | 70 | 70 | 78 |
| 90° | 18 | 29 | 49 | 32 | 18 | 12 |
| 95° | 30 | 50 | 110 | 54 | 34 | 29 |
| 105° | 147 | 291 | 742 | 320 | 195 | 197 |
| 115° | 678 | 714 | 877 | 841 | 835 | 625 |
| 125° | 489 | 457 | 469 | 476 | 534 | 446 |
| 135° | 357 | 346 | 358 | 336 | 335 | 279 |
| 145° | 293 | 289 | 307 | 303 | 301 | 186 |
| 155° | 257 | 254 | 266 | 266 | 266 | 120 |
| 165° | 241 | 241 | 247 | 247 | 246 | 69 |
| 175° | 238 | 238 | 242 | 242 | 242 | 23 |
| 180° | 241 | 241 | 241 | 241 | 241 | |



TEST NUMBER:

CATALOG NUMBER: EHBR1-12-UNV-N-L840-UPL24

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 14541.5 | 14541.5 | 14541.5 | 14541.5 | 14541.5 |
| 2.5° | 14490.0 | 14490.0 | 14490.0 | 14490.0 | 14490.0 |
| 5° | 14297.6 | 14297.6 | 14297.6 | 14297.6 | 14297.6 |
| 7.5° | 13969.2 | 13969.2 | 13969.2 | 13969.2 | 13969.2 |
| 10° | 13503.3 | 13503.3 | 13503.3 | 13503.3 | 13503.3 |
| 12.5° | 12901.1 | 12901.1 | 12901.1 | 12901.1 | 12901.1 |
| 15° | 12131.8 | 12131.8 | 12131.8 | 12131.8 | 12131.8 |
| 17.5° | 11239.3 | 11239.3 | 11239.3 | 11239.3 | 11239.3 |
| 20° | 10194.8 | 10194.8 | 10194.8 | 10194.8 | 10194.8 |
| 22.5° | 9031.9 | 9031.9 | 9031.9 | 9031.9 | 9031.9 |
| 25° | 7792.4 | 7792.4 | 7792.4 | 7792.4 | 7792.4 |
| 27.5° | 6478.3 | 6478.3 | 6478.3 | 6478.3 | 6478.3 |
| 30° | 5150.7 | 5150.7 | 5150.7 | 5150.7 | 5150.7 |
| 32.5° | 3953.0 | 3953.0 | 3953.0 | 3953.0 | 3953.0 |
| 35° | 2919.5 | 2919.5 | 2919.5 | 2919.5 | 2919.5 |
| 37.5° | 2143.6 | 2143.6 | 2143.6 | 2143.6 | 2143.6 |
| 40° | 1631.3 | 1631.3 | 1631.3 | 1631.3 | 1631.3 |
| 42.5° | 1308.1 | 1308.1 | 1308.1 | 1308.1 | 1308.1 |
| 45° | 1093.1 | 1093.1 | 1093.1 | 1093.1 | 1093.1 |
| 47.5° | 938.3 | 938.3 | 938.3 | 938.3 | 938.3 |
| 50° | 827.7 | 827.7 | 827.7 | 827.7 | 827.7 |
| 52.5° | 746.9 | 746.9 | 746.9 | 746.9 | 746.9 |
| 55° | 682.1 | 682.1 | 682.1 | 682.1 | 682.1 |
| 57.5° | 629.5 | 629.5 | 629.5 | 629.5 | 629.5 |
| 60° | 580.8 | 580.8 | 580.8 | 580.8 | 580.8 |
| 62.5° | 532.2 | 532.2 | 532.2 | 532.2 | 532.2 |
| 65° | 481.0 | 481.0 | 481.0 | 481.0 | 481.0 |
| 67.5° | 428.8 | 428.8 | 428.8 | 428.8 | 428.8 |
| 70° | 376.0 | 376.0 | 376.0 | 376.0 | 376.0 |
| 72.5° | 324.7 | 324.7 | 324.7 | 324.7 | 324.7 |
| 75° | 272.9 | 272.9 | 272.9 | 272.9 | 272.9 |
| 77.5° | 222.2 | 222.2 | 222.2 | 222.2 | 222.2 |
| 80° | 169.2 | 169.2 | 169.2 | 169.2 | 169.2 |
| 82.5° | 118.4 | 118.4 | 118.4 | 118.4 | 118.4 |
| 85° | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 |
| 87.5° | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 |
| 90° | 18.0 | 28.8 | 49.1 | 31.5 | 18.0 |
| 92.5° | 25.7 | 43.3 | 78.4 | 40.5 | 23.0 |
| 95° | 29.7 | 50.0 | 109.5 | 54.1 | 33.8 |
| 97.5° | 37.8 | 55.4 | 125.7 | 66.2 | 52.7 |
| 100° | 50.0 | 64.9 | 196.0 | 81.1 | 70.3 |
| 102.5° | 85.1 | 137.9 | 416.3 | 152.7 | 106.8 |
| 105° | 147.3 | 290.6 | 742.0 | 320.3 | 194.6 |
| 107.5° | 255.4 | 520.4 | 978.5 | 567.7 | 369.0 |
| 110° | 477.1 | 690.6 | 1025.8 | 779.9 | 590.6 |



