

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: P1436220

Luminaire Tested: EHBR1-30-UNV-M-L835-UPL15

Issue Date: 3/25/2026

Test Information

Test Method: LM-79-2019
Report Number: P1436220
REPORT IS A COMBINATION OF REPORTS P1436076 AND P1431635
Test Lab: INNOVATION CENTER
Issue Date: 3/25/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-30-UNV-M-L835-UPL15
Description: Elevate Round Highbay at, 30000 lumens, 3500K 80CRI LEDs with M lens
Light Source: -
Ballast/Driver: -

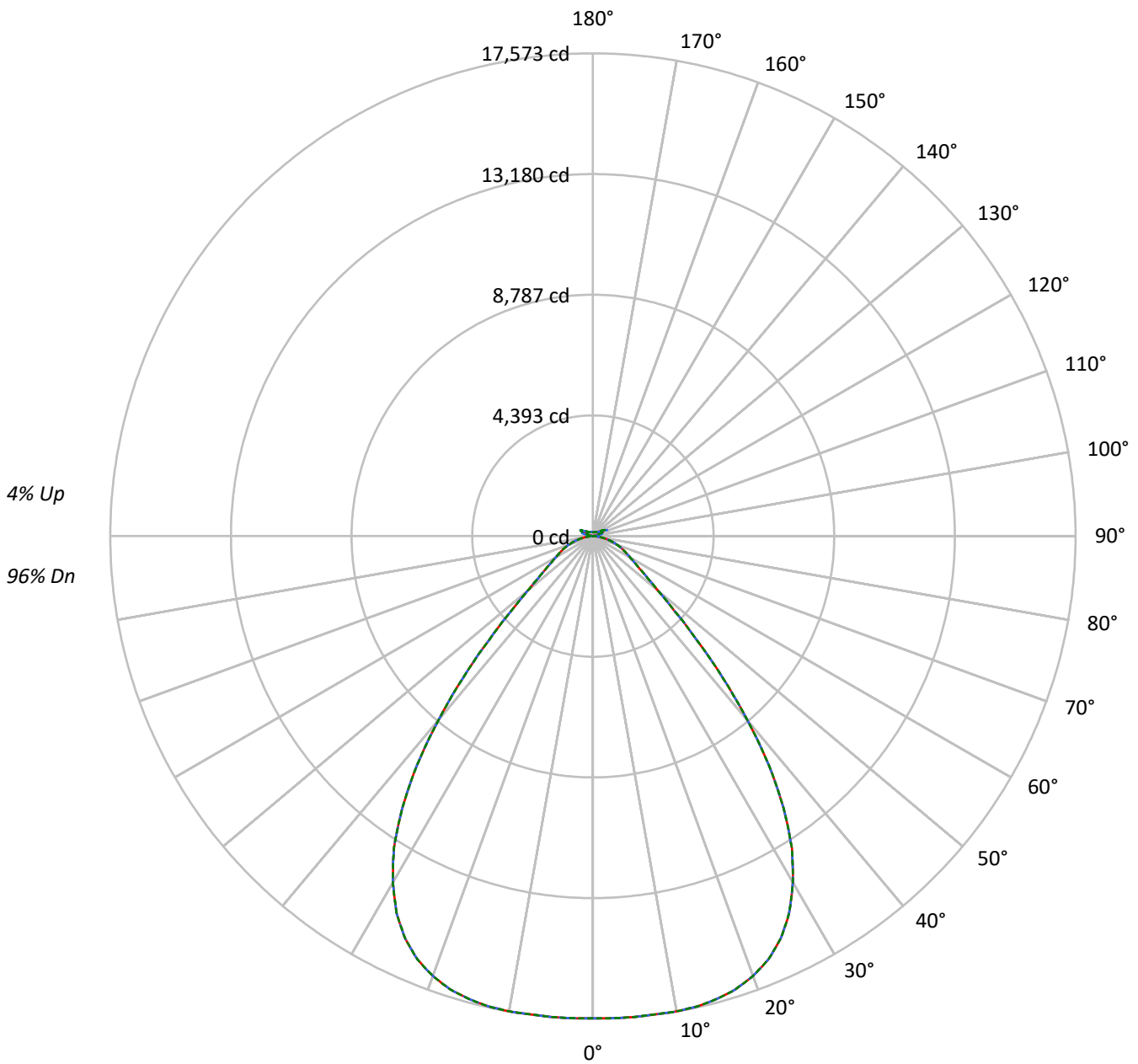
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 31116.7 lumens
Efficiency: N/A
Efficacy: 184.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')
CIE Type: Direct

