

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: EHBR1-48-UNV-N-L950-UPL36

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: REPORT IS A COMBINATION OF REPORTS P1431849 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-48-UNV-N-L950-UPL36
Description: Elevate Round Highbay at, 49000 lumens, 5000K 90CRI LEDs with N lens
Light Source: -
Ballast/Driver: -

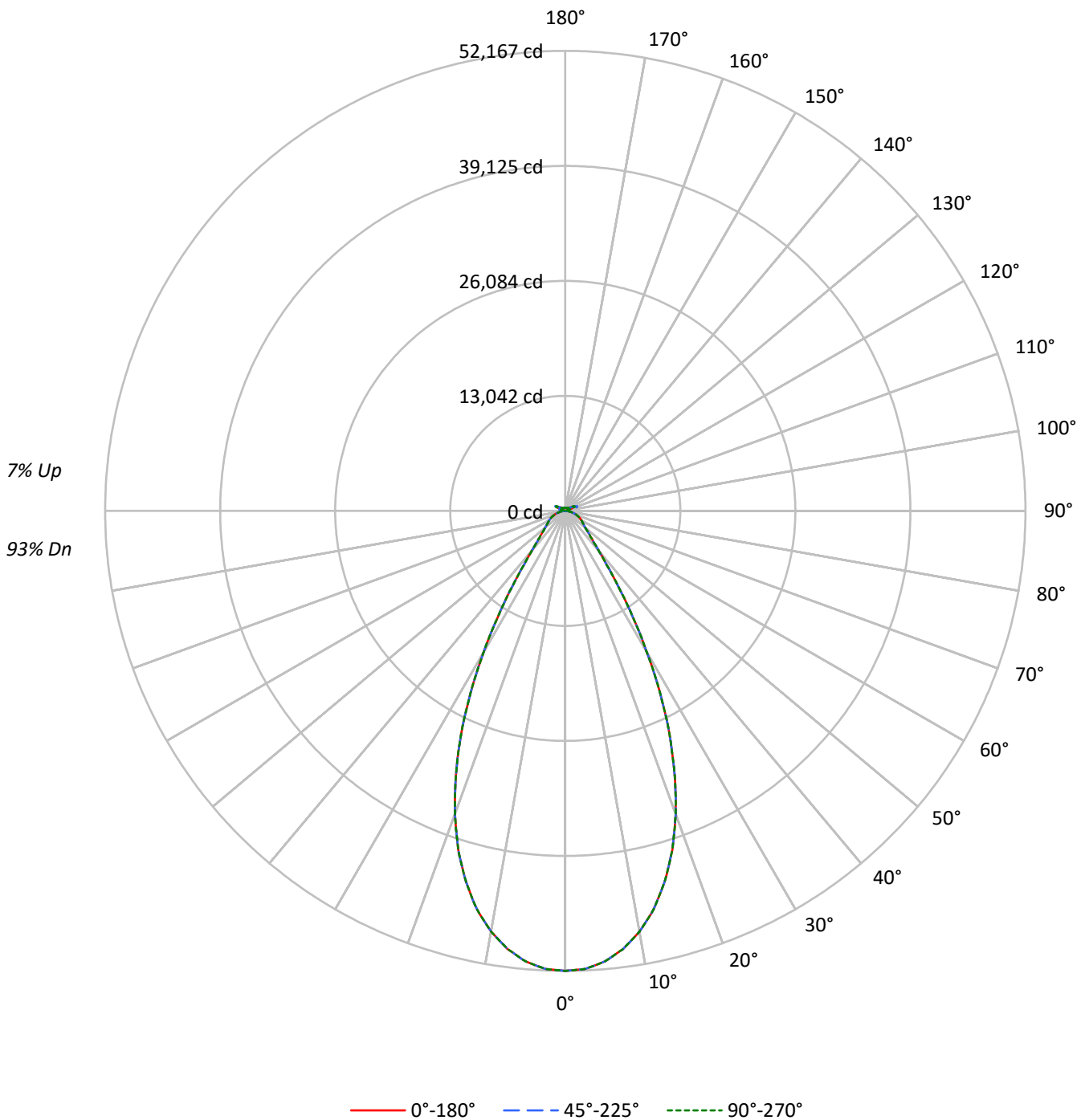
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 48029.4 lumens
Efficiency: N/A
Efficacy: 167.3 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: Direct

