

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: P230093

Luminaire Tested: **24CZ-LD5-60SE-S-UNV-L935-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P230093
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-LD5-60SE-S-UNV-L935-CD1-U
Description: CRUZE 2x4 LED TROFFER
WITH SMOOTH LENS
Light Source: (84) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5235.0 lumens
Efficiency: N/A
Efficacy: 87.3 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

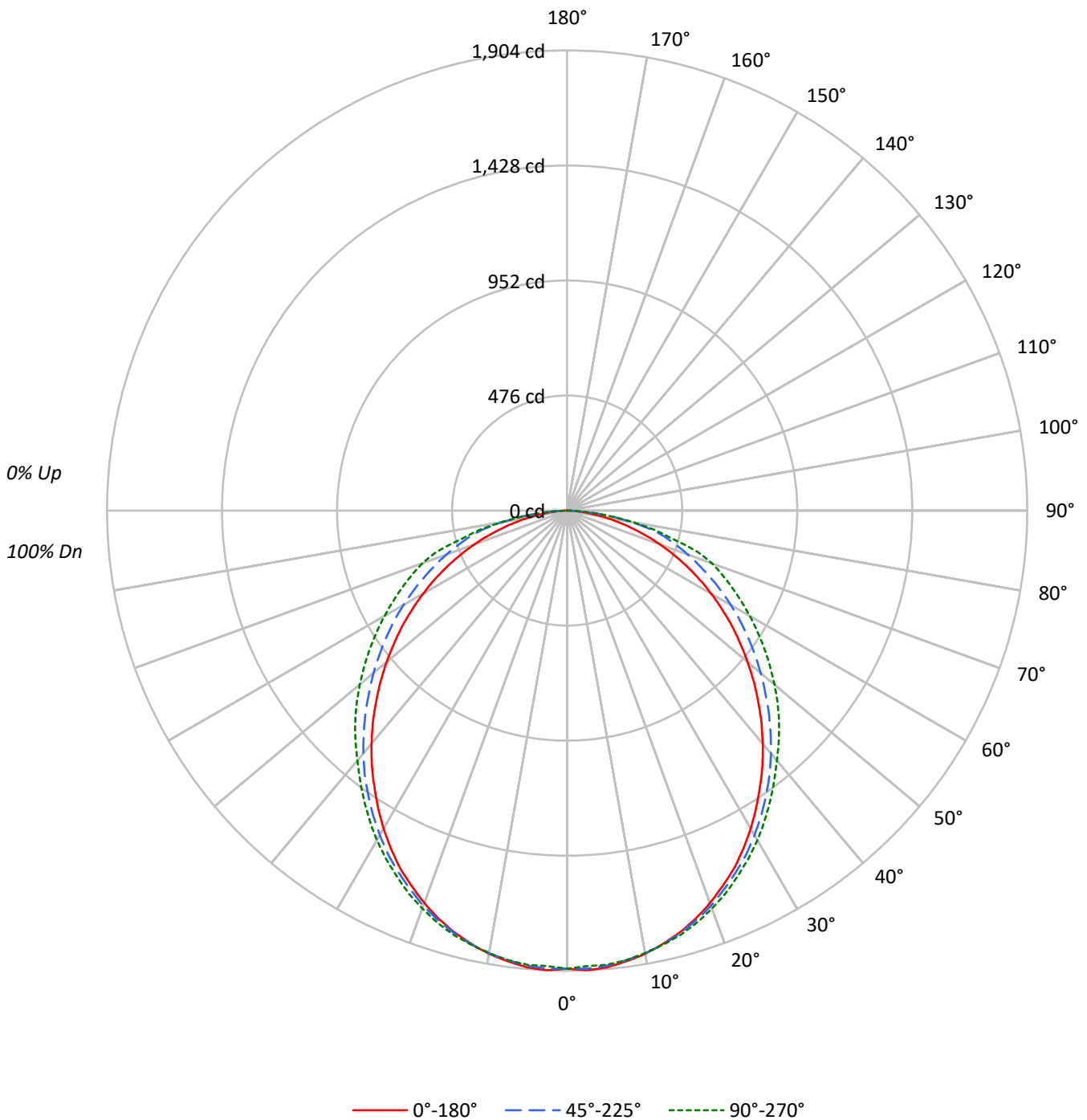
Input Watts (W): 60
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P230093

CATALOG NUMBER: 24CZ-LD5-60SE-S-UNV-L935-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P230093

