

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: P1433404

Luminaire Tested: EHBR1-60-UNV-W-L930-UPL15

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: P1433404
REPORT IS A COMBINATION OF REPORTS P1431917 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-UPL15
Description: Elevate Round Highbay at, 60000 lumens, 3000K 90CRI LEDs with W lens
Light Source: -
Ballast/Driver: -

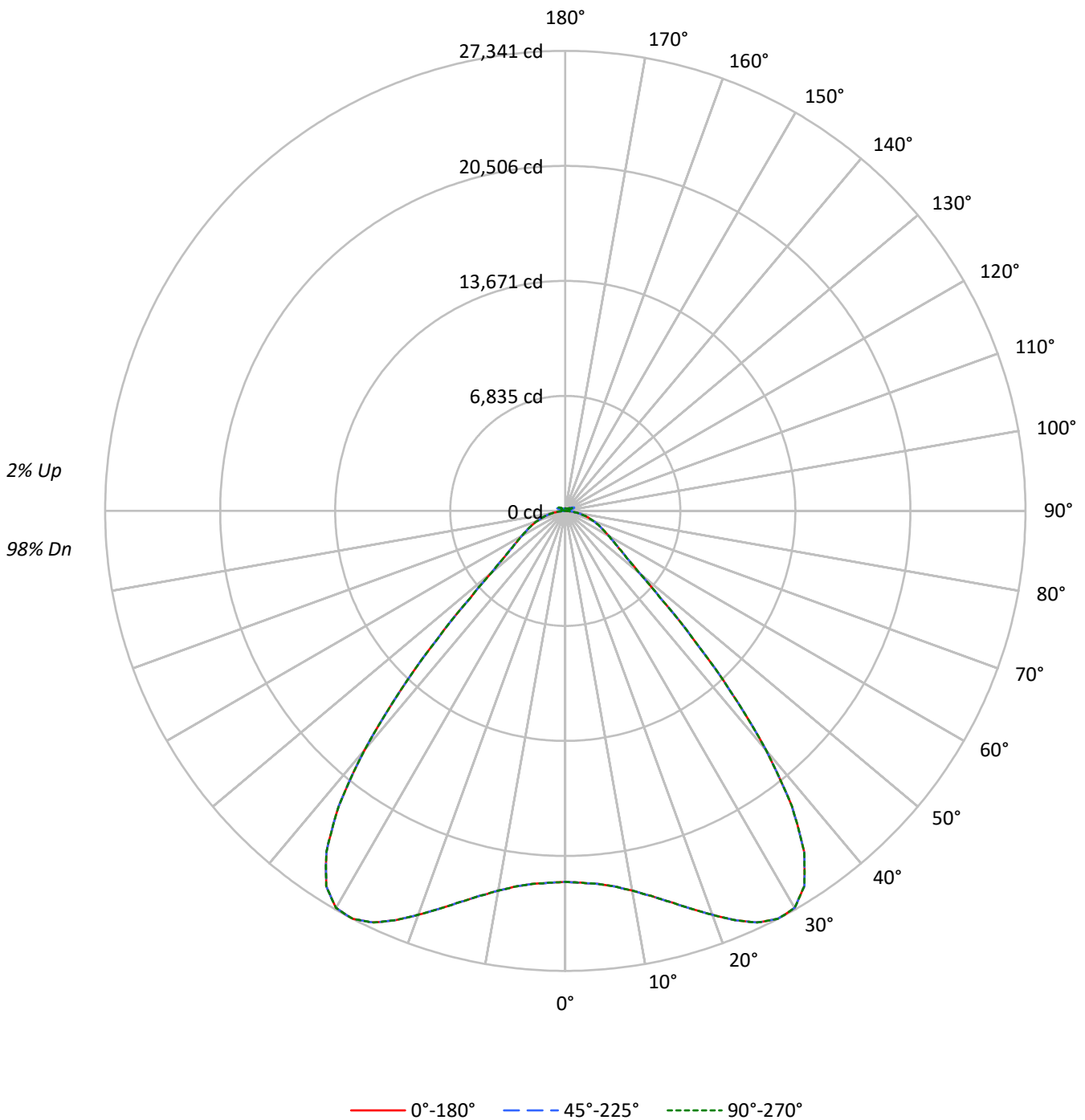
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 54018.0 lumens
Efficiency: N/A
Efficacy: 159.0 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): 339.7
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: P1433404
CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL15