Input Watts (W): 169.1
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: P1436220
CATALOG NUMBER: EHBR1-30-UNV-M-L835-UPL15

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 | | | | |
| 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 | 96 |
| 1 | 110 | 107 | 104 | 101 | 107 | 104 | 101 | 99 | 99 | 97 | 95 | 95 | 93 | 91 | 91 | 89 | 88 | 88 | 88 | 88 | 86 |
| 2 | 103 | 97 | 91 | 87 | 100 | 95 | 90 | 86 | 90 | 87 | 83 | 87 | 83 | 81 | 83 | 81 | 78 | 78 | 78 | 78 | 76 |
| 3 | 96 | 88 | 81 | 76 | 93 | 86 | 80 | 75 | 83 | 78 | 74 | 79 | 75 | 72 | 76 | 73 | 70 | 70 | 70 | 70 | 68 |
| 4 | 90 | 80 | 73 | 68 | 87 | 78 | 72 | 67 | 76 | 70 | 66 | 73 | 68 | 64 | 70 | 66 | 63 | 63 | 63 | 63 | 61 |
| 5 | 84 | 73 | 66 | 61 | 81 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 65 | 61 | 57 | 57 | 57 | 57 | 55 |
| 6 | 78 | 67 | 60 | 55 | 76 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 60 | 56 | 52 | 52 | 52 | 52 | 50 |
| 7 | 73 | 62 | 55 | 50 | 72 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 52 | 48 | 56 | 51 | 47 | 47 | 47 | 47 | 46 |
| 8 | 69 | 57 | 50 | 45 | 67 | 57 | 50 | 45 | 55 | 49 | 44 | 53 | 48 | 44 | 52 | 47 | 43 | 43 | 43 | 43 | 42 |
| 9 | 65 | 53 | 46 | 41 | 63 | 53 | 46 | 41 | 51 | 45 | 41 | 50 | 44 | 40 | 49 | 44 | 40 | 40 | 40 | 40 | 38 |
| 10 | 61 | 50 | 43 | 38 | 60 | 49 | 42 | 38 | 48 | 42 | 38 | 47 | 41 | 37 | 46 | 41 | 37 | 37 | 37 | 37 | 35 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 82444 | 82444 | 82444 |
| 5° | 82303 | 82303 | 82303 |
| 10° | 82689 | 82689 | 82689 |
| 15° | 83164 | 83164 | 83164 |
| 20° | 82913 | 82913 | 82913 |
| 25° | 80976 | 80976 | 80976 |
| 30° | 75719 | 75719 | 75719 |
| 35° | 65944 | 65944 | 65944 |
| 40° | 50538 | 50538 | 50538 |
| 45° | 33015 | 33015 | 33015 |
| 50° | 20813 | 20813 | 20813 |
| 55° | 15515 | 15515 | 15515 |
| 60° | 13062 | 13062 | 13062 |
| 65° | 11878 | 11878 | 11878 |
| 70° | 10820 | 10820 | 10820 |
