

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: P261377

Luminaire Tested: **24CZ-LD5-45SE-S-UNV-L92765-W2A1-U-4000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P261377  
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-L92765-W2A1-U-4000K  
Description: CRUZE 2x4 TUNABLE WHITE LED TROFFER  
WITH SMOOTH LENS  
Light Source: (168) 90 CRI LEDS TUNED AT 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4083.0 lumens  
Efficiency: N/A  
Efficacy: 115.5 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

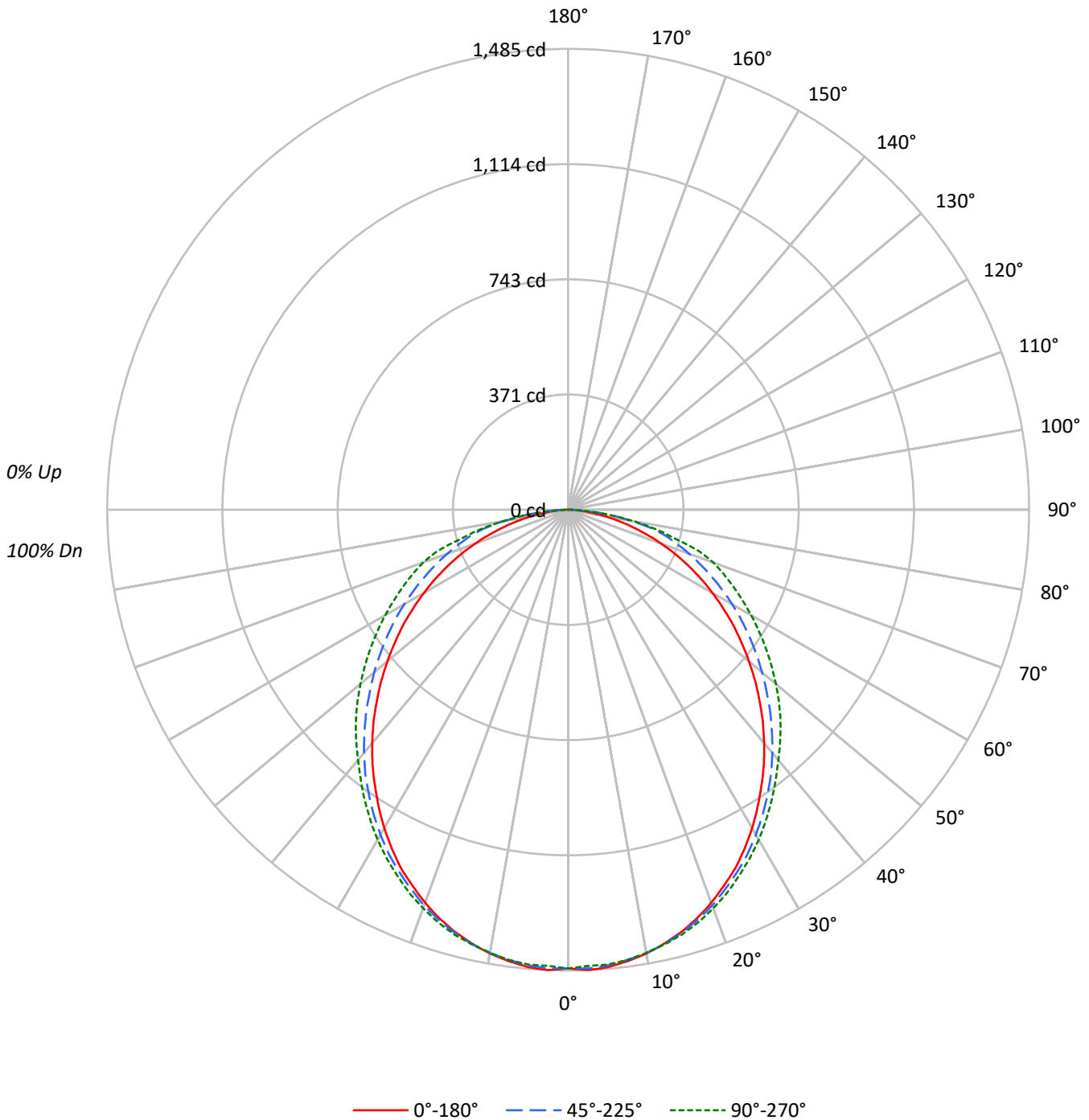
Input Watts (W): 35.34  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 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 |    |    |    |    | 100 |   |  |   |
| 1   | 108 | 104 | 99  | 95  | 106 | 101 | 97  | 94  | 97  | 94  | 91  | 93  | 90  | 88  | 89  | 87  | 85  | 83  |    |    |    |    | 83  |   |  |   |
| 2   | 99  | 90  | 83  | 77  | 96  | 88  | 82  | 76  | 85  | 79  | 75  | 81  | 77  | 73  | 78  | 75  | 71  | 69  |    |    |    |    | 69  |   |  |   |
| 3   | 90  | 79  | 71  | 64  | 87  | 77  | 70  | 64  | 74  | 68  | 62  | 72  | 66  | 61  | 69  | 64  | 60  | 58  |    |    |    |    | 58  |   |  |   |
| 4   | 82  | 70  | 61  | 54  | 80  | 69  | 60  | 54  | 66  | 59  | 53  | 64  | 58  | 52  | 62  | 56  | 52  | 50  |    |    |    |    | 50  |   |  |   |
| 5   | 76  | 63  | 53  | 47  | 73  | 61  | 53  | 47  | 59  | 52  | 46  | 57  | 51  | 45  | 55  | 50  | 45  | 43  |    |    |    |    | 43  |   |  |   |
| 6   | 70  | 56  | 47  | 41  | 68  | 55  | 47  | 41  | 54  | 46  | 40  | 52  | 45  | 40  | 50  | 44  | 40  | 38  |    |    |    |    | 38  |   |  |   |
| 7   | 65  | 51  | 42  | 36  | 63  | 50  | 42  | 36  | 49  | 41  | 36  | 47  | 41  | 35  | 46  | 40  | 35  | 33  |    |    |    |    | 33  |   |  |   |
| 8   | 60  | 47  | 38  | 32  | 59  | 46  | 38  | 32  | 45  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 30  |    |    |    |    | 30  |   |  |   |
