

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: P1436441

Luminaire Tested: EHBR1-30-UNV-M-L930-UPL40

Issue Date: 3/25/2026

Test Information

Test Method: LM-79-2019
Report Number: P1436441
REPORT IS A COMBINATION OF REPORTS P1436081 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/25/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-30-UNV-M-L930-UPL40
Description: Elevate Round Highbay at, 30000 lumens, 3000K 90CRI LEDs with M lens
Light Source: -
Ballast/Driver: -

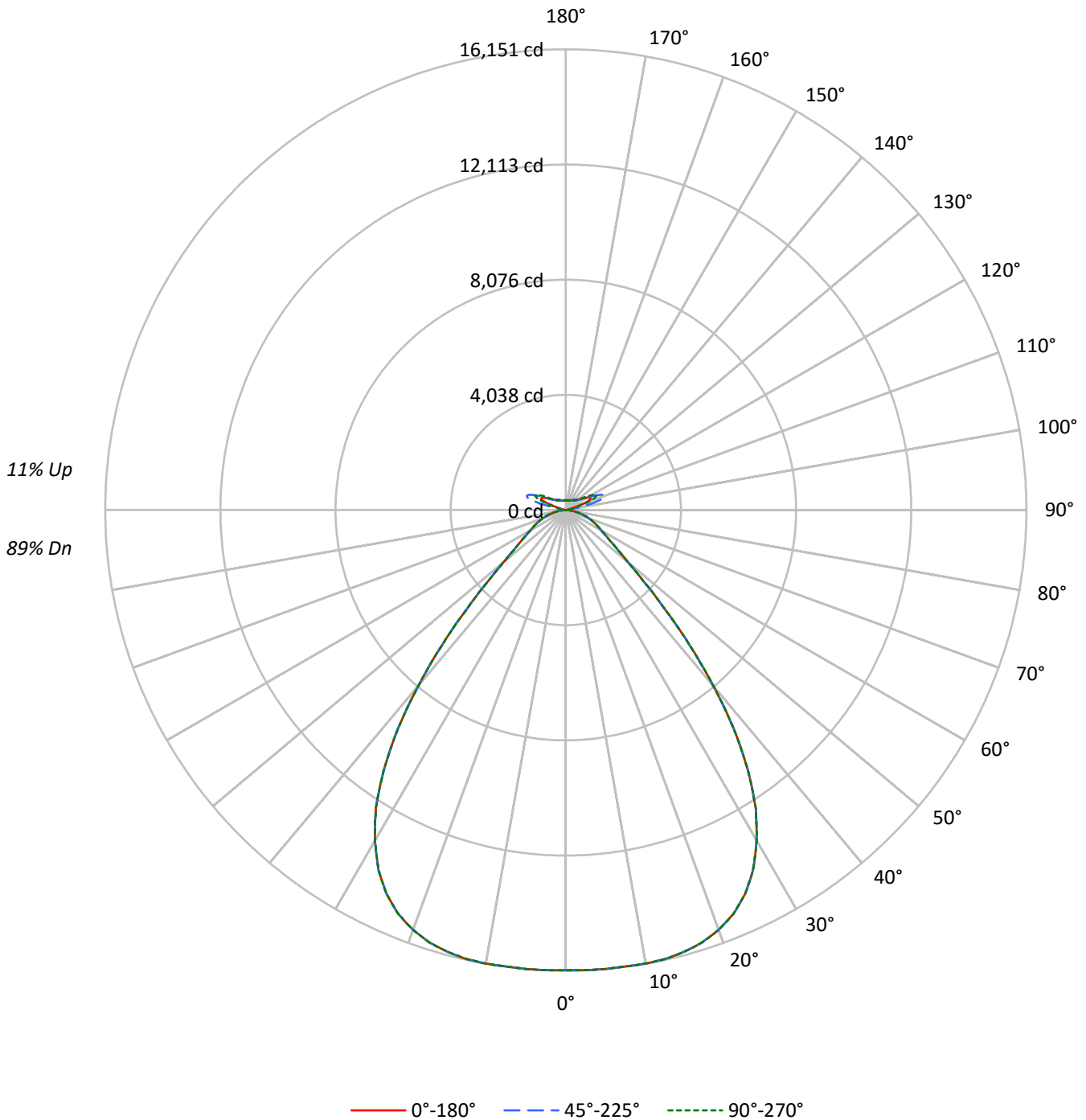
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30669.6 lumens
Efficiency: N/A
Efficacy: 161.1 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: Semi-Direct