| 75° | 9264 | 9264 | 9264 |
| 80° | 7132 | 7132 | 7132 |
| 85° | 3742 | 3742 | 3742 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 33015 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1676.8 | 5.4 |
| 10°-20° | 4924.1 | 15.8 |
| 20°-30° | 7388.4 | 23.7 |
| 30°-40° | 7433.5 | 23.9 |
| 40°-50° | 4255.1 | 13.7 |
| 50°-60° | 1946.2 | 6.3 |
| 60°-70° | 1234.8 | 4.0 |
| 70°-80° | 692.7 | 2.2 |
| 80°-90° | 165.0 | 0.5 |
| 90°-100° | 39.9 | 0.1 |
| 100°-110° | 250.2 | 0.8 |
| 110°-120° | 447.3 | 1.4 |
| 120°-130° | 262.5 | 0.8 |
| 130°-140° | 161.0 | 0.5 |
| 140°-150° | 111.7 | 0.4 |
| 150°-160° | 72.6 | 0.2 |
| 160°-170° | 41.3 | 0.1 |
| 170°-180° | 13.7 | 0.0 |
| 0°-30° | 13989.2 | 45.0 |
| 0°-40° | 21422.8 | 68.8 |
| 0°-60° | 27624.1 | 88.8 |
| 0°-90° | 29716.6 | 95.5 |
| 90°-120° | 737.4 | 2.4 |
| 90°-150° | 1272.6 | 4.1 |
| 90°-180° | 1400.0 | 4.5 |
| 0°-180° | 31116.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 17556 | 17556 | 17556 | 17556 | 17556 | |
| 5° | 17573 | 17573 | 17573 | 17573 | 17573 | 1677 |
| 15° | 17447 | 17447 | 17447 | 17447 | 17447 | 4924 |
| 25° | 16171 | 16171 | 16171 | 16171 | 16171 | 7388 |
| 35° | 12103 | 12103 | 12103 | 12103 | 12103 | 7434 |
| 45° | 5342 | 5342 | 5342 | 5342 | 5342 | 4255 |
| 55° | 2097 | 2097 | 2097 | 2097 | 2097 | 1946 |
| 65° | 1240 | 1240 | 1240 | 1240 | 1240 | 1235 |
| 75° | 653 | 653 | 653 | 653 | 653 | 693 |
| 85° | 129 | 129 | 129 | 129 | 129 | 157 |
| 90° | 10 | 17 | 29 | 18 | 10 | 10 |
| 95° | 18 | 30 | 65 | 32 | 20 | 17 |
| 105° | 87 | 172 | 440 | 190 | 115 | 117 |
| 115° | 402 | 423 | 520 | 498 | 495 | 371 |
| 125° | 290 | 271 | 278 | 282 | 317 | 264 |
| 135° | 212 | 205 | 212 | 200 | 199 | 166 |
| 145° | 174 | 172 | 182 | 180 | 179 | 110 |
| 155° | 152 | 151 | 158 | 158 | 158 | 71 |
| 165° | 143 | 143 | 147 | 147 | 146 | 41 |
| 175° | 141 | 141 | 144 | 144 | 144 | 14 |
| 180° | 143 | 143 | 143 | 143 | 143 | |