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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° | 2550 | 2550 | 2550 |
| 5° | 2562 | 2553 | 2548 |
| 10° | 2544 | 2542 | 2539 |
| 15° | 2516 | 2521 | 2531 |
| 20° | 2474 | 2492 | 2509 |
| 25° | 2426 | 2451 | 2477 |
| 30° | 2360 | 2409 | 2447 |
| 35° | 2286 | 2358 | 2406 |
| 40° | 2212 | 2304 | 2371 |
| 45° | 2128 | 2244 | 2360 |
| 50° | 2042 | 2188 | 2344 |
| 55° | 1953 | 2141 | 2337 |
| 60° | 1851 | 2105 | 2348 |
| 65° | 1741 | 2080 | 2396 |
| 70° | 1603 | 2090 | 2508 |
| 75° | 1422 | 2164 | 2336 |
| 80° | 1188 | 2052 | 2105 |
| 85° | 888 | 1641 | 1505 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 179.2 | 3.4 |
| 10°-20° | 509.6 | 9.7 |
| 20°-30° | 759.4 | 14.5 |
| 30°-40° | 894.0 | 17.1 |
| 40°-50° | 908.5 | 17.4 |
| 50°-60° | 816.8 | 15.6 |
| 60°-70° | 645.3 | 12.3 |
| 70°-80° | 409.4 | 7.8 |
| 80°-90° | 113.0 | 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° | 1448.2 | 27.7 |
| 0°-40° | 2342.2 | 44.7 |
| 0°-60° | 4067.4 | 77.7 |
| 0°-90° | 5235.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5235.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1895 | 1895 | 1895 | 1895 | 1895 | |
| 5° | 1897 | 1881 | 1890 | 1886 | 1886 | 180 |
| 15° | 1806 | 1798 | 1810 | 1815 | 1817 | 509 |
| 25° | 1634 | 1632 | 1651 | 1662 | 1669 | 751 |
| 35° | 1392 | 1400 | 1435 | 1451 | 1465 | 871 |
| 45° | 1118 | 1134 | 1179 | 1214 | 1240 | 863 |
| 55° | 833 | 854 | 913 | 972 | 996 | 744 |
| 65° | 547 | 575 | 653 | 725 | 752 | 542 |
| 75° | 274 | 320 | 416 | 453 | 449 | 291 |
| 85° | 58 | 99 | 106 | 98 | 98 | 71 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P230093

CATALOG NUMBER: 24CZ-LD5-60SE-S-UNV-L935-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1895.2 | 1895.2 | 1895.2 | 1895.2 | 1895.2 |
| 2.5° | 1903.9 | 1889.9 | 1896.9 | 1893.4 | 1886.5 |
| 5° | 1896.9 | 1881.2 | 1889.9 | 1886.5 | 1886.5 |
| 7.5° | 1881.2 | 1869.0 | 1876.0 | 1874.3 | 1876.0 |
| 10° | 1862.1 | 1849.9 | 1860.3 | 1860.3 | 1858.6 |
| 12.5° | 1835.9 | 1825.5 | 1837.7 | 1837.7 | 1839.4 |
| 15° | 1806.3 | 1797.6 | 1809.8 | 1815.0 | 1816.8 |
| 17.5° | 1769.8 | 1761.0 | 1776.7 | 1781.9 | 1787.2 |
| 20° | 1727.9 | 1724.5 | 1740.1 | 1745.4 | 1752.3 |
| 22.5° | 1680.9 | 1680.9 | 1696.6 | 1703.6 | 1714.0 |
| 25° | 1633.9 | 1632.1 | 1651.3 | 1661.8 | 1668.7 |
| 27.5° | 1578.1 | 1579.9 | 1604.3 | 1614.7 | 1623.4 |
| 30° | 1518.9 | 1522.4 | 1550.3 | 1562.5 | 1574.7 |
| 32.5° | 1456.2 | 1463.2 | 1494.5 | 1508.5 | 1520.7 |
| 35° | 1391.8 | 1400.5 | 1435.3 | 1451.0 | 1464.9 |
| 37.5° | 1327.3 | 1339.5 | 1376.1 | 1391.8 | 1407.4 |
| 40° | 1259.4 | 1269.8 | 1311.6 | 1330.8 | 1350.0 |
| 42.5° | 1189.7 | 1203.6 | 1245.4 | 1273.3 | 1296.0 |
| 45° | 1118.3 | 1134.0 | 1179.3 | 1214.1 | 1240.2 |
| 47.5° | 1046.9 | 1067.8 | 1111.3 | 1158.4 | 1181.0 |
| 50° | 975.5 | 996.4 | 1045.1 | 1097.4 | 1120.0 |
| 52.5° | 902.3 | 923.2 | 978.9 | 1032.9 | 1057.3 |
| 55° | 832.6 | 853.5 | 912.7 | 972.0 | 996.4 |
| 57.5° | 759.5 | 782.1 | 848.3 | 909.3 | 933.6 |
| 60° | 688.0 | 710.7 | 782.1 | 846.6 | 872.7 |
| 62.5° | 618.4 | 642.8 | 717.7 | 785.6 | 811.7 |
| 65° | 547.0 | 574.8 | 653.2 | 724.6 | 752.5 |
| 67.5° | 477.3 | 508.6 | 590.5 | 665.4 | 695.0 |
| 70° | 407.6 | 444.2 | 531.3 | 607.9 | 637.5 |
| 72.5° | 339.7 | 379.7 | 472.0 | 548.7 | 564.4 |
| 75° | 273.5 | 320.5 | 416.3 | 452.9 | 449.4 |
| 77.5° | 210.8 | 263.0 | 353.6 | 360.6 | 371.0 |
| 80° | 153.3 | 210.8 | 264.8 | 278.7 | 271.7 |
| 82.5° | 101.0 | 158.5 | 189.9 | 182.9 | 181.2 |
| 85° | 57.5 | 99.3 | 106.3 | 97.5 | 97.5 |
| 87.5° | 24.4 | 40.1 | 34.8 | 26.1 | 24.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)