

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: P843351

Luminaire Tested: 24CGSB-70-L930

Issue Date: 5/31/2024

Tested By:

Approved By:



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Test Information

Test Method: LM-79-2019
 Report Number: P843351
 Test Lab: INNOVATION CENTER
 Issue Date: 5/31/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: METALUX
 Catalog Number: 24CGSB-70-L930
 Description: 2x4 CGSB AT 7000LM 3000K 90CRI
 Light Source: -
 Ballast/Driver: -

Summary

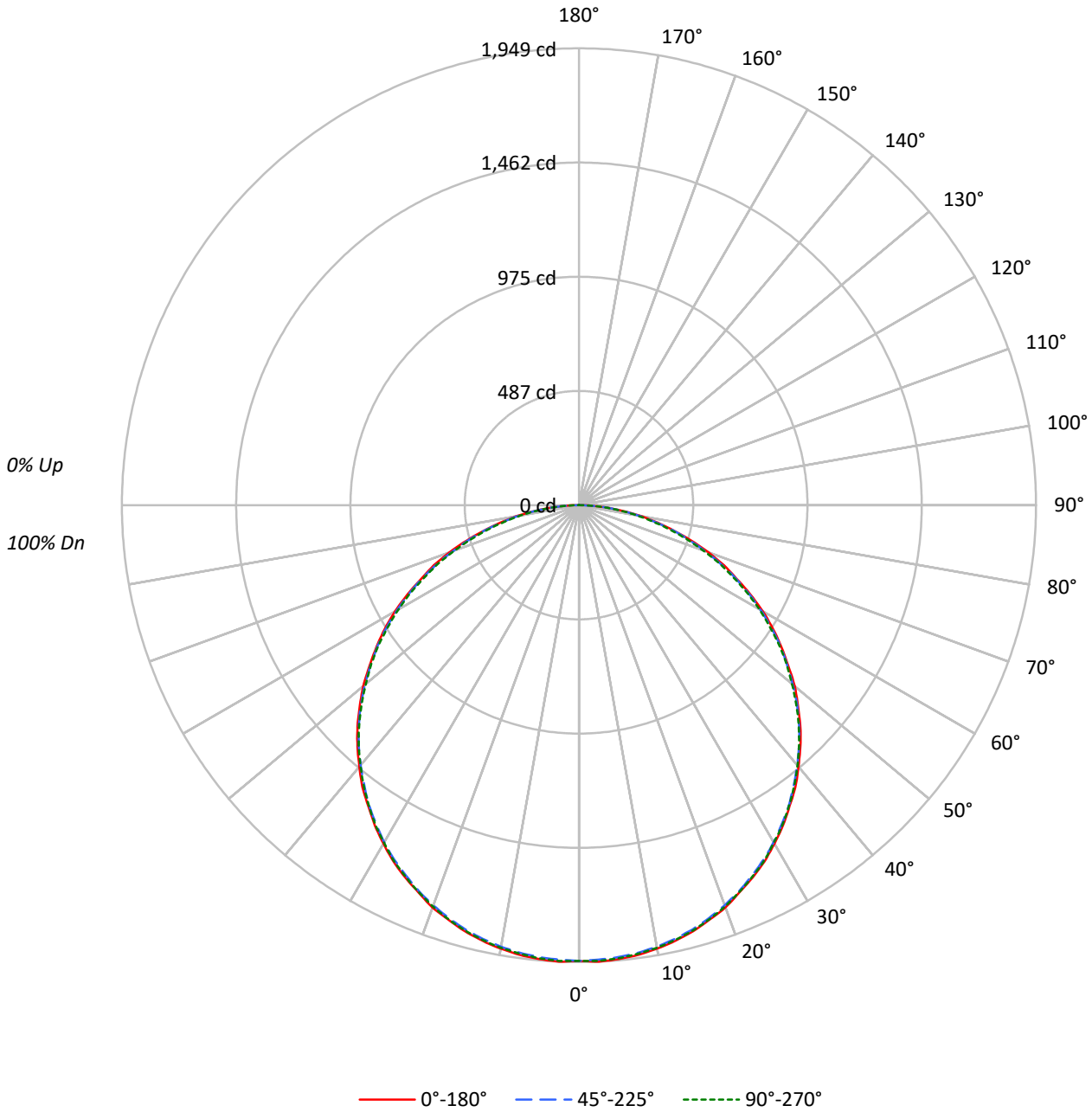
Lumens per Lamp: N/A
 Luminaire Lumens: 5751.8 lumens
 Efficiency: N/A
 Efficacy: 105.9 lumens/watt
 Spacing Criteria (0/90/45): 1.27 / 1.27 / 1.39
 Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
 CIE Type: Direct

