

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: P1432405

Luminaire Tested: EHBR1-36-UNV-N-L830-UPL18

Issue Date: 3/20/2026

Test Information

Test Method: LM-79-2019
Report Number: P1432405
REPORT IS A COMBINATION OF REPORTS P1431782 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-36-UNV-N-L830-UPL18
Description: Elevate Round Highbay at, 36000 lumens, 3000K 80CRI LEDs with N lens
Light Source: -
Ballast/Driver: -

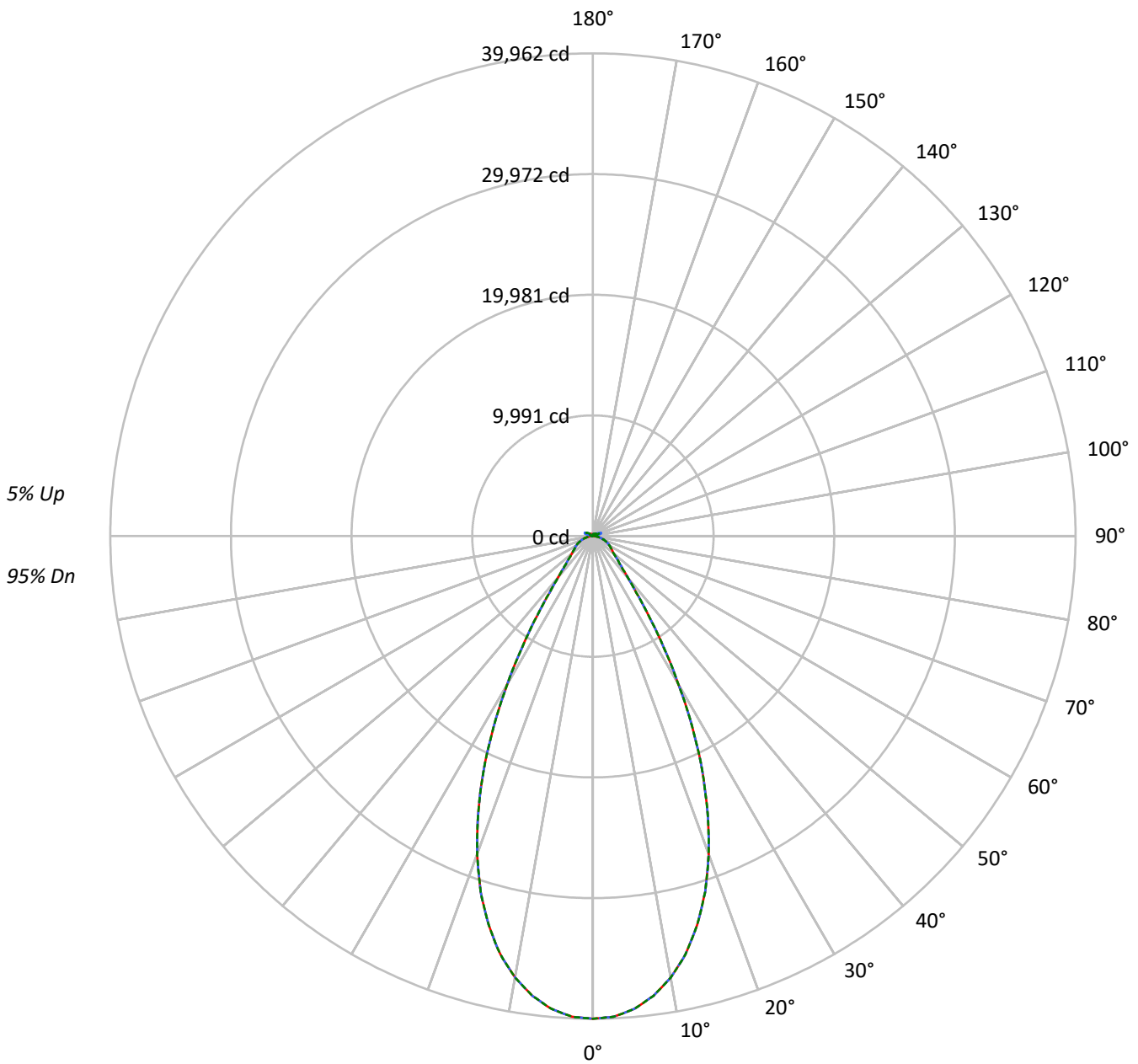
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 35924.5 lumens
Efficiency: N/A
Efficacy: 176.7 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): 203.3
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: P1432405
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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | | | | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 103 | 103 | 103 | 98 | 98 | 98 | 98 | 98 | 98 | 95 |
| 1 | 111 | 108 | 105 | 102 | 108 | 105 | 103 | 100 | 100 | 98 | 96 | 96 | 94 | 92 | 92 | 90 | 89 | 89 | 89 | 89 | 87 |
| 2 | 105 | 99 | 94 | 90 | 102 | 97 | 92 | 89 | 93 | 89 | 86 | 89 | 86 | 84 | 85 | 83 | 81 | 81 | 81 | 81 | 79 |
| 3 | 98 | 91 | 85 | 81 | 96 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 76 | 80 | 77 | 74 | 74 | 74 | 74 | 73 |
| 4 | 93 | 84 | 78 | 73 | 91 | 83 | 77 | 73 | 80 | 75 | 71 | 77 | 73 | 70 | 75 | 72 | 69 | 69 | 69 | 69 | 67 |
| 5 | 88 | 79 | 72 | 67 | 86 | 77 | 71 | 67 | 75 | 70 | 66 | 73 | 68 | 65 | 71 | 67 | 64 | 64 | 64 | 64 | 62 |
| 6 | 83 | 73 | 67 | 62 | 81 | 72 | 66 | 62 | 70 | 65 | 61 | 68 | 64 | 60 | 67 | 63 | 59 | 59 | 59 | 59 | 58 |
| 7 | 79 | 69 | 62 | 58 | 77 | 68 | 62 | 57 | 66 | 61 | 57 | 64 | 60 | 56 | 63 | 59 | 56 | 56 | 56 | 56 | 54 |
| 8 | 75 | 65 | 58 | 54 | 73 | 64 | 58 | 54 | 62 | 57 | 53 | 61 | 56 | 53 | 60 | 55 | 52 | 52 | 52 | 52 | 51 |
| 9 | 71 | 61 | 55 | 51 | 70 | 60 | 54 | 50 | 59 | 54 | 50 | 58 | 53 | 49 | 57 | 52 | 49 | 49 | 49 | 49 | 48 |
| 10 | 68 | 58 | 52 | 48 | 67 | 57 | 51 | 47 | 56 | 51 | 47 | 55 | 50 | 47 | 54 | 49 | 46 | 46 | 46 | 46 | 45 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 187664 | 187664 | 187664 |
| 5° | 184021 | 184021 | 184021 |
| 10° | 174658 | 174658 | 174658 |
| 15° | 158915 | 158915 | 158915 |
| 20° | 136315 | 136315 | 136315 |