Input Watts (W): 287
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:
CATALOG NUMBER: EHBR1-48-UNV-N-L950-UPL36

Luminous Intensity Polar Plot





TEST NUMBER:

CATALOG NUMBER: EHBR1-48-UNV-N-L950-UPL36

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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 101 | 101 | 101 | 96 | 96 | 96 | 96 | 96 | 96 | 93 |
| 1 | 111 | 107 | 104 | 102 | 107 | 104 | 102 | 99 | 99 | 97 | 95 | 94 | 92 | 91 | 90 | 88 | 87 | 87 | 87 | 87 | 85 |
| 2 | 104 | 98 | 93 | 90 | 101 | 96 | 92 | 88 | 91 | 88 | 85 | 87 | 85 | 82 | 84 | 81 | 79 | 79 | 79 | 79 | 77 |
| 3 | 98 | 90 | 85 | 80 | 95 | 88 | 83 | 79 | 85 | 80 | 77 | 81 | 78 | 75 | 78 | 75 | 73 | 73 | 73 | 73 | 71 |
| 4 | 92 | 84 | 77 | 73 | 90 | 82 | 76 | 72 | 79 | 74 | 70 | 76 | 72 | 69 | 73 | 70 | 67 | 67 | 67 | 67 | 65 |
| 5 | 87 | 78 | 71 | 67 | 85 | 76 | 70 | 66 | 74 | 69 | 65 | 71 | 67 | 63 | 69 | 65 | 62 | 62 | 62 | 62 | 61 |
| 6 | 82 | 73 | 66 | 61 | 80 | 71 | 65 | 61 | 69 | 64 | 60 | 67 | 63 | 59 | 65 | 61 | 58 | 58 | 58 | 58 | 56 |
| 7 | 78 | 68 | 62 | 57 | 76 | 67 | 61 | 57 | 65 | 60 | 56 | 63 | 59 | 55 | 62 | 57 | 54 | 54 | 54 | 54 | 53 |
| 8 | 74 | 64 | 58 | 53 | 73 | 63 | 57 | 53 | 61 | 56 | 52 | 60 | 55 | 52 | 58 | 54 | 51 | 51 | 51 | 51 | 49 |
| 9 | 71 | 60 | 54 | 50 | 69 | 60 | 54 | 50 | 58 | 53 | 49 | 57 | 52 | 48 | 55 | 51 | 48 | 48 | 48 | 48 | 46 |
| 10 | 67 | 57 | 51 | 47 | 66 | 56 | 51 | 47 | 55 | 50 | 46 | 54 | 49 | 46 | 53 | 48 | 45 | 45 | 45 | 45 | 44 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 244982 | 244982 | 244982 |
| 5° | 240226 | 240226 | 240226 |
| 10° | 228003 | 228003 | 228003 |
| 15° | 207453 | 207453 | 207453 |
| 20° | 177949 | 177949 | 177949 |
| 25° | 139985 | 139985 | 139985 |
| 30° | 96065 | 96065 | 96065 |
| 35° | 57066 | 57066 | 57066 |
| 40° | 33765 | 33765 | 33765 |
| 45° | 24238 | 24238 | 24238 |
| 50° | 19924 | 19924 | 19924 |
| 55° | 18107 | 18107 | 18107 |
| 60° | 17333 | 17333 | 17333 |
| 65° | 16532 | 16532 | 16532 |
| 70° | 15375 | 15375 | 15375 |
| 75° | 13899 | 13899 | 13899 |
| 80° | 11537 | 11537 | 11537 |
| 85° | 7303 | 7303 | 7303 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 24238 cd/sqm



TEST NUMBER:

CATALOG NUMBER: EHBR1-48-UNV-N-L950-UPL36

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 4805.4 | 10.0 |
| 10°-20° | 12062.4 | 25.1 |
| 20°-30° | 12612.5 | 26.3 |
| 30°-40° | 6833.8 | 14.2 |
| 40°-50° | 3143.9 | 6.5 |
| 50°-60° | 2215.6 | 4.6 |
| 60°-70° | 1705.0 | 3.5 |
| 70°-80° | 1033.6 | 2.2 |
| 80°-90° | 297.0 | 0.6 |
| 90°-100° | 94.9 | 0.2 |
| 100°-110° | 593.1 | 1.2 |
| 110°-120° | 1060.7 | 2.2 |
| 120°-130° | 622.4 | 1.3 |
| 130°-140° | 381.8 | 0.8 |
| 140°-150° | 264.8 | 0.6 |
| 150°-160° | 172.0 | 0.4 |
| 160°-170° | 98.0 | 0.2 |
| 170°-180° | 32.4 | 0.1 |
| 0°-30° | 29480.4 | 61.4 |
| 0°-40° | 36314.2 | 75.6 |
| 0°-60° | 41673.6 | 86.8 |
| 0°-90° | 44709.3 | 93.1 |
| 90°-120° | 1748.7 | 3.6 |
| 90°-150° | 3017.6 | 6.3 |
| 90°-180° | 3320.0 | 6.9 |
| 0°-180° | 48029.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|-------|
| 0° | 52167 | 52167 | 52167 | 52167 | 52167 | |
| 5° | 51292 | 51292 | 51292 | 51292 | 51292 | 4805 |
| 15° | 43522 | 43522 | 43522 | 43522 | 43522 | 12062 |
| 25° | 27955 | 27955 | 27955 | 27955 | 27955 | 12613 |
| 35° | 10474 | 10474 | 10474 | 10474 | 10474 | 6834 |
| 45° | 3922 | 3922 | 3922 | 3922 | 3922 | 3144 |
| 55° | 2447 | 2447 | 2447 | 2447 | 2447 | 2216 |
| 65° | 1726 | 1726 | 1726 | 1726 | 1726 | 1705 |
| 75° | 979 | 979 | 979 | 979 | 979 | 1034 |
| 85° | 251 | 251 | 251 | 251 | 251 | 278 |
| 90° | 26 | 41 | 70 | 45 | 26 | 24 |
| 95° | 42 | 70 | 154 | 76 | 48 | 40 |
| 105° | 207 | 409 | 1043 | 450 | 274 | 277 |
| 115° | 954 | 1003 | 1233 | 1182 | 1174 | 879 |
| 125° | 688 | 642 | 660 | 669 | 751 | 627 |
| 135° | 502 | 486 | 504 | 473 | 471 | 392 |
| 145° | 412 | 407 | 431 | 426 | 424 | 261 |
| 155° | 361 | 357 | 374 | 374 | 374 | 168 |
| 165° | 338 | 338 | 348 | 348 | 346 | 97 |
| 175° | 334 | 334 | 340 | 340 | 340 | 32 |
| 180° | 338 | 338 | 338 | 338 | 338 | |



TEST NUMBER:

CATALOG NUMBER: EHBR1-48-UNV-N-L950-UPL36

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 52167.2 | 52167.2 | 52167.2 | 52167.2 | 52167.2 |
| 2.5° | 51982.3 | 51982.3 | 51982.3 | 51982.3 | 51982.3 |
| 5° | 51292.1 | 51292.1 | 51292.1 | 51292.1 | 51292.1 |
| 7.5° | 50113.9 | 50113.9 | 50113.9 | 50113.9 | 50113.9 |
| 10° | 48442.4 | 48442.4 | 48442.4 | 48442.4 | 48442.4 |
| 12.5° | 46282.2 | 46282.2 | 46282.2 | 46282.2 | 46282.2 |
| 15° | 43522.5 | 43522.5 | 43522.5 | 43522.5 | 43522.5 |
| 17.5° | 40320.7 | 40320.7 | 40320.7 | 40320.7 | 40320.7 |
| 20° | 36573.6 | 36573.6 | 36573.6 | 36573.6 | 36573.6 |
| 22.5° | 32401.7 | 32401.7 | 32401.7 | 32401.7 | 32401.7 |
| 25° | 27954.9 | 27954.9 | 27954.9 | 27954.9 | 27954.9 |
| 27.5° | 23240.7 | 23240.7 | 23240.7 | 23240.7 | 23240.7 |
| 30° | 18478.1 | 18478.1 | 18478.1 | 18478.1 | 18478.1 |
| 32.5° | 14181.3 | 14181.3 | 14181.3 | 14181.3 | 14181.3 |
| 35° | 10473.7 | 10473.7 | 10473.7 | 10473.7 | 10473.7 |
| 37.5° | 7690.2 | 7690.2 | 7690.2 | 7690.2 | 7690.2 |
| 40° | 5852.3 | 5852.3 | 5852.3 | 5852.3 | 5852.3 |
| 42.5° | 4692.7 | 4692.7 | 4692.7 | 4692.7 | 4692.7 |
| 45° | 3921.6 | 3921.6 | 3921.6 | 3921.6 | 3921.6 |
| 47.5° | 3365.9 | 3365.9 | 3365.9 | 3365.9 | 3365.9 |
| 50° | 2969.3 | 2969.3 | 2969.3 | 2969.3 | 2969.3 |
| 52.5° | 2679.6 | 2679.6 | 2679.6 | 2679.6 | 2679.6 |
| 55° | 2447.0 | 2447.0 | 2447.0 | 2447.0 | 2447.0 |
| 57.5° | 2258.3 | 2258.3 | 2258.3 | 2258.3 | 2258.3 |
| 60° | 2083.7 | 2083.7 | 2083.7 | 2083.7 | 2083.7 |
| 62.5° | 1909.1 | 1909.1 | 1909.1 | 1909.1 | 1909.1 |
| 65° | 1725.6 | 1725.6 | 1725.6 | 1725.6 | 1725.6 |
| 67.5° | 1538.5 | 1538.5 | 1538.5 | 1538.5 | 1538.5 |
| 70° | 1349.1 | 1349.1 | 1349.1 | 1349.1 | 1349.1 |
| 72.5° | 1164.8 | 1164.8 | 1164.8 | 1164.8 | 1164.8 |
| 75° | 979.1 | 979.1 | 979.1 | 979.1 | 979.1 |
| 77.5° | 797.1 | 797.1 | 797.1 | 797.1 | 797.1 |
| 80° | 606.9 | 606.9 | 606.9 | 606.9 | 606.9 |
| 82.5° | 424.9 | 424.9 | 424.9 | 424.9 | 424.9 |
| 85° | 251.0 | 251.0 | 251.0 | 251.0 | 251.0 |
| 87.5° | 89.8 | 89.8 | 89.8 | 89.8 | 89.8 |
| 90° | 26.2 | 41.4 | 69.9 | 45.2 | 26.2 |
| 92.5° | 36.1 | 60.9 | 110.2 | 57.0 | 32.3 |
| 95° | 41.8 | 70.3 | 154.0 | 76.0 | 47.5 |
| 97.5° | 53.2 | 78.0 | 176.7 | 93.1 | 74.1 |
| 100° | 70.3 | 91.2 | 275.6 | 114.0 | 98.9 |
| 102.5° | 119.8 | 193.8 | 585.3 | 214.7 | 150.1 |
| 105° | 207.1 | 408.6 | 1043.3 | 450.4 | 273.6 |
| 107.5° | 359.2 | 731.7 | 1375.9 | 798.2 | 518.8 |
| 110° | 670.8 | 971.1 | 1442.4 | 1096.5 | 830.4 |



TEST NUMBER:

CATALOG NUMBER: EHBR1-48-UNV-N-L950-UPL36

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|--------|--------|--------|--------|
| 112.5° | 906.5 | 1043.3 | 1381.6 | 1210.5 | 1081.3 |
| 115° | 954.0 | 1003.4 | 1233.4 | 1182.0 | 1174.5 |
| 117.5° | 921.7 | 916.0 | 1047.1 | 1062.3 | 1134.5 |
| 120° | 853.3 | 815.3 | 874.2 | 927.4 | 1024.3 |
| 122.5° | 767.7 | 722.2 | 748.8 | 788.6 | 885.6 |
| 125° | 687.9 | 642.3 | 659.5 | 669.0 | 750.6 |
| 127.5° | 617.7 | 587.2 | 596.8 | 585.3 | 636.6 |
| 130° | 570.1 | 543.5 | 556.8 | 530.2 | 555.0 |
| 132.5° | 530.2 | 513.1 | 528.3 | 496.0 | 503.6 |
| 135° | 501.7 | 486.5 | 503.6 | 473.2 | 471.3 |
| 137.5° | 477.0 | 463.7 | 480.8 | 458.0 | 452.3 |
| 140° | 454.2 | 442.8 | 461.8 | 444.7 | 440.9 |
| 142.5° | 429.5 | 421.9 | 444.7 | 433.3 | 429.5 |
| 145° | 412.4 | 406.7 | 431.4 | 425.7 | 423.8 |
| 147.5° | 397.2 | 393.4 | 416.2 | 414.3 | 414.3 |
| 150° | 383.9 | 380.1 | 402.9 | 401.0 | 402.9 |
| 152.5° | 370.6 | 366.8 | 387.7 | 385.8 | 387.7 |
| 155° | 361.1 | 357.2 | 374.3 | 374.3 | 374.3 |
| 157.5° | 353.4 | 351.6 | 364.9 | 364.9 | 364.9 |
| 160° | 347.8 | 345.9 | 357.2 | 357.2 | 355.4 |
| 162.5° | 342.1 | 340.1 | 353.4 | 351.6 | 351.6 |
| 165° | 338.3 | 338.3 | 347.8 | 347.8 | 345.9 |
| 167.5° | 338.3 | 336.3 | 345.9 | 345.9 | 344.0 |
| 170° | 336.3 | 336.3 | 344.0 | 342.1 | 340.1 |
| 172.5° | 336.3 | 336.3 | 344.0 | 342.1 | 340.1 |
| 175° | 334.5 | 334.5 | 340.1 | 340.1 | 340.1 |
| 177.5° | 336.3 | 336.3 | 340.1 | 340.1 | 338.3 |
| 180° | 338.3 | 338.3 | 338.3 | 338.3 | 338.3 |



