

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: P1436151

Luminaire Tested: EHBR1-30-UNV-M-L830-UPL30

Issue Date: 3/25/2026

Test Information

Test Method: LM-79-2019
Report Number: P1436151
REPORT IS A COMBINATION OF REPORTS P1436079 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/25/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-30-UNV-M-L830-UPL30
Description: Elevate Round Highbay at, 30000 lumens, 3000K 80CRI LEDs with M lens
Light Source: -
Ballast/Driver: -

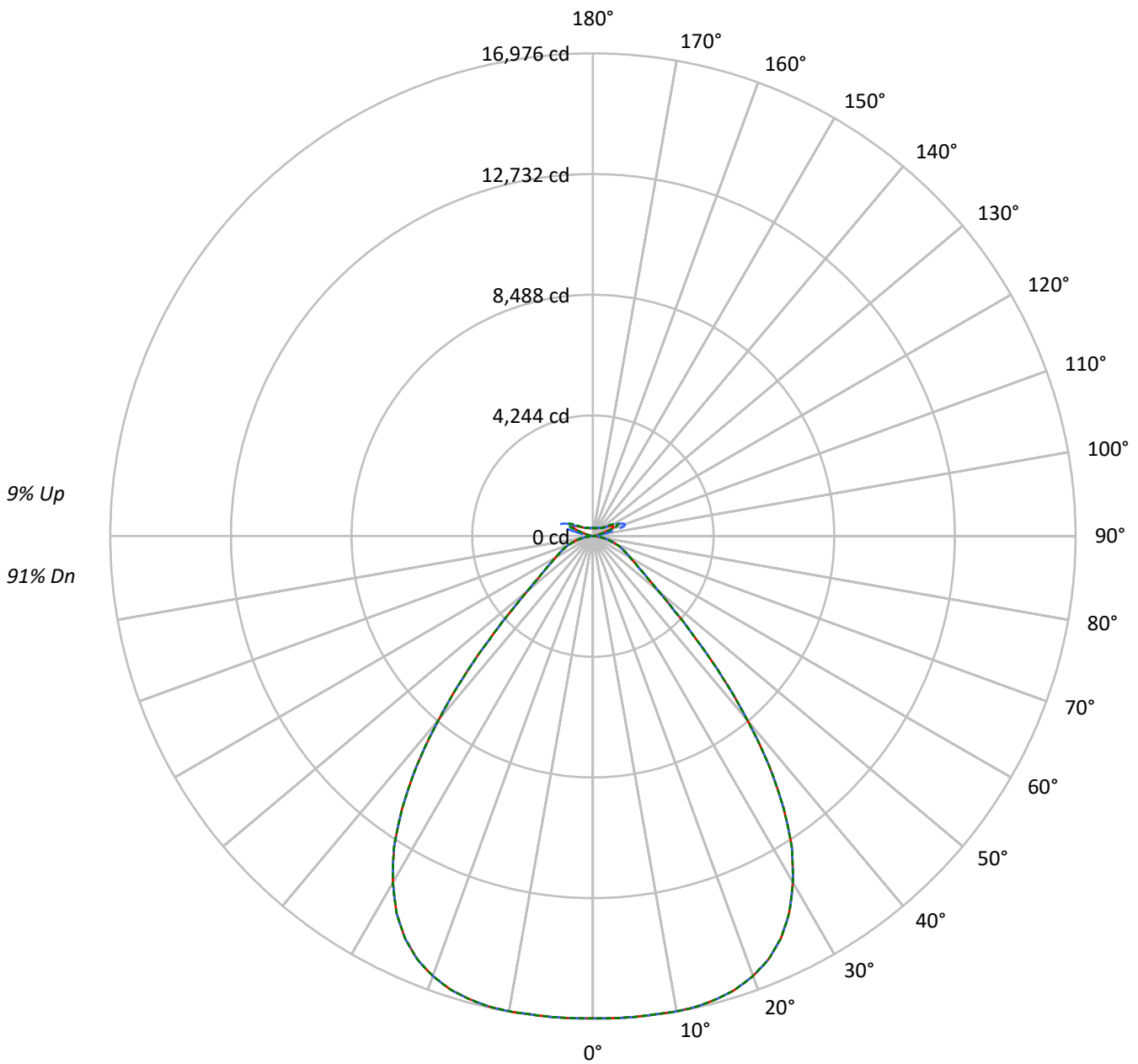
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 31483.0 lumens
Efficiency: N/A
Efficacy: 173.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type: Direct