| 25° | 107233 | 107233 | 107233 |
| 30° | 73589 | 73589 | 73589 |
| 35° | 43715 | 43715 | 43715 |
| 40° | 25865 | 25865 | 25865 |
| 45° | 18567 | 18567 | 18567 |
| 50° | 15262 | 15262 | 15262 |
| 55° | 13870 | 13870 | 13870 |
| 60° | 13278 | 13278 | 13278 |
| 65° | 12665 | 12665 | 12665 |
| 70° | 11777 | 11777 | 11777 |
| 75° | 10647 | 10647 | 10647 |
| 80° | 8837 | 8837 | 8837 |
| 85° | 5595 | 5595 | 5595 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18567 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 3681.1 | 10.2 |
| 10°-20° | 9240.2 | 25.7 |
| 20°-30° | 9661.6 | 26.9 |
| 30°-40° | 5234.9 | 14.6 |
| 40°-50° | 2408.3 | 6.7 |
| 50°-60° | 1697.2 | 4.7 |
| 60°-70° | 1306.1 | 3.6 |
| 70°-80° | 791.8 | 2.2 |
| 80°-90° | 226.0 | 0.6 |
| 90°-100° | 48.0 | 0.1 |
| 100°-110° | 299.7 | 0.8 |
| 110°-120° | 535.8 | 1.5 |
| 120°-130° | 314.4 | 0.9 |
| 130°-140° | 192.9 | 0.5 |
| 140°-150° | 133.8 | 0.4 |
| 150°-160° | 86.9 | 0.2 |
| 160°-170° | 49.5 | 0.1 |
| 170°-180° | 16.4 | 0.0 |
| 0°-30° | 22582.9 | 62.9 |
| 0°-40° | 27817.8 | 77.4 |
| 0°-60° | 31923.3 | 88.9 |
| 0°-90° | 34247.2 | 95.3 |
| 90°-120° | 883.5 | 2.5 |
| 90°-150° | 1524.5 | 4.2 |
| 90°-180° | 1677.0 | 4.7 |
| 0°-180° | 35924.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 39962 | 39962 | 39962 | 39962 | 39962 | |
| 5° | 39291 | 39291 | 39291 | 39291 | 39291 | 3681 |
| 15° | 33340 | 33340 | 33340 | 33340 | 33340 | 9240 |
| 25° | 21414 | 21414 | 21414 | 21414 | 21414 | 9662 |
| 35° | 8023 | 8023 | 8023 | 8023 | 8023 | 5235 |
| 45° | 3004 | 3004 | 3004 | 3004 | 3004 | 2408 |
| 55° | 1874 | 1874 | 1874 | 1874 | 1874 | 1697 |
| 65° | 1322 | 1322 | 1322 | 1322 | 1322 | 1306 |
| 75° | 750 | 750 | 750 | 750 | 750 | 792 |
| 85° | 192 | 192 | 192 | 192 | 192 | 213 |
| 90° | 14 | 21 | 36 | 23 | 14 | 16 |
| 95° | 21 | 36 | 78 | 38 | 24 | 20 |
| 105° | 105 | 206 | 527 | 228 | 138 | 140 |
| 115° | 482 | 507 | 623 | 597 | 593 | 444 |
| 125° | 348 | 324 | 333 | 338 | 379 | 317 |
| 135° | 254 | 246 | 254 | 239 | 238 | 198 |
| 145° | 208 | 205 | 218 | 215 | 214 | 132 |
| 155° | 182 | 180 | 189 | 189 | 189 | 85 |
| 165° | 171 | 171 | 176 | 176 | 175 | 49 |
| 175° | 169 | 169 | 172 | 172 | 172 | 16 |
| 180° | 171 | 171 | 171 | 171 | 171 | |



