

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: P843307

Luminaire Tested: 24CGSB-40-L830

Issue Date: 5/31/2024

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-2019  
 Report Number: P843307  
 Test Lab: INNOVATION CENTER  
 Issue Date: 5/31/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: METALUX  
 Catalog Number: 24CGSB-40-L830  
 Description: 2x4 CGSB AT 4000LM 3000K 80CRI  
 Light Source: -  
 Ballast/Driver: -

**Summary**

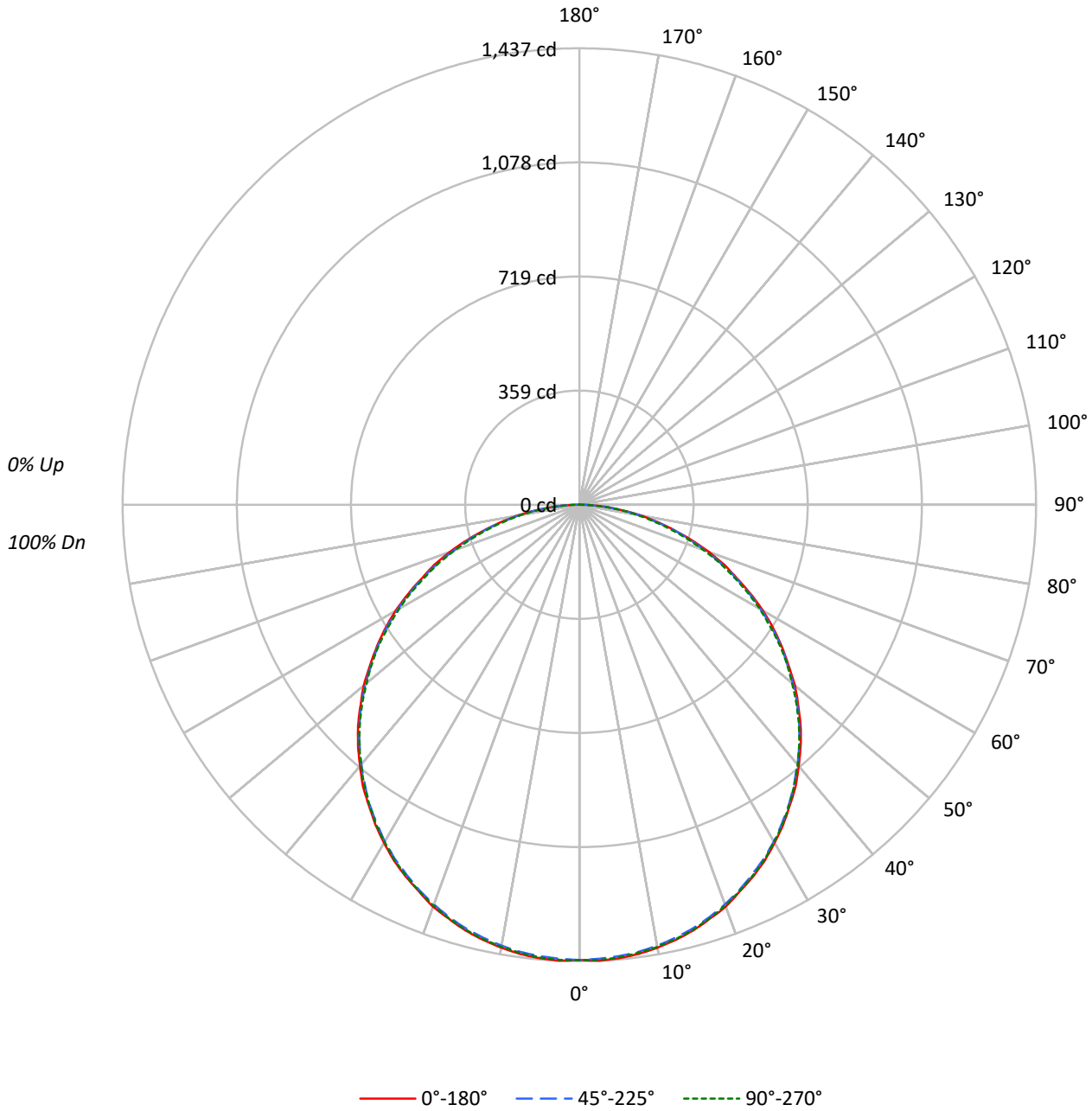
Lumens per Lamp: N/A  
 Luminaire Lumens: 4239.9 lumens  
 Efficiency: N/A  
 Efficacy: 132.1 lumens/watt  
 Spacing Criteria (0/90/45): 1.27 / 1.27 / 1.39  
 Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
 CIE Type: Direct