Input Watts (W): 181.8
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

TEST NUMBER: P1436151
CATALOG NUMBER: EHBR1-30-UNV-M-L830-UPL30

Luminous Intensity Polar Plot



9% Up
91% Dn

— 0°-180° - - 45°-225° - - - 90°-270°



TEST NUMBER: P1436151
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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | | | | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 100 | 100 | 100 | 94 | 94 | 94 | 94 | 94 | 94 | 91 |
| 1 | 109 | 106 | 103 | 100 | 106 | 103 | 100 | 97 | 97 | 95 | 93 | 92 | 90 | 88 | 87 | 85 | 84 | 84 | 84 | 84 | 82 |
| 2 | 102 | 96 | 90 | 86 | 99 | 93 | 88 | 84 | 88 | 84 | 81 | 84 | 81 | 78 | 80 | 77 | 75 | 75 | 75 | 75 | 73 |
| 3 | 95 | 87 | 80 | 75 | 92 | 85 | 79 | 74 | 80 | 76 | 72 | 77 | 73 | 69 | 73 | 70 | 67 | 67 | 67 | 67 | 65 |
| 4 | 88 | 79 | 72 | 67 | 86 | 77 | 71 | 66 | 74 | 68 | 64 | 70 | 66 | 62 | 68 | 64 | 61 | 61 | 61 | 61 | 58 |
| 5 | 83 | 72 | 65 | 59 | 80 | 71 | 64 | 59 | 68 | 62 | 57 | 65 | 60 | 56 | 62 | 58 | 55 | 55 | 55 | 55 | 53 |
| 6 | 77 | 66 | 59 | 53 | 75 | 65 | 58 | 53 | 62 | 56 | 52 | 60 | 55 | 51 | 58 | 53 | 50 | 50 | 50 | 50 | 48 |
| 7 | 72 | 61 | 54 | 48 | 70 | 60 | 53 | 48 | 58 | 52 | 47 | 56 | 50 | 46 | 54 | 49 | 45 | 45 | 45 | 45 | 44 |
| 8 | 68 | 56 | 49 | 44 | 66 | 55 | 49 | 44 | 53 | 47 | 43 | 52 | 46 | 42 | 50 | 45 | 42 | 42 | 42 | 42 | 40 |
| 9 | 64 | 52 | 45 | 40 | 62 | 51 | 45 | 40 | 50 | 44 | 40 | 48 | 43 | 39 | 47 | 42 | 38 | 38 | 38 | 38 | 37 |
| 10 | 60 | 49 | 42 | 37 | 59 | 48 | 41 | 37 | 46 | 41 | 36 | 45 | 40 | 36 | 44 | 39 | 35 | 35 | 35 | 35 | 34 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 79646 | 79646 | 79646 |
| 5° | 79509 | 79509 | 79509 |
| 10° | 79882 | 79882 | 79882 |
| 15° | 80341 | 80341 | 80341 |
| 20° | 80099 | 80099 | 80099 |
| 25° | 78228 | 78228 | 78228 |
| 30° | 73149 | 73149 | 73149 |
| 35° | 63706 | 63706 | 63706 |
| 40° | 48823 | 48823 | 48823 |
| 45° | 31895 | 31895 | 31895 |
| 50° | 20107 | 20107 | 20107 |
| 55° | 14988 | 14988 | 14988 |