Input Watts (W): 190.4
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: P1436441
CATALOG NUMBER: EHBR1-30-UNV-M-L930-UPL40

Luminous Intensity Polar Plot





TEST NUMBER: P1436441

CATALOG NUMBER: EHBR1-30-UNV-M-L930-UPL40

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|
| RF | 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 |
| RCR | | | | | | | | | | | | | | | | | | | | |
| 0 | 116 | 116 | 116 | 116 | 112 | 112 | 112 | 112 | 105 | 105 | 105 | 98 | 98 | 98 | 92 | 92 | 92 | 89 | | |
| 1 | 109 | 105 | 102 | 99 | 105 | 102 | 99 | 96 | 96 | 94 | 91 | 90 | 88 | 87 | 85 | 84 | 82 | 80 | | |
| 2 | 101 | 95 | 90 | 85 | 98 | 92 | 88 | 84 | 87 | 83 | 80 | 82 | 79 | 77 | 78 | 76 | 73 | 71 | | |
| 3 | 94 | 86 | 80 | 75 | 91 | 84 | 78 | 73 | 79 | 75 | 71 | 75 | 72 | 68 | 72 | 69 | 66 | 63 | | |
| 4 | 88 | 78 | 71 | 66 | 85 | 76 | 70 | 65 | 73 | 67 | 63 | 69 | 65 | 61 | 66 | 62 | 59 | 57 | | |
| 5 | 82 | 72 | 64 | 59 | 79 | 70 | 63 | 58 | 67 | 61 | 57 | 64 | 59 | 55 | 61 | 57 | 54 | 51 | | |
| 6 | 77 | 66 | 58 | 53 | 74 | 64 | 57 | 52 | 61 | 56 | 51 | 59 | 54 | 50 | 57 | 52 | 49 | 47 | | |
| 7 | 72 | 60 | 53 | 48 | 70 | 59 | 52 | 47 | 57 | 51 | 46 | 55 | 49 | 45 | 52 | 48 | 44 | 43 | | |
| 8 | 67 | 56 | 49 | 44 | 65 | 55 | 48 | 43 | 53 | 47 | 42 | 51 | 45 | 42 | 49 | 44 | 41 | 39 | | |
| 9 | 63 | 52 | 45 | 40 | 62 | 51 | 44 | 40 | 49 | 43 | 39 | 47 | 42 | 38 | 46 | 41 | 38 | 36 | | |
| 10 | 60 | 48 | 41 | 37 | 58 | 47 | 41 | 36 | 46 | 40 | 36 | 44 | 39 | 35 | 43 | 38 | 35 | 33 | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 75771 | 75771 | 75771 |
| 5° | 75641 | 75641 | 75641 |
| 10° | 75996 | 75996 | 75996 |
| 15° | 76433 | 76433 | 76433 |
| 20° | 76202 | 76202 | 76202 |
| 25° | 74422 | 74422 | 74422 |
| 30° | 69590 | 69590 | 69590 |
| 35° | 60607 | 60607 | 60607 |
| 40° | 46447 | 46447 | 46447 |
| 45° | 30343 | 30343 | 30343 |
| 50° | 19128 | 19128 | 19128 |
| 55° | 14259 | 14259 | 14259 |
| 60° | 12005 | 12005 | 12005 |
| 65° | 10916 | 10916 | 10916 |
| 70° | 9944 | 9944 | 9944 |
| 75° | 8513 | 8513 | 8513 |
| 80° | 6556 | 6556 | 6556 |
| 85° | 3439 | 3439 | 3439 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 30343 cd/sqm



