

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: P#

Luminaire Tested: **24CZ-LD5-45SE-S-UNV-L830-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P#
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-L830-CD1-U
Description: CRUZE 2x4 LED TROFFER

Light Source: -
Ballast/Driver: -

Summary

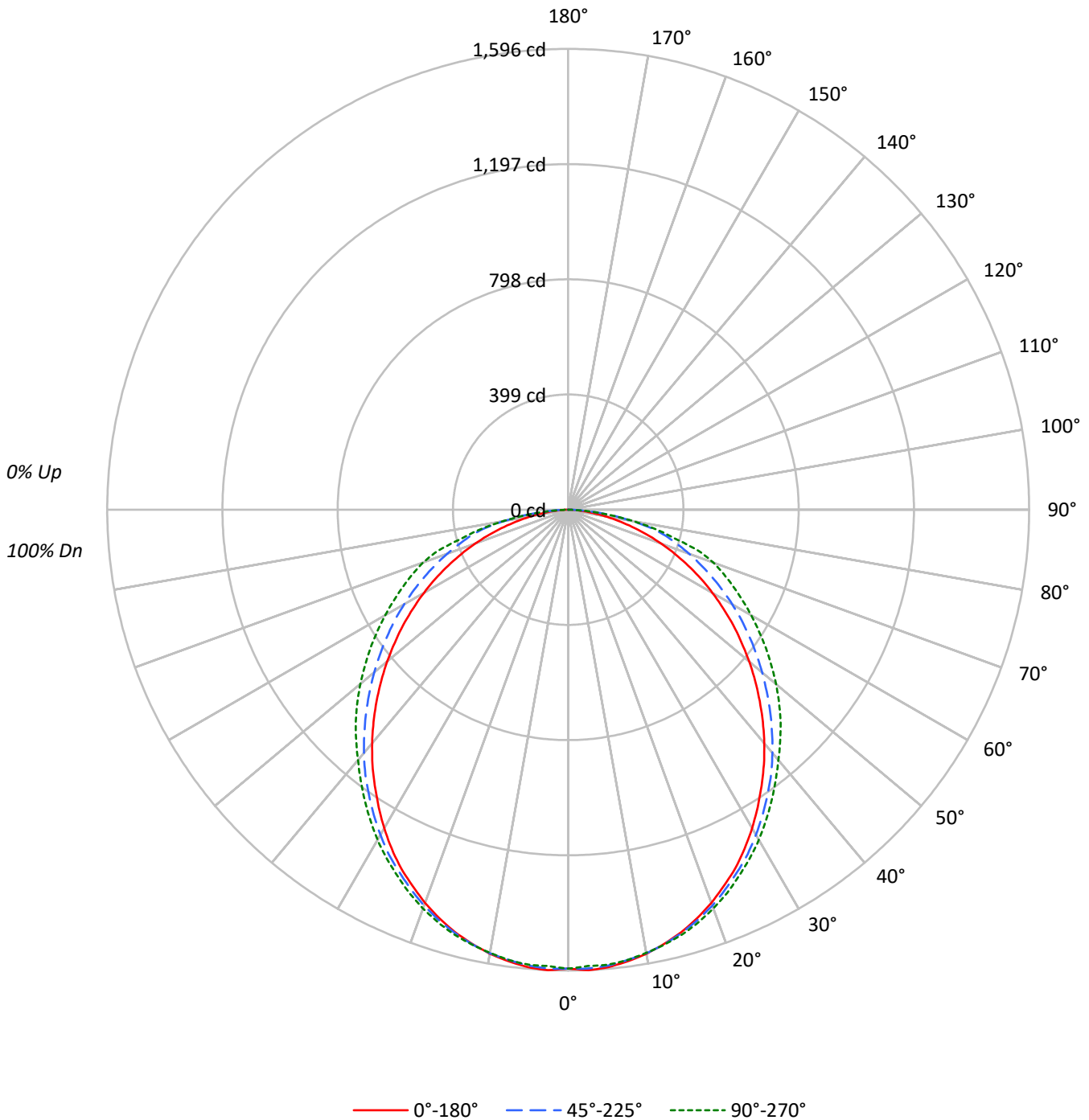
Lumens per Lamp: N/A
Luminaire Lumens: 4389.9 lumens
Efficiency: N/A
Efficacy: 110.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 4' x H: 0.1')
CIE Type: Direct

Input Watts (W): 39.91
Input Voltage (V): NR
Input Current (A_{in}): 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: P#
CATALOG NUMBER: 24CZ-LD5-45SE-S-UNV-L830-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P#

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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° | 2138 | 2138 | 2138 |
| 5° | 2144 | 2131 | 2127 |
| 10° | 2124 | 2112 | 2111 |
| 15° | 2096 | 2084 | 2094 |
| 20° | 2056 | 2050 | 2066 |
| 25° | 2011 | 2006 | 2030 |
| 30° | 1951 | 1960 | 1994 |
| 35° | 1884 | 1906 | 1949 |
| 40° | 1817 | 1850 | 1908 |
| 45° | 1741 | 1787 | 1885 |
| 50° | 1663 | 1725 | 1855 |
| 55° | 1581 | 1669 | 1829 |
| 60° | 1488 | 1617 | 1812 |
| 65° | 1386 | 1566 | 1814 |
| 70° | 1258 | 1530 | 1849 |
| 75° | 1090 | 1515 | 1651 |
| 80° | 872 | 1322 | 1376 |
| 85° | 579 | 856 | 804 |



