

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: P229986

Luminaire Tested: **24CZ-LD5-65-UNV-L940-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P229986
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-LD5-65-UNV-L940-CD1-U
Description: CRUZE 2x4 LED TROFFER
WITH RIBBED LENS
Light Source: (168) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5805.0 lumens
Efficiency: N/A
Efficacy: 100.7 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

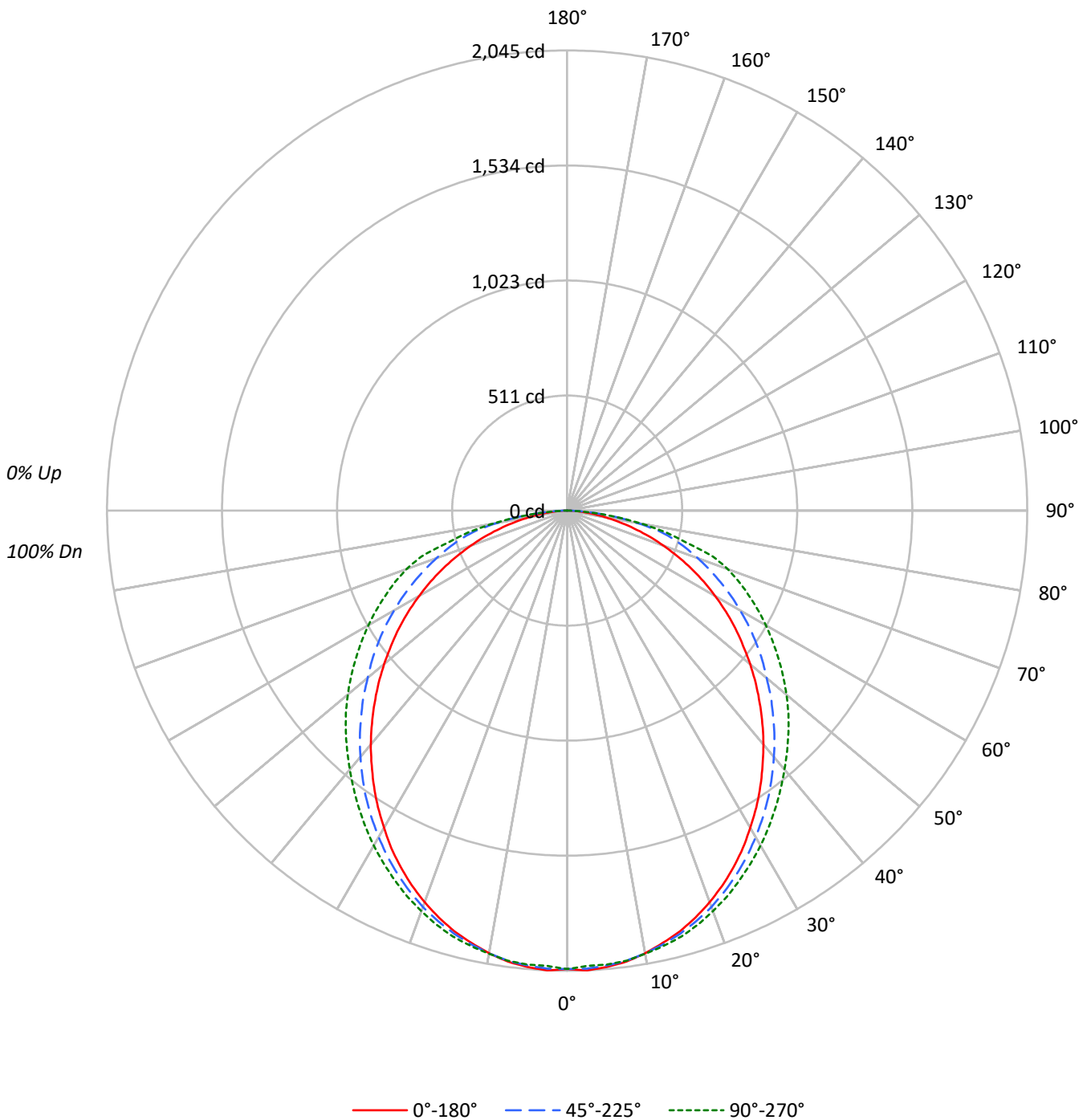
Input Watts (W): 57.64
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 2741 | 2741 | 2741 |
| 5° | 2749 | 2741 | 2735 |
| 10° | 2729 | 2729 | 2732 |
| 15° | 2697 | 2710 | 2730 |
| 20° | 2652 | 2684 | 2712 |
| 25° | 2597 | 2647 | 2691 |
| 30° | 2529 | 2603 | 2671 |
| 35° | 2458 | 2560 | 2651 |
| 40° | 2384 | 2510 | 2639 |
| 45° | 2303 | 2462 | 2647 |
| 50° | 2222 | 2421 | 2663 |
| 55° | 2140 | 2406 | 2690 |
| 60° | 2043 | 2391 | 2744 |
| 65° | 1936 | 2392 | 2835 |
| 70° | 1791 | 2432 | 2987 |
| 75° | 1602 | 2542 | 2842 |
| 80° | 1340 | 2433 | 2603 |
| 85° | 1013 | 1871 | 1780 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 192.5 | 3.3 |
| 10°-20° | 547.9 | 9.4 |
| 20°-30° | 819.1 | 14.1 |
| 30°-40° | 971.7 | 16.7 |
| 40°-50° | 1000.2 | 17.2 |
| 50°-60° | 917.5 | 15.8 |
| 60°-70° | 741.9 | 12.8 |
| 70°-80° | 481.5 | 8.3 |
| 80°-90° | 132.8 | 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° | 1559.5 | 26.9 |
| 0°-40° | 2531.3 | 43.6 |
| 0°-60° | 4448.9 | 76.6 |
| 0°-90° | 5805.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5805.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2037 | 2037 | 2037 | 2037 | 2037 | |
| 5° | 2035 | 2021 | 2029 | 2027 | 2025 | 193 |
| 15° | 1936 | 1928 | 1946 | 1954 | 1960 | 545 |
| 25° | 1749 | 1751 | 1783 | 1799 | 1813 | 805 |
| 35° | 1497 | 1509 | 1558 | 1592 | 1614 | 936 |
| 45° | 1210 | 1230 | 1294 | 1356 | 1391 | 934 |
| 55° | 912 | 940 | 1026 | 1109 | 1147 | 815 |
| 65° | 608 | 644 | 751 | 851 | 890 | 601 |
| 75° | 308 | 366 | 489 | 547 | 547 | 327 |
| 85° | 66 | 111 | 121 | 117 | 115 | 80 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P229986