TEST NUMBER: P1436441
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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1541.0 | 5.0 |
| 10°-20° | 4525.5 | 14.8 |
| 20°-30° | 6790.4 | 22.1 |
| 30°-40° | 6831.8 | 22.3 |
| 40°-50° | 3910.7 | 12.8 |
| 50°-60° | 1788.7 | 5.8 |
| 60°-70° | 1134.9 | 3.7 |
| 70°-80° | 636.6 | 2.1 |
| 80°-90° | 155.4 | 0.5 |
| 90°-100° | 95.6 | 0.3 |
| 100°-110° | 599.3 | 2.0 |
| 110°-120° | 1071.8 | 3.5 |
| 120°-130° | 628.9 | 2.1 |
| 130°-140° | 385.8 | 1.3 |
| 140°-150° | 267.6 | 0.9 |
| 150°-160° | 173.8 | 0.6 |
| 160°-170° | 99.1 | 0.3 |
| 170°-180° | 32.7 | 0.1 |
| 0°-30° | 12857.0 | 41.9 |
| 0°-40° | 19688.8 | 64.2 |
| 0°-60° | 25388.2 | 82.8 |
| 0°-90° | 27315.1 | 89.1 |
| 90°-120° | 1766.7 | 5.8 |
| 90°-150° | 3048.9 | 9.9 |
| 90°-180° | 3355.0 | 10.9 |
| 0°-180° | 30669.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 16135 | 16135 | 16135 | 16135 | 16135 | |
| 5° | 16151 | 16151 | 16151 | 16151 | 16151 | 1541 |
| 15° | 16035 | 16035 | 16035 | 16035 | 16035 | 4526 |
| 25° | 14862 | 14862 | 14862 | 14862 | 14862 | 6790 |
| 35° | 11124 | 11124 | 11124 | 11124 | 11124 | 6832 |
| 45° | 4909 | 4909 | 4909 | 4909 | 4909 | 3911 |
| 55° | 1927 | 1927 | 1927 | 1927 | 1927 | 1789 |
| 65° | 1139 | 1139 | 1139 | 1139 | 1139 | 1135 |
| 75° | 600 | 600 | 600 | 600 | 600 | 637 |
| 85° | 118 | 118 | 118 | 118 | 118 | 145 |
| 90° | 25 | 40 | 69 | 44 | 25 | 16 |
| 95° | 42 | 71 | 156 | 77 | 48 | 41 |
| 105° | 209 | 413 | 1054 | 455 | 276 | 280 |
| 115° | 964 | 1014 | 1246 | 1194 | 1187 | 888 |
| 125° | 695 | 649 | 666 | 676 | 758 | 634 |
| 135° | 507 | 492 | 509 | 478 | 476 | 397 |
| 145° | 417 | 411 | 436 | 430 | 428 | 264 |
| 155° | 365 | 361 | 378 | 378 | 378 | 170 |
| 165° | 342 | 342 | 351 | 351 | 350 | 98 |
| 175° | 338 | 338 | 344 | 344 | 344 | 32 |
| 180° | 342 | 342 | 342 | 342 | 342 | |



