

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P474036

Luminaire Tested: **24CZ2-55VHE-S-UNV-L835-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474036  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-55VHE-S-UNV-L835-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

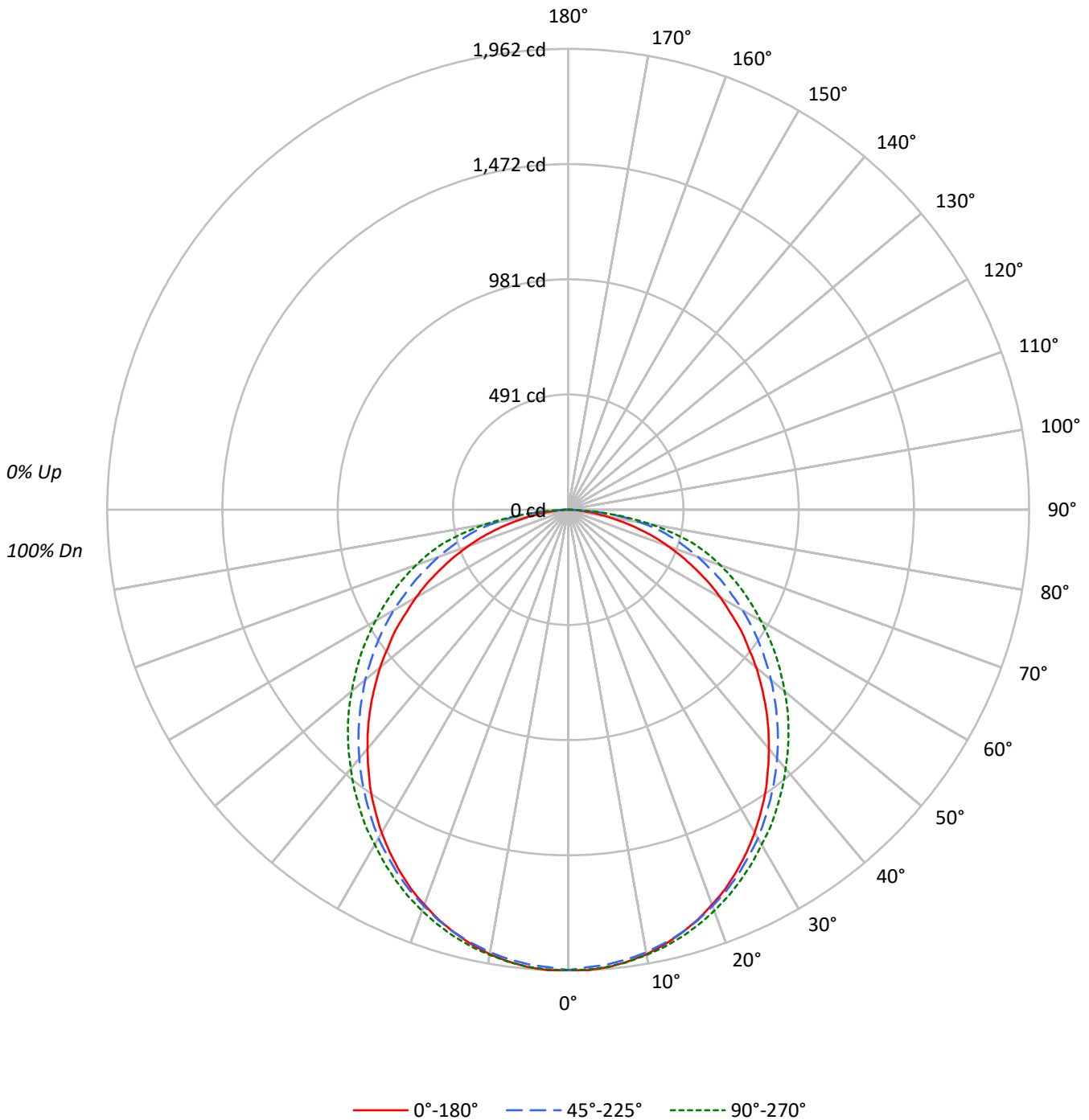
Lumens per Lamp: N/A  
Luminaire Lumens: 5614.1 lumens  
Efficiency: N/A  
Efficacy: 151.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 37.1  
Input Voltage (V): 120  
Input Current (Ain): 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: 25 FT



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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  | 105 | 101 | 97  | 93  | 97  | 93  | 90  |  | 93  | 90  | 87  |  | 89  | 87  | 85  | 83  |
| 2   | 98  | 90  | 83  | 77  | 95  | 88  | 81  | 76  | 84  | 79  | 74  |  | 81  | 76  | 72  |  | 78  | 74  | 71  | 68  |
| 3   | 89  | 78  | 70  | 63  | 87  | 77  | 69  | 63  | 74  | 67  | 62  |  | 71  | 65  | 61  |  | 68  | 64  | 59  | 57  |
| 4   | 82  | 69  | 60  | 54  | 79  | 68  | 60  | 53  | 66  | 58  | 52  |  | 63  | 57  | 52  |  | 61  | 55  | 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  | 63  | 50  | 41  | 35  | 48  | 41  | 35  |  | 47  | 40  | 35  |  | 45  | 39  | 34  | 32  |
| 8   | 60  | 46  | 38  | 32  | 58  | 45  | 37  | 31  | 44  | 37  | 31  |  | 43  | 36  | 31  |  | 42  | 35  | 31  | 29  |
| 9   | 56  | 42  | 34  | 28  | 54  | 42  | 34  | 28  | 41  | 33  | 28  |  | 39  | 33  | 28  |  | 38  | 32  | 28  | 26  |
| 10  | 52  | 39  | 31  | 26  | 51  | 39  | 31  | 26  | 38  | 30  | 26  |  | 37  | 30  | 25  |  | 36  | 30  | 25  | 24  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2637 | 2637 | 2637 |
| 5°  | 2640 | 2624 | 2638 |
| 10° | 2626 | 2614 | 2629 |
| 15° | 2599 | 2597 | 2619 |