TEST NUMBER: CATALOG
 CATALOG NUMBER: EHBR1-48-UNV-N-L950-UPL36

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 | 17.98 | 19.04 | 18.47 | 19.50 | 19.99 | 17.98 | 19.04 | 18.47 | 19.50 | 19.99 |
| | 3H | 19.76 | 20.70 | 20.26 | 21.18 | 21.71 | 19.76 | 20.70 | 20.26 | 21.18 | 21.71 |
| | 4H | 20.42 | 21.30 | 20.94 | 21.79 | 22.34 | 20.42 | 21.30 | 20.94 | 21.79 | 22.34 |
| | 6H | 20.88 | 21.68 | 21.41 | 22.19 | 22.75 | 20.88 | 21.68 | 21.41 | 22.19 | 22.75 |
| | 8H | 21.00 | 21.76 | 21.55 | 22.29 | 22.86 | 21.00 | 21.76 | 21.55 | 22.29 | 22.86 |
| | 12H | 21.05 | 21.78 | 21.61 | 22.30 | 22.89 | 21.05 | 21.78 | 21.61 | 22.30 | 22.89 |
| 4H | 2H | 18.52 | 19.40 | 19.05 | 19.89 | 20.45 | 18.52 | 19.40 | 19.05 | 19.89 | 20.45 |
| | 3H | 20.49 | 21.22 | 21.03 | 21.76 | 22.33 | 20.49 | 21.22 | 21.03 | 21.76 | 22.33 |
| | 4H | 21.26 | 21.92 | 21.82 | 22.47 | 23.07 | 21.26 | 21.92 | 21.82 | 22.47 | 23.07 |
| | 6H | 21.83 | 22.40 | 22.42 | 22.97 | 23.60 | 21.83 | 22.40 | 22.42 | 22.97 | 23.60 |
| | 8H | 21.99 | 22.52 | 22.58 | 23.09 | 23.72 | 21.99 | 22.52 | 22.58 | 23.09 | 23.72 |
| | 12H | 22.07 | 22.53 | 22.68 | 23.14 | 23.77 | 22.07 | 22.53 | 22.68 | 23.14 | 23.77 |
| 8H | 4H | 21.49 | 22.02 | 22.08 | 22.59 | 23.22 | 21.49 | 22.02 | 22.08 | 22.59 | 23.22 |
| | 6H | 22.17 | 22.60 | 22.79 | 23.22 | 23.86 | 22.17 | 22.60 | 22.79 | 23.22 | 23.86 |
| | 8H | 22.40 | 22.77 | 23.03 | 23.41 | 24.06 | 22.40 | 22.77 | 23.03 | 23.41 | 24.06 |
| | 12H | 22.54 | 22.86 | 23.17 | 23.48 | 24.20 | 22.54 | 22.86 | 23.17 | 23.48 | 24.20 |
| 12H | 4H | 21.49 | 21.95 | 22.09 | 22.55 | 23.19 | 21.49 | 21.95 | 22.09 | 22.55 | 23.19 |
| | 6H | 22.20 | 22.58 | 22.84 | 23.21 | 23.86 | 22.20 | 22.58 | 22.84 | 23.21 | 23.86 |
| | 8H | 22.46 | 22.79 | 23.09 | 23.40 | 24.13 | 22.46 | 22.79 | 23.09 | 23.40 | 24.13 |

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: SP1-2506-472-8

Test Date: 08/04/2025

Luminaire Tested: EHBR-60-L950-N

Data in this report applies to families of products including EHBR-60-L950-N

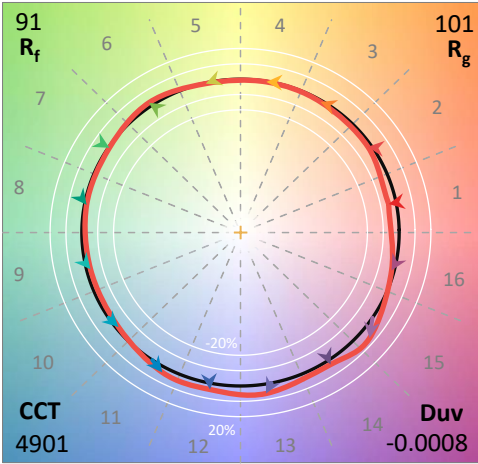
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-8
 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-L950-N**
 Description: Elevate Round Highbay at, 60000 lumens, 5000K 90CRI LEDs with N lens

Spectral Parameters

CCT (K): 4901
 CIE u': 0.2131
 CIE v': 0.4853
 Duv: -0.0008
 CIE x: 0.3477
 CIE y: 0.3520
 CIE z: 0.3003
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 574
 Purity: 9.953987
 Rf: 90.7
 Rg: 100.5

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 94.3 | | |
| R1: | 95.8 | R9: | 72.3 |
| R2: | 96.5 | R10: | 89.1 |
| R3: | 94.4 | R11: | 94.9 |
| R4: | 95.3 | R12: | 68.4 |
| R5: | 94.1 | R13: | 96.4 |
| R6: | 92.5 | R14: | 96.4 |
| R7: | 95.5 | R15: | 93.9 |
| R8: | 90.1 | | |



Test Conditions

Stabilization Time: 35M
 Operation Time: 1H 35M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-8

| 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 5000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-8

