

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: P261242

Luminaire Tested: **24CZ-LD5-45SE-S-UNV-L82765-W2A1-U-4000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P261242  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25694)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ-LD5-45SE-S-UNV-L82765-W2A1-U-4000K  
Description: CRUZE 2x4 TUNABLE WHITE LED TROFFER WITH SMOOTH LENS  
Light Source: (168) 80 CRI LEDS TUNED AT 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4614.0 lumens  
Efficiency: N/A  
Efficacy: 130.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

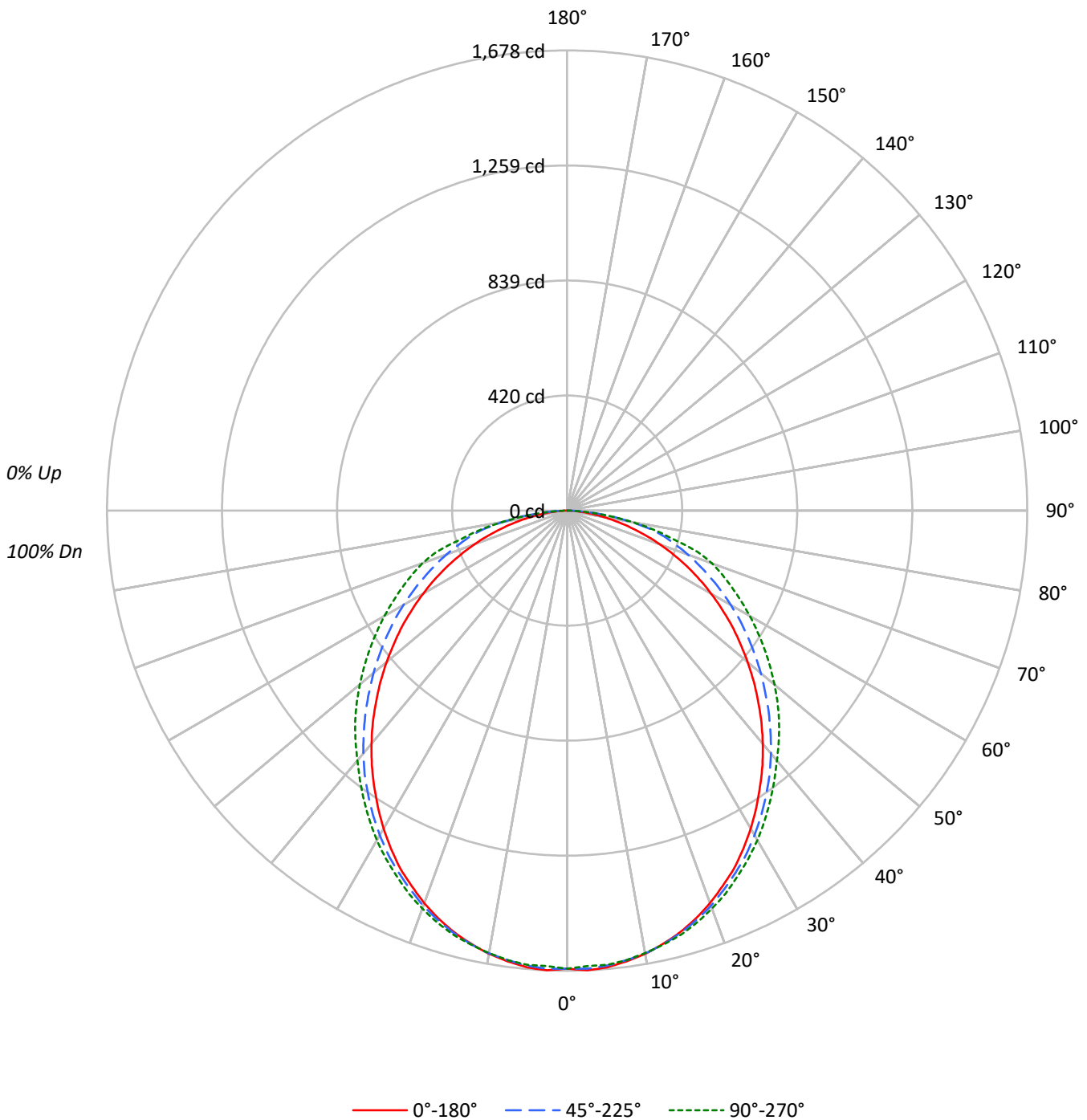
Input Watts (W): 35.34  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 104 | 99  | 95  | 106 | 101 | 97  | 94  | 97  | 94  | 91  | 93  | 90  | 88  | 89  | 87  | 85  | 83  |
| 2   | 99  | 90  | 83  | 77  | 96  | 88  | 82  | 76  | 85  | 79  | 75  | 81  | 77  | 73  | 78  | 75  | 71  | 69  |
| 3   | 90  | 79  | 71  | 64  | 87  | 77  | 70  | 64  | 74  | 68  | 62  | 72  | 66  | 61  | 69  | 64  | 60  | 58  |
| 4   | 82  | 70  | 61  | 54  | 80  | 69  | 60  | 54  | 66  | 59  | 53  | 64  | 58  | 52  | 62  | 56  | 52  | 50  |
| 5   | 76  | 63  | 53  | 47  | 73  | 61  | 53  | 47  | 59  | 52  | 46  | 57  | 51  | 45  | 55  | 50  | 45  | 43  |
| 6   | 70  | 56  | 47  | 41  | 68  | 55  | 47  | 41  | 54  | 46  | 40  | 52  | 45  | 40  | 50  | 44  | 40  | 38  |
| 7   | 65  | 51  | 42  | 36  | 63  | 50  | 42  | 36  | 49  | 41  | 36  | 47  | 41  | 35  | 46  | 40  | 35  | 33  |
| 8   | 60  | 47  | 38  | 32  | 59  | 46  | 38  | 32  | 45  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 30  |
| 9   | 56  | 43  | 35  | 29  | 55  | 42  | 34  | 29  | 41  | 34  | 29  | 40  | 33  | 29  | 39  | 33  | 29  | 27  |
| 10  | 53  | 40  | 32  | 26  | 52  | 39  | 31  | 26  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 30  | 26  | 24  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2248 | 2248 | 2248 |