TEST NUMBER: P1436220
 CATALOG NUMBER: EHBR1-30-UNV-M-L835-UPL15

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 17555.8 | 17555.8 | 17555.8 | 17555.8 | 17555.8 |
| 2.5° | 17564.4 | 17564.4 | 17564.4 | 17564.4 | 17564.4 |
| 5° | 17572.9 | 17572.9 | 17572.9 | 17572.9 | 17572.9 |
| 7.5° | 17560.9 | 17560.9 | 17560.9 | 17560.9 | 17560.9 |
| 10° | 17568.4 | 17568.4 | 17568.4 | 17568.4 | 17568.4 |
| 12.5° | 17538.2 | 17538.2 | 17538.2 | 17538.2 | 17538.2 |
| 15° | 17447.3 | 17447.3 | 17447.3 | 17447.3 | 17447.3 |
| 17.5° | 17297.1 | 17297.1 | 17297.1 | 17297.1 | 17297.1 |
| 20° | 17041.0 | 17041.0 | 17041.0 | 17041.0 | 17041.0 |
| 22.5° | 16688.8 | 16688.8 | 16688.8 | 16688.8 | 16688.8 |
| 25° | 16170.9 | 16170.9 | 16170.9 | 16170.9 | 16170.9 |
| 27.5° | 15474.2 | 15474.2 | 15474.2 | 15474.2 | 15474.2 |
| 30° | 14564.5 | 14564.5 | 14564.5 | 14564.5 | 14564.5 |
| 32.5° | 13487.5 | 13487.5 | 13487.5 | 13487.5 | 13487.5 |
| 35° | 12103.1 | 12103.1 | 12103.1 | 12103.1 | 12103.1 |
| 37.5° | 10534.8 | 10534.8 | 10534.8 | 10534.8 | 10534.8 |
| 40° | 8759.5 | 8759.5 | 8759.5 | 8759.5 | 8759.5 |
| 42.5° | 6999.9 | 6999.9 | 6999.9 | 6999.9 | 6999.9 |
| 45° | 5341.7 | 5341.7 | 5341.7 | 5341.7 | 5341.7 |
| 47.5° | 4021.1 | 4021.1 | 4021.1 | 4021.1 | 4021.1 |
| 50° | 3101.9 | 3101.9 | 3101.9 | 3101.9 | 3101.9 |
| 52.5° | 2506.1 | 2506.1 | 2506.1 | 2506.1 | 2506.1 |
| 55° | 2096.7 | 2096.7 | 2096.7 | 2096.7 | 2096.7 |
| 57.5° | 1795.3 | 1795.3 | 1795.3 | 1795.3 | 1795.3 |
| 60° | 1570.3 | 1570.3 | 1570.3 | 1570.3 | 1570.3 |
| 62.5° | 1396.4 | 1396.4 | 1396.4 | 1396.4 | 1396.4 |
| 65° | 1239.8 | 1239.8 | 1239.8 | 1239.8 | 1239.8 |
| 67.5° | 1095.6 | 1095.6 | 1095.6 | 1095.6 | 1095.6 |
| 70° | 949.4 | 949.4 | 949.4 | 949.4 | 949.4 |
| 72.5° | 802.3 | 802.3 | 802.3 | 802.3 | 802.3 |
| 75° | 652.6 | 652.6 | 652.6 | 652.6 | 652.6 |
| 77.5° | 510.4 | 510.4 | 510.4 | 510.4 | 510.4 |
| 80° | 375.2 | 375.2 | 375.2 | 375.2 | 375.2 |
| 82.5° | 244.6 | 244.6 | 244.6 | 244.6 | 244.6 |
| 85° | 128.6 | 128.6 | 128.6 | 128.6 | 128.6 |
| 87.5° | 36.7 | 36.7 | 36.7 | 36.7 | 36.7 |
| 90° | 10.4 | 16.9 | 28.9 | 18.4 | 10.4 |
| 92.5° | 15.2 | 25.7 | 46.4 | 24.0 | 13.7 |
| 95° | 17.6 | 29.7 | 65.0 | 32.1 | 20.1 |
| 97.5° | 22.4 | 32.9 | 74.6 | 39.3 | 31.2 |
| 100° | 29.7 | 38.5 | 116.3 | 48.1 | 41.7 |
| 102.5° | 50.5 | 81.7 | 246.9 | 90.6 | 63.3 |
| 105° | 87.4 | 172.3 | 440.0 | 189.9 | 115.4 |
| 107.5° | 151.5 | 308.5 | 580.3 | 336.7 | 218.8 |
| 110° | 282.9 | 409.6 | 608.3 | 462.4 | 350.2 |



