

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: P843366

Luminaire Tested: 24CGSB-90-L850

Issue Date: 5/31/2024

Tested By:

Approved By:



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Test Information

Test Method: LM-79-2019
 Report Number: P843366
 Test Lab: INNOVATION CENTER
 Issue Date: 5/31/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: METALUX
 Catalog Number: 24CGSB-90-L850
 Description: 2x4 CGSB AT 9000LM 5000K 80CRI
 Light Source: -
 Ballast/Driver: -

Summary

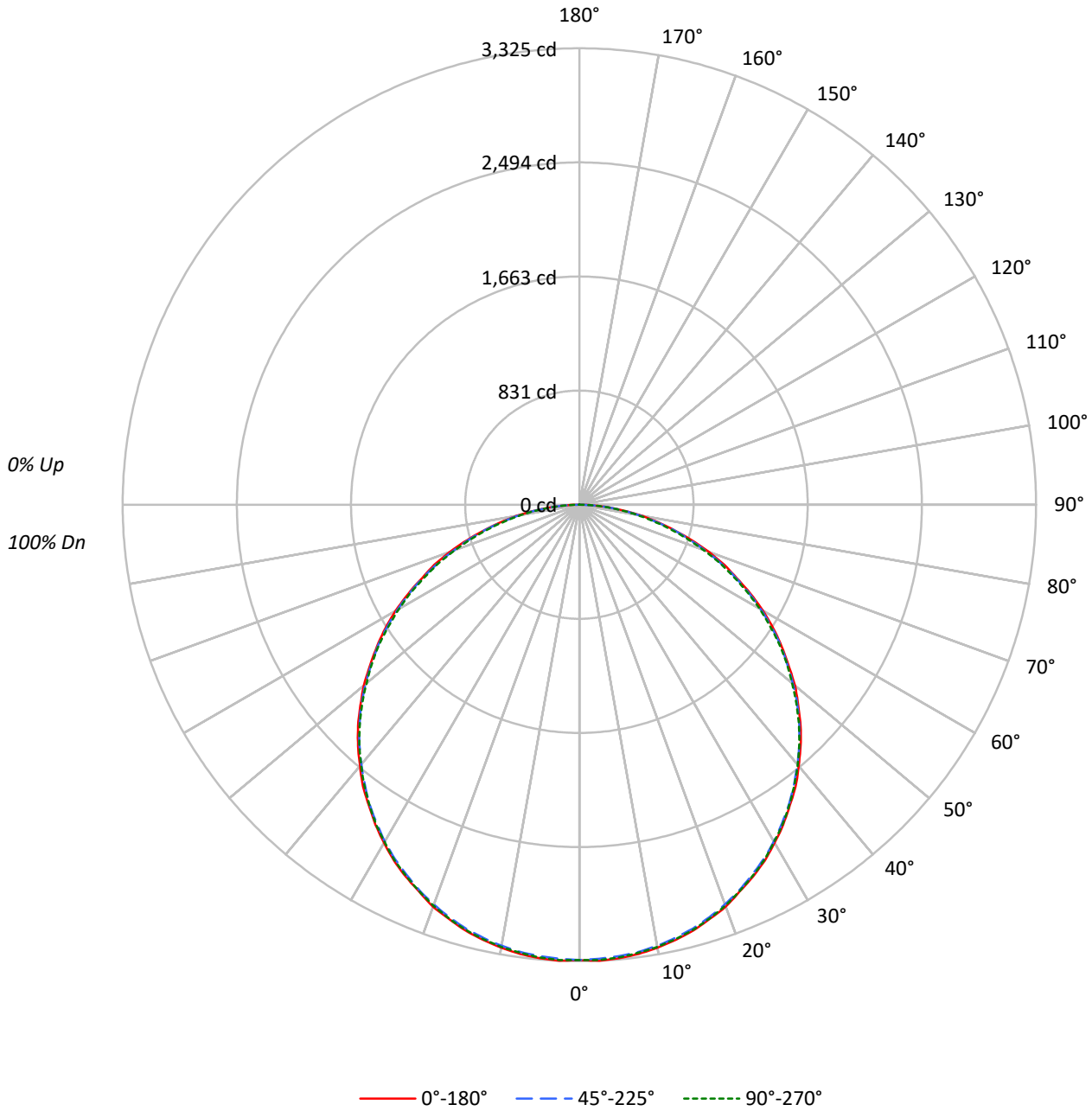
Lumens per Lamp: N/A
 Luminaire Lumens: 9811.4 lumens
 Efficiency: N/A
 Efficacy: 131.0 lumens/watt
 Spacing Criteria (0/90/45): 1.27 / 1.27 / 1.39
 Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
 CIE Type: Direct