Luminous Intensity Polar Plot





TEST NUMBER: P1433404
 CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL15

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 | 110 | 110 | 110 | 105 | 105 | 105 | 100 | 100 | 100 | 100 | 100 | 100 | 98 |
| 1 | 111 | 107 | 104 | 101 | 108 | 104 | 101 | 99 | 100 | 97 | 95 | 96 | 94 | 92 | 92 | 90 | 89 | 89 | 89 | 89 | 87 |
| 2 | 103 | 96 | 91 | 86 | 100 | 94 | 89 | 85 | 90 | 86 | 83 | 87 | 84 | 81 | 84 | 81 | 79 | 79 | 79 | 79 | 77 |
| 3 | 96 | 87 | 80 | 75 | 93 | 85 | 79 | 74 | 82 | 77 | 73 | 79 | 75 | 71 | 76 | 73 | 70 | 70 | 70 | 70 | 68 |
| 4 | 89 | 79 | 72 | 66 | 87 | 77 | 71 | 65 | 75 | 69 | 64 | 72 | 67 | 63 | 70 | 66 | 62 | 62 | 62 | 62 | 60 |
| 5 | 83 | 72 | 64 | 59 | 81 | 71 | 63 | 58 | 68 | 62 | 57 | 66 | 61 | 57 | 64 | 60 | 56 | 56 | 56 | 56 | 54 |
| 6 | 77 | 66 | 58 | 52 | 75 | 65 | 57 | 52 | 63 | 56 | 51 | 61 | 55 | 51 | 59 | 54 | 50 | 50 | 50 | 50 | 48 |
| 7 | 72 | 60 | 52 | 47 | 70 | 59 | 52 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 55 | 49 | 46 | 46 | 46 | 46 | 44 |
| 8 | 67 | 55 | 48 | 43 | 66 | 55 | 47 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 50 | 45 | 41 | 41 | 41 | 41 | 40 |
| 9 | 63 | 51 | 44 | 39 | 62 | 50 | 43 | 39 | 49 | 43 | 38 | 48 | 42 | 38 | 47 | 42 | 38 | 38 | 38 | 38 | 36 |
| 10 | 59 | 47 | 40 | 35 | 58 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 35 | 44 | 38 | 35 | 35 | 35 | 35 | 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



TEST NUMBER: P1433404
 CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL15

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 2145.0 | 4.0 |
| 10°-20° | 6876.7 | 12.7 |
| 20°-30° | 12412.6 | 23.0 |
| 30°-40° | 14999.4 | 27.8 |
| 40°-50° | 8569.6 | 15.9 |
| 50°-60° | 3629.5 | 6.7 |
| 60°-70° | 2341.0 | 4.3 |
| 70°-80° | 1361.2 | 2.5 |
| 80°-90° | 362.6 | 0.7 |
| 90°-100° | 38.4 | 0.1 |
| 100°-110° | 231.9 | 0.4 |
| 110°-120° | 413.8 | 0.8 |
| 120°-130° | 244.2 | 0.5 |
| 130°-140° | 153.4 | 0.3 |
| 140°-150° | 109.7 | 0.2 |
| 150°-160° | 72.7 | 0.1 |
| 160°-170° | 42.2 | 0.1 |
| 170°-180° | 14.1 | 0.0 |
| 0°-30° | 21434.3 | 39.7 |
| 0°-40° | 36433.7 | 67.4 |
| 0°-60° | 48632.9 | 90.0 |
| 0°-90° | 52697.7 | 97.6 |
| 90°-120° | 684.1 | 1.3 |
| 90°-150° | 1191.4 | 2.2 |
| 90°-180° | 1320.0 | 2.4 |
| 0°-180° | 54018.0 | 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° | 11 | 17 | 28 | 19 | 11 | 18 |
| 95° | 18 | 29 | 62 | 31 | 20 | 17 |
| 105° | 82 | 160 | 406 | 176 | 108 | 109 |
| 115° | 372 | 392 | 481 | 461 | 458 | 343 |
| 125° | 270 | 252 | 259 | 263 | 294 | 246 |
| 135° | 202 | 196 | 202 | 190 | 190 | 158 |
| 145° | 171 | 169 | 179 | 176 | 176 | 108 |
| 155° | 153 | 152 | 158 | 158 | 158 | 71 |
| 165° | 146 | 146 | 150 | 150 | 149 | 42 |
| 175° | 146 | 146 | 149 | 149 | 149 | 14 |
| 180° | 149 | 149 | 149 | 149 | 149 | |



