

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: P230013

Luminaire Tested: **24CZ-LD5-50SE-UNV-L935-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P230013
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-LD5-50SE-UNV-L935-CD1-U
Description: CRUZE 2x4 LED TROFFER
WITH RIBBED LENS
Light Source: (84) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4379.0 lumens
Efficiency: N/A
Efficacy: 94.1 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

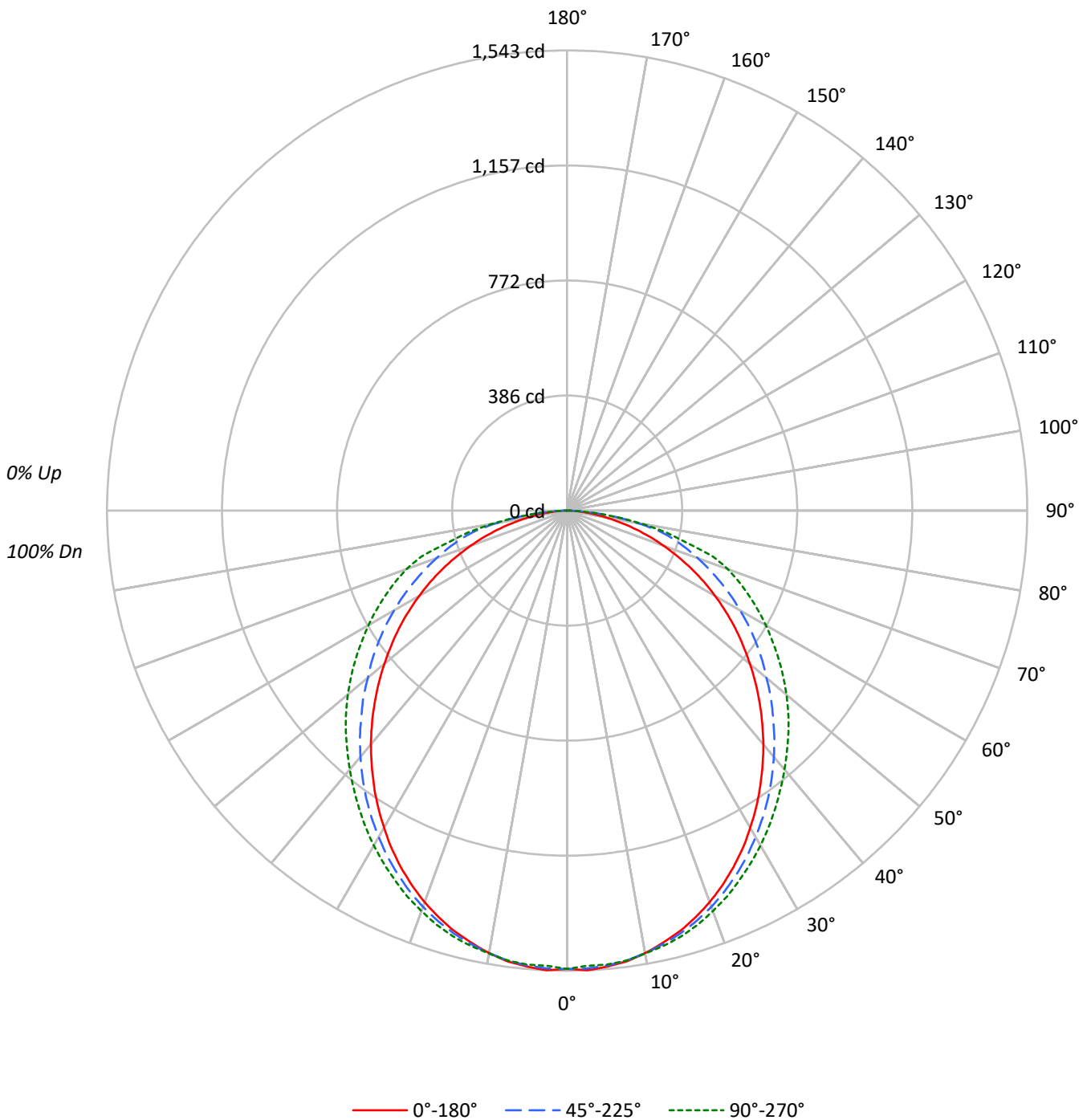
Input Watts (W): 46.56
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 2068 | 2068 | 2068 |
| 5° | 2074 | 2068 | 2063 |
| 10° | 2059 | 2059 | 2061 |
| 15° | 2034 | 2045 | 2059 |
| 20° | 2001 | 2024 | 2046 |
| 25° | 1959 | 1997 | 2030 |
| 30° | 1908 | 1964 | 2015 |
| 35° | 1854 | 1931 | 2000 |
| 40° | 1799 | 1893 | 1991 |
| 45° | 1737 | 1857 | 1997 |
| 50° | 1676 | 1827 | 2009 |
| 55° | 1614 | 1815 | 2029 |
| 60° | 1541 | 1803 | 2070 |
| 65° | 1461 | 1804 | 2138 |
| 70° | 1351 | 1834 | 2253 |
| 75° | 1208 | 1917 | 2143 |
| 80° | 1010 | 1836 | 1963 |
| 85° | 764 | 1413 | 1343 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 145.2 | 3.3 |
| 10°-20° | 413.3 | 9.4 |
| 20°-30° | 617.9 | 14.1 |
| 30°-40° | 733.0 | 16.7 |
| 40°-50° | 754.5 | 17.2 |
| 50°-60° | 692.1 | 15.8 |
| 60°-70° | 559.6 | 12.8 |
| 70°-80° | 363.2 | 8.3 |
| 80°-90° | 100.2 | 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° | 1176.4 | 26.9 |
| 0°-40° | 1909.5 | 43.6 |
| 0°-60° | 3356.1 | 76.6 |
| 0°-90° | 4379.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4379.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1537 | 1537 | 1537 | 1537 | 1537 | |
| 5° | 1535 | 1525 | 1531 | 1529 | 1528 | 146 |
| 15° | 1460 | 1454 | 1468 | 1474 | 1478 | 411 |
| 25° | 1319 | 1321 | 1345 | 1357 | 1367 | 607 |
| 35° | 1129 | 1138 | 1176 | 1201 | 1217 | 706 |
| 45° | 913 | 928 | 976 | 1022 | 1050 | 705 |
| 55° | 688 | 709 | 774 | 837 | 865 | 615 |
| 65° | 459 | 486 | 567 | 642 | 672 | 453 |
| 75° | 232 | 276 | 369 | 412 | 412 | 247 |
| 85° | 50 | 84 | 92 | 88 | 87 | 61 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P230013