TEST NUMBER:

CATALOG NUMBER: EHBR1-12-UNV-N-L840-UPL24

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 644.7 | 742.0 | 982.6 | 860.9 | 769.0 |
| 115° | 678.5 | 713.6 | 877.2 | 840.7 | 835.3 |
| 117.5° | 655.5 | 651.5 | 744.7 | 755.5 | 806.9 |
| 120° | 606.9 | 579.8 | 621.7 | 659.6 | 728.5 |
| 122.5° | 546.0 | 513.6 | 532.5 | 560.9 | 629.8 |
| 125° | 489.3 | 456.8 | 469.0 | 475.8 | 533.9 |
| 127.5° | 439.3 | 417.6 | 424.4 | 416.3 | 452.8 |
| 130° | 405.5 | 386.5 | 396.0 | 377.1 | 394.7 |
| 132.5° | 377.1 | 364.9 | 375.7 | 352.8 | 358.2 |
| 135° | 356.8 | 346.0 | 358.2 | 336.5 | 335.2 |
| 137.5° | 339.2 | 329.8 | 341.9 | 325.7 | 321.7 |
| 140° | 323.0 | 314.9 | 328.4 | 316.3 | 313.6 |
| 142.5° | 305.5 | 300.0 | 316.3 | 308.2 | 305.5 |
| 145° | 293.3 | 289.2 | 306.8 | 302.8 | 301.4 |
| 147.5° | 282.5 | 279.8 | 296.0 | 294.6 | 294.6 |
| 150° | 273.0 | 270.3 | 286.5 | 285.2 | 286.5 |
| 152.5° | 263.6 | 260.9 | 275.7 | 274.4 | 275.7 |
| 155° | 256.8 | 254.1 | 266.3 | 266.3 | 266.3 |
| 157.5° | 251.4 | 250.0 | 259.5 | 259.5 | 259.5 |
| 160° | 247.3 | 246.0 | 254.1 | 254.1 | 252.7 |
| 162.5° | 243.3 | 241.9 | 251.4 | 250.0 | 250.0 |
| 165° | 240.6 | 240.6 | 247.3 | 247.3 | 246.0 |
| 167.5° | 240.6 | 239.2 | 246.0 | 246.0 | 244.6 |
| 170° | 239.2 | 239.2 | 244.6 | 243.3 | 241.9 |
| 172.5° | 239.2 | 239.2 | 244.6 | 243.3 | 241.9 |
| 175° | 237.9 | 237.9 | 241.9 | 241.9 | 241.9 |
| 177.5° | 239.2 | 239.2 | 241.9 | 241.9 | 240.6 |
| 180° | 240.6 | 240.6 | 240.6 | 240.6 | 240.6 |