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 | 221 | NR | 620 | 326 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 250 | NR | 625 | 325 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 284 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 311 | NR | 635 | 643 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 329 | NR | 640 | 206 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 344 | NR | 645 | 199 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 353 | NR | 650 | 172 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 357 | NR | 655 | 143 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 362 | NR | 660 | 122 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 365 | NR | 665 | 102 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 367 | NR | 670 | 94 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 369 | NR | 675 | 76 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 26 | NR | 550 | 370 | NR | 680 | 65 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 47 | NR | 555 | 372 | NR | 685 | 56 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 81 | NR | 560 | 372 | NR | 690 | 48 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 143 | NR | 565 | 371 | NR | 695 | 41 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 243 | NR | 570 | 370 | NR | 700 | 35 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 434 | NR | 575 | 367 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 675 | NR | 580 | 365 | NR | 710 | 25 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 615 | NR | 585 | 361 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 418 | NR | 590 | 356 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 344 | NR | 595 | 348 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 272 | NR | 600 | 343 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 206 | NR | 605 | 337 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 190 | NR | 610 | 362 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 202 | NR | 615 | 381 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-8

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 2.04

| 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 | 221 | NR | 620 | 326 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 250 | NR | 625 | 325 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 284 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 311 | NR | 635 | 643 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 329 | NR | 640 | 206 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 344 | NR | 645 | 199 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 353 | NR | 650 | 172 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 357 | NR | 655 | 143 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 362 | NR | 660 | 122 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 365 | NR | 665 | 102 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 367 | NR | 670 | 94 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 369 | NR | 675 | 76 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 26 | NR | 550 | 370 | NR | 680 | 65 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 47 | NR | 555 | 372 | NR | 685 | 56 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 81 | NR | 560 | 372 | NR | 690 | 48 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 143 | NR | 565 | 371 | NR | 695 | 41 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 243 | NR | 570 | 370 | NR | 700 | 35 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 434 | NR | 575 | 367 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 675 | NR | 580 | 365 | NR | 710 | 25 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 615 | NR | 585 | 361 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 418 | NR | 590 | 356 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 344 | NR | 595 | 348 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 272 | NR | 600 | 343 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 206 | NR | 605 | 337 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 190 | NR | 610 | 362 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 202 | NR | 615 | 381 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-8

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.41

| 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 | 221 | NR | 620 | 326 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 250 | NR | 625 | 325 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 284 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 311 | NR | 635 | 643 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 329 | NR | 640 | 206 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 344 | NR | 645 | 199 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 353 | NR | 650 | 172 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 357 | NR | 655 | 143 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 362 | NR | 660 | 122 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 365 | NR | 665 | 102 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 367 | NR | 670 | 94 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 369 | NR | 675 | 76 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 26 | NR | 550 | 370 | NR | 680 | 65 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 47 | NR | 555 | 372 | NR | 685 | 56 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 81 | NR | 560 | 372 | NR | 690 | 48 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 143 | NR | 565 | 371 | NR | 695 | 41 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 243 | NR | 570 | 370 | NR | 700 | 35 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 434 | NR | 575 | 367 | NR | 705 | 30 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 675 | NR | 580 | 365 | NR | 710 | 25 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 615 | NR | 585 | 361 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 418 | NR | 590 | 356 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 344 | NR | 595 | 348 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 272 | NR | 600 | 343 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 206 | NR | 605 | 337 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 190 | NR | 610 | 362 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 202 | NR | 615 | 381 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 90.7$
 $R_g = 100.5$
 CIE $R_a = 94.3$
 $R_9 = 72.3$

