

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: P474194

Luminaire Tested: **24CZ2-100VHE-RDP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474194  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-100VHE-RDP-UNV-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ RDP  
INSERT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6470.8 lumens  
Efficiency: N/A  
Efficacy: 91.0 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

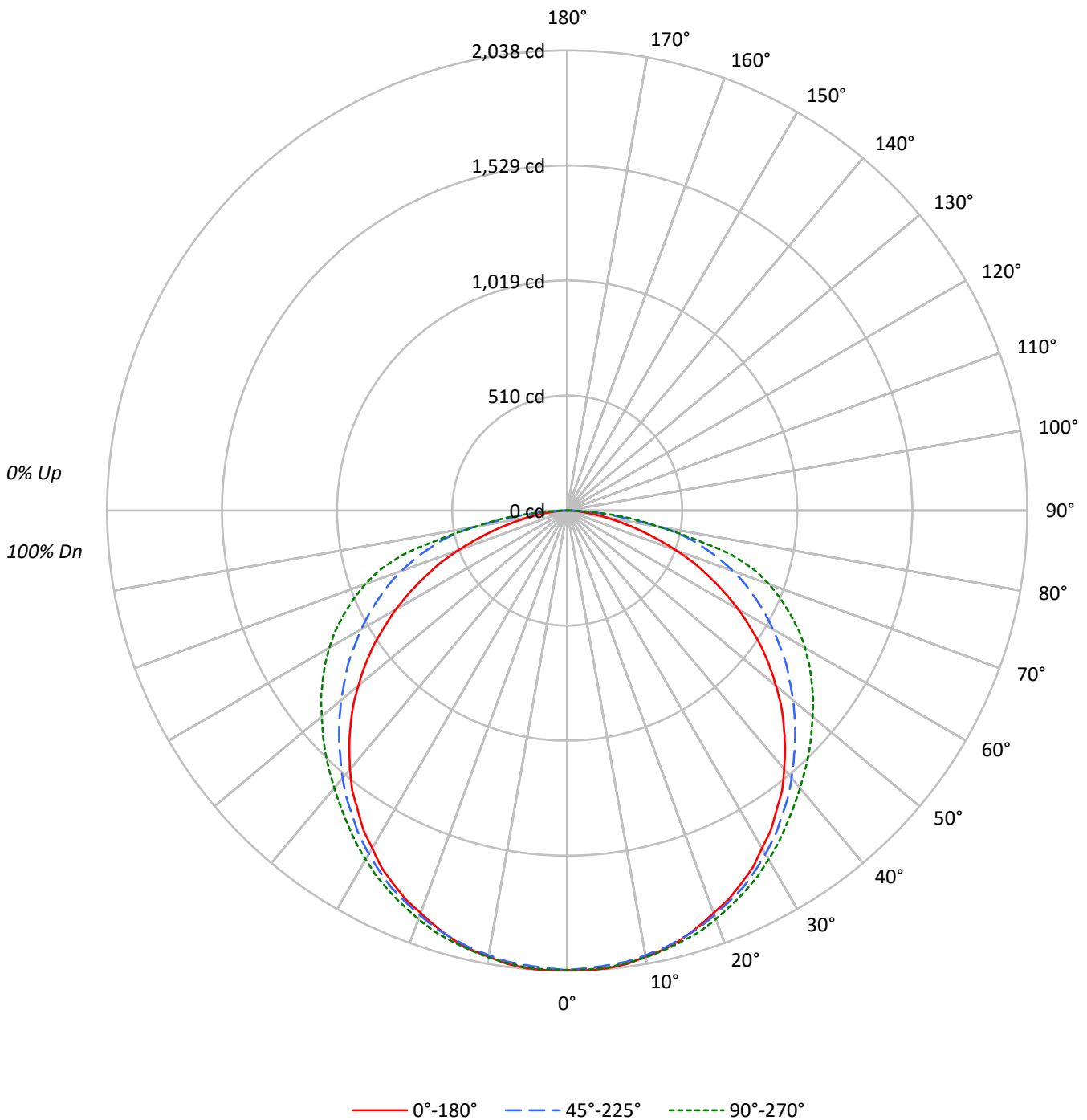
Input Watts (W): 71.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |
| 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 |
| 1   | 108 | 103 | 98  | 94  | 105 | 100 | 96  | 92  | 96  | 93  | 89  | 92  | 89  | 87  | 88  | 86  | 84  |
| 2   | 97  | 89  | 81  | 75  | 95  | 87  | 80  | 74  | 83  | 77  | 72  | 80  | 75  | 71  | 77  | 73  | 69  |
| 3   | 88  | 77  | 68  | 62  | 86  | 76  | 67  | 61  | 72  | 66  | 60  | 70  | 64  | 59  | 67  | 62  | 58  |
| 4   | 81  | 68  | 59  | 52  | 78  | 67  | 58  | 51  | 64  | 57  | 51  | 62  | 55  | 50  | 59  | 54  | 49  |
| 5   | 74  | 60  | 51  | 44  | 72  | 59  | 51  | 44  | 57  | 49  | 43  | 55  | 48  | 43  | 53  | 47  | 42  |
| 6   | 68  | 54  | 45  | 38  | 66  | 53  | 45  | 38  | 51  | 44  | 38  | 50  | 43  | 37  | 48  | 42  | 37  |
| 7   | 63  | 49  | 40  | 34  | 61  | 48  | 40  | 34  | 47  | 39  | 33  | 45  | 38  | 33  | 44  | 38  | 33  |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 35  | 30  | 41  | 34  | 29  | 40  | 34  | 29  |
| 9   | 55  | 41  | 33  | 27  | 53  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 26  | 37  | 31  | 26  |
| 10  | 51  | 38  | 30  | 24  | 50  | 37  | 29  | 24  | 36  | 29  | 24  | 35  | 29  | 24  | 34  | 28  | 24  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2738 | 2738 | 2738 |
| 5°  | 2749 | 2731 | 2744 |