TEST NUMBER: P1436220

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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 382.3 | 440.0 | 582.6 | 510.5 | 456.0 |
| 115° | 402.4 | 423.1 | 520.2 | 498.5 | 495.3 |
| 117.5° | 388.7 | 386.3 | 441.7 | 448.1 | 478.5 |
| 120° | 359.8 | 343.8 | 368.6 | 391.1 | 432.0 |
| 122.5° | 323.8 | 304.6 | 315.8 | 332.6 | 373.5 |
| 125° | 290.1 | 270.9 | 278.1 | 282.2 | 316.6 |
| 127.5° | 260.4 | 247.6 | 251.7 | 246.9 | 268.5 |
| 130° | 240.5 | 229.2 | 234.8 | 223.6 | 234.1 |
| 132.5° | 223.6 | 216.4 | 222.8 | 209.1 | 212.3 |
| 135° | 211.6 | 205.2 | 212.3 | 199.5 | 198.8 |
| 137.5° | 201.2 | 195.6 | 202.7 | 193.1 | 190.7 |
| 140° | 191.6 | 186.7 | 194.8 | 187.5 | 186.0 |
| 142.5° | 181.1 | 177.9 | 187.5 | 182.8 | 181.1 |
| 145° | 173.9 | 171.5 | 181.9 | 179.6 | 178.7 |
| 147.5° | 167.6 | 165.9 | 175.5 | 174.7 | 174.7 |
| 150° | 161.9 | 160.3 | 169.9 | 169.1 | 169.9 |
| 152.5° | 156.3 | 154.7 | 163.5 | 162.7 | 163.5 |
| 155° | 152.3 | 150.7 | 157.9 | 157.9 | 157.9 |
| 157.5° | 149.0 | 148.3 | 153.9 | 153.9 | 153.9 |
| 160° | 146.7 | 145.8 | 150.7 | 150.7 | 149.9 |
| 162.5° | 144.3 | 143.5 | 149.0 | 148.3 | 148.3 |
| 165° | 142.6 | 142.6 | 146.7 | 146.7 | 145.8 |
| 167.5° | 142.6 | 141.9 | 145.8 | 145.8 | 145.1 |
| 170° | 141.9 | 141.9 | 145.1 | 144.3 | 143.5 |
| 172.5° | 141.9 | 141.9 | 145.1 | 144.3 | 143.5 |
| 175° | 141.1 | 141.1 | 143.5 | 143.5 | 143.5 |
| 177.5° | 141.9 | 141.9 | 143.5 | 143.5 | 142.6 |
| 180° | 142.6 | 142.6 | 142.6 | 142.6 | 142.6 |



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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 | 17.85 | 19.04 | 18.29 | 19.45 | 19.88 | 17.85 | 19.04 | 18.29 | 19.45 | 19.88 |
| | 3H | 19.33 | 20.40 | 19.79 | 20.82 | 21.30 | 19.33 | 20.40 | 19.79 | 20.82 | 21.30 |
| | 4H | 19.86 | 20.85 | 20.34 | 21.29 | 21.79 | 19.86 | 20.85 | 20.34 | 21.29 | 21.79 |
| | 6H | 20.18 | 21.09 | 20.68 | 21.56 | 22.06 | 20.18 | 21.09 | 20.68 | 21.56 | 22.06 |
| | 8H | 20.25 | 21.12 | 20.76 | 21.60 | 22.11 | 20.25 | 21.12 | 20.76 | 21.60 | 22.11 |
| | 12H | 20.27 | 21.09 | 20.78 | 21.56 | 22.10 | 20.27 | 21.09 | 20.78 | 21.56 | 22.10 |
| 4H | 2H | 18.29 | 19.28 | 18.77 | 19.72 | 20.22 | 18.29 | 19.28 | 18.77 | 19.72 | 20.22 |
| | 3H | 19.99 | 20.80 | 20.48 | 21.29 | 21.81 | 19.99 | 20.80 | 20.48 | 21.29 | 21.81 |
| | 4H | 20.62 | 21.35 | 21.13 | 21.85 | 22.40 | 20.62 | 21.35 | 21.13 | 21.85 | 22.40 |
| | 6H | 21.04 | 21.67 | 21.58 | 22.20 | 22.77 | 21.04 | 21.67 | 21.58 | 22.20 | 22.77 |
| | 8H | 21.14 | 21.72 | 21.68 | 22.25 | 22.83 | 21.14 | 21.72 | 21.68 | 22.25 | 22.83 |
| | 12H | 21.17 | 21.69 | 21.73 | 22.25 | 22.83 | 21.17 | 21.69 | 21.73 | 22.25 | 22.83 |
| 8H | 4H | 20.80 | 21.38 | 21.34 | 21.91 | 22.49 | 20.80 | 21.38 | 21.34 | 21.91 | 22.49 |
| | 6H | 21.31 | 21.78 | 21.88 | 22.36 | 22.95 | 21.31 | 21.78 | 21.88 | 22.36 | 22.95 |
| | 8H | 21.44 | 21.87 | 22.04 | 22.46 | 23.06 | 21.44 | 21.87 | 22.04 | 22.46 | 23.06 |
| | 12H | 21.51 | 21.89 | 22.10 | 22.46 | 23.13 | 21.51 | 21.89 | 22.10 | 22.46 | 23.13 |
| 12H | 4H | 20.78 | 21.30 | 21.35 | 21.87 | 22.44 | 20.78 | 21.30 | 21.35 | 21.87 | 22.44 |
| | 6H | 21.31 | 21.74 | 21.90 | 22.33 | 22.92 | 21.31 | 21.74 | 21.90 | 22.33 | 22.92 |
| | 8H | 21.48 | 21.86 | 22.07 | 22.43 | 23.10 | 21.48 | 21.86 | 22.07 | 22.43 | 23.10 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-3