TEST NUMBER: P1436441

CATALOG NUMBER: EHBR1-30-UNV-M-L930-UPL40

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 16134.9 | 16134.9 | 16134.9 | 16134.9 | 16134.9 |
| 2.5° | 16142.7 | 16142.7 | 16142.7 | 16142.7 | 16142.7 |
| 5° | 16150.6 | 16150.6 | 16150.6 | 16150.6 | 16150.6 |
| 7.5° | 16139.5 | 16139.5 | 16139.5 | 16139.5 | 16139.5 |
| 10° | 16146.4 | 16146.4 | 16146.4 | 16146.4 | 16146.4 |
| 12.5° | 16118.7 | 16118.7 | 16118.7 | 16118.7 | 16118.7 |
| 15° | 16035.2 | 16035.2 | 16035.2 | 16035.2 | 16035.2 |
| 17.5° | 15897.1 | 15897.1 | 15897.1 | 15897.1 | 15897.1 |
| 20° | 15661.7 | 15661.7 | 15661.7 | 15661.7 | 15661.7 |
| 22.5° | 15338.0 | 15338.0 | 15338.0 | 15338.0 | 15338.0 |
| 25° | 14862.1 | 14862.1 | 14862.1 | 14862.1 | 14862.1 |
| 27.5° | 14221.7 | 14221.7 | 14221.7 | 14221.7 | 14221.7 |
| 30° | 13385.6 | 13385.6 | 13385.6 | 13385.6 | 13385.6 |
| 32.5° | 12395.8 | 12395.8 | 12395.8 | 12395.8 | 12395.8 |
| 35° | 11123.5 | 11123.5 | 11123.5 | 11123.5 | 11123.5 |
| 37.5° | 9682.1 | 9682.1 | 9682.1 | 9682.1 | 9682.1 |
| 40° | 8050.5 | 8050.5 | 8050.5 | 8050.5 | 8050.5 |
| 42.5° | 6433.3 | 6433.3 | 6433.3 | 6433.3 | 6433.3 |
| 45° | 4909.4 | 4909.4 | 4909.4 | 4909.4 | 4909.4 |
| 47.5° | 3695.6 | 3695.6 | 3695.6 | 3695.6 | 3695.6 |
| 50° | 2850.8 | 2850.8 | 2850.8 | 2850.8 | 2850.8 |
| 52.5° | 2303.2 | 2303.2 | 2303.2 | 2303.2 | 2303.2 |
| 55° | 1927.0 | 1927.0 | 1927.0 | 1927.0 | 1927.0 |
| 57.5° | 1650.0 | 1650.0 | 1650.0 | 1650.0 | 1650.0 |
| 60° | 1443.2 | 1443.2 | 1443.2 | 1443.2 | 1443.2 |
| 62.5° | 1283.4 | 1283.4 | 1283.4 | 1283.4 | 1283.4 |
| 65° | 1139.4 | 1139.4 | 1139.4 | 1139.4 | 1139.4 |
| 67.5° | 1006.9 | 1006.9 | 1006.9 | 1006.9 | 1006.9 |
| 70° | 872.5 | 872.5 | 872.5 | 872.5 | 872.5 |
| 72.5° | 737.3 | 737.3 | 737.3 | 737.3 | 737.3 |
| 75° | 599.7 | 599.7 | 599.7 | 599.7 | 599.7 |
| 77.5° | 469.1 | 469.1 | 469.1 | 469.1 | 469.1 |
| 80° | 344.9 | 344.9 | 344.9 | 344.9 | 344.9 |
| 82.5° | 224.8 | 224.8 | 224.8 | 224.8 | 224.8 |
| 85° | 118.2 | 118.2 | 118.2 | 118.2 | 118.2 |
| 87.5° | 33.7 | 33.7 | 33.7 | 33.7 | 33.7 |
| 90° | 25.0 | 40.4 | 69.2 | 44.2 | 25.0 |
| 92.5° | 36.4 | 61.5 | 111.4 | 57.6 | 32.6 |
| 95° | 42.2 | 71.0 | 155.5 | 76.8 | 48.0 |
| 97.5° | 53.7 | 78.7 | 178.6 | 94.1 | 74.9 |
| 100° | 71.0 | 92.1 | 278.5 | 115.2 | 99.9 |
| 102.5° | 121.0 | 195.9 | 591.4 | 217.0 | 151.7 |
| 105° | 209.3 | 412.9 | 1054.2 | 455.1 | 276.5 |
| 107.5° | 363.0 | 739.3 | 1390.3 | 806.5 | 524.3 |
| 110° | 677.9 | 981.2 | 1457.5 | 1108.0 | 839.2 |



TEST NUMBER: P1436441

CATALOG NUMBER: EHBR1-30-UNV-M-L930-UPL40

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|--------|--------|--------|--------|
| 112.5° | 916.0 | 1054.2 | 1396.1 | 1223.2 | 1092.6 |
| 115° | 963.9 | 1013.9 | 1246.3 | 1194.4 | 1186.7 |
| 117.5° | 931.3 | 925.5 | 1058.0 | 1073.5 | 1146.4 |
| 120° | 862.2 | 823.8 | 883.3 | 937.1 | 1035.1 |
| 122.5° | 775.8 | 729.7 | 756.6 | 796.9 | 894.9 |
| 125° | 695.1 | 649.0 | 666.3 | 675.9 | 758.5 |
| 127.5° | 624.1 | 593.3 | 602.9 | 591.4 | 643.3 |
| 130° | 576.1 | 549.2 | 562.7 | 535.8 | 560.7 |
| 132.5° | 535.8 | 518.5 | 533.8 | 501.2 | 508.8 |
| 135° | 507.0 | 491.6 | 508.8 | 478.2 | 476.2 |
| 137.5° | 482.0 | 468.6 | 485.8 | 462.8 | 457.1 |
| 140° | 458.9 | 447.4 | 466.6 | 449.3 | 445.5 |
| 142.5° | 434.0 | 426.3 | 449.3 | 437.8 | 434.0 |
| 145° | 416.7 | 410.9 | 435.9 | 430.2 | 428.2 |
| 147.5° | 401.4 | 397.5 | 420.5 | 418.7 | 418.7 |
| 150° | 387.9 | 384.1 | 407.1 | 405.2 | 407.1 |
| 152.5° | 374.5 | 370.6 | 391.7 | 389.8 | 391.7 |
| 155° | 364.8 | 361.0 | 378.3 | 378.3 | 378.3 |
| 157.5° | 357.2 | 355.2 | 368.7 | 368.7 | 368.7 |
| 160° | 351.4 | 349.5 | 361.0 | 361.0 | 359.1 |
| 162.5° | 345.7 | 343.7 | 357.2 | 355.2 | 355.2 |
| 165° | 341.8 | 341.8 | 351.4 | 351.4 | 349.5 |
| 167.5° | 341.8 | 339.9 | 349.5 | 349.5 | 347.5 |
| 170° | 339.9 | 339.9 | 347.5 | 345.7 | 343.7 |
| 172.5° | 339.9 | 339.9 | 347.5 | 345.7 | 343.7 |
| 175° | 338.0 | 338.0 | 343.7 | 343.7 | 343.7 |
| 177.5° | 339.9 | 339.9 | 343.7 | 343.7 | 341.8 |
| 180° | 341.8 | 341.8 | 341.8 | 341.8 | 341.8 |



