

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: P229991

Luminaire Tested: **24CZ-LD5-70-UNV-L950-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P229991  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25697)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ-LD5-70-UNV-L950-CD1-U  
Description: CRUZE 2x4 LED TROFFER  
WITH RIBBED LENS  
Light Source: (168) 5000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6800.0 lumens  
Efficiency: N/A  
Efficacy: 105.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

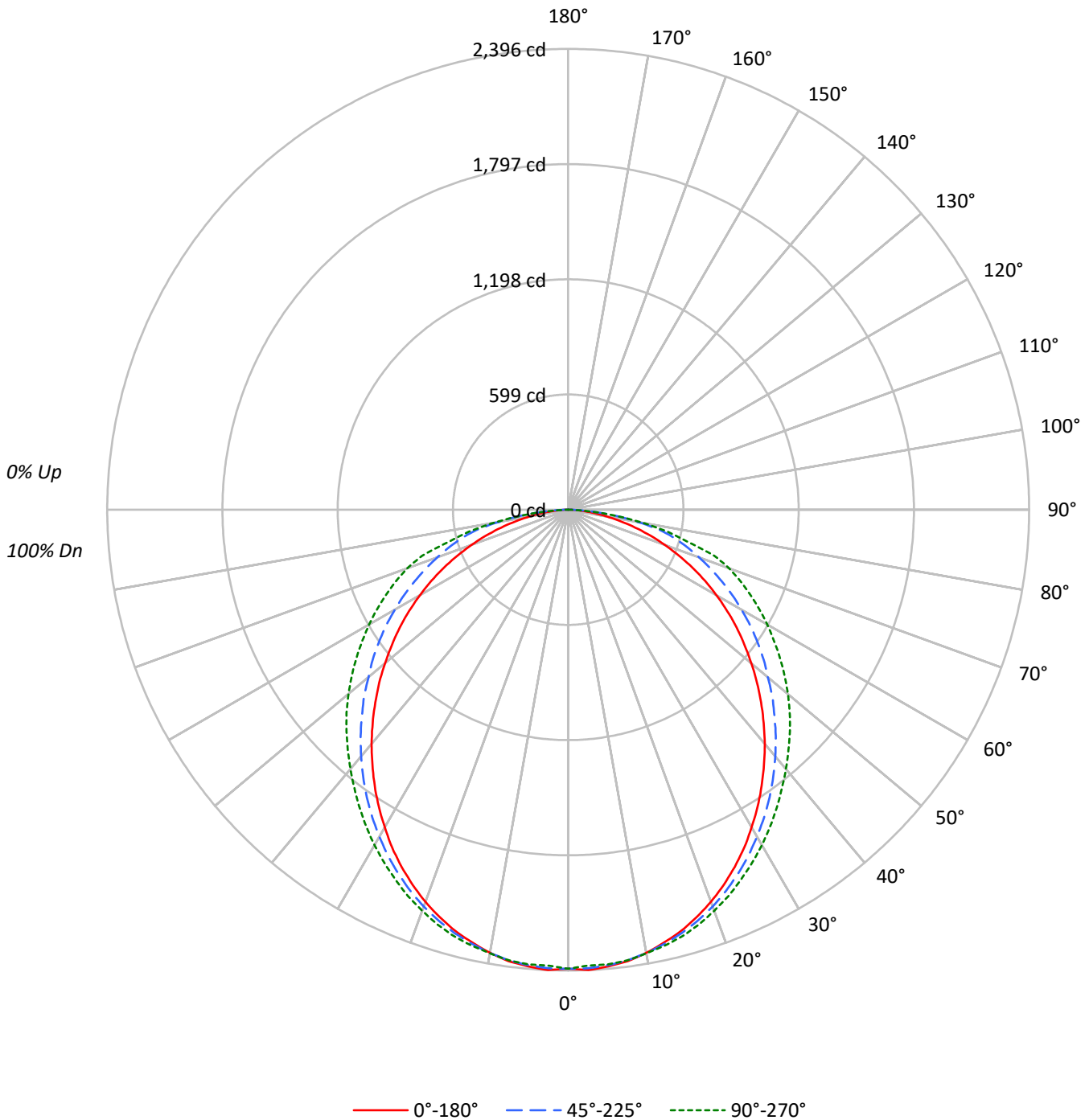
Input Watts (W): 64.22  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 106 | 101 | 97  | 93  | 97  | 93  | 90  | 93  | 90  | 88  | 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  | 60  | 57  |
| 4   | 82  | 69  | 60  | 54  | 79  | 68  | 60  | 53  | 66  | 58  | 52  | 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  | 63  | 50  | 41  | 35  | 48  | 41  | 35  | 47  | 40  | 35  | 45  | 39  | 35  | 32  |
| 8   | 60  | 46  | 38  | 32  | 58  | 45  | 37  | 32  | 44  | 37  | 31  | 43  | 36  | 31  | 42  | 36  | 31  | 29  |
| 9   | 56  | 42  | 34  | 28  | 54  | 42  | 34  | 28  | 41  | 33  | 28  | 40  | 33  | 28  | 38  | 32  | 28  | 26  |
| 10  | 52  | 39  | 31  | 26  | 51  | 39  | 31  | 26  | 38  | 31  | 26  | 37  | 30  | 25  | 36  | 30  | 25  | 24  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3211 | 3211 | 3211 |
| 5°  | 3220 | 3211 | 3204 |
| 10° | 3197 | 3197 | 3200 |
| 15° | 3159 | 3175 | 3198 |
| 20° | 3107 | 3144 | 3177 |
| 25° | 3042 | 3100 | 3152 |
| 30° | 2962 | 3049 | 3129 |
| 35° | 2880 | 2998 | 3105 |
| 40° | 2793 | 2940 | 3091 |
| 45° | 2698 | 2884 | 3101 |
| 50° | 2602 | 2836 | 3119 |
| 55° | 2507 | 2818 | 3151 |
| 60° | 2393 | 2801 | 3214 |
| 65° | 2268 | 2802 | 3321 |
| 70° | 2098 | 2849 | 3499 |
| 75° | 1876 | 2977 | 3329 |
| 80° | 1570 | 2851 | 3049 |
| 85° | 1186 | 2192 | 2084 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 225.5  | 3.3       |
| 10°-20°   | 641.8  | 9.4       |
| 20°-30°   | 959.5  | 14.1      |
| 30°-40°   | 1138.3 | 16.7      |
| 40°-50°   | 1171.6 | 17.2      |
| 50°-60°   | 1074.8 | 15.8      |
| 60°-70°   | 869.0  | 12.8      |
| 70°-80°   | 564.0  | 8.3       |
| 80°-90°   | 155.5  | 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°    | 1826.9 | 26.9      |
| 0°-40°    | 2965.1 | 43.6      |
| 0°-60°    | 5211.5 | 76.6      |
| 0°-90°    | 6800.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6800.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2386 | 2386  | 2386 | 2386  | 2386 |      |