Test Date: 07/31/2025

Luminaire Tested: EHBR-60-L835-N

Data in this report applies to families of products including EHBR-60-L835-N

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-3
 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-L835-N**
 Description: Elevate Round Highbay at, 60000 lumens, 3500K 80CRI LEDs with N lens

Spectral Parameters

CCT (K): 3468
 CIE u': 0.2375
 CIE v': 0.5091
 Duv: -0.0021
 CIE x: 0.4049
 CIE y: 0.3856
 CIE z: 0.2095
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 581
 Purity: 37.24544
 R_f: 80.1
 R_g: 101

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 82.1 | | |
| R1: | 82.9 | R9: | 27.6 |
| R2: | 85.6 | R10: | 63.8 |
| R3: | 85.9 | R11: | 81.2 |
| R4: | 82.8 | R12: | 57.2 |
| R5: | 81.0 | R13: | 82.6 |
| R6: | 79.7 | R14: | 91.0 |
| R7: | 86.5 | R15: | 79.4 |
| R8: | 72.1 | | |



Test Conditions

Stabilization Time: 39M
 Operation Time: 1H 39M
 Sphere Temperature (°C): 25.0

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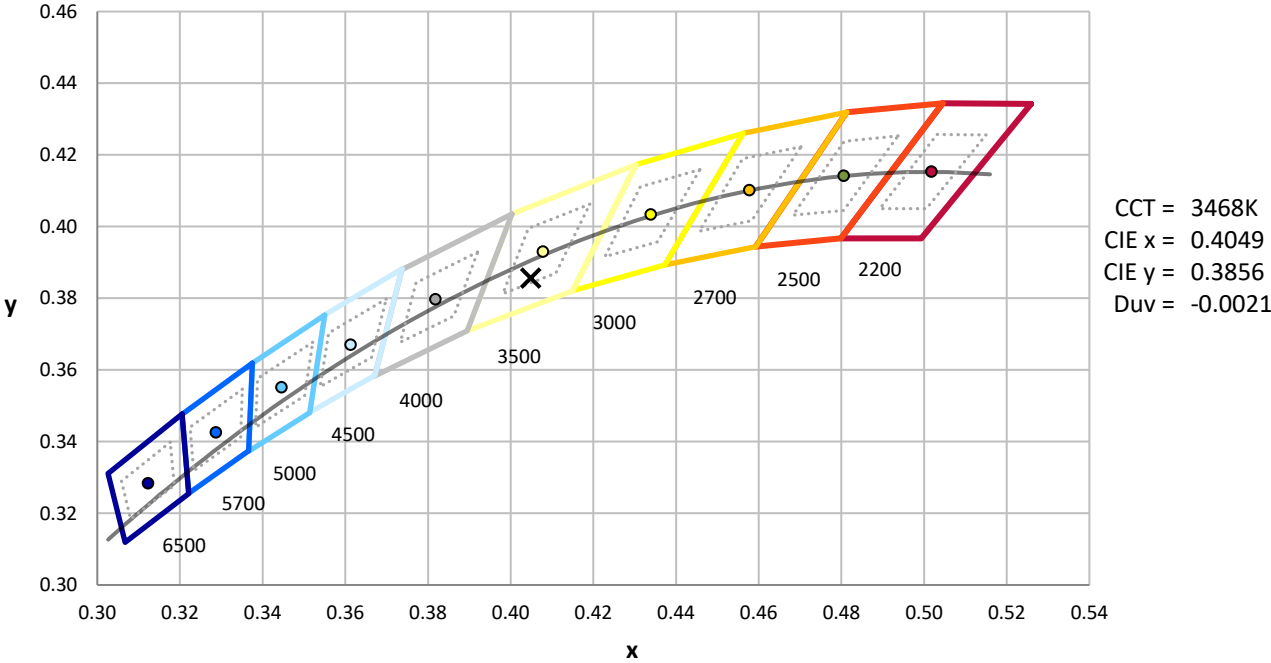
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | 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 3500K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 60 | NR | 620 | 327 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 82 | NR | 625 | 322 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 114 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 152 | NR | 635 | 645 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 189 | NR | 640 | 197 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 222 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 248 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 268 | NR | 655 | 134 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 283 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 294 | NR | 665 | 94 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 305 | NR | 670 | 87 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 314 | NR | 675 | 70 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 323 | NR | 680 | 60 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 62 | NR | 555 | 335 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 102 | NR | 560 | 346 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 159 | NR | 565 | 356 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 241 | NR | 570 | 364 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 363 | NR | 575 | 371 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 389 | NR | 580 | 375 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 375 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 158 | NR | 590 | 373 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 120 | NR | 595 | 364 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 357 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 349 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 51 | NR | 610 | 371 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 51 | NR | 615 | 387 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-3

