

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: P1433405

Luminaire Tested: EHBR1-60-UNV-W-L930-UPL18

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: P1433405
REPORT IS A COMBINATION OF REPORTS P1431918 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-60-UNV-W-L930-UPL18
Description: Elevate Round Highbay at, 60000 lumens, 3000K 90CRI LEDs with W lens
Light Source: -
Ballast/Driver: -

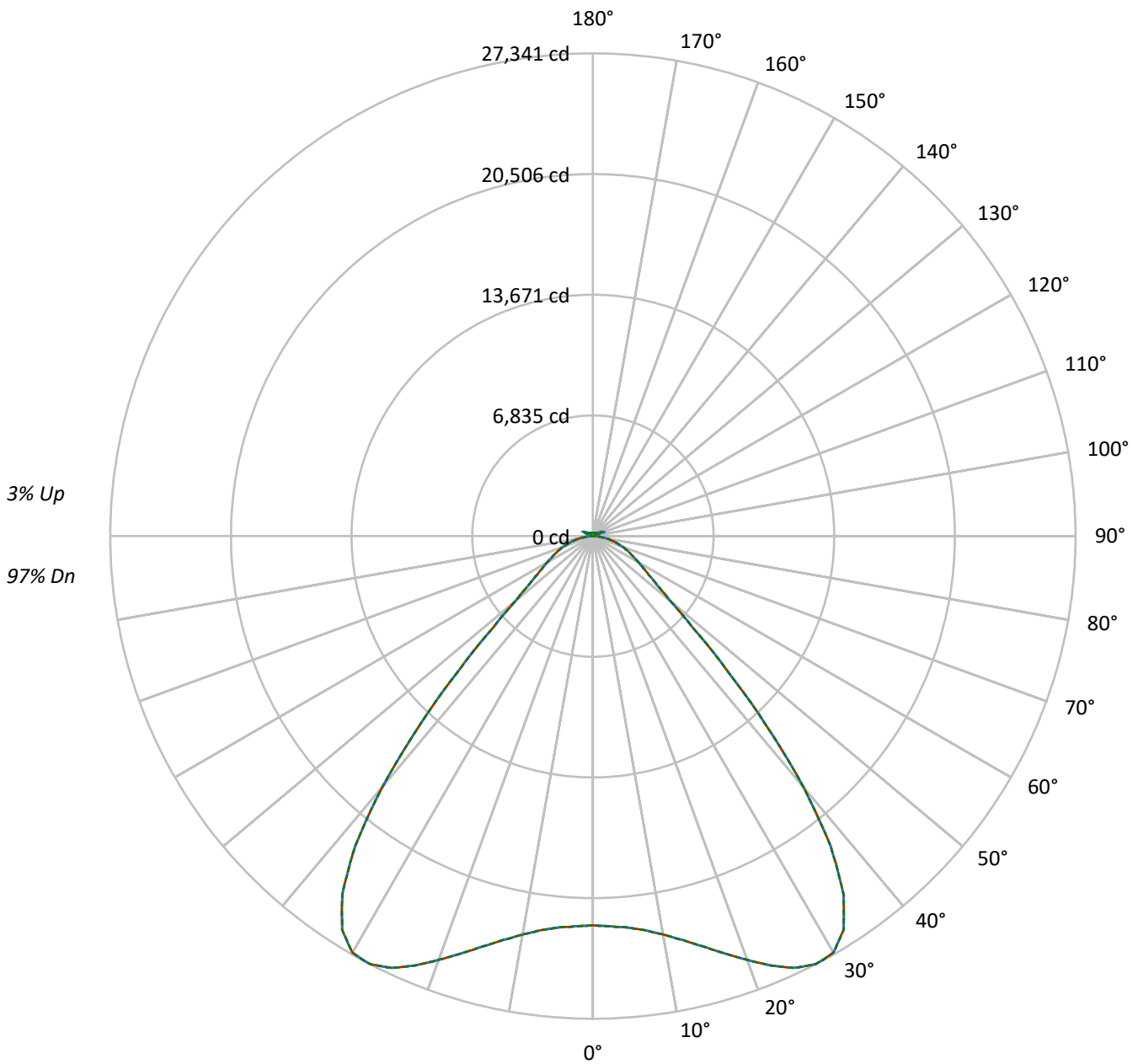
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 54327.3 lumens
Efficiency: N/A
Efficacy: 158.7 lumens/watt
Spacing Criteria (0/90/45): 1.54 / 1.54 / 1.31
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type: Direct

