

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: P229984

Luminaire Tested: **24CZ-LD5-65-UNV-L930-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P229984
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-L930-CD1-U
Description: CRUZE 2x4 LED TROFFER
WITH RIBBED LENS
Light Source: (168) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5450.0 lumens
Efficiency: N/A
Efficacy: 94.6 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

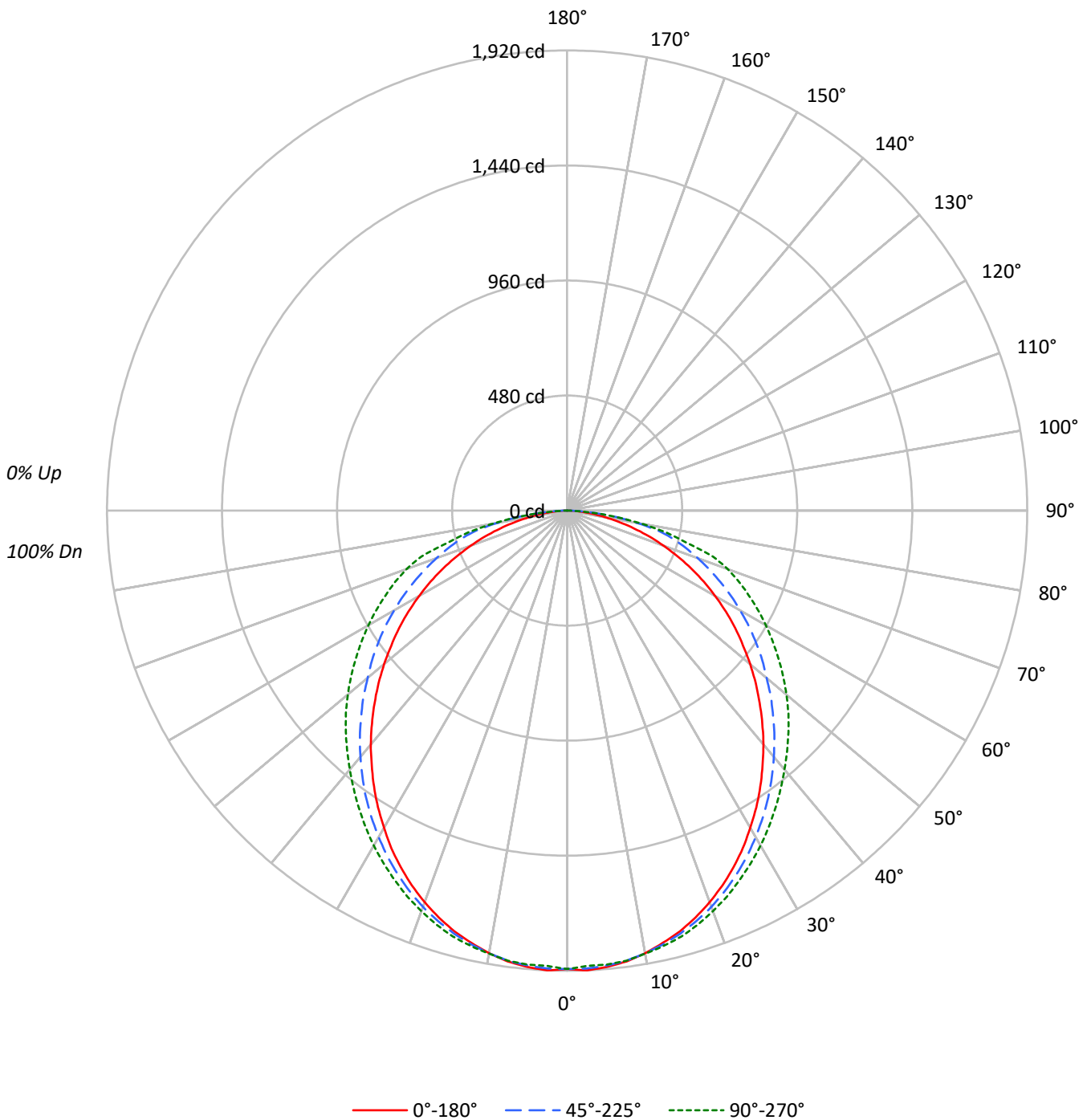
Input Watts (W): 57.64
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 2574 | 2574 | 2574 |
| 5° | 2581 | 2573 | 2568 |
| 10° | 2562 | 2562 | 2565 |
| 15° | 2532 | 2545 | 2563 |
| 20° | 2490 | 2520 | 2546 |
| 25° | 2438 | 2485 | 2526 |
| 30° | 2374 | 2444 | 2508 |
| 35° | 2308 | 2403 | 2489 |
| 40° | 2239 | 2357 | 2478 |
| 45° | 2162 | 2312 | 2485 |
| 50° | 2086 | 2273 | 2500 |
| 55° | 2009 | 2259 | 2526 |
| 60° | 1918 | 2245 | 2576 |
| 65° | 1818 | 2246 | 2662 |
| 70° | 1681 | 2283 | 2804 |
| 75° | 1503 | 2386 | 2668 |
| 80° | 1258 | 2284 | 2444 |
| 85° | 951 | 1757 | 1670 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 180.7 | 3.3 |
| 10°-20° | 514.4 | 9.4 |
| 20°-30° | 769.0 | 14.1 |
| 30°-40° | 912.3 | 16.7 |
| 40°-50° | 939.0 | 17.2 |
| 50°-60° | 861.4 | 15.8 |
| 60°-70° | 696.5 | 12.8 |
| 70°-80° | 452.0 | 8.3 |
| 80°-90° | 124.6 | 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° | 1464.2 | 26.9 |
| 0°-40° | 2376.5 | 43.6 |
| 0°-60° | 4176.9 | 76.6 |
| 0°-90° | 5450.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5450.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1913 | 1913 | 1913 | 1913 | 1913 | |
| 5° | 1911 | 1898 | 1905 | 1903 | 1902 | 181 |
| 15° | 1818 | 1810 | 1827 | 1834 | 1840 | 512 |
| 25° | 1642 | 1644 | 1674 | 1689 | 1702 | 756 |
| 35° | 1405 | 1416 | 1463 | 1495 | 1515 | 879 |
| 45° | 1136 | 1155 | 1215 | 1273 | 1306 | 877 |
| 55° | 856 | 883 | 963 | 1041 | 1077 | 765 |
| 65° | 571 | 605 | 705 | 799 | 836 | 564 |
| 75° | 289 | 343 | 459 | 513 | 513 | 307 |
| 85° | 62 | 104 | 114 | 110 | 108 | 75 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P229984