Scotopic Flux vs. Wavelength



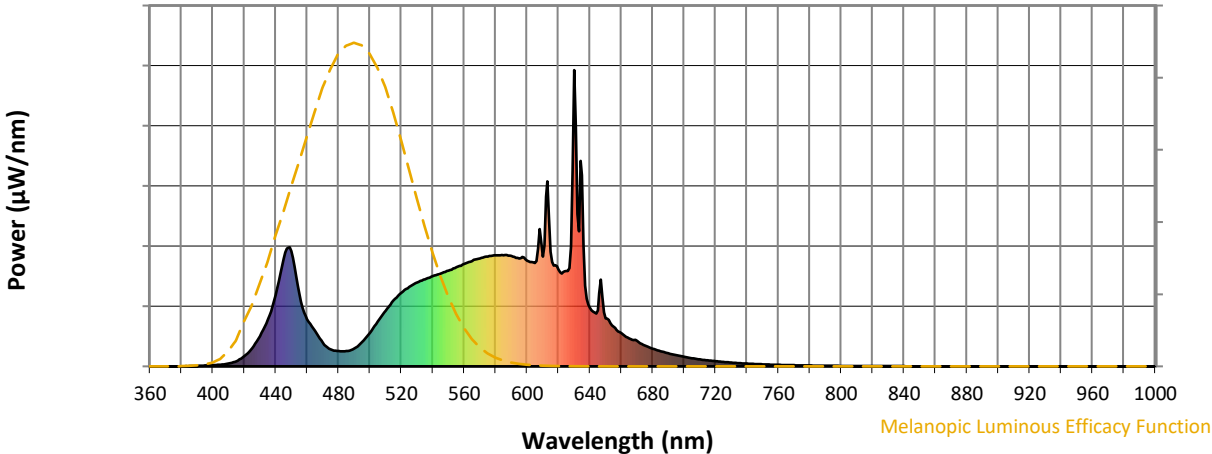
Scotopic Lumens: NR

S/P: 1.43

| 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 | 60 | NR | 620 | 327 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 82 | NR | 625 | 322 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 114 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 152 | NR | 635 | 645 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 189 | NR | 640 | 197 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 222 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 248 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 268 | NR | 655 | 134 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 283 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 294 | NR | 665 | 94 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 305 | NR | 670 | 87 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 314 | NR | 675 | 70 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 323 | NR | 680 | 60 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 62 | NR | 555 | 335 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 102 | NR | 560 | 346 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 159 | NR | 565 | 356 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 241 | NR | 570 | 364 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 363 | NR | 575 | 371 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 389 | NR | 580 | 375 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 375 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 158 | NR | 590 | 373 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 120 | NR | 595 | 364 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 357 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 349 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 51 | NR | 610 | 371 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 51 | NR | 615 | 387 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-472-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.75

| 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 | 60 | NR | 620 | 327 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 82 | NR | 625 | 322 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 114 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 152 | NR | 635 | 645 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 189 | NR | 640 | 197 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 222 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 248 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 268 | NR | 655 | 134 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 283 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 6 | NR | 