CATALOG NUMBER: 24CZ-LD5-50SE-UNV-L935-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1536.8 | 1536.8 | 1536.8 | 1536.8 | 1536.8 |
| 2.5° | 1542.8 | 1530.8 | 1536.8 | 1535.3 | 1527.8 |
| 5° | 1535.3 | 1524.8 | 1530.8 | 1529.3 | 1527.8 |
| 7.5° | 1524.8 | 1514.3 | 1521.8 | 1520.3 | 1521.8 |
| 10° | 1506.8 | 1497.8 | 1506.8 | 1508.3 | 1508.3 |
| 12.5° | 1484.3 | 1476.8 | 1488.8 | 1491.8 | 1494.8 |
| 15° | 1460.3 | 1454.3 | 1467.8 | 1473.8 | 1478.3 |
| 17.5° | 1430.3 | 1425.9 | 1442.3 | 1449.8 | 1455.8 |
| 20° | 1397.4 | 1395.9 | 1413.9 | 1421.4 | 1428.9 |
| 22.5° | 1359.9 | 1359.9 | 1380.9 | 1389.9 | 1400.4 |
| 25° | 1319.4 | 1320.9 | 1344.9 | 1356.9 | 1367.4 |
| 27.5° | 1275.9 | 1277.4 | 1305.9 | 1320.9 | 1332.9 |
| 30° | 1227.9 | 1233.9 | 1263.9 | 1283.4 | 1296.9 |
| 32.5° | 1180.0 | 1187.5 | 1220.4 | 1242.9 | 1257.9 |
| 35° | 1129.0 | 1138.0 | 1175.5 | 1201.0 | 1217.4 |
| 37.5° | 1076.5 | 1087.0 | 1127.5 | 1156.0 | 1175.5 |
| 40° | 1024.0 | 1036.0 | 1078.0 | 1111.0 | 1133.5 |
| 42.5° | 968.6 | 982.1 | 1028.5 | 1067.5 | 1091.5 |
| 45° | 913.1 | 928.1 | 976.1 | 1022.5 | 1049.5 |
| 47.5° | 857.6 | 875.6 | 926.6 | 977.6 | 1006.0 |
| 50° | 800.6 | 818.6 | 872.6 | 931.1 | 959.6 |
| 52.5° | 743.7 | 764.7 | 824.6 | 884.6 | 913.1 |
| 55° | 688.2 | 709.2 | 773.6 | 836.6 | 865.1 |
| 57.5° | 631.2 | 652.2 | 722.7 | 788.6 | 817.1 |
| 60° | 572.7 | 596.7 | 670.2 | 737.7 | 769.2 |
| 62.5° | 515.8 | 541.3 | 619.2 | 691.2 | 721.2 |
| 65° | 458.8 | 485.8 | 566.7 | 641.7 | 671.7 |
| 67.5° | 400.3 | 431.8 | 515.8 | 592.2 | 623.7 |
| 70° | 343.3 | 377.8 | 466.3 | 542.8 | 572.7 |
| 72.5° | 287.9 | 325.4 | 416.8 | 494.8 | 512.8 |
| 75° | 232.4 | 275.9 | 368.8 | 412.3 | 412.3 |
| 77.5° | 179.9 | 227.9 | 314.9 | 331.3 | 340.3 |
| 80° | 130.4 | 182.9 | 236.9 | 256.4 | 253.4 |
| 82.5° | 87.0 | 139.4 | 169.4 | 169.4 | 164.9 |
| 85° | 49.5 | 84.0 | 91.5 | 88.5 | 87.0 |
| 87.5° | 21.0 | 31.5 | 28.5 | 22.5 | 19.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)