TEST NUMBER: P1436441
 CATALOG NUMBER: EHBR1-30-UNV-M-L930-UPL40

CIE UGR TABLE:

| Reflectances: | | | | | | | | | | | |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 17.05 | 18.15 | 17.60 | 18.68 | 19.26 | 17.05 | 18.15 | 17.60 | 18.68 | 19.26 |
| | 3H | 18.53 | 19.51 | 19.10 | 20.05 | 20.68 | 18.53 | 19.51 | 19.10 | 20.05 | 20.68 |
| | 4H | 19.05 | 19.97 | 19.64 | 20.53 | 21.17 | 19.05 | 19.97 | 19.64 | 20.53 | 21.17 |
| | 6H | 19.38 | 20.22 | 19.97 | 20.79 | 21.44 | 19.38 | 20.22 | 19.97 | 20.79 | 21.44 |
| | 8H | 19.44 | 20.24 | 20.05 | 20.83 | 21.49 | 19.44 | 20.24 | 20.05 | 20.83 | 21.49 |
| | 12H | 19.46 | 20.21 | 20.07 | 20.80 | 21.48 | 19.46 | 20.21 | 20.07 | 20.80 | 21.48 |
| 4H | 2H | 17.48 | 18.40 | 18.07 | 18.96 | 19.60 | 17.48 | 18.40 | 18.07 | 18.96 | 19.60 |
| | 3H | 19.18 | 19.93 | 19.77 | 20.53 | 21.19 | 19.18 | 19.93 | 19.77 | 20.53 | 21.19 |
| | 4H | 19.80 | 20.48 | 20.42 | 21.09 | 21.78 | 19.80 | 20.48 | 20.42 | 21.09 | 21.78 |
| | 6H | 20.23 | 20.81 | 20.86 | 21.44 | 22.15 | 20.23 | 20.81 | 20.86 | 21.44 | 22.15 |
| | 8H | 20.32 | 20.86 | 20.96 | 21.50 | 22.21 | 20.32 | 20.86 | 20.96 | 21.50 | 22.21 |
| | 12H | 20.35 | 20.83 | 21.01 | 21.49 | 22.21 | 20.35 | 20.83 | 21.01 | 21.49 | 22.21 |
| 8H | 4H | 19.98 | 20.52 | 20.62 | 21.15 | 21.87 | 19.98 | 20.52 | 20.62 | 21.15 | 21.87 |
| | 6H | 20.49 | 20.93 | 21.16 | 21.61 | 22.33 | 20.49 | 20.93 | 21.16 | 21.61 | 22.33 |
| | 8H | 20.63 | 21.02 | 21.32 | 21.71 | 22.44 | 20.63 | 21.02 | 21.32 | 21.71 | 22.44 |
| | 12H | 20.69 | 21.04 | 21.38 | 21.71 | 22.51 | 20.69 | 21.04 | 21.38 | 21.71 | 22.51 |
| 12H | 4H | 19.96 | 20.44 | 20.62 | 21.11 | 21.82 | 19.96 | 20.44 | 20.62 | 21.11 | 21.82 |
| | 6H | 20.49 | 20.89 | 21.18 | 21.57 | 22.31 | 20.49 | 20.89 | 21.18 | 21.57 | 22.31 |
| | 8H | 20.66 | 21.01 | 21.34 | 21.68 | 22.48 | 20.66 | 21.01 | 21.34 | 21.68 | 22.48 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-5