535 | 294 | NR | 665 | 94 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 305 | NR | 670 | 87 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 314 | NR | 675 | 70 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 34 | NR | 550 | 323 | NR | 680 | 60 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 62 | NR | 555 | 335 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 102 | NR | 560 | 346 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 159 | NR | 565 | 356 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 241 | NR | 570 | 364 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 363 | NR | 575 | 371 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 389 | NR | 580 | 375 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 245 | NR | 585 | 375 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 158 | NR | 590 | 373 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 120 | NR | 595 | 364 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 79 | NR | 600 | 357 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 349 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 51 | NR | 610 | 371 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 51 | NR | 615 | 387 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 80.1$
 $R_g = 101$
 CIE $R_a = 82.1$
 $R_9 = 27.6$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 59 |
| CES02 = 62 | CES27 = 89 | CES52 = 90 | CES77 = 78 |
| CES03 = 31 | CES28 = 84 | CES53 = 81 | CES78 = 61 |
| CES04 = 70 | CES29 = 66 | CES54 = 91 | CES79 = 86 |
| CES05 = 49 | CES30 = 77 | CES55 = 90 | CES80 = 82 |
| CES06 = 51 | CES31 = 69 | CES56 = 80 | CES81 = 79 |
| CES07 = 42 | CES32 = 62 | CES57 = 79 | CES82 = 92 |
| CES08 = 41 | CES33 = 74 | CES58 = 81 | CES83 = 89 |
| CES09 = 29 | CES34 = 72 | CES59 = 92 | CES84 = 89 |
| CES10 = 75 | CES35 = 85 | CES60 = 94 | CES85 = 82 |
| CES11 = 58 | CES36 = 97 | CES61 = 90 | CES86 = 78 |
| CES12 = 64 | CES37 = 79 | CES62 = 92 | CES87 = 82 |
| CES13 = 43 | CES38 = 85 | CES63 = 78 | CES88 = 86 |
| CES14 = 74 | CES39 = 94 | CES64 = 79 | CES89 = 76 |
| CES15 = 71 | CES40 = 89 | CES65 = 76 | CES90 = 85 |
| CES16 = 47 | CES41 = 89 | CES66 = 73 | CES91 = 83 |
| CES17 = 49 | CES42 = 77 | CES67 = 70 | CES92 = 73 |
| CES18 = 56 | CES43 = 74 | CES68 = 76 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 81 | CES94 = 65 |
| CES20 = 66 | CES45 = 83 | CES70 = 68 | CES95 = 79 |
| CES21 = 86 | CES46 = 82 | CES71 = 64 | CES96 = 85 |
| CES22 = 78 | CES47 = 81 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 80 | CES73 = 60 | CES98 = 82 |
| CES24 = 91 | CES49 = 80 | CES74 = 97 | CES99 = 81 |
| CES25 = 72 | CES50 = 89 | CES75 = 64 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)