| 60° | 12619 | 12619 | 12619 |
| 65° | 11475 | 11475 | 11475 |
| 70° | 10452 | 10452 | 10452 |
| 75° | 8949 | 8949 | 8949 |
| 80° | 6891 | 6891 | 6891 |
| 85° | 3614 | 3614 | 3614 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 31895 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1619.8 | 5.1 |
| 10°-20° | 4757.0 | 15.1 |
| 20°-30° | 7137.6 | 22.7 |
| 30°-40° | 7181.2 | 22.8 |
| 40°-50° | 4110.7 | 13.1 |
| 50°-60° | 1880.1 | 6.0 |
| 60°-70° | 1192.9 | 3.8 |
| 70°-80° | 669.2 | 2.1 |
| 80°-90° | 162.0 | 0.5 |
| 90°-100° | 79.0 | 0.3 |
| 100°-110° | 495.4 | 1.6 |
| 110°-120° | 885.8 | 2.8 |
| 120°-130° | 519.8 | 1.7 |
| 130°-140° | 318.8 | 1.0 |
| 140°-150° | 221.2 | 0.7 |
| 150°-160° | 143.7 | 0.5 |
| 160°-170° | 81.9 | 0.3 |
| 170°-180° | 27.1 | 0.1 |
| 0°-30° | 13514.5 | 42.9 |
| 0°-40° | 20695.7 | 65.7 |
| 0°-60° | 26686.5 | 84.8 |
| 0°-90° | 28710.5 | 91.2 |
| 90°-120° | 1460.2 | 4.6 |
| 90°-150° | 2519.9 | 8.0 |
| 90°-180° | 2773.0 | 8.8 |
| 0°-180° | 31483.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 16960 | 16960 | 16960 | 16960 | 16960 | |
| 5° | 16976 | 16976 | 16976 | 16976 | 16976 | 1620 |
| 15° | 16855 | 16855 | 16855 | 16855 | 16855 | 4757 |
| 25° | 15622 | 15622 | 15622 | 15622 | 15622 | 7138 |
| 35° | 11692 | 11692 | 11692 | 11692 | 11692 | 7181 |
| 45° | 5160 | 5160 | 5160 | 5160 | 5160 | 4111 |
| 55° | 2026 | 2026 | 2026 | 2026 | 2026 | 1880 |
| 65° | 1198 | 1198 | 1198 | 1198 | 1198 | 1193 |
| 75° | 630 | 630 | 630 | 630 | 630 | 669 |
| 85° | 124 | 124 | 124 | 124 | 124 | 152 |
| 90° | 21 | 33 | 57 | 36 | 21 | 15 |
| 95° | 35 | 59 | 128 | 64 | 40 | 34 |
| 105° | 173 | 341 | 871 | 376 | 229 | 232 |
| 115° | 797 | 838 | 1030 | 987 | 981 | 734 |
| 125° | 574 | 536 | 551 | 559 | 627 | 524 |
| 135° | 419 | 406 | 421 | 395 | 394 | 328 |
| 145° | 344 | 340 | 360 | 356 | 354 | 218 |
| 155° | 302 | 298 | 313 | 313 | 313 | 141 |
| 165° | 282 | 282 | 290 | 290 | 289 | 81 |
| 175° | 279 | 279 | 284 | 284 | 284 | 27 |
| 180° | 282 | 282 | 282 | 282 | 282 | |