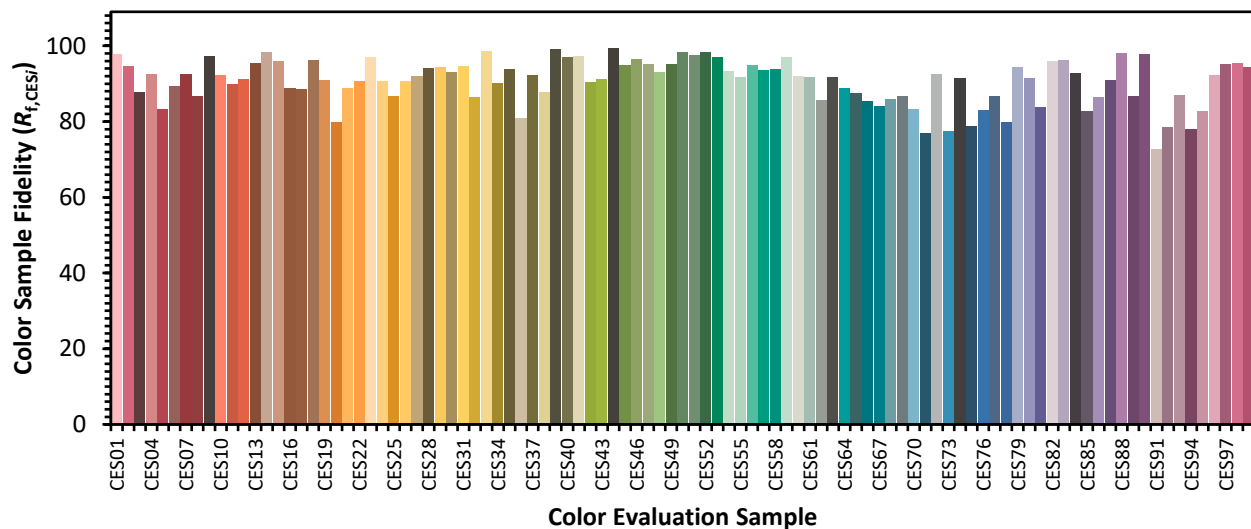


Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 91 | CES51 = 98 | CES76 = 83 |
| CES02 = 61 | CES27 = 92 | CES52 = 98 | CES77 = 87 |
| CES03 = 31 | CES28 = 94 | CES53 = 97 | CES78 = 80 |
| CES04 = 69 | CES29 = 94 | CES54 = 93 | CES79 = 94 |
| CES05 = 48 | CES30 = 93 | CES55 = 92 | CES80 = 91 |
| CES06 = 50 | CES31 = 95 | CES56 = 95 | CES81 = 84 |
| CES07 = 41 | CES32 = 86 | CES57 = 94 | CES82 = 96 |
| CES08 = 40 | CES33 = 99 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 90 | CES59 = 97 | CES84 = 93 |
| CES10 = 73 | CES35 = 94 | CES60 = 92 | CES85 = 83 |
| CES11 = 56 | CES36 = 81 | CES61 = 92 | CES86 = 86 |
| CES12 = 62 | CES37 = 92 | CES62 = 86 | CES87 = 91 |
| CES13 = 43 | CES38 = 88 | CES63 = 92 | CES88 = 98 |
| CES14 = 74 | CES39 = 99 | CES64 = 89 | CES89 = 87 |
| CES15 = 71 | CES40 = 97 | CES65 = 88 | CES90 = 98 |
| CES16 = 47 | CES41 = 97 | CES66 = 85 | CES91 = 73 |
| CES17 = 48 | CES42 = 90 | CES67 = 84 | CES92 = 79 |
| CES18 = 56 | CES43 = 91 | CES68 = 86 | CES93 = 87 |
| CES19 = 70 | CES44 = 99 | CES69 = 87 | CES94 = 78 |
| CES20 = 65 | CES45 = 95 | CES70 = 83 | CES95 = 83 |
| CES21 = 85 | CES46 = 97 | CES71 = 77 | CES96 = 92 |
| CES22 = 77 | CES47 = 95 | CES72 = 92 | CES97 = 95 |
| CES23 = 91 | CES48 = 93 | CES73 = 77 | CES98 = 95 |
| CES24 = 90 | CES49 = 95 | CES74 = 92 | CES99 = 94 |
| CES25 = 70 | CES50 = 98 | CES75 = 79 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)