TEST NUMBER: P1433404
 CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL15

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° | 11.3 | 17.3 | 28.3 | 18.7 | 11.3 |
| 92.5° | 14.9 | 24.5 | 43.6 | 23.0 | 13.5 |
| 95° | 18.0 | 29.1 | 61.5 | 31.3 | 20.2 |
| 97.5° | 22.4 | 32.0 | 70.3 | 37.9 | 30.5 |
| 100° | 29.1 | 37.2 | 108.6 | 46.0 | 40.1 |
| 102.5° | 48.2 | 76.9 | 228.7 | 85.0 | 60.0 |
| 105° | 82.1 | 160.1 | 406.2 | 176.4 | 107.8 |
| 107.5° | 141.0 | 285.3 | 535.1 | 311.2 | 202.9 |
| 110° | 262.7 | 379.1 | 561.8 | 427.7 | 324.6 |



TEST NUMBER: P1433404

CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL15

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 354.0 | 407.1 | 538.2 | 471.9 | 421.8 |
| 115° | 372.5 | 391.6 | 480.8 | 460.8 | 457.9 |
| 117.5° | 359.9 | 357.7 | 408.6 | 414.5 | 442.5 |
| 120° | 333.4 | 318.7 | 341.5 | 362.2 | 399.7 |
| 122.5° | 300.2 | 282.6 | 292.9 | 308.3 | 345.9 |
| 125° | 270.2 | 252.5 | 259.1 | 262.9 | 294.5 |
| 127.5° | 242.9 | 231.2 | 234.9 | 230.4 | 250.3 |
| 130° | 225.4 | 215.0 | 220.2 | 209.9 | 219.5 |
| 132.5° | 211.6 | 205.1 | 210.9 | 198.4 | 201.3 |
| 135° | 201.5 | 195.6 | 202.2 | 190.4 | 189.7 |
| 137.5° | 192.8 | 187.7 | 194.3 | 185.4 | 183.2 |
| 140° | 185.8 | 181.3 | 188.7 | 182.1 | 180.6 |
| 142.5° | 177.1 | 174.1 | 183.0 | 178.6 | 177.1 |
| 145° | 171.3 | 169.0 | 178.6 | 176.4 | 175.6 |
| 147.5° | 166.3 | 164.8 | 173.6 | 172.9 | 172.9 |
| 150° | 161.1 | 159.6 | 168.4 | 167.7 | 168.4 |
| 152.5° | 155.9 | 154.4 | 162.5 | 161.8 | 162.5 |
| 155° | 153.2 | 151.7 | 158.3 | 158.3 | 158.3 |
| 157.5° | 150.2 | 149.4 | 154.6 | 154.6 | 154.6 |
| 160° | 148.9 | 148.1 | 152.6 | 152.6 | 151.9 |
| 162.5° | 147.6 | 146.9 | 151.9 | 151.2 | 151.2 |
| 165° | 146.1 | 146.1 | 149.8 | 149.8 | 149.0 |
| 167.5° | 146.1 | 145.3 | 149.0 | 149.0 | 148.3 |
| 170° | 145.3 | 145.3 | 148.3 | 147.6 | 146.9 |
| 172.5° | 146.2 | 146.2 | 149.2 | 148.5 | 147.8 |
| 175° | 146.4 | 146.4 | 148.6 | 148.6 | 148.6 |
| 177.5° | 147.1 | 147.1 | 148.6 | 148.6 | 147.8 |
| 180° | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 |