Input Watts (W): 342.3
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: P1433405
CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL18

Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270°



TEST NUMBER: P1433405
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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 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 104 | 104 | 104 | 99 | 99 | 99 | 99 | 99 | 99 | 97 |
| 1 | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 99 | 100 | 97 | 95 | 95 | 93 | 92 | 91 | 90 | 88 | 88 | 88 | 88 | 86 |
| 2 | 103 | 96 | 91 | 86 | 100 | 94 | 89 | 85 | 90 | 86 | 83 | 87 | 83 | 80 | 83 | 81 | 78 | 78 | 78 | 78 | 76 |
| 3 | 95 | 87 | 80 | 75 | 93 | 85 | 79 | 74 | 82 | 77 | 72 | 79 | 75 | 71 | 76 | 72 | 69 | 69 | 69 | 69 | 67 |
| 4 | 89 | 79 | 71 | 66 | 86 | 77 | 71 | 65 | 75 | 69 | 64 | 72 | 67 | 63 | 70 | 65 | 62 | 62 | 62 | 62 | 60 |
| 5 | 82 | 72 | 64 | 58 | 80 | 70 | 63 | 58 | 68 | 62 | 57 | 66 | 61 | 56 | 64 | 59 | 56 | 56 | 56 | 56 | 54 |
| 6 | 77 | 65 | 58 | 52 | 75 | 64 | 57 | 52 | 62 | 56 | 51 | 61 | 55 | 51 | 59 | 54 | 50 | 50 | 50 | 50 | 48 |
| 7 | 72 | 60 | 52 | 47 | 70 | 59 | 52 | 47 | 57 | 51 | 46 | 56 | 50 | 46 | 54 | 49 | 45 | 45 | 45 | 45 | 43 |
| 8 | 67 | 55 | 48 | 43 | 66 | 54 | 47 | 42 | 53 | 46 | 42 | 52 | 46 | 42 | 50 | 45 | 41 | 41 | 41 | 41 | 39 |
| 9 | 63 | 51 | 44 | 39 | 62 | 50 | 43 | 38 | 49 | 43 | 38 | 48 | 42 | 38 | 47 | 41 | 38 | 38 | 38 | 38 | 36 |
| 10 | 59 | 47 | 40 | 35 | 58 | 47 | 40 | 35 | 45 | 39 | 35 | 44 | 39 | 35 | 43 | 38 | 34 | 34 | 34 | 34 | 33 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 103532 | 103532 | 103532 |
| 5° | 104220 | 104220 | 104220 |
| 10° | 107841 | 107841 | 107841 |
| 15° | 114674 | 114674 | 114674 |
| 20° | 124310 | 124310 | 124310 |
| 25° | 135137 | 135137 | 135137 |
| 30° | 141646 | 141646 | 141646 |
| 35° | 134824 | 134824 | 134824 |
| 40° | 106983 | 106983 | 106983 |
| 45° | 66125 | 66125 | 66125 |
| 50° | 38290 | 38290 | 38290 |
| 55° | 28970 | 28970 | 28970 |
| 60° | 24851 | 24851 | 24851 |
| 65° | 22445 | 22445 | 22445 |
| 70° | 20649 | 20649 | 20649 |
| 75° | 18241 | 18241 | 18241 |
| 80° | 14869 | 14869 | 14869 |
| 85° | 8764 | 8764 | 8764 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 66125 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 2145.0 | 3.9 |
| 10°-20° | 6876.7 | 12.7 |
| 20°-30° | 12412.6 | 22.8 |
| 30°-40° | 14999.4 | 27.6 |
| 40°-50° | 8569.6 | 15.8 |
| 50°-60° | 3629.5 | 6.7 |
| 60°-70° | 2341.0 | 4.3 |
| 70°-80° | 1361.2 | 2.5 |
| 80°-90° | 363.1 | 0.7 |
| 90°-100° | 47.2 | 0.1 |
| 100°-110° | 287.1 | 0.5 |
| 110°-120° | 512.4 | 0.9 |
| 120°-130° | 302.1 | 0.6 |
| 130°-140° | 188.9 | 0.3 |
| 140°-150° | 134.3 | 0.2 |
| 150°-160° | 88.7 | 0.2 |
| 160°-170° | 51.3 | 0.1 |
| 170°-180° | 17.1 | 0.0 |
| 0°-30° | 21434.3 | 39.5 |
| 0°-40° | 36433.7 | 67.1 |
| 0°-60° | 48632.9 | 89.5 |
| 0°-90° | 52698.2 | 97.0 |
| 90°-120° | 846.7 | 1.6 |
| 90°-150° | 1472.0 | 2.7 |
| 90°-180° | 1629.0 | 3.0 |
| 0°-180° | 54327.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|-------|
| 0° | 22046 | 22046 | 22046 | 22046 | 22046 | |
| 5° | 22253 | 22253 | 22253 | 22253 | 22253 | 2145 |
| 15° | 24058 | 24058 | 24058 | 24058 | 24058 | 6877 |
| 25° | 26987 | 26987 | 26987 | 26987 | 26987 | 12413 |
| 35° | 24745 | 24745 | 24745 | 24745 | 24745 | 14999 |
| 45° | 10699 | 10699 | 10699 | 10699 | 10699 | 8570 |
| 55° | 3915 | 3915 | 3915 | 3915 | 3915 | 3630 |
| 65° | 2343 | 2343 | 2343 | 2343 | 2343 | 2341 |
| 75° | 1285 | 1285 | 1285 | 1285 | 1285 | 1361 |
| 85° | 301 | 301 | 301 | 301 | 301 | 347 |
| 90° | 14 | 21 | 35 | 23 | 14 | 19 |
| 95° | 22 | 36 | 76 | 38 | 25 | 21 |
| 105° | 101 | 198 | 503 | 218 | 133 | 135 |
| 115° | 461 | 485 | 596 | 571 | 567 | 425 |
| 125° | 334 | 312 | 320 | 325 | 364 | 304 |
| 135° | 248 | 241 | 249 | 234 | 234 | 194 |
| 145° | 210 | 207 | 219 | 216 | 215 | 133 |
| 155° | 187 | 185 | 193 | 193 | 193 | 87 |
| 165° | 178 | 178 | 182 | 182 | 181 | 51 |
| 175° | 178 | 178 | 180 | 180 | 180 | 17 |
| 180° | 180 | 180 | 180 | 180 | 180 | |