TEST NUMBER: CATALOG
 CATALOG NUMBER: EHBR1-12-UNV-N-L840-UPL24

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 | 12.82 | 13.78 | 13.44 | 14.39 | 15.08 | 12.82 | 13.78 | 13.44 | 14.39 | 15.08 |
| | 3H | 14.59 | 15.44 | 15.23 | 16.07 | 16.80 | 14.59 | 15.44 | 15.23 | 16.07 | 16.80 |
| | 4H | 15.25 | 16.04 | 15.91 | 16.68 | 17.43 | 15.25 | 16.04 | 15.91 | 16.68 | 17.43 |
| | 6H | 15.70 | 16.44 | 16.37 | 17.09 | 17.84 | 15.70 | 16.44 | 16.37 | 17.09 | 17.84 |
| | 8H | 15.82 | 16.52 | 16.51 | 17.18 | 17.95 | 15.82 | 16.52 | 16.51 | 17.18 | 17.95 |
| | 12H | 15.87 | 16.54 | 16.56 | 17.19 | 17.98 | 15.87 | 16.54 | 16.56 | 17.19 | 17.98 |
| 4H | 2H | 13.35 | 14.15 | 14.01 | 14.79 | 15.53 | 13.35 | 14.15 | 14.01 | 14.79 | 15.53 |
| | 3H | 15.32 | 15.98 | 15.99 | 16.66 | 17.42 | 15.32 | 15.98 | 15.99 | 16.66 | 17.42 |
| | 4H | 16.09 | 16.68 | 16.77 | 17.37 | 18.16 | 16.09 | 16.68 | 16.77 | 17.37 | 18.16 |
| | 6H | 16.66 | 17.17 | 17.37 | 17.88 | 18.69 | 16.66 | 17.17 | 17.37 | 17.88 | 18.69 |
| | 8H | 16.81 | 17.29 | 17.53 | 18.00 | 18.81 | 16.81 | 17.29 | 17.53 | 18.00 | 18.81 |
| | 12H | 16.89 | 17.31 | 17.62 | 18.04 | 18.86 | 16.89 | 17.31 | 17.62 | 18.04 | 18.86 |
| 8H | 4H | 16.31 | 16.79 | 17.03 | 17.49 | 18.31 | 16.31 | 16.79 | 17.03 | 17.49 | 18.31 |
| | 6H | 17.00 | 17.38 | 17.74 | 18.13 | 18.95 | 17.00 | 17.38 | 17.74 | 18.13 | 18.95 |
| | 8H | 17.22 | 17.56 | 17.98 | 18.32 | 19.15 | 17.22 | 17.56 | 17.98 | 18.32 | 19.15 |
| | 12H | 17.35 | 17.65 | 18.11 | 18.39 | 19.29 | 17.35 | 17.65 | 18.11 | 18.39 | 19.29 |
| 12H | 4H | 16.31 | 16.73 | 17.04 | 17.46 | 18.28 | 16.31 | 16.73 | 17.04 | 17.46 | 18.28 |
| | 6H | 17.02 | 17.36 | 17.78 | 18.12 | 18.95 | 17.02 | 17.36 | 17.78 | 18.12 | 18.95 |
| | 8H | 17.28 | 17.58 | 18.03 | 18.32 | 19.22 | 17.28 | 17.58 | 18.03 | 18.32 | 19.22 |

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



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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-1

Test Date: 07/30/2025

Luminaire Tested: EHBR-60-L840-N

Data in this report applies to families of products including EHBR-60-L840-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-1
 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-L840-N**
 Description: Elevate Round Highbay at, 60000 lumens, 4000K 80CRI LEDs with N lens

Spectral Parameters

CCT (K): 3898
 CIE u': 0.2263
 CIE v': 0.5052
 Duv: 0.0013
 CIE x: 0.3861
 CIE y: 0.3831
 CIE z: 0.2308
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 578
 Purity: 30.85729
 Rf: 80.7
 Rg: 102.1

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 82.1 | | |
| R1: | 84.4 | R9: | 38.5 |
| R2: | 83.5 | R10: | 58.9 |
| R3: | 80.8 | R11: | 83.6 |
| R4: | 83.9 | R12: | 54.2 |
| R5: | 82.1 | R13: | 82.8 |
| R6: | 77.3 | R14: | 88.2 |
| R7: | 86.4 | R15: | 81.2 |
| R8: | 78.3 | | |



Test Conditions
 Stabilization Time: 42M
 Operation Time: 1H 42M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-1

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 10/22/2024 | 10/22/2025 |
| DC Power Source | AGILENT E3634A IN0208 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | ONSET IN0085 | 10/22/2024 | 10/22/2025 |
| Room Thermometer | ONSET IN0046 | 10/22/2024 | 10/22/2025 |