TEST NUMBER: P1436151

CATALOG NUMBER: EHBR1-30-UNV-M-L830-UPL30

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 16960.0 | 16960.0 | 16960.0 | 16960.0 | 16960.0 |
| 2.5° | 16968.2 | 16968.2 | 16968.2 | 16968.2 | 16968.2 |
| 5° | 16976.5 | 16976.5 | 16976.5 | 16976.5 | 16976.5 |
| 7.5° | 16964.8 | 16964.8 | 16964.8 | 16964.8 | 16964.8 |
| 10° | 16972.1 | 16972.1 | 16972.1 | 16972.1 | 16972.1 |
| 12.5° | 16942.9 | 16942.9 | 16942.9 | 16942.9 | 16942.9 |
| 15° | 16855.2 | 16855.2 | 16855.2 | 16855.2 | 16855.2 |
| 17.5° | 16710.1 | 16710.1 | 16710.1 | 16710.1 | 16710.1 |
| 20° | 16462.6 | 16462.6 | 16462.6 | 16462.6 | 16462.6 |
| 22.5° | 16122.4 | 16122.4 | 16122.4 | 16122.4 | 16122.4 |
| 25° | 15622.1 | 15622.1 | 15622.1 | 15622.1 | 15622.1 |
| 27.5° | 14949.0 | 14949.0 | 14949.0 | 14949.0 | 14949.0 |
| 30° | 14070.1 | 14070.1 | 14070.1 | 14070.1 | 14070.1 |
| 32.5° | 13029.7 | 13029.7 | 13029.7 | 13029.7 | 13029.7 |
| 35° | 11692.3 | 11692.3 | 11692.3 | 11692.3 | 11692.3 |
| 37.5° | 10177.3 | 10177.3 | 10177.3 | 10177.3 | 10177.3 |
| 40° | 8462.2 | 8462.2 | 8462.2 | 8462.2 | 8462.2 |
| 42.5° | 6762.3 | 6762.3 | 6762.3 | 6762.3 | 6762.3 |
| 45° | 5160.4 | 5160.4 | 5160.4 | 5160.4 | 5160.4 |
| 47.5° | 3884.6 | 3884.6 | 3884.6 | 3884.6 | 3884.6 |
| 50° | 2996.6 | 2996.6 | 2996.6 | 2996.6 | 2996.6 |
| 52.5° | 2421.0 | 2421.0 | 2421.0 | 2421.0 | 2421.0 |
| 55° | 2025.5 | 2025.5 | 2025.5 | 2025.5 | 2025.5 |
| 57.5° | 1734.4 | 1734.4 | 1734.4 | 1734.4 | 1734.4 |
| 60° | 1517.0 | 1517.0 | 1517.0 | 1517.0 | 1517.0 |
| 62.5° | 1349.0 | 1349.0 | 1349.0 | 1349.0 | 1349.0 |
| 65° | 1197.7 | 1197.7 | 1197.7 | 1197.7 | 1197.7 |
| 67.5° | 1058.4 | 1058.4 | 1058.4 | 1058.4 | 1058.4 |
| 70° | 917.1 | 917.1 | 917.1 | 917.1 | 917.1 |
| 72.5° | 775.0 | 775.0 | 775.0 | 775.0 | 775.0 |
| 75° | 630.4 | 630.4 | 630.4 | 630.4 | 630.4 |
| 77.5° | 493.1 | 493.1 | 493.1 | 493.1 | 493.1 |
| 80° | 362.5 | 362.5 | 362.5 | 362.5 | 362.5 |
| 82.5° | 236.3 | 236.3 | 236.3 | 236.3 | 236.3 |
| 85° | 124.2 | 124.2 | 124.2 | 124.2 | 124.2 |
| 87.5° | 35.4 | 35.4 | 35.4 | 35.4 | 35.4 |
| 90° | 20.6 | 33.3 | 57.1 | 36.5 | 20.6 |
| 92.5° | 30.2 | 50.8 | 92.1 | 47.6 | 27.0 |
| 95° | 34.9 | 58.7 | 128.5 | 63.5 | 39.7 |
| 97.5° | 44.4 | 65.1 | 147.6 | 77.7 | 61.9 |
| 100° | 58.7 | 76.2 | 230.1 | 95.3 | 82.5 |
| 102.5° | 99.9 | 161.9 | 488.8 | 179.4 | 125.4 |
| 105° | 173.0 | 341.2 | 871.3 | 376.2 | 228.6 |
| 107.5° | 299.9 | 611.0 | 1149.1 | 666.6 | 433.2 |
| 110° | 560.2 | 811.0 | 1204.6 | 915.7 | 693.5 |