Input Watts (W): 74.9
 Input Voltage (V): 120
 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

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | P3 | 10/30/2015 | 4/30/2016 |
| Power Meter | IN0214 | 1/12/2016 | 1/12/2017 |
| AC Power Source | IN0062 | 1/12/2016 | 1/12/2017 |
| DC Power Supply | -- | -- | -- |
| Room Thermometer | IN0145 | 1/13/2016 | 1/13/2017 |

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 108 | 103 | 99 | 95 | 106 | 101 | 97 | 93 | 97 | 94 | 90 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 96 | 88 | 81 | 76 | 84 | 79 | 74 | 81 | 76 | 72 | 78 | 74 | 71 | 69 |
| 3 | 89 | 79 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 79 | 68 | 60 | 53 | 66 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 42 |
| 6 | 69 | 56 | 47 | 40 | 67 | 55 | 46 | 40 | 53 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 35 | 62 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 32 | 58 | 45 | 37 | 31 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 36 | 30 | 25 | 23 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4462 | 4462 | 4462 |
| 5° | 4479 | 4459 | 4471 |
| 10° | 4477 | 4456 | 4469 |
| 15° | 4472 | 4451 | 4463 |
| 20° | 4463 | 4437 | 4450 |
| 25° | 4438 | 4416 | 4429 |
| 30° | 4419 | 4401 | 4405 |
| 35° | 4389 | 4374 | 4379 |
| 40° | 4365 | 4338 | 4343 |
| 45° | 4337 | 4308 | 4303 |
| 50° | 4290 | 4252 | 4233 |
| 55° | 4219 | 4198 | 4177 |
| 60° | 4157 | 4108 | 4075 |
| 65° | 4023 | 3994 | 3936 |
| 70° | 3936 | 3829 | 3770 |
| 75° | 3724 | 3677 | 3552 |
| 80° | 3560 | 3443 | 3302 |
| 85° | 3174 | 3126 | 2893 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4337 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 314.3 | 3.2 |
| 10°-20° | 902.8 | 9.2 |
| 20°-30° | 1374.0 | 14.0 |
| 30°-40° | 1667.6 | 17.0 |
| 40°-50° | 1746.5 | 17.8 |
| 50°-60° | 1595.8 | 16.3 |
| 60°-70° | 1240.3 | 12.6 |
| 70°-80° | 743.8 | 7.6 |
| 80°-90° | 226.2 | 2.3 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 2591.1 | 26.4 |
| 0°-40° | 4258.7 | 43.4 |
| 0°-60° | 7601.1 | 77.5 |
| 0°-90° | 9811.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 9811.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3316 | 3316 | 3316 | 3316 | 3316 | |
| 5° | 3316 | 3307 | 3301 | 3301 | 3310 | 315 |
| 15° | 3210 | 3198 | 3195 | 3195 | 3204 | 906 |