Input Watts (W): 32.1  
 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°  | 1928 | 1928 | 1928 |
| 5°  | 1936 | 1927 | 1932 |
| 10° | 1935 | 1926 | 1931 |
| 15° | 1932 | 1923 | 1929 |
| 20° | 1928 | 1917 | 1923 |
| 25° | 1918 | 1908 | 1914 |
| 30° | 1910 | 1902 | 1904 |
| 35° | 1897 | 1890 | 1893 |
| 40° | 1886 | 1875 | 1877 |
| 45° | 1874 | 1862 | 1859 |
| 50° | 1854 | 1838 | 1829 |
| 55° | 1823 | 1814 | 1805 |
| 60° | 1796 | 1775 | 1761 |
| 65° | 1739 | 1726 | 1701 |
| 70° | 1701 | 1655 | 1629 |
| 75° | 1609 | 1589 | 1535 |
| 80° | 1539 | 1488 | 1427 |
| 85° | 1371 | 1351 | 1250 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1874 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 135.8  | 3.2       |
| 10°-20°   | 390.2  | 9.2       |
| 20°-30°   | 593.7  | 14.0      |
| 30°-40°   | 720.7  | 17.0      |
| 40°-50°   | 754.7  | 17.8      |
| 50°-60°   | 689.6  | 16.3      |
| 60°-70°   | 536.0  | 12.6      |
| 70°-80°   | 321.4  | 7.6       |
| 80°-90°   | 97.8   | 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°    | 1119.7 | 26.4      |
| 0°-40°    | 1840.4 | 43.4      |
| 0°-60°    | 3284.7 | 77.5      |
| 0°-90°    | 4239.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4239.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1433 | 1433  | 1433 | 1433  | 1433 |      |
| 5°  | 1433 | 1429  | 1426 | 1426  | 1430 | 136  |
| 15° | 1387 | 1382  | 1381 | 1381  | 1385 | 391  |
| 25° | 1292 | 1287  | 1285 | 1287  | 1289 | 596  |
| 35° | 1155 | 1152  | 1151 | 1151  | 1152 | 723  |
| 45° | 985  | 980   | 978  | 977   | 977  | 759  |
| 55° | 777  | 775   | 773  | 767   | 769  | 695  |
| 65° | 546  | 545   | 542  | 536   | 534  | 544  |
| 75° | 310  | 308   | 306  | 300   | 295  | 329  |
| 85° | 89   | 88    | 88   | 85    | 81   | 100  |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1433.1 | 1433.1 | 1433.1 | 1433.1 | 1433.1 |
| 2.5°  | 1437.0 | 1431.8 | 1430.4 | 1430.4 | 1434.4 |
| 5°    | 1433.1 | 1429.1 | 1426.5 | 1426.5 | 1430.4 |
| 7.5°  | 1426.5 | 1421.3 | 1420.0 | 1420.0 | 1422.6 |
| 10°   | 1416.1 | 1412.2 | 1409.5 | 1409.5 | 1413.5 |
| 12.5° | 1403.0 | 1397.8 | 1396.5 | 1397.8 | 1400.4 |
| 15°   | 1387.3 | 1382.1 | 1380.8 | 1380.8 | 1384.7 |
| 17.5° | 1366.4 | 1362.5 | 1361.2 | 1361.2 | 1365.1 |
| 20°   | 1346.8 | 1340.3 | 1339.0 | 1340.3 | 1342.9 |
| 22.5° | 1318.1 | 1315.5 | 1314.2 | 1315.5 | 1316.8 |
| 25°   | 1292.0 | 1286.7 | 1285.4 | 1286.7 | 1289.4 |
| 27.5° | 1263.2 | 1258.0 | 1256.7 | 1256.7 | 1260.6 |
| 30°   | 1229.3 | 1225.4 | 1224.0 | 1224.0 | 1225.4 |
| 32.5° | 1194.0 | 1191.4 | 1187.5 | 1188.8 | 1191.4 |
| 35°   | 1154.8 | 1152.2 | 1150.9 | 1150.9 | 1152.2 |
| 37.5° | 1118.2 | 1113.0 | 1109.1 | 1109.1 | 1111.7 |
| 40°   | 1073.8 | 1071.2 | 1067.3 | 1068.6 | 1068.6 |
| 42.5° | 1030.7 | 1026.8 | 1024.2 | 1022.9 | 1024.2 |
| 45°   | 985.0  | 979.8  | 978.5  | 977.1  | 977.1  |
| 47.5° | 934.0  | 934.0  | 930.1  | 927.5  | 926.2  |
| 50°   | 885.7  | 880.5  | 877.9  | 873.9  | 873.9  |
| 52.5° | 829.5  | 828.2  | 824.3  | 823.0  | 823.0  |
| 55°   | 777.3  | 774.7  | 773.4  | 766.8  | 769.4  |
| 57.5° | 723.7  | 718.5  | 717.2  | 713.3  | 710.7  |
| 60°   | 667.5  | 664.9  | 659.7  | 654.5  | 654.5  |
| 62.5° | 607.4  | 606.1  | 600.9  | 597.0  | 595.7  |
| 65°   | 546.1  | 544.7  | 542.1  | 535.6  | 534.3  |
| 67.5° | 493.8  | 488.6  | 482.0  | 476.8  | 476.8  |
| 70°   | 432.4  | 425.9  | 420.6  | 415.4  | 414.1  |
| 72.5° | 369.7  | 365.8  | 363.2  | 357.9  | 354.0  |
| 75°   | 309.6  | 308.3  | 305.7  | 300.5  | 295.2  |
| 77.5° | 253.4  | 252.1  | 245.6  | 241.7  | 237.8  |
| 80°   | 198.6  | 193.3  | 192.0  | 186.8  | 184.2  |
| 82.5° | 139.8  | 142.4  | 135.9  | 134.6  | 133.2  |
| 85°   | 88.8   | 87.5   | 87.5   | 84.9   | 81.0   |
| 87.5° | 39.2   | 40.5   | 40.5   | 40.5   | 40.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)