TEST NUMBER: P1436151

CATALOG NUMBER: EHBR1-30-UNV-M-L830-UPL30

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|--------|--------|-------|
| 112.5° | 757.0 | 871.3 | 1153.8 | 1011.0 | 903.1 |
| 115° | 796.7 | 838.0 | 1030.0 | 987.2 | 980.8 |
| 117.5° | 769.7 | 765.0 | 874.5 | 887.2 | 947.5 |
| 120° | 712.6 | 680.9 | 730.1 | 774.5 | 855.4 |
| 122.5° | 641.2 | 603.1 | 625.3 | 658.6 | 739.6 |
| 125° | 574.5 | 536.5 | 550.7 | 558.7 | 626.9 |
| 127.5° | 515.8 | 490.4 | 498.3 | 488.8 | 531.7 |
| 130° | 476.1 | 453.9 | 465.0 | 442.8 | 463.4 |
| 132.5° | 442.8 | 428.5 | 441.2 | 414.2 | 420.6 |
| 135° | 419.0 | 406.3 | 420.6 | 395.2 | 393.6 |
| 137.5° | 398.4 | 387.2 | 401.6 | 382.5 | 377.7 |
| 140° | 379.3 | 369.8 | 385.6 | 371.4 | 368.2 |
| 142.5° | 358.7 | 352.3 | 371.4 | 361.9 | 358.7 |
| 145° | 344.4 | 339.7 | 360.3 | 355.5 | 353.9 |
| 147.5° | 331.7 | 328.5 | 347.6 | 346.0 | 346.0 |
| 150° | 320.6 | 317.5 | 336.5 | 334.9 | 336.5 |
| 152.5° | 309.5 | 306.3 | 323.7 | 322.1 | 323.7 |
| 155° | 301.5 | 298.3 | 312.7 | 312.7 | 312.7 |
| 157.5° | 295.2 | 293.6 | 304.7 | 304.7 | 304.7 |
| 160° | 290.5 | 288.9 | 298.3 | 298.3 | 296.7 |
| 162.5° | 285.7 | 284.1 | 295.2 | 293.6 | 293.6 |
| 165° | 282.5 | 282.5 | 290.5 | 290.5 | 288.9 |
| 167.5° | 282.5 | 280.9 | 288.9 | 288.9 | 287.3 |
| 170° | 280.9 | 280.9 | 287.3 | 285.7 | 284.1 |
| 172.5° | 280.9 | 280.9 | 287.3 | 285.7 | 284.1 |
| 175° | 279.3 | 279.3 | 284.1 | 284.1 | 284.1 |
| 177.5° | 280.9 | 280.9 | 284.1 | 284.1 | 282.5 |
| 180° | 282.5 | 282.5 | 282.5 | 282.5 | 282.5 |