Test Date: 08/01/2025

Luminaire Tested: EHBR-60-L930-N

Data in this report applies to families of products including EHBR-60-L930-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-5
 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-L930-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3000K 90CRI LEDs with N lens

Spectral Parameters

CCT (K): 2996
 CIE u': 0.2519
 CIE v': 0.5169
 Duv: -0.0033
 CIE x: 0.4325
 CIE y: 0.3945
 CIE z: 0.1730
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 584
 Purity: 48.21818
 Rf: 91.3
 Rg: 102

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 94.4 | | |
| R1: | 96.8 | R9: | 61.4 |
| R2: | 98.1 | R10: | 94.4 |
| R3: | 97.8 | R11: | 95.7 |
| R4: | 95.6 | R12: | 88.5 |
| R5: | 96.9 | R13: | 97.3 |
| R6: | 95.7 | R14: | 97.8 |
| R7: | 90.9 | R15: | 92.3 |
| R8: | 83.0 | | |



Test Conditions

Stabilization Time: 40M
 Operation Time: 1H 40M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-5

| 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 7-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 | 101 | NR | 620 | 317 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 320 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 141 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 158 | NR | 635 | 651 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 171 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 182 | NR | 645 | 201 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 189 | NR | 650 | 174 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 194 | NR | 655 | 146 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 199 | NR | 660 | 124 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 205 | NR | 665 | 105 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 210 | NR | 670 | 96 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 216 | NR | 675 | 79 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 13 | NR | 550 | 222 | NR | 680 | 67 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 22 | NR | 555 | 230 | NR | 685 | 58 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 37 | NR | 560 | 240 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 60 | NR | 565 | 248 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 101 | NR | 570 | 258 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 172 | NR | 575 | 268 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 223 | NR | 580 | 278 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 167 | NR | 585 | 287 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 126 | NR | 590 | 295 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 111 | NR | 595 | 298 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 86 | NR | 600 | 303 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 74 | NR | 605 | 307 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 341 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 86 | NR | 615 | 368 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-5

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.44

| 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 | 101 | NR | 620 | 317 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 320 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 141 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 158 | NR | 635 | 651 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 171 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 182 | NR | 645 | 201 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 189 | NR | 650 | 174 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 194 | NR | 655 | 146 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 199 | NR | 660 | 124 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 205 | NR | 665 | 105 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 210 | NR | 670 | 96 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 216 | NR | 675 | 79 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 13 | NR | 550 | 222 | NR | 680 | 67 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 22 | NR | 555 | 230 | NR | 685 | 58 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 37 | NR | 560 | 240 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 60 | NR | 565 | 248 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 101 | NR | 570 | 258 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 172 | NR | 575 | 268 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 223 | NR | 580 | 278 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 167 | NR | 585 | 287 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 126 | NR | 590 | 295 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 111 | NR | 595 | 298 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 86 | NR | 600 | 303 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 74 | NR | 605 | 307 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 341 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 86 | NR | 615 | 368 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.85

| 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 | 101 | NR | 620 | 317 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 320 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 141 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 158 | NR | 635 | 651 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 171 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 182 | NR | 645 | 201 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 189 | NR | 650 | 174 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 194 | NR | 655 | 146 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 199 | NR | 660 | 124 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 205 | NR | 665 | 105 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 210 | NR | 670 | 96 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 216 | NR | 675 | 79 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 13 | NR | 550 | 222 | NR | 680 | 67 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 22 | NR | 555 | 230 | NR | 685 | 58 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 37 | NR | 560 | 240 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 60 | NR | 565 | 248 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 101 | NR | 570 | 258 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 172 | NR | 575 | 268 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 223 | NR | 580 | 278 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 167 | NR | 585 | 287 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 126 | NR | 590 | 295 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 111 | NR | 595 | 298 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 86 | NR | 600 | 303 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 74 | NR | 605 | 307 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 341 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 86 | NR | 615 | 368 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 91.3$
 $R_g = 102$
 $CIE R_a = 94.4$
 $R_9 = 61.4$