| 5°  | 2258 | 2250 | 2246 |
| 10° | 2242 | 2240 | 2238 |
| 15° | 2218 | 2222 | 2231 |
| 20° | 2181 | 2196 | 2211 |
| 25° | 2138 | 2161 | 2184 |
| 30° | 2080 | 2123 | 2156 |
| 35° | 2015 | 2078 | 2121 |
| 40° | 1950 | 2030 | 2090 |
| 45° | 1875 | 1978 | 2080 |
| 50° | 1800 | 1928 | 2066 |
| 55° | 1721 | 1887 | 2060 |
| 60° | 1632 | 1855 | 2070 |
| 65° | 1535 | 1833 | 2111 |
| 70° | 1413 | 1842 | 2210 |
| 75° | 1253 | 1907 | 2059 |
| 80° | 1047 | 1808 | 1856 |
| 85° | 783  | 1447 | 1328 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 157.9  | 3.4       |
| 10°-20°   | 449.1  | 9.7       |
| 20°-30°   | 669.3  | 14.5      |
| 30°-40°   | 787.9  | 17.1      |
| 40°-50°   | 800.7  | 17.4      |
| 50°-60°   | 719.9  | 15.6      |
| 60°-70°   | 568.7  | 12.3      |
| 70°-80°   | 360.8  | 7.8       |
| 80°-90°   | 99.6   | 2.2       |
| 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°    | 1276.4 | 27.7      |
| 0°-40°    | 2064.3 | 44.7      |
| 0°-60°    | 3584.9 | 77.7      |
| 0°-90°    | 4614.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4614.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1670 | 1670  | 1670 | 1670  | 1670 |      |
| 5°  | 1672 | 1658  | 1666 | 1663  | 1663 | 159  |
| 15° | 1592 | 1584  | 1595 | 1600  | 1601 | 448  |
| 25° | 1440 | 1438  | 1455 | 1465  | 1471 | 662  |
| 35° | 1227 | 1234  | 1265 | 1279  | 1291 | 767  |
| 45° | 986  | 999   | 1039 | 1070  | 1093 | 761  |
| 55° | 734  | 752   | 804  | 857   | 878  | 655  |
| 65° | 482  | 507   | 576  | 639   | 663  | 478  |
| 75° | 241  | 282   | 367  | 399   | 396  | 257  |
| 85° | 51   | 88    | 94   | 86    | 86   | 62   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1670.4 | 1670.4 | 1670.4 | 1670.4 | 1670.4 |
| 2.5°  | 1678.0 | 1665.7 | 1671.9 | 1668.8 | 1662.7 |
| 5°    | 1671.9 | 1658.1 | 1665.7 | 1662.7 | 1662.7 |