REPORT NUMBER: SP1-2506-472-1

CIE 1931 Chromaticity Diagram



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



CCT = 3898K
 CIE x = 0.3861
 CIE y = 0.3831
 Duv = 0.0013

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-1

Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 277 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 278 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 124 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 168 | NR | 635 | 623 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 209 | NR | 640 | 162 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 246 | NR | 645 | 158 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 273 | NR | 650 | 134 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 292 | NR | 655 | 109 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 305 | NR | 660 | 91 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 313 | NR | 665 | 75 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 11 | NR | 540 | 319 | NR | 670 | 70 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 323 | NR | 675 | 56 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 326 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 76 | NR | 555 | 330 | NR | 685 | 41 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 125 | NR | 560 | 333 | NR | 690 | 35 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 193 | NR | 565 | 336 | NR | 695 | 30 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 302 | NR | 570 | 336 | NR | 700 | 26 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 432 | NR | 575 | 335 | NR | 705 | 22 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 380 | NR | 580 | 332 | NR | 710 | 19 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 213 | NR | 585 | 326 | NR | 715 | 16 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 147 | NR | 590 | 319 | NR | 720 | 14 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 307 | NR | 725 | 12 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 65 | NR | 600 | 299 | NR | 730 | 10 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 50 | NR | 605 | 291 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 46 | NR | 610 | 317 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 47 | NR | 615 | 336 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-1

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.55

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 277 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 278 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 124 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 168 | NR | 635 | 623 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 209 | NR | 640 | 162 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 246 | NR | 645 | 158 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 273 | NR | 650 | 134 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 292 | NR | 655 | 109 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 305 | NR | 660 | 91 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 313 | NR | 665 | 75 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 11 | NR | 540 | 319 | NR | 670 | 70 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 323 | NR | 675 | 56 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 326 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 76 | NR | 555 | 330 | NR | 685 | 41 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 125 | NR | 560 | 333 | NR | 690 | 35 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 193 | NR | 565 | 336 | NR | 695 | 30 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 302 | NR | 570 | 336 | NR | 700 | 26 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 432 | NR | 575 | 335 | NR | 705 | 22 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 380 | NR | 580 | 332 | NR | 710 | 19 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 213 | NR | 585 | 326 | NR | 715 | 16 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 147 | NR | 590 | 319 | NR | 720 | 14 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 307 | NR | 725 | 12 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 65 | NR | 600 | 299 | NR | 730 | 10 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 50 | NR | 605 | 291 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 46 | NR | 610 | 317 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 47 | NR | 615 | 336 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.99

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|----------------|--------------------------|---------------|----------------|--------------------------|---------------|----------------|--------------------------|---------------|----------------|--------------------------|---------------|----------------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 277 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 87 | NR | 625 | 278 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 124 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 168 | NR | 635 | 623 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 209 | NR | 640 | 162 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 246 | NR | 645 | 158 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 273 | NR | 650 | 134 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 292 | NR | 655 | 109 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 305 | NR | 660 | 91 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 313 | NR | 665 | 75 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 11 | NR | 540 | 319 | NR | 670 | 70 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 323 | NR | 675 | 56 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 42 | NR | 550 | 326 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 76 | NR | 555 | 330 | NR | 685 | 41 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 125 | NR | 560 | 333 | NR | 690 | 35 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 193 | NR | 565 | 336 | NR | 695 | 30 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 302 | NR | 570 | 336 | NR | 700 | 26 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 432 | NR | 575 | 335 | NR | 705 | 22 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 380 | NR | 580 | 332 | NR | 710 | 19 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 213 | NR | 585 | 326 | NR | 715 | 16 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 147 | NR | 590 | 319 | NR | 720 | 14 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 104 | NR | 595 | 307 | NR | 725 | 12 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 65 | NR | 600 | 299 | NR | 730 | 10 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 50 | NR | 605 | 291 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 46 | NR | 610 | 317 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 47 | NR | 615 | 336 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 80.7$
 $R_g = 102.1$
 CIE $R_a = 82.1$
 $R_9 = 38.5$