TEST NUMBER: P1433404
 CATALOG NUMBER: EHBR1-60-UNV-W-L930-UPL15

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 | 20.41 | 21.68 | 20.82 | 22.04 | 22.42 | 20.41 | 21.68 | 20.82 | 22.04 | 22.42 |
| | 3H | 21.91 | 23.04 | 22.34 | 23.42 | 23.85 | 21.91 | 23.04 | 22.34 | 23.42 | 23.85 |
| | 4H | 22.48 | 23.53 | 22.92 | 23.93 | 24.37 | 22.48 | 23.53 | 22.92 | 23.93 | 24.37 |
| | 6H | 22.86 | 23.83 | 23.32 | 24.25 | 24.71 | 22.86 | 23.83 | 23.32 | 24.25 | 24.71 |
| | 8H | 22.96 | 23.88 | 23.44 | 24.32 | 24.79 | 22.96 | 23.88 | 23.44 | 24.32 | 24.79 |
| | 12H | 23.00 | 23.88 | 23.48 | 24.31 | 24.80 | 23.00 | 23.88 | 23.48 | 24.31 | 24.80 |
| 4H | 2H | 20.86 | 21.91 | 21.31 | 22.31 | 22.76 | 20.86 | 21.91 | 21.31 | 22.31 | 22.76 |
| | 3H | 22.58 | 23.45 | 23.04 | 23.90 | 24.36 | 22.58 | 23.45 | 23.04 | 23.90 | 24.36 |
| | 4H | 23.26 | 24.04 | 23.74 | 24.50 | 25.01 | 23.26 | 24.04 | 23.74 | 24.50 | 25.01 |
| | 6H | 23.76 | 24.43 | 24.27 | 24.92 | 25.45 | 23.76 | 24.43 | 24.27 | 24.92 | 25.45 |
| | 8H | 23.90 | 24.52 | 24.41 | 25.01 | 25.54 | 23.90 | 24.52 | 24.41 | 25.01 | 25.54 |
| | 12H | 23.96 | 24.51 | 24.49 | 25.04 | 25.57 | 23.96 | 24.51 | 24.49 | 25.04 | 25.57 |
| 8H | 4H | 23.47 | 24.09 | 23.98 | 24.59 | 25.12 | 23.47 | 24.09 | 23.98 | 24.59 | 25.12 |
| | 6H | 24.07 | 24.58 | 24.61 | 25.12 | 25.66 | 24.07 | 24.58 | 24.61 | 25.12 | 25.66 |
| | 8H | 24.25 | 24.71 | 24.82 | 25.27 | 25.82 | 24.25 | 24.71 | 24.82 | 25.27 | 25.82 |
| | 12H | 24.36 | 24.77 | 24.92 | 25.30 | 25.93 | 24.36 | 24.77 | 24.92 | 25.30 | 25.93 |
| 12H | 4H | 23.47 | 24.02 | 24.00 | 24.55 | 25.08 | 23.47 | 24.02 | 24.00 | 24.55 | 25.08 |
| | 6H | 24.08 | 24.54 | 24.64 | 25.10 | 25.65 | 24.08 | 24.54 | 24.64 | 25.10 | 25.65 |
| | 8H | 24.31 | 24.71 | 24.87 | 25.25 | 25.88 | 24.31 | 24.71 | 24.87 | 25.25 | 25.88 |

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 |

REPORT NUMBER: SP1-2506-472-5

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)