TEST NUMBER: P1432405

CATALOG NUMBER: EHBR1-36-UNV-N-L830-UPL18

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 39961.7 | 39961.7 | 39961.7 | 39961.7 | 39961.7 |
| 2.5° | 39820.1 | 39820.1 | 39820.1 | 39820.1 | 39820.1 |
| 5° | 39291.4 | 39291.4 | 39291.4 | 39291.4 | 39291.4 |
| 7.5° | 38388.9 | 38388.9 | 38388.9 | 38388.9 | 38388.9 |
| 10° | 37108.5 | 37108.5 | 37108.5 | 37108.5 | 37108.5 |
| 12.5° | 35453.6 | 35453.6 | 35453.6 | 35453.6 | 35453.6 |
| 15° | 33339.5 | 33339.5 | 33339.5 | 33339.5 | 33339.5 |
| 17.5° | 30886.9 | 30886.9 | 30886.9 | 30886.9 | 30886.9 |
| 20° | 28016.6 | 28016.6 | 28016.6 | 28016.6 | 28016.6 |
| 22.5° | 24820.7 | 24820.7 | 24820.7 | 24820.7 | 24820.7 |
| 25° | 21414.3 | 21414.3 | 21414.3 | 21414.3 | 21414.3 |
| 27.5° | 17803.1 | 17803.1 | 17803.1 | 17803.1 | 17803.1 |
| 30° | 14154.8 | 14154.8 | 14154.8 | 14154.8 | 14154.8 |
| 32.5° | 10863.4 | 10863.4 | 10863.4 | 10863.4 | 10863.4 |
| 35° | 8023.2 | 8023.2 | 8023.2 | 8023.2 | 8023.2 |
| 37.5° | 5891.0 | 5891.0 | 5891.0 | 5891.0 | 5891.0 |
| 40° | 4483.1 | 4483.1 | 4483.1 | 4483.1 | 4483.1 |
| 42.5° | 3594.7 | 3594.7 | 3594.7 | 3594.7 | 3594.7 |
| 45° | 3004.0 | 3004.0 | 3004.0 | 3004.0 | 3004.0 |
| 47.5° | 2578.4 | 2578.4 | 2578.4 | 2578.4 | 2578.4 |
| 50° | 2274.5 | 2274.5 | 2274.5 | 2274.5 | 2274.5 |
| 52.5° | 2052.6 | 2052.6 | 2052.6 | 2052.6 | 2052.6 |
| 55° | 1874.4 | 1874.4 | 1874.4 | 1874.4 | 1874.4 |
| 57.5° | 1729.9 | 1729.9 | 1729.9 | 1729.9 | 1729.9 |
| 60° | 1596.2 | 1596.2 | 1596.2 | 1596.2 | 1596.2 |
| 62.5° | 1462.5 | 1462.5 | 1462.5 | 1462.5 | 1462.5 |
| 65° | 1321.9 | 1321.9 | 1321.9 | 1321.9 | 1321.9 |
| 67.5° | 1178.6 | 1178.6 | 1178.6 | 1178.6 | 1178.6 |
| 70° | 1033.4 | 1033.4 | 1033.4 | 1033.4 | 1033.4 |
| 72.5° | 892.3 | 892.3 | 892.3 | 892.3 | 892.3 |
| 75° | 750.0 | 750.0 | 750.0 | 750.0 | 750.0 |
| 77.5° | 610.6 | 610.6 | 610.6 | 610.6 | 610.6 |
| 80° | 464.9 | 464.9 | 464.9 | 464.9 | 464.9 |
| 82.5° | 325.5 | 325.5 | 325.5 | 325.5 | 325.5 |
| 85° | 192.3 | 192.3 | 192.3 | 192.3 | 192.3 |
| 87.5° | 68.8 | 68.8 | 68.8 | 68.8 | 68.8 |
| 90° | 13.6 | 21.3 | 35.7 | 23.2 | 13.6 |
| 92.5° | 18.3 | 30.7 | 55.6 | 28.8 | 16.3 |
| 95° | 21.1 | 35.5 | 77.7 | 38.4 | 24.0 |
| 97.5° | 26.9 | 39.3 | 89.3 | 47.0 | 37.5 |
| 100° | 35.5 | 46.1 | 139.2 | 57.6 | 49.9 |
| 102.5° | 60.5 | 97.9 | 295.7 | 108.5 | 75.9 |
| 105° | 104.6 | 206.5 | 527.1 | 227.5 | 138.3 |
| 107.5° | 181.4 | 369.6 | 695.0 | 403.3 | 262.1 |
| 110° | 338.9 | 490.6 | 728.7 | 554.0 | 419.6 |