TEST NUMBER: P1433405

CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL18

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 22046.4 | 22046.4 | 22046.4 | 22046.4 | 22046.4 |
| 2.5° | 22120.4 | 22120.4 | 22120.4 | 22120.4 | 22120.4 |
| 5° | 22252.6 | 22252.6 | 22252.6 | 22252.6 | 22252.6 |
| 7.5° | 22512.3 | 22512.3 | 22512.3 | 22512.3 | 22512.3 |
| 10° | 22912.3 | 22912.3 | 22912.3 | 22912.3 | 22912.3 |
| 12.5° | 23431.9 | 23431.9 | 23431.9 | 23431.9 | 23431.9 |
| 15° | 24058.1 | 24058.1 | 24058.1 | 24058.1 | 24058.1 |
| 17.5° | 24775.0 | 24775.0 | 24775.0 | 24775.0 | 24775.0 |
| 20° | 25549.3 | 25549.3 | 25549.3 | 25549.3 | 25549.3 |
| 22.5° | 26328.7 | 26328.7 | 26328.7 | 26328.7 | 26328.7 |
| 25° | 26986.7 | 26986.7 | 26986.7 | 26986.7 | 26986.7 |
| 27.5° | 27340.7 | 27340.7 | 27340.7 | 27340.7 | 27340.7 |
| 30° | 27245.6 | 27245.6 | 27245.6 | 27245.6 | 27245.6 |
| 32.5° | 26438.0 | 26438.0 | 26438.0 | 26438.0 | 26438.0 |
| 35° | 24745.1 | 24745.1 | 24745.1 | 24745.1 | 24745.1 |
| 37.5° | 22105.4 | 22105.4 | 22105.4 | 22105.4 | 22105.4 |
| 40° | 18542.8 | 18542.8 | 18542.8 | 18542.8 | 18542.8 |
| 42.5° | 14513.3 | 14513.3 | 14513.3 | 14513.3 | 14513.3 |
| 45° | 10698.7 | 10698.7 | 10698.7 | 10698.7 | 10698.7 |
| 47.5° | 7646.8 | 7646.8 | 7646.8 | 7646.8 | 7646.8 |
| 50° | 5706.5 | 5706.5 | 5706.5 | 5706.5 | 5706.5 |
| 52.5° | 4620.5 | 4620.5 | 4620.5 | 4620.5 | 4620.5 |
| 55° | 3915.0 | 3915.0 | 3915.0 | 3915.0 | 3915.0 |
| 57.5° | 3399.8 | 3399.8 | 3399.8 | 3399.8 | 3399.8 |
| 60° | 2987.5 | 2987.5 | 2987.5 | 2987.5 | 2987.5 |
| 62.5° | 2644.1 | 2644.1 | 2644.1 | 2644.1 | 2644.1 |
| 65° | 2342.8 | 2342.8 | 2342.8 | 2342.8 | 2342.8 |
| 67.5° | 2076.8 | 2076.8 | 2076.8 | 2076.8 | 2076.8 |
| 70° | 1811.8 | 1811.8 | 1811.8 | 1811.8 | 1811.8 |
| 72.5° | 1547.5 | 1547.5 | 1547.5 | 1547.5 | 1547.5 |
| 75° | 1285.0 | 1285.0 | 1285.0 | 1285.0 | 1285.0 |
| 77.5° | 1032.3 | 1032.3 | 1032.3 | 1032.3 | 1032.3 |
| 80° | 782.2 | 782.2 | 782.2 | 782.2 | 782.2 |
| 82.5° | 536.4 | 536.4 | 536.4 | 536.4 | 536.4 |