TEST NUMBER: P1436151
 CATALOG NUMBER: EHBR1-30-UNV-M-L830-UPL30

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 | 17.39 | 18.52 | 17.91 | 19.01 | 19.55 | 17.39 | 18.52 | 17.91 | 19.01 | 19.55 |
| | 3H | 18.87 | 19.88 | 19.40 | 20.39 | 20.96 | 18.87 | 19.88 | 19.40 | 20.39 | 20.96 |
| | 4H | 19.40 | 20.33 | 19.95 | 20.86 | 21.45 | 19.40 | 20.33 | 19.95 | 20.86 | 21.45 |
| | 6H | 19.72 | 20.58 | 20.28 | 21.12 | 21.72 | 19.72 | 20.58 | 20.28 | 21.12 | 21.72 |
| | 8H | 19.79 | 20.60 | 20.36 | 21.16 | 21.77 | 19.79 | 20.60 | 20.36 | 21.16 | 21.77 |
| | 12H | 19.80 | 20.58 | 20.38 | 21.13 | 21.76 | 19.80 | 20.58 | 20.38 | 21.13 | 21.76 |
| 4H | 2H | 17.83 | 18.76 | 18.38 | 19.29 | 19.88 | 17.83 | 18.76 | 18.38 | 19.29 | 19.88 |
| | 3H | 19.52 | 20.29 | 20.08 | 20.86 | 21.47 | 19.52 | 20.29 | 20.08 | 20.86 | 21.47 |
| | 4H | 20.15 | 20.84 | 20.73 | 21.42 | 22.07 | 20.15 | 20.84 | 20.73 | 21.42 | 22.07 |
| | 6H | 20.57 | 21.17 | 21.18 | 21.77 | 22.44 | 20.57 | 21.17 | 21.18 | 21.77 | 22.44 |
| | 8H | 20.67 | 21.22 | 21.28 | 21.82 | 22.49 | 20.67 | 21.22 | 21.28 | 21.82 | 22.49 |
| | 12H | 20.69 | 21.19 | 21.32 | 21.82 | 22.49 | 20.69 | 21.19 | 21.32 | 21.82 | 22.49 |
| 8H | 4H | 20.32 | 20.88 | 20.94 | 21.48 | 22.15 | 20.32 | 20.88 | 20.94 | 21.48 | 22.15 |
| | 6H | 20.83 | 21.29 | 21.48 | 21.93 | 22.61 | 20.83 | 21.29 | 21.48 | 21.93 | 22.61 |
| | 8H | 20.97 | 21.38 | 21.63 | 22.04 | 22.73 | 20.97 | 21.38 | 21.63 | 22.04 | 22.73 |
| | 12H | 21.04 | 21.39 | 21.69 | 22.03 | 22.80 | 21.04 | 21.39 | 21.69 | 22.03 | 22.80 |
| 12H | 4H | 20.31 | 20.80 | 20.94 | 21.43 | 22.11 | 20.31 | 20.80 | 20.94 | 21.43 | 22.11 |
| | 6H | 20.84 | 21.24 | 21.50 | 21.90 | 22.59 | 20.84 | 21.24 | 21.50 | 21.90 | 22.59 |
| | 8H | 21.01 | 21.36 | 21.66 | 22.00 | 22.77 | 21.01 | 21.36 | 21.66 | 22.00 | 22.77 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-2

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L830-N

Data in this report applies to families of products including EHBR-60-L830-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-2
 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-L830-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3000K 80CRI LEDs with N lens

Spectral Parameters

CCT (K): 2983
 CIE u': 0.2516
 CIE v': 0.5201
 Duv: -0.0012
 CIE x: 0.4364
 CIE y: 0.4010
 CIE z: 0.1626
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 583
 Purity: 51.34918
 Rf: 81.2
 Rg: 101.5

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 83.4 | | |
| R1: | 84.0 | R9: | 29.4 |
| R2: | 87.5 | R10: | 68.6 |
| R3: | 88.9 | R11: | 82.2 |
| R4: | 83.8 | R12: | 61.6 |
| R5: | 81.9 | R13: | 83.9 |
| R6: | 83.1 | R14: | 92.5 |
| R7: | 87.1 | R15: | 79.8 |
| R8: | 70.9 | | |



Test Conditions

Stabilization Time: 38M
 Operation Time: 1H 38M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-2

| 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 3000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-2

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 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| 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 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.34

| 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 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 81.2$
 $R_g = 101.5$
 CIE $R_a = 83.4$
 $R_9 = 29.4$