| 10° | 2741 | 2732 | 2745 |
| 15° | 2736 | 2732 | 2750 |
| 20° | 2716 | 2730 | 2757 |
| 25° | 2706 | 2735 | 2764 |
| 30° | 2683 | 2728 | 2772 |
| 35° | 2657 | 2720 | 2783 |
| 40° | 2627 | 2717 | 2819 |
| 45° | 2583 | 2718 | 2882 |
| 50° | 2526 | 2734 | 2970 |
| 55° | 2462 | 2778 | 3102 |
| 60° | 2358 | 2833 | 3273 |
| 65° | 2207 | 2932 | 3474 |
| 70° | 2007 | 3068 | 3737 |
| 75° | 1701 | 3237 | 3905 |
| 80° | 1344 | 3257 | 3157 |
| 85° | 991  | 2479 | 2776 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 193.0  | 3.0       |
| 10°-20°   | 555.5  | 8.6       |
| 20°-30°   | 849.5  | 13.1      |
| 30°-40°   | 1038.5 | 16.0      |
| 40°-50°   | 1106.9 | 17.1      |
| 50°-60°   | 1058.3 | 16.4      |
| 60°-70°   | 896.5  | 13.9      |
| 70°-80°   | 602.5  | 9.3       |
| 80°-90°   | 170.0  | 2.6       |
| 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°    | 1598.1 | 24.7      |
| 0°-40°    | 2636.6 | 40.7      |
| 0°-60°    | 4801.7 | 74.2      |
| 0°-90°    | 6470.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6470.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2035 | 2035  | 2035 | 2035  | 2035 |      |
| 5°  | 2035 | 2032  | 2022 | 2032  | 2032 | 193  |
| 15° | 1964 | 1964  | 1961 | 1977  | 1974 | 554  |
| 25° | 1823 | 1830  | 1842 | 1858  | 1862 | 840  |
| 35° | 1618 | 1630  | 1656 | 1688  | 1695 | 1013 |
| 45° | 1358 | 1380  | 1428 | 1489  | 1515 | 1047 |
| 55° | 1049 | 1088  | 1184 | 1277  | 1322 | 935  |
| 65° | 693  | 764   | 921  | 1043  | 1091 | 688  |
| 75° | 327  | 446   | 623  | 729   | 751  | 351  |
| 85° | 64   | 132   | 161  | 173   | 180  | 79   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2035.0 | 2035.0 | 2035.0 | 2035.0 | 2035.0 |
| 2.5°  | 2038.2 | 2038.2 | 2028.5 | 2035.0 | 2035.0 |
| 5°    | 2035.0 | 2031.8 | 2022.1 | 2031.8 | 2031.8 |
| 7.5°  | 2025.3 | 2022.1 | 2015.7 | 2025.3 | 2022.1 |