| 25° | 2990 | 2978 | 2975 | 2978 | 2984 | 1378 |
| 35° | 2672 | 2666 | 2663 | 2663 | 2666 | 1674 |
| 45° | 2279 | 2267 | 2264 | 2261 | 2261 | 1756 |
| 55° | 1799 | 1793 | 1790 | 1774 | 1780 | 1608 |
| 65° | 1264 | 1261 | 1254 | 1239 | 1236 | 1258 |
| 75° | 716 | 713 | 707 | 695 | 683 | 762 |
| 85° | 206 | 202 | 202 | 196 | 187 | 231 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3316.2 | 3316.2 | 3316.2 | 3316.2 | 3316.2 |
| 2.5° | 3325.2 | 3313.1 | 3310.1 | 3310.1 | 3319.2 |
| 5° | 3316.2 | 3307.1 | 3301.1 | 3301.1 | 3310.1 |
| 7.5° | 3301.1 | 3289.0 | 3285.9 | 3285.9 | 3292.0 |
| 10° | 3276.9 | 3267.8 | 3261.8 | 3261.8 | 3270.8 |
| 12.5° | 3246.6 | 3234.6 | 3231.5 | 3234.6 | 3240.6 |
| 15° | 3210.4 | 3198.3 | 3195.3 | 3195.3 | 3204.3 |
| 17.5° | 3162.0 | 3152.9 | 3149.9 | 3149.9 | 3159.0 |
| 20° | 3116.7 | 3101.5 | 3098.5 | 3101.5 | 3107.6 |
| 22.5° | 3050.2 | 3044.1 | 3041.1 | 3044.1 | 3047.1 |
| 25° | 2989.7 | 2977.6 | 2974.6 | 2977.6 | 2983.6 |
| 27.5° | 2923.2 | 2911.1 | 2908.1 | 2908.1 | 2917.1 |
| 30° | 2844.6 | 2835.5 | 2832.5 | 2832.5 | 2835.5 |
| 32.5° | 2763.0 | 2756.9 | 2747.9 | 2750.9 | 2756.9 |
| 35° | 2672.3 | 2666.2 | 2663.2 | 2663.2 | 2666.2 |
| 37.5° | 2587.6 | 2575.5 | 2566.5 | 2566.5 | 2572.5 |
| 40° | 2484.9 | 2478.8 | 2469.7 | 2472.8 | 2472.8 |
| 42.5° | 2385.1 | 2376.0 | 2370.0 | 2367.0 | 2370.0 |
| 45° | 2279.3 | 2267.2 | 2264.2 | 2261.2 | 2261.2 |
| 47.5° | 2161.4 | 2161.4 | 2152.3 | 2146.3 | 2143.3 |
| 50° | 2049.6 | 2037.5 | 2031.4 | 2022.4 | 2022.4 |
| 52.5° | 1919.6 | 1916.5 | 1907.5 | 1904.5 | 1904.5 |
| 55° | 1798.7 | 1792.6 | 1789.6 | 1774.5 | 1780.5 |
| 57.5° | 1674.7 | 1662.6 | 1659.6 | 1650.5 | 1644.5 |
| 60° | 1544.7 | 1538.7 | 1526.6 | 1514.5 | 1514.5 |
| 62.5° | 1405.7 | 1402.6 | 1390.6 | 1381.5 | 1378.5 |
| 65° | 1263.6 | 1260.6 | 1254.5 | 1239.4 | 1236.4 |
| 67.5° | 1142.7 | 1130.6 | 1115.5 | 1103.4 | 1103.4 |
| 70° | 1000.6 | 985.5 | 973.4 | 961.3 | 958.3 |
| 72.5° | 855.5 | 846.4 | 840.4 | 828.3 | 819.2 |
| 75° | 716.4 | 713.4 | 707.4 | 695.3 | 683.2 |
| 77.5° | 586.5 | 583.4 | 568.3 | 559.2 | 550.2 |
| 80° | 459.5 | 447.4 | 444.4 | 432.3 | 426.2 |
| 82.5° | 323.5 | 329.5 | 314.4 | 311.4 | 308.3 |
| 85° | 205.6 | 202.5 | 202.5 | 196.5 | 187.4 |
| 87.5° | 90.7 | 93.7 | 93.7 | 93.7 | 93.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)