Color Vector Graphics

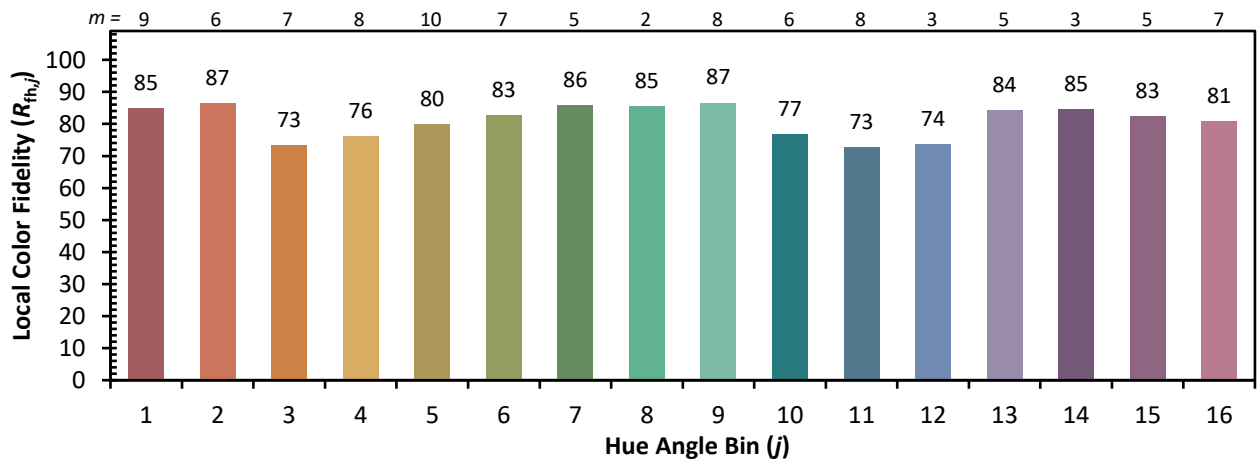


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 69 | CES51 = 90 | CES76 = 58 |
| CES02 = 61 | CES27 = 89 | CES52 = 90 | CES77 = 76 |
| CES03 = 31 | CES28 = 83 | CES53 = 80 | CES78 = 60 |
| CES04 = 69 | CES29 = 66 | CES54 = 91 | CES79 = 85 |
| CES05 = 48 | CES30 = 76 | CES55 = 89 | CES80 = 79 |
| CES06 = 50 | CES31 = 69 | CES56 = 79 | CES81 = 81 |
| CES07 = 41 | CES32 = 62 | CES57 = 77 | CES82 = 91 |
| CES08 = 40 | CES33 = 74 | CES58 = 79 | CES83 = 88 |
| CES09 = 29 | CES34 = 72 | CES59 = 93 | CES84 = 89 |
| CES10 = 74 | CES35 = 84 | CES60 = 95 | CES85 = 84 |
| CES11 = 57 | CES36 = 98 | CES61 = 92 | CES86 = 82 |
| CES12 = 63 | CES37 = 77 | CES62 = 89 | CES87 = 81 |
| CES13 = 43 | CES38 = 83 | CES63 = 80 | CES88 = 86 |
| CES14 = 74 | CES39 = 94 | CES64 = 80 | CES89 = 79 |
| CES15 = 71 | CES40 = 88 | CES65 = 77 | CES90 = 85 |
| CES16 = 47 | CES41 = 89 | CES66 = 74 | CES91 = 83 |
| CES17 = 49 | CES42 = 74 | CES67 = 72 | CES92 = 77 |
| CES18 = 56 | CES43 = 73 | CES68 = 78 | CES93 = 86 |
| CES19 = 71 | CES44 = 98 | CES69 = 83 | CES94 = 69 |
| CES20 = 65 | CES45 = 82 | CES70 = 69 | CES95 = 80 |
| CES21 = 86 | CES46 = 82 | CES71 = 64 | CES96 = 86 |
| CES22 = 78 | CES47 = 80 | CES72 = 88 | CES97 = 83 |
| CES23 = 91 | CES48 = 79 | CES73 = 60 | CES98 = 81 |
| CES24 = 90 | CES49 = 80 | CES74 = 98 | CES99 = 83 |
| CES25 = 71 | CES50 = 89 | CES75 = 62 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)