TEST NUMBER: P#

CATALOG NUMBER: 24CZ-LD5-45SE-S-UNV-L830-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 150.3 | 3.4 |
| 10°-20° | 427.3 | 9.7 |
| 20°-30° | 636.8 | 14.5 |
| 30°-40° | 749.6 | 17.1 |
| 40°-50° | 761.8 | 17.4 |
| 50°-60° | 684.9 | 15.6 |
| 60°-70° | 541.1 | 12.3 |
| 70°-80° | 343.3 | 7.8 |
| 80°-90° | 94.7 | 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° | 1214.4 | 27.7 |
| 0°-40° | 1964.1 | 44.7 |
| 0°-60° | 3410.8 | 77.7 |
| 0°-90° | 4389.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4389.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1589 | 1589 | 1589 | 1589 | 1589 | |
| 5° | 1591 | 1578 | 1585 | 1582 | 1582 | 151 |
| 15° | 1515 | 1508 | 1518 | 1522 | 1524 | 427 |
| 25° | 1370 | 1369 | 1385 | 1394 | 1399 | 630 |
| 35° | 1167 | 1174 | 1204 | 1217 | 1228 | 730 |
| 45° | 938 | 951 | 989 | 1018 | 1040 | 724 |
| 55° | 698 | 716 | 765 | 815 | 836 | 624 |
| 65° | 459 | 482 | 548 | 608 | 631 | 454 |
| 75° | 229 | 269 | 349 | 380 | 377 | 244 |
| 85° | 48 | 83 | 89 | 82 | 82 | 59 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P#

CATALOG NUMBER: 24CZ-LD5-45SE-S-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1589.3 | 1589.3 | 1589.3 | 1589.3 | 1589.3 |
| 2.5° | 1596.5 | 1584.8 | 1590.7 | 1587.7 | 1581.9 |
| 5° | 1590.7 | 1577.6 | 1584.8 | 1581.9 | 1581.9 |
| 7.5° | 1577.6 | 1567.3 | 1573.1 | 1571.7 | 1573.1 |
| 10° | 1561.4 | 1551.3 | 1560.0 | 1560.0 | 1558.6 |
| 12.5° | 1539.6 | 1530.8 | 1541.0 | 1541.0 | 1542.5 |
| 15° | 1514.7 | 1507.5 | 1517.6 | 1522.0 | 1523.5 |
| 17.5° | 1484.1 | 1476.8 | 1489.9 | 1494.3 | 1498.6 |
| 20° | 1449.0 | 1446.1 | 1459.2 | 1463.6 | 1469.5 |
| 22.5° | 1409.5 | 1409.5 | 1422.7 | 1428.5 | 1437.4 |
| 25° | 1370.1 | 1368.7 | 1384.7 | 1393.5 | 1399.4 |
| 27.5° | 1323.4 | 1324.9 | 1345.3 | 1354.0 | 1361.4 |
| 30° | 1273.7 | 1276.6 | 1300.0 | 1310.2 | 1320.4 |
| 32.5° | 1221.1 | 1226.9 | 1253.2 | 1264.9 | 1275.2 |
| 35° | 1167.1 | 1174.4 | 1203.6 | 1216.8 | 1228.4 |
| 37.5° | 1113.0 | 1123.3 | 1154.0 | 1167.1 | 1180.2 |
| 40° | 1056.1 | 1064.9 | 1099.9 | 1116.0 | 1132.0 |
| 42.5° | 997.6 | 1009.3 | 1044.3 | 1067.8 | 1086.7 |
| 45° | 937.7 | 950.9 | 988.9 | 1018.1 | 1040.0 |
| 47.5° | 877.9 | 895.4 | 932.0 | 971.4 | 990.4 |
| 50° | 817.9 | 835.5 | 876.4 | 920.3 | 939.2 |
| 52.5° | 756.7 | 774.2 | 820.9 | 866.2 | 886.6 |
| 55° | 698.2 | 715.7 | 765.4 | 815.1 | 835.5 |
| 57.5° | 636.9 | 655.9 | 711.4 | 762.5 | 782.9 |
| 60° | 576.9 | 595.9 | 655.9 | 709.9 | 731.8 |
| 62.5° | 518.5 | 539.0 | 601.8 | 658.7 | 680.7 |
| 65° | 458.7 | 482.0 | 547.8 | 607.6 | 631.0 |
| 67.5° | 400.2 | 426.6 | 495.1 | 557.9 | 582.8 |
| 70° | 341.8 | 372.5 | 445.6 | 509.8 | 534.6 |
| 72.5° | 284.8 | 318.4 | 395.9 | 460.1 | 473.3 |
| 75° | 229.3 | 268.8 | 349.1 | 379.8 | 376.9 |
| 77.5° | 176.7 | 220.6 | 296.5 | 302.4 | 311.1 |
| 80° | 128.5 | 176.7 | 222.0 | 233.7 | 227.9 |
| 82.5° | 84.7 | 132.9 | 159.2 | 153.3 | 151.9 |
| 85° | 48.2 | 83.2 | 89.1 | 81.8 | 81.8 |
| 87.5° | 20.4 | 33.6 | 29.3 | 21.9 | 20.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)