CATALOG NUMBER: 24CZ-LD5-65-UNV-L940-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2037.3 | 2037.3 | 2037.3 | 2037.3 | 2037.3 |
| 2.5° | 2045.2 | 2029.3 | 2037.3 | 2035.3 | 2025.3 |
| 5° | 2035.3 | 2021.4 | 2029.3 | 2027.3 | 2025.3 |
| 7.5° | 2021.4 | 2007.4 | 2017.4 | 2015.4 | 2017.4 |
| 10° | 1997.5 | 1985.6 | 1997.5 | 1999.5 | 1999.5 |
| 12.5° | 1967.7 | 1957.8 | 1973.7 | 1977.6 | 1981.6 |
| 15° | 1935.9 | 1927.9 | 1945.8 | 1953.8 | 1959.7 |
| 17.5° | 1896.1 | 1890.2 | 1912.0 | 1922.0 | 1929.9 |
| 20° | 1852.4 | 1850.4 | 1874.3 | 1884.2 | 1894.1 |
| 22.5° | 1802.7 | 1802.7 | 1830.5 | 1842.5 | 1856.4 |
| 25° | 1749.1 | 1751.0 | 1782.8 | 1798.7 | 1812.7 |
| 27.5° | 1691.4 | 1693.4 | 1731.2 | 1751.0 | 1766.9 |
| 30° | 1627.8 | 1635.8 | 1675.5 | 1701.4 | 1719.2 |
| 32.5° | 1564.2 | 1574.2 | 1617.9 | 1647.7 | 1667.6 |
| 35° | 1496.6 | 1508.6 | 1558.3 | 1592.0 | 1613.9 |
| 37.5° | 1427.1 | 1441.0 | 1494.6 | 1532.4 | 1558.3 |
| 40° | 1357.5 | 1373.4 | 1429.1 | 1472.8 | 1502.6 |
| 42.5° | 1284.0 | 1301.9 | 1363.5 | 1415.1 | 1446.9 |
| 45° | 1210.4 | 1230.3 | 1293.9 | 1355.5 | 1391.3 |
| 47.5° | 1136.9 | 1160.7 | 1228.3 | 1295.9 | 1333.7 |
| 50° | 1061.4 | 1085.2 | 1156.8 | 1234.3 | 1272.0 |
| 52.5° | 985.8 | 1013.7 | 1093.2 | 1172.7 | 1210.4 |
| 55° | 912.3 | 940.1 | 1025.6 | 1109.1 | 1146.8 |
| 57.5° | 836.8 | 864.6 | 958.0 | 1045.5 | 1083.2 |
| 60° | 759.2 | 791.1 | 888.4 | 977.9 | 1019.6 |
| 62.5° | 683.7 | 717.5 | 820.9 | 916.3 | 956.0 |
| 65° | 608.2 | 644.0 | 751.3 | 850.7 | 890.4 |
| 67.5° | 530.7 | 572.4 | 683.7 | 785.1 | 826.8 |
| 70° | 455.2 | 500.9 | 618.1 | 719.5 | 759.2 |
| 72.5° | 381.6 | 431.3 | 552.5 | 655.9 | 679.7 |
| 75° | 308.1 | 365.7 | 488.9 | 546.6 | 546.6 |
| 77.5° | 238.5 | 302.1 | 417.4 | 439.3 | 451.2 |
| 80° | 172.9 | 242.5 | 314.0 | 339.9 | 335.9 |
| 82.5° | 115.3 | 184.8 | 224.6 | 224.6 | 218.6 |
| 85° | 65.6 | 111.3 | 121.2 | 117.3 | 115.3 |
| 87.5° | 27.8 | 41.7 | 37.8 | 29.8 | 25.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)