| 7.5°  | 1658.1 | 1647.3 | 1653.5 | 1651.9 | 1653.5 |
| 10°   | 1641.2 | 1630.4 | 1639.6 | 1639.6 | 1638.1 |
| 12.5° | 1618.2 | 1608.9 | 1619.7 | 1619.7 | 1621.2 |
| 15°   | 1592.1 | 1584.4 | 1595.1 | 1599.7 | 1601.3 |
| 17.5° | 1559.8 | 1552.1 | 1566.0 | 1570.6 | 1575.2 |
| 20°   | 1523.0 | 1519.9 | 1533.7 | 1538.3 | 1544.5 |
| 22.5° | 1481.5 | 1481.5 | 1495.3 | 1501.5 | 1510.7 |
| 25°   | 1440.1 | 1438.5 | 1455.4 | 1464.6 | 1470.8 |
| 27.5° | 1390.9 | 1392.5 | 1414.0 | 1423.2 | 1430.9 |
| 30°   | 1338.7 | 1341.8 | 1366.4 | 1377.1 | 1387.9 |
| 32.5° | 1283.5 | 1289.6 | 1317.2 | 1329.5 | 1340.3 |
| 35°   | 1226.7 | 1234.3 | 1265.0 | 1278.9 | 1291.1 |
| 37.5° | 1169.9 | 1180.6 | 1212.8 | 1226.7 | 1240.5 |
| 40°   | 1110.0 | 1119.2 | 1156.0 | 1172.9 | 1189.8 |
| 42.5° | 1048.6 | 1060.9 | 1097.7 | 1122.3 | 1142.2 |
| 45°   | 985.6  | 999.4  | 1039.4 | 1070.1 | 1093.1 |
| 47.5° | 922.7  | 941.1  | 979.5  | 1020.9 | 1040.9 |
| 50°   | 859.7  | 878.2  | 921.2  | 967.2  | 987.2  |
| 52.5° | 795.3  | 813.7  | 862.8  | 910.4  | 931.9  |
| 55°   | 733.8  | 752.3  | 804.5  | 856.7  | 878.2  |
| 57.5° | 669.4  | 689.3  | 747.7  | 801.4  | 822.9  |
| 60°   | 606.4  | 626.4  | 689.3  | 746.1  | 769.2  |
| 62.5° | 545.0  | 566.5  | 632.5  | 692.4  | 715.4  |
| 65°   | 482.1  | 506.6  | 575.7  | 638.7  | 663.2  |
| 67.5° | 420.7  | 448.3  | 520.5  | 586.5  | 612.6  |
| 70°   | 359.2  | 391.5  | 468.3  | 535.8  | 561.9  |
| 72.5° | 299.4  | 334.7  | 416.1  | 483.6  | 497.4  |
| 75°   | 241.0  | 282.5  | 366.9  | 399.2  | 396.1  |
| 77.5° | 185.8  | 231.8  | 311.7  | 317.8  | 327.0  |
| 80°   | 135.1  | 185.8  | 233.4  | 245.6  | 239.5  |
| 82.5° | 89.0   | 139.7  | 167.3  | 161.2  | 159.7  |
| 85°   | 50.7   | 87.5   | 93.7   | 86.0   | 86.0   |
| 87.5° | 21.5   | 35.3   | 30.7   | 23.0   | 21.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)