Input Watts (W): 54.3
 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 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 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° | 2616 | 2616 | 2616 |
| 5° | 2626 | 2614 | 2621 |
| 10° | 2625 | 2613 | 2620 |
| 15° | 2622 | 2609 | 2617 |
| 20° | 2616 | 2601 | 2609 |
| 25° | 2602 | 2589 | 2597 |
| 30° | 2591 | 2580 | 2583 |
| 35° | 2573 | 2564 | 2567 |
| 40° | 2559 | 2543 | 2546 |
| 45° | 2543 | 2526 | 2522 |
| 50° | 2515 | 2493 | 2482 |
| 55° | 2473 | 2461 | 2449 |
| 60° | 2437 | 2408 | 2389 |
| 65° | 2358 | 2341 | 2308 |
| 70° | 2308 | 2245 | 2210 |
| 75° | 2183 | 2156 | 2082 |
| 80° | 2087 | 2018 | 1936 |
| 85° | 1860 | 1832 | 1697 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2543 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 184.2 | 3.2 |
| 10°-20° | 529.3 | 9.2 |
| 20°-30° | 805.5 | 14.0 |
| 30°-40° | 977.6 | 17.0 |
| 40°-50° | 1023.9 | 17.8 |
| 50°-60° | 935.5 | 16.3 |
| 60°-70° | 727.1 | 12.6 |
| 70°-80° | 436.1 | 7.6 |
| 80°-90° | 132.6 | 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° | 1519.0 | 26.4 |
| 0°-40° | 2496.6 | 43.4 |
| 0°-60° | 4456.0 | 77.5 |
| 0°-90° | 5751.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5751.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1944 | 1944 | 1944 | 1944 | 1944 | |
| 5° | 1944 | 1939 | 1935 | 1935 | 1940 | 185 |
| 15° | 1882 | 1875 | 1873 | 1873 | 1878 | 531 |
| 25° | 1753 | 1746 | 1744 | 1746 | 1749 | 808 |
| 35° | 1567 | 1563 | 1561 | 1561 | 1563 | 981 |
| 45° | 1336 | 1329 | 1327 | 1326 | 1326 | 1029 |
| 55° | 1054 | 1051 | 1049 | 1040 | 1044 | 943 |
| 65° | 741 | 739 | 735 | 727 | 725 | 738 |
| 75° | 420 | 418 | 415 | 408 | 400 | 447 |
| 85° | 120 | 119 | 119 | 115 | 110 | 135 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1944.1 | 1944.1 | 1944.1 | 1944.1 | 1944.1 |
| 2.5° | 1949.4 | 1942.3 | 1940.5 | 1940.5 | 1945.8 |
| 5° | 1944.1 | 1938.7 | 1935.2 | 1935.2 | 1940.5 |
| 7.5° | 1935.2 | 1928.1 | 1926.3 | 1926.3 | 1929.9 |
| 10° | 1921.0 | 1915.7 | 1912.2 | 1912.2 | 1917.5 |
| 12.5° | 1903.3 | 1896.2 | 1894.4 | 1896.2 | 1899.8 |
| 15° | 1882.0 | 1874.9 | 1873.2 | 1873.2 | 1878.5 |
| 17.5° | 1853.7 | 1848.4 | 1846.6 | 1846.6 | 1851.9 |
| 20° | 1827.1 | 1818.2 | 1816.5 | 1818.2 | 1821.8 |
| 22.5° | 1788.1 | 1784.6 | 1782.8 | 1784.6 | 1786.3 |
| 25° | 1752.7 | 1745.6 | 1743.8 | 1745.6 | 1749.1 |
| 27.5° | 1713.7 | 1706.6 | 1704.8 | 1704.8 | 1710.1 |
| 30° | 1667.6 | 1662.3 | 1660.5 | 1660.5 | 1662.3 |
| 32.5° | 1619.8 | 1616.2 | 1610.9 | 1612.7 | 1616.2 |
| 35° | 1566.6 | 1563.0 | 1561.3 | 1561.3 | 1563.0 |
| 37.5° | 1517.0 | 1509.9 | 1504.6 | 1504.6 | 1508.1 |
| 40° | 1456.7 | 1453.2 | 1447.9 | 1449.6 | 1449.6 |
| 42.5° | 1398.2 | 1392.9 | 1389.4 | 1387.6 | 1389.4 |
| 45° | 1336.2 | 1329.1 | 1327.3 | 1325.6 | 1325.6 |
| 47.5° | 1267.1 | 1267.1 | 1261.8 | 1258.2 | 1256.5 |
| 50° | 1201.5 | 1194.4 | 1190.9 | 1185.6 | 1185.6 |
| 52.5° | 1125.3 | 1123.5 | 1118.2 | 1116.5 | 1116.5 |
| 55° | 1054.4 | 1050.9 | 1049.1 | 1040.3 | 1043.8 |
| 57.5° | 981.8 | 974.7 | 972.9 | 967.6 | 964.1 |
| 60° | 905.6 | 902.0 | 894.9 | 887.9 | 887.9 |
| 62.5° | 824.1 | 822.3 | 815.2 | 809.9 | 808.1 |
| 65° | 740.8 | 739.0 | 735.4 | 726.6 | 724.8 |
| 67.5° | 669.9 | 662.8 | 653.9 | 646.8 | 646.8 |
| 70° | 586.6 | 577.7 | 570.6 | 563.5 | 561.8 |
| 72.5° | 501.5 | 496.2 | 492.7 | 485.6 | 480.3 |
| 75° | 420.0 | 418.2 | 414.7 | 407.6 | 400.5 |
| 77.5° | 343.8 | 342.0 | 333.2 | 327.8 | 322.5 |
| 80° | 269.4 | 262.3 | 260.5 | 253.4 | 249.9 |
| 82.5° | 189.6 | 193.2 | 184.3 | 182.5 | 180.8 |
| 85° | 120.5 | 118.7 | 118.7 | 115.2 | 109.9 |
| 87.5° | 53.2 | 54.9 | 54.9 | 54.9 | 54.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)