| 20° | 2563 | 2571 | 2603 |
| 25° | 2520 | 2542 | 2582 |
| 30° | 2467 | 2510 | 2557 |
| 35° | 2405 | 2466 | 2543 |
| 40° | 2334 | 2429 | 2528 |
| 45° | 2264 | 2392 | 2523 |
| 50° | 2187 | 2359 | 2517 |
| 55° | 2109 | 2330 | 2531 |
| 60° | 2013 | 2308 | 2549 |
| 65° | 1905 | 2299 | 2610 |
| 70° | 1778 | 2311 | 2703 |
| 75° | 1582 | 2378 | 2848 |
| 80° | 1293 | 2429 | 2779 |
| 85° | 911  | 2121 | 2164 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 185.3  | 3.3       |
| 10°-20°   | 527.6  | 9.4       |
| 20°-30°   | 790.9  | 14.1      |
| 30°-40°   | 942.0  | 16.8      |
| 40°-50°   | 971.3  | 17.3      |
| 50°-60°   | 886.3  | 15.8      |
| 60°-70°   | 708.7  | 12.6      |
| 70°-80°   | 462.9  | 8.2       |
| 80°-90°   | 139.0  | 2.5       |
| 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°    | 1503.8 | 26.8      |
| 0°-40°    | 2445.8 | 43.6      |
| 0°-60°    | 4303.5 | 76.7      |
| 0°-90°    | 5614.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5614.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1960 | 1960  | 1960 | 1960  | 1960 |      |
| 5°  | 1955 | 1951  | 1943 | 1955  | 1953 | 185  |
| 15° | 1866 | 1866  | 1865 | 1880  | 1880 | 526  |
| 25° | 1698 | 1700  | 1712 | 1737  | 1739 | 782  |
| 35° | 1464 | 1474  | 1501 | 1539  | 1548 | 915  |
| 45° | 1190 | 1211  | 1257 | 1310  | 1326 | 917  |
| 55° | 899  | 925   | 993  | 1059  | 1079 | 801  |
| 65° | 598  | 639   | 722  | 793   | 820  | 593  |
| 75° | 304  | 355   | 457  | 531   | 548  | 323  |
| 85° | 59   | 106   | 137  | 140   | 140  | 75   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1959.6 | 1959.6 | 1959.6 | 1959.6 | 1959.6 |
| 2.5°  | 1962.3 | 1959.6 | 1949.4 | 1961.4 | 1959.6 |
| 5°    | 1955.0 | 1951.3 | 1943.0 | 1955.0 | 1953.1 |
| 7.5°  | 1940.2 | 1938.4 | 1930.1 | 1943.9 | 1942.1 |