| 85° | 301.2 | 301.2 | 301.2 | 301.2 | 301.2 |
| 87.5° | 95.1 | 95.1 | 95.1 | 95.1 | 95.1 |
| 90° | 13.6 | 20.9 | 34.7 | 22.8 | 13.6 |
| 92.5° | 18.3 | 30.1 | 53.8 | 28.2 | 16.4 |
| 95° | 21.8 | 35.6 | 75.7 | 38.3 | 24.6 |
| 97.5° | 27.4 | 39.2 | 86.7 | 46.5 | 37.4 |
| 100° | 35.6 | 45.6 | 134.2 | 56.6 | 49.3 |
| 102.5° | 59.3 | 94.9 | 283.1 | 105.0 | 74.0 |
| 105° | 101.3 | 198.2 | 503.2 | 218.2 | 133.3 |
| 107.5° | 174.4 | 353.4 | 663.0 | 385.4 | 251.1 |
| 110° | 325.1 | 469.4 | 695.9 | 529.7 | 401.8 |



TEST NUMBER: P1433405
 CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL18

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 438.4 | 504.1 | 666.7 | 584.5 | 522.4 |
| 115° | 461.2 | 485.0 | 595.5 | 570.8 | 567.1 |
| 117.5° | 445.7 | 442.9 | 505.9 | 513.2 | 548.0 |
| 120° | 412.8 | 394.5 | 422.8 | 448.4 | 494.9 |
| 122.5° | 371.7 | 349.8 | 362.5 | 381.7 | 428.3 |
| 125° | 334.2 | 312.3 | 320.5 | 325.1 | 364.3 |
| 127.5° | 300.4 | 285.8 | 290.3 | 284.9 | 309.5 |
| 130° | 278.4 | 265.6 | 272.0 | 259.2 | 271.1 |
| 132.5° | 261.0 | 252.7 | 260.0 | 244.5 | 248.2 |
| 135° | 248.2 | 240.9 | 249.1 | 234.5 | 233.6 |
| 137.5° | 237.2 | 230.8 | 239.0 | 228.0 | 225.3 |
| 140° | 228.0 | 222.5 | 231.7 | 223.4 | 221.6 |
| 142.5° | 217.0 | 213.3 | 224.3 | 218.9 | 217.0 |
| 145° | 209.6 | 206.8 | 218.8 | 216.0 | 215.1 |
| 147.5° | 203.2 | 201.4 | 212.4 | 211.4 | 211.4 |
| 150° | 196.8 | 195.0 | 205.9 | 205.1 | 205.9 |
| 152.5° | 190.4 | 188.6 | 198.6 | 197.7 | 198.6 |
| 155° | 186.7 | 184.9 | 193.1 | 193.1 | 193.1 |
| 157.5° | 183.0 | 182.1 | 188.6 | 188.6 | 188.6 |
| 160° | 181.3 | 180.3 | 185.8 | 185.8 | 184.9 |
| 162.5° | 179.4 | 178.5 | 184.8 | 183.9 | 183.9 |
| 165° | 177.5 | 177.5 | 182.1 | 182.1 | 181.2 |
| 167.5° | 177.5 | 176.6 | 181.2 | 181.2 | 180.3 |
| 170° | 176.6 | 176.6 | 180.3 | 179.4 | 178.5 |
| 172.5° | 177.5 | 177.5 | 181.2 | 180.3 | 179.4 |
| 175° | 177.5 | 177.5 | 180.3 | 180.3 | 180.3 |
| 177.5° | 178.4 | 178.4 | 180.3 | 180.3 | 179.3 |
| 180° | 180.2 | 180.2 | 180.2 | 180.2 | 180.2 |