Color Vector Graphics

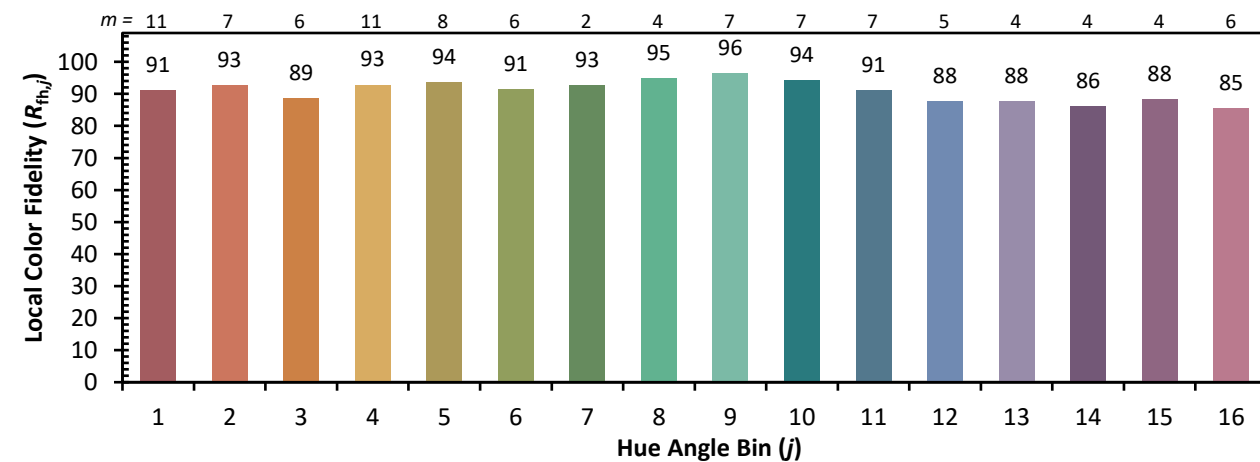


Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 91 | CES51 = 96 | CES76 = 89 |
| CES02 = 63 | CES27 = 96 | CES52 = 95 | CES77 = 85 |
| CES03 = 32 | CES28 = 96 | CES53 = 93 | CES78 = 86 |
| CES04 = 70 | CES29 = 90 | CES54 = 98 | CES79 = 89 |
| CES05 = 51 | CES30 = 96 | CES55 = 98 | CES80 = 91 |
| CES06 = 51 | CES31 = 90 | CES56 = 95 | CES81 = 72 |
| CES07 = 44 | CES32 = 84 | CES57 = 95 | CES82 = 95 |
| CES08 = 42 | CES33 = 91 | CES58 = 95 | CES83 = 93 |
| CES09 = 29 | CES34 = 92 | CES59 = 99 | CES84 = 96 |
| CES10 = 76 | CES35 = 96 | CES60 = 96 | CES85 = 80 |
| CES11 = 59 | CES36 = 90 | CES61 = 96 | CES86 = 77 |
| CES12 = 65 | CES37 = 94 | CES62 = 95 | CES87 = 91 |
| CES13 = 44 | CES38 = 99 | CES63 = 94 | CES88 = 96 |
| CES14 = 74 | CES39 = 97 | CES64 = 96 | CES89 = 82 |
| CES15 = 72 | CES40 = 94 | CES65 = 92 | CES90 = 97 |
| CES16 = 48 | CES41 = 94 | CES66 = 95 | CES91 = 82 |
| CES17 = 50 | CES42 = 91 | CES67 = 94 | CES92 = 78 |
| CES18 = 57 | CES43 = 88 | CES68 = 93 | CES93 = 87 |
| CES19 = 72 | CES44 = 99 | CES69 = 94 | CES94 = 73 |
| CES20 = 67 | CES45 = 93 | CES70 = 90 | CES95 = 85 |
| CES21 = 86 | CES46 = 93 | CES71 = 90 | CES96 = 92 |
| CES22 = 79 | CES47 = 86 | CES72 = 96 | CES97 = 93 |
| CES23 = 92 | CES48 = 95 | CES73 = 85 | CES98 = 94 |
| CES24 = 91 | CES49 = 91 | CES74 = 90 | CES99 = 93 |
| CES25 = 72 | CES50 = 96 | CES75 = 90 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)