TEST NUMBER: P1432405

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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 458.0 | 527.1 | 697.9 | 611.6 | 546.3 |
| 115° | 481.9 | 506.9 | 623.1 | 597.2 | 593.3 |
| 117.5° | 465.6 | 462.7 | 529.0 | 536.6 | 573.2 |
| 120° | 431.1 | 411.9 | 441.7 | 468.5 | 517.4 |
| 122.5° | 387.9 | 364.8 | 378.2 | 398.4 | 447.4 |
| 125° | 347.5 | 324.5 | 333.1 | 338.0 | 379.2 |
| 127.5° | 312.0 | 296.7 | 301.4 | 295.7 | 321.6 |
| 130° | 288.0 | 274.5 | 281.3 | 267.9 | 280.4 |
| 132.5° | 267.9 | 259.2 | 266.9 | 250.6 | 254.4 |
| 135° | 253.5 | 245.8 | 254.4 | 239.0 | 238.1 |
| 137.5° | 241.0 | 234.3 | 242.9 | 231.4 | 228.5 |
| 140° | 229.5 | 223.7 | 233.3 | 224.6 | 222.7 |
| 142.5° | 216.9 | 213.1 | 224.6 | 218.9 | 216.9 |
| 145° | 208.3 | 205.4 | 218.0 | 215.1 | 214.1 |
| 147.5° | 200.6 | 198.8 | 210.3 | 209.3 | 209.3 |
| 150° | 193.9 | 192.0 | 203.5 | 202.6 | 203.5 |
| 152.5° | 187.2 | 185.3 | 195.9 | 194.9 | 195.9 |
| 155° | 182.4 | 180.5 | 189.1 | 189.1 | 189.1 |
| 157.5° | 178.5 | 177.6 | 184.3 | 184.3 | 184.3 |
| 160° | 175.7 | 174.7 | 180.5 | 180.5 | 179.6 |
| 162.5° | 172.8 | 171.9 | 178.5 | 177.6 | 177.6 |
| 165° | 170.9 | 170.9 | 175.7 | 175.7 | 174.7 |
| 167.5° | 170.9 | 169.9 | 174.7 | 174.7 | 173.8 |
| 170° | 169.9 | 169.9 | 173.8 | 172.8 | 171.9 |
| 172.5° | 169.9 | 169.9 | 173.8 | 172.8 | 171.9 |
| 175° | 169.0 | 169.0 | 171.9 | 171.9 | 171.9 |
| 177.5° | 169.9 | 169.9 | 171.9 | 171.9 | 170.9 |
| 180° | 170.9 | 170.9 | 170.9 | 170.9 | 170.9 |