TEST NUMBER: P1433405
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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 | 20.37 | 21.63 | 20.79 | 22.00 | 22.40 | 20.37 | 21.63 | 20.79 | 22.00 | 22.40 |
| | 3H | 21.87 | 22.99 | 22.30 | 23.38 | 23.82 | 21.87 | 22.99 | 22.30 | 23.38 | 23.82 |
| | 4H | 22.43 | 23.47 | 22.89 | 23.89 | 24.35 | 22.43 | 23.47 | 22.89 | 23.89 | 24.35 |
| | 6H | 22.82 | 23.78 | 23.29 | 24.21 | 24.68 | 22.82 | 23.78 | 23.29 | 24.21 | 24.68 |
| | 8H | 22.92 | 23.83 | 23.40 | 24.28 | 24.76 | 22.92 | 23.83 | 23.40 | 24.28 | 24.76 |
| | 12H | 22.96 | 23.83 | 23.44 | 24.27 | 24.77 | 22.96 | 23.83 | 23.44 | 24.27 | 24.77 |
| 4H | 2H | 20.82 | 21.86 | 21.27 | 22.27 | 22.73 | 20.82 | 21.86 | 21.27 | 22.27 | 22.73 |
| | 3H | 22.54 | 23.40 | 23.01 | 23.86 | 24.34 | 22.54 | 23.40 | 23.01 | 23.86 | 24.34 |
| | 4H | 23.22 | 23.99 | 23.71 | 24.46 | 24.98 | 23.22 | 23.99 | 23.71 | 24.46 | 24.98 |
| | 6H | 23.72 | 24.38 | 24.23 | 24.88 | 25.42 | 23.72 | 24.38 | 24.23 | 24.88 | 25.42 |
| | 8H | 23.85 | 24.47 | 24.37 | 24.97 | 25.51 | 23.85 | 24.47 | 24.37 | 24.97 | 25.51 |
| | 12H | 23.91 | 24.46 | 24.45 | 25.00 | 25.54 | 23.91 | 24.46 | 24.45 | 25.00 | 25.54 |
| 8H | 4H | 23.43 | 24.04 | 23.95 | 24.55 | 25.09 | 23.43 | 24.04 | 23.95 | 24.55 | 25.09 |
| | 6H | 24.02 | 24.53 | 24.57 | 25.08 | 25.63 | 24.02 | 24.53 | 24.57 | 25.08 | 25.63 |
| | 8H | 24.21 | 24.66 | 24.78 | 25.23 | 25.79 | 24.21 | 24.66 | 24.78 | 25.23 | 25.79 |
| | 12H | 24.32 | 24.72 | 24.88 | 25.27 | 25.90 | 24.32 | 24.72 | 24.88 | 25.27 | 25.90 |
| 12H | 4H | 23.42 | 23.97 | 23.96 | 24.51 | 25.05 | 23.42 | 23.97 | 23.96 | 24.51 | 25.05 |
| | 6H | 24.04 | 24.49 | 24.61 | 25.06 | 25.62 | 24.04 | 24.49 | 24.61 | 25.06 | 25.62 |
| | 8H | 24.26 | 24.66 | 24.83 | 25.21 | 25.85 | 24.26 | 24.66 | 24.83 | 25.21 | 25.85 |

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

REPORT NUMBER: SP1-2506-472-5

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)