| 5°  | 2384 | 2368  | 2377 | 2375  | 2372 | 226  |
| 15° | 2268 | 2258  | 2279 | 2289  | 2296 | 639  |
| 25° | 2049 | 2051  | 2088 | 2107  | 2123 | 943  |
| 35° | 1753 | 1767  | 1825 | 1865  | 1890 | 1096 |
| 45° | 1418 | 1441  | 1516 | 1588  | 1630 | 1094 |
| 55° | 1069 | 1101  | 1201 | 1299  | 1343 | 955  |
| 65° | 712  | 754   | 880  | 996   | 1043 | 704  |
| 75° | 361  | 428   | 573  | 640   | 640  | 384  |
| 85° | 77   | 130   | 142  | 137   | 135  | 94   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2386.4 | 2386.4 | 2386.4 | 2386.4 | 2386.4 |
| 2.5°  | 2395.8 | 2377.1 | 2386.4 | 2384.1 | 2372.5 |
| 5°    | 2384.1 | 2367.8 | 2377.1 | 2374.8 | 2372.5 |
| 7.5°  | 2367.8 | 2351.5 | 2363.2 | 2360.8 | 2363.2 |
| 10°   | 2339.9 | 2325.9 | 2339.9 | 2342.2 | 2342.2 |
| 12.5° | 2305.0 | 2293.3 | 2311.9 | 2316.6 | 2321.3 |
| 15°   | 2267.7 | 2258.4 | 2279.3 | 2288.7 | 2295.6 |
| 17.5° | 2221.1 | 2214.2 | 2239.8 | 2251.4 | 2260.7 |
| 20°   | 2169.9 | 2167.6 | 2195.5 | 2207.2 | 2218.8 |
| 22.5° | 2111.7 | 2111.7 | 2144.3 | 2158.3 | 2174.6 |
| 25°   | 2048.9 | 2051.2 | 2088.4 | 2107.1 | 2123.4 |
| 27.5° | 1981.3 | 1983.7 | 2027.9 | 2051.2 | 2069.8 |
| 30°   | 1906.8 | 1916.1 | 1962.7 | 1993.0 | 2013.9 |
| 32.5° | 1832.3 | 1844.0 | 1895.2 | 1930.1 | 1953.4 |
| 35°   | 1753.2 | 1767.1 | 1825.3 | 1864.9 | 1890.5 |
| 37.5° | 1671.7 | 1688.0 | 1750.8 | 1795.1 | 1825.3 |
| 40°   | 1590.2 | 1608.8 | 1674.0 | 1725.2 | 1760.1 |
| 42.5° | 1504.0 | 1525.0 | 1597.2 | 1657.7 | 1695.0 |
| 45°   | 1417.9 | 1441.2 | 1515.7 | 1587.9 | 1629.8 |
| 47.5° | 1331.8 | 1359.7 | 1438.9 | 1518.0 | 1562.2 |
| 50°   | 1243.3 | 1271.2 | 1355.0 | 1445.8 | 1490.1 |
| 52.5° | 1154.8 | 1187.4 | 1280.5 | 1373.7 | 1417.9 |
| 55°   | 1068.7 | 1101.3 | 1201.4 | 1299.2 | 1343.4 |
| 57.5° | 980.2  | 1012.8 | 1122.2 | 1224.7 | 1268.9 |
| 60°   | 889.4  | 926.6  | 1040.7 | 1145.5 | 1194.4 |
| 62.5° | 800.9  | 840.5  | 961.6  | 1073.3 | 1119.9 |
| 65°   | 712.4  | 754.3  | 880.1  | 996.5  | 1043.1 |
| 67.5° | 621.6  | 670.5  | 800.9  | 919.7  | 968.5  |
| 70°   | 533.2  | 586.7  | 724.1  | 842.8  | 889.4  |
| 72.5° | 447.0  | 505.2  | 647.3  | 768.3  | 796.3  |
| 75°   | 360.9  | 428.4  | 572.7  | 640.3  | 640.3  |
| 77.5° | 279.4  | 353.9  | 488.9  | 514.5  | 528.5  |
| 80°   | 202.6  | 284.0  | 367.9  | 398.1  | 393.5  |
| 82.5° | 135.0  | 216.5  | 263.1  | 263.1  | 256.1  |
| 85°   | 76.8   | 130.4  | 142.0  | 137.4  | 135.0  |
| 87.5° | 32.6   | 48.9   | 44.2   | 34.9   | 30.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)