| 9   | 56  | 43  | 35  | 29  | 55  | 42  | 34  | 29  | 41  | 34  | 29  | 40  | 33  | 29  | 39  | 33  | 29  | 27  |    |    |    |    | 27  |   |  |   |
| 10  | 53  | 40  | 32  | 26  | 52  | 39  | 31  | 26  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 30  | 26  | 24  |    |    |    |    | 24  |   |  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1989 | 1989 | 1989 |
| 5°  | 1998 | 1991 | 1987 |
| 10° | 1984 | 1982 | 1981 |
| 15° | 1962 | 1966 | 1974 |
| 20° | 1930 | 1943 | 1957 |
| 25° | 1892 | 1912 | 1932 |
| 30° | 1841 | 1879 | 1908 |
| 35° | 1783 | 1839 | 1877 |
| 40° | 1725 | 1797 | 1849 |
| 45° | 1660 | 1750 | 1841 |
| 50° | 1593 | 1706 | 1829 |
| 55° | 1523 | 1670 | 1823 |
| 60° | 1444 | 1641 | 1831 |
| 65° | 1358 | 1622 | 1869 |
| 70° | 1251 | 1630 | 1956 |
| 75° | 1109 | 1688 | 1822 |
| 80° | 927  | 1600 | 1642 |
| 85° | 692  | 1280 | 1175 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 139.7  | 3.4       |
| 10°-20°   | 397.4  | 9.7       |
| 20°-30°   | 592.3  | 14.5      |
| 30°-40°   | 697.2  | 17.1      |
| 40°-50°   | 708.5  | 17.4      |
| 50°-60°   | 637.0  | 15.6      |
| 60°-70°   | 503.3  | 12.3      |
| 70°-80°   | 319.3  | 7.8       |
| 80°-90°   | 88.1   | 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°    | 1129.5 | 27.7      |
| 0°-40°    | 1826.7 | 44.7      |
| 0°-60°    | 3172.3 | 77.7      |
| 0°-90°    | 4083.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4083.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1478 | 1478  | 1478 | 1478  | 1478 |      |
| 5°  | 1480 | 1467  | 1474 | 1471  | 1471 | 140  |
| 15° | 1409 | 1402  | 1412 | 1416  | 1417 | 397  |
| 25° | 1274 | 1273  | 1288 | 1296  | 1302 | 586  |
| 35° | 1086 | 1092  | 1120 | 1132  | 1143 | 679  |
| 45° | 872  | 884   | 920  | 947   | 967  | 673  |
| 55° | 649  | 666   | 712  | 758   | 777  | 580  |
| 65° | 427  | 448   | 510  | 565   | 587  | 423  |
| 75° | 213  | 250   | 325  | 353   | 350  | 227  |
| 85° | 45   | 77    | 83   | 76    | 76   | 55   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1478.1 | 1478.1 | 1478.1 | 1478.1 | 1478.1 |