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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 | 17.24 | 18.33 | 17.69 | 18.74 | 19.18 | 17.24 | 18.33 | 17.69 | 18.74 | 19.18 |
| | 3H | 19.02 | 19.99 | 19.48 | 20.42 | 20.90 | 19.02 | 19.99 | 19.48 | 20.42 | 20.90 |
| | 4H | 19.67 | 20.58 | 20.16 | 21.03 | 21.53 | 19.67 | 20.58 | 20.16 | 21.03 | 21.53 |
| | 6H | 20.13 | 20.97 | 20.63 | 21.43 | 21.94 | 20.13 | 20.97 | 20.63 | 21.43 | 21.94 |
| | 8H | 20.26 | 21.04 | 20.77 | 21.53 | 22.05 | 20.26 | 21.04 | 20.77 | 21.53 | 22.05 |
| | 12H | 20.31 | 21.06 | 20.83 | 21.54 | 22.08 | 20.31 | 21.06 | 20.83 | 21.54 | 22.08 |
| 4H | 2H | 17.78 | 18.68 | 18.27 | 19.13 | 19.63 | 17.78 | 18.68 | 18.27 | 19.13 | 19.63 |
| | 3H | 19.75 | 20.50 | 20.25 | 20.99 | 21.51 | 19.75 | 20.50 | 20.25 | 20.99 | 21.51 |
| | 4H | 20.52 | 21.19 | 21.04 | 21.70 | 22.26 | 20.52 | 21.19 | 21.04 | 21.70 | 22.26 |
| | 6H | 21.09 | 21.67 | 21.64 | 22.21 | 22.78 | 21.09 | 21.67 | 21.64 | 22.21 | 22.78 |
| | 8H | 21.25 | 21.79 | 21.80 | 22.33 | 22.91 | 21.25 | 21.79 | 21.80 | 22.33 | 22.91 |
| | 12H | 21.33 | 21.81 | 21.90 | 22.37 | 22.96 | 21.33 | 21.81 | 21.90 | 22.37 | 22.96 |
| 8H | 4H | 20.75 | 21.29 | 21.30 | 21.82 | 22.41 | 20.75 | 21.29 | 21.30 | 21.82 | 22.41 |
| | 6H | 21.43 | 21.87 | 22.02 | 22.45 | 23.04 | 21.43 | 21.87 | 22.02 | 22.45 | 23.04 |
| | 8H | 21.66 | 22.04 | 22.26 | 22.64 | 23.24 | 21.66 | 22.04 | 22.26 | 22.64 | 23.24 |
| | 12H | 21.80 | 22.13 | 22.39 | 22.71 | 23.39 | 21.80 | 22.13 | 22.39 | 22.71 | 23.39 |
| 12H | 4H | 20.75 | 21.22 | 21.32 | 21.79 | 22.38 | 20.75 | 21.22 | 21.32 | 21.79 | 22.38 |
| | 6H | 21.46 | 21.85 | 22.06 | 22.44 | 23.05 | 21.46 | 21.85 | 22.06 | 22.44 | 23.05 |
| | 8H | 21.72 | 22.06 | 22.32 | 22.64 | 23.32 | 21.72 | 22.06 | 22.32 | 22.64 | 23.32 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-2

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L830-N

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

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/05/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Metalux
 Catalog Number: **EHBR-60-L830-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3000K 80CRI LEDs with N lens

Spectral Parameters

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

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



Test Conditions

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

REPORT NUMBER: SP1-2506-472-2

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 10/22/2024 | 10/22/2025 |
| DC Power Source | AGILENT E3634A IN0208 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | ONSET IN0085 | 10/22/2024 | 10/22/2025 |
| Room Thermometer | ONSET IN0046 | 10/22/2024 | 10/22/2025 |

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CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2506-472-2

Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.27

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.34

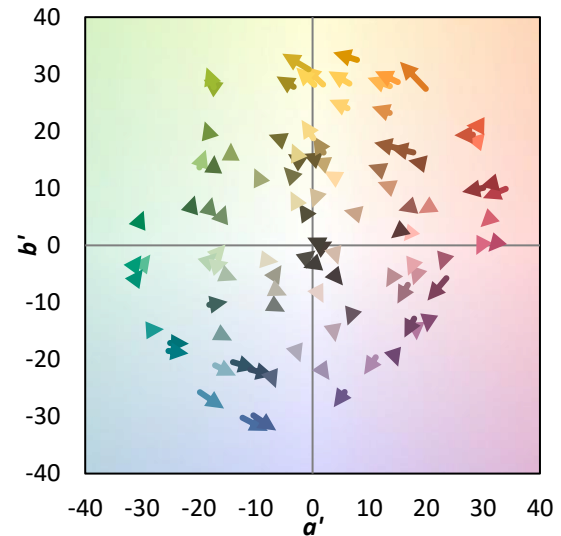
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 43 | NR | 620 | 294 | NR | 750 | 6 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 59 | NR | 625 | 294 | NR | 755 | 5 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 81 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 109 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 135 | NR | 640 | 175 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 160 | NR | 645 | 171 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 180 | NR | 650 | 146 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 195 | NR | 655 | 119 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 207 | NR | 660 | 99 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 218 | NR | 665 | 82 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 227 | NR | 670 | 76 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 237 | NR | 675 | 61 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 247 | NR | 680 | 52 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 259 | NR | 685 | 44 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 58 | NR | 560 | 271 | NR | 690 | 38 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 90 | NR | 565 | 283 | NR | 695 | 33 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 135 | NR | 570 | 293 | NR | 700 | 27 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 204 | NR | 575 | 303 | NR | 705 | 24 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 233 | NR | 580 | 310 | NR | 710 | 20 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 153 | NR | 585 | 313 | NR | 715 | 17 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 98 | NR | 590 | 314 | NR | 720 | 15 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 310 | NR | 725 | 13 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 53 | NR | 600 | 307 | NR | 730 | 11 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 39 | NR | 605 | 303 | NR | 735 | 9 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 35 | NR | 610 | 331 | NR | 740 | 8 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 36 | NR | 615 | 353 | NR | 745 | 7 | NR | 875 | 0 | NR | | | |

Summary

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

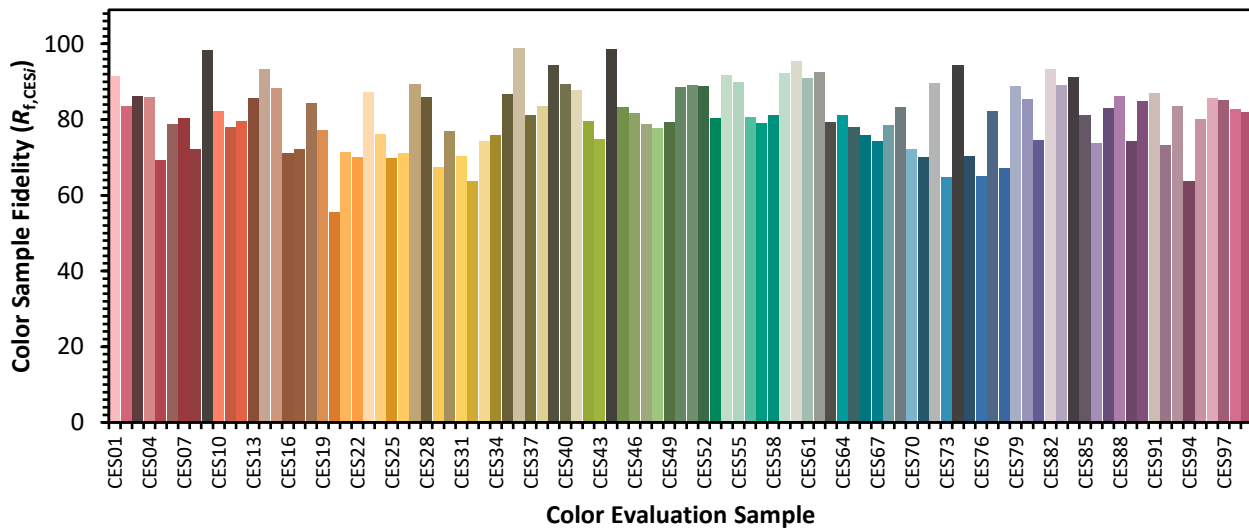


Color Vector Graphics



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

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



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)