| 10°   | 1921.8 | 1919.9 | 1913.5 | 1927.3 | 1924.5 |
| 12.5° | 1896.0 | 1895.0 | 1890.4 | 1907.0 | 1905.2 |
| 15°   | 1865.5 | 1866.4 | 1864.6 | 1880.3 | 1880.3 |
| 17.5° | 1830.5 | 1829.6 | 1833.2 | 1852.6 | 1850.8 |
| 20°   | 1789.9 | 1790.8 | 1795.4 | 1817.6 | 1817.6 |
| 22.5° | 1747.5 | 1746.6 | 1756.7 | 1778.8 | 1780.7 |
| 25°   | 1697.7 | 1700.5 | 1712.4 | 1737.3 | 1739.2 |
| 27.5° | 1644.2 | 1648.8 | 1663.6 | 1692.2 | 1694.9 |
| 30°   | 1588.0 | 1593.5 | 1615.6 | 1642.4 | 1646.0 |
| 32.5° | 1526.2 | 1538.2 | 1558.4 | 1592.6 | 1601.8 |
| 35°   | 1464.4 | 1474.5 | 1501.3 | 1539.1 | 1548.3 |
| 37.5° | 1396.1 | 1412.7 | 1443.2 | 1484.7 | 1496.7 |
| 40°   | 1328.8 | 1345.4 | 1383.2 | 1426.6 | 1439.5 |
| 42.5° | 1260.6 | 1278.1 | 1321.4 | 1370.3 | 1384.2 |
| 45°   | 1189.6 | 1210.8 | 1256.9 | 1309.5 | 1326.1 |
| 47.5° | 1116.7 | 1141.6 | 1191.4 | 1248.6 | 1267.0 |
| 50°   | 1044.8 | 1069.7 | 1126.9 | 1185.9 | 1202.5 |
| 52.5° | 967.3  | 998.7  | 1059.6 | 1123.2 | 1139.8 |
| 55°   | 899.1  | 924.9  | 993.2  | 1058.6 | 1078.9 |
| 57.5° | 818.9  | 853.9  | 926.8  | 993.2  | 1012.5 |
| 60°   | 747.9  | 780.1  | 857.6  | 924.9  | 947.1  |
| 62.5° | 675.9  | 709.1  | 786.6  | 863.1  | 883.4  |
| 65°   | 598.5  | 639.1  | 722.0  | 793.1  | 819.8  |
| 67.5° | 524.7  | 567.1  | 652.0  | 727.6  | 755.2  |
| 70°   | 451.9  | 495.2  | 587.4  | 664.9  | 687.0  |
| 72.5° | 379.9  | 425.1  | 521.0  | 596.6  | 622.5  |
| 75°   | 304.3  | 355.0  | 457.4  | 531.2  | 547.8  |
| 77.5° | 233.3  | 289.6  | 392.8  | 442.6  | 454.6  |
| 80°   | 166.9  | 228.7  | 313.5  | 349.5  | 358.7  |
| 82.5° | 109.7  | 169.7  | 234.2  | 253.6  | 250.8  |
| 85°   | 59.0   | 106.0  | 137.4  | 140.2  | 140.2  |
| 87.5° | 23.1   | 42.4   | 43.3   | 33.2   | 31.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)