Color Vector Graphics

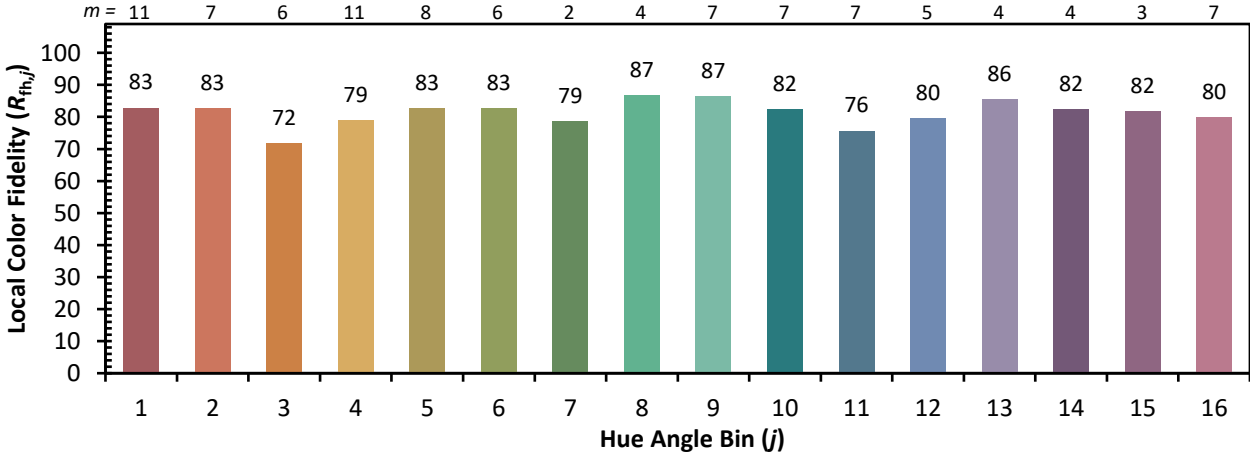


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 71 | CES51 = 89 | CES76 = 65 |
| CES02 = 63 | CES27 = 89 | CES52 = 89 | CES77 = 82 |
| CES03 = 31 | CES28 = 86 | CES53 = 80 | CES78 = 67 |
| CES04 = 70 | CES29 = 68 | CES54 = 92 | CES79 = 89 |
| CES05 = 50 | CES30 = 77 | CES55 = 90 | CES80 = 85 |
| CES06 = 51 | CES31 = 70 | CES56 = 81 | CES81 = 75 |
| CES07 = 43 | CES32 = 64 | CES57 = 79 | CES82 = 93 |
| CES08 = 41 | CES33 = 74 | CES58 = 81 | CES83 = 89 |
| CES09 = 29 | CES34 = 76 | CES59 = 92 | CES84 = 91 |
| CES10 = 76 | CES35 = 87 | CES60 = 96 | CES85 = 81 |
| CES11 = 59 | CES36 = 99 | CES61 = 91 | CES86 = 74 |
| CES12 = 65 | CES37 = 81 | CES62 = 93 | CES87 = 83 |
| CES13 = 44 | CES38 = 83 | CES63 = 79 | CES88 = 86 |
| CES14 = 74 | CES39 = 94 | CES64 = 81 | CES89 = 74 |
| CES15 = 72 | CES40 = 89 | CES65 = 78 | CES90 = 85 |
| CES16 = 48 | CES41 = 88 | CES66 = 76 | CES91 = 87 |
| CES17 = 50 | CES42 = 80 | CES67 = 74 | CES92 = 73 |
| CES18 = 57 | CES43 = 75 | CES68 = 79 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 83 | CES94 = 64 |
| CES20 = 67 | CES45 = 83 | CES70 = 72 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 70 | CES96 = 86 |
| CES22 = 79 | CES47 = 79 | CES72 = 90 | CES97 = 85 |
| CES23 = 92 | CES48 = 78 | CES73 = 65 | CES98 = 83 |
| CES24 = 91 | CES49 = 79 | CES74 = 94 | CES99 = 82 |
| CES25 = 72 | CES50 = 88 | CES75 = 70 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)