| 10°   | 2006.1 | 2006.1 | 1999.6 | 2009.3 | 2009.3 |
| 12.5° | 1990.0 | 1986.8 | 1983.6 | 1996.4 | 1993.2 |
| 15°   | 1964.3 | 1964.3 | 1961.1 | 1977.2 | 1974.0 |
| 17.5° | 1932.2 | 1935.4 | 1938.6 | 1951.5 | 1954.7 |
| 20°   | 1896.9 | 1903.3 | 1906.5 | 1925.8 | 1925.8 |
| 22.5° | 1864.8 | 1868.0 | 1874.4 | 1893.7 | 1893.7 |
| 25°   | 1823.0 | 1829.5 | 1842.3 | 1858.4 | 1861.6 |
| 27.5° | 1781.3 | 1784.5 | 1800.5 | 1823.0 | 1826.2 |
| 30°   | 1726.7 | 1736.3 | 1755.6 | 1781.3 | 1784.5 |
| 32.5° | 1678.5 | 1688.2 | 1710.6 | 1736.3 | 1742.7 |
| 35°   | 1617.5 | 1630.4 | 1656.0 | 1688.2 | 1694.6 |
| 37.5° | 1562.9 | 1572.6 | 1604.7 | 1640.0 | 1649.6 |
| 40°   | 1495.8 | 1514.7 | 1546.9 | 1588.6 | 1604.7 |
| 42.5° | 1428.4 | 1447.6 | 1486.2 | 1540.4 | 1559.7 |
| 45°   | 1357.7 | 1380.2 | 1428.4 | 1489.4 | 1514.7 |
| 47.5° | 1287.1 | 1312.8 | 1367.4 | 1438.0 | 1466.9 |
| 50°   | 1206.8 | 1238.9 | 1306.3 | 1386.6 | 1418.7 |
| 52.5° | 1129.7 | 1168.3 | 1242.1 | 1332.0 | 1373.8 |
| 55°   | 1049.4 | 1088.0 | 1184.3 | 1277.4 | 1322.4 |
| 57.5° | 959.5  | 1010.9 | 1116.9 | 1222.8 | 1271.0 |
| 60°   | 876.4  | 924.2  | 1052.6 | 1168.3 | 1216.4 |
| 62.5° | 786.4  | 850.7  | 988.4  | 1110.5 | 1158.6 |
| 65°   | 693.3  | 764.0  | 921.0  | 1043.0 | 1091.2 |
| 67.5° | 609.8  | 686.9  | 853.9  | 975.6  | 1023.7 |
| 70°   | 510.3  | 606.6  | 780.0  | 901.7  | 949.9  |
| 72.5° | 417.1  | 523.1  | 702.9  | 821.8  | 866.7  |
| 75°   | 327.2  | 446.0  | 622.7  | 728.6  | 751.1  |
| 77.5° | 244.1  | 369.0  | 539.2  | 584.1  | 568.1  |
| 80°   | 173.4  | 295.4  | 420.4  | 397.9  | 407.5  |
| 82.5° | 112.4  | 224.8  | 260.1  | 295.4  | 304.7  |
| 85°   | 64.2   | 131.7  | 160.6  | 173.4  | 179.8  |
| 87.5° | 28.9   | 48.2   | 64.2   | 64.2   | 61.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)