| 2.5°  | 1484.9 | 1474.0 | 1479.5 | 1476.8 | 1471.3 |
| 5°    | 1479.5 | 1467.3 | 1474.0 | 1471.3 | 1471.3 |
| 7.5°  | 1467.3 | 1457.7 | 1463.2 | 1461.8 | 1463.2 |
| 10°   | 1452.3 | 1442.8 | 1450.9 | 1450.9 | 1449.6 |
| 12.5° | 1431.9 | 1423.8 | 1433.3 | 1433.3 | 1434.6 |
| 15°   | 1408.8 | 1402.0 | 1411.6 | 1415.6 | 1417.0 |
| 17.5° | 1380.3 | 1373.5 | 1385.7 | 1389.8 | 1393.9 |
| 20°   | 1347.7 | 1345.0 | 1357.2 | 1361.3 | 1366.7 |
| 22.5° | 1311.0 | 1311.0 | 1323.2 | 1328.7 | 1336.8 |
| 25°   | 1274.3 | 1273.0 | 1287.9 | 1296.1 | 1301.5 |
| 27.5° | 1230.9 | 1232.2 | 1251.2 | 1259.4 | 1266.2 |
| 30°   | 1184.7 | 1187.4 | 1209.1 | 1218.6 | 1228.1 |
| 32.5° | 1135.8 | 1141.2 | 1165.7 | 1176.5 | 1186.0 |
| 35°   | 1085.5 | 1092.3 | 1119.5 | 1131.7 | 1142.6 |
| 37.5° | 1035.2 | 1044.7 | 1073.3 | 1085.5 | 1097.7 |
| 40°   | 982.2  | 990.4  | 1023.0 | 1037.9 | 1052.9 |
| 42.5° | 927.9  | 938.8  | 971.4  | 993.1  | 1010.8 |
| 45°   | 872.2  | 884.4  | 919.8  | 946.9  | 967.3  |
| 47.5° | 816.5  | 832.8  | 866.8  | 903.4  | 921.1  |
| 50°   | 760.8  | 777.1  | 815.1  | 855.9  | 873.6  |
| 52.5° | 703.7  | 720.0  | 763.5  | 805.6  | 824.7  |
| 55°   | 649.4  | 665.7  | 711.9  | 758.1  | 777.1  |
| 57.5° | 592.3  | 610.0  | 661.6  | 709.2  | 728.2  |
| 60°   | 536.6  | 554.3  | 610.0  | 660.3  | 680.6  |
| 62.5° | 482.3  | 501.3  | 559.7  | 612.7  | 633.1  |
| 65°   | 426.6  | 448.3  | 509.5  | 565.2  | 586.9  |
| 67.5° | 372.2  | 396.7  | 460.6  | 519.0  | 542.1  |
| 70°   | 317.9  | 346.4  | 414.4  | 474.1  | 497.2  |
| 72.5° | 264.9  | 296.2  | 368.2  | 427.9  | 440.2  |
| 75°   | 213.3  | 250.0  | 324.7  | 353.2  | 350.5  |
| 77.5° | 164.4  | 205.1  | 275.8  | 281.2  | 289.4  |
| 80°   | 119.6  | 164.4  | 206.5  | 217.4  | 211.9  |
| 82.5° | 78.8   | 123.6  | 148.1  | 142.6  | 141.3  |
| 85°   | 44.8   | 77.4   | 82.9   | 76.1   | 76.1   |
| 87.5° | 19.0   | 31.2   | 27.2   | 20.4   | 19.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)