CATALOG NUMBER: 24CZ-LD5-65-UNV-L930-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1912.7 | 1912.7 | 1912.7 | 1912.7 | 1912.7 |
| 2.5° | 1920.1 | 1905.2 | 1912.7 | 1910.8 | 1901.5 |
| 5° | 1910.8 | 1897.7 | 1905.2 | 1903.3 | 1901.5 |
| 7.5° | 1897.7 | 1884.7 | 1894.0 | 1892.1 | 1894.0 |
| 10° | 1875.3 | 1864.2 | 1875.3 | 1877.2 | 1877.2 |
| 12.5° | 1847.4 | 1838.0 | 1853.0 | 1856.7 | 1860.4 |
| 15° | 1817.5 | 1810.0 | 1826.8 | 1834.3 | 1839.9 |
| 17.5° | 1780.2 | 1774.6 | 1795.1 | 1804.4 | 1811.9 |
| 20° | 1739.1 | 1737.3 | 1759.7 | 1769.0 | 1778.3 |
| 22.5° | 1692.5 | 1692.5 | 1718.6 | 1729.8 | 1742.9 |
| 25° | 1642.1 | 1644.0 | 1673.8 | 1688.7 | 1701.8 |
| 27.5° | 1588.0 | 1589.8 | 1625.3 | 1644.0 | 1658.9 |
| 30° | 1528.3 | 1535.7 | 1573.1 | 1597.3 | 1614.1 |
| 32.5° | 1468.6 | 1477.9 | 1518.9 | 1546.9 | 1565.6 |
| 35° | 1405.1 | 1416.3 | 1463.0 | 1494.7 | 1515.2 |
| 37.5° | 1339.8 | 1352.9 | 1403.2 | 1438.7 | 1463.0 |
| 40° | 1274.5 | 1289.4 | 1341.7 | 1382.7 | 1410.7 |
| 42.5° | 1205.4 | 1222.2 | 1280.1 | 1328.6 | 1358.5 |
| 45° | 1136.4 | 1155.1 | 1214.8 | 1272.6 | 1306.2 |
| 47.5° | 1067.4 | 1089.8 | 1153.2 | 1216.6 | 1252.1 |
| 50° | 996.5 | 1018.8 | 1086.0 | 1158.8 | 1194.3 |
| 52.5° | 925.5 | 951.7 | 1026.3 | 1100.9 | 1136.4 |
| 55° | 856.5 | 882.6 | 962.9 | 1041.2 | 1076.7 |
| 57.5° | 785.6 | 811.7 | 899.4 | 981.5 | 1017.0 |
| 60° | 712.8 | 742.7 | 834.1 | 918.1 | 957.3 |
| 62.5° | 641.9 | 673.6 | 770.7 | 860.2 | 897.6 |
| 65° | 571.0 | 604.6 | 705.4 | 798.7 | 836.0 |
| 67.5° | 498.2 | 537.4 | 641.9 | 737.1 | 776.3 |
| 70° | 427.3 | 470.2 | 580.3 | 675.5 | 712.8 |
| 72.5° | 358.3 | 404.9 | 518.8 | 615.8 | 638.2 |
| 75° | 289.2 | 343.3 | 459.0 | 513.2 | 513.2 |
| 77.5° | 223.9 | 283.6 | 391.9 | 412.4 | 423.6 |
| 80° | 162.3 | 227.7 | 294.8 | 319.1 | 315.4 |
| 82.5° | 108.2 | 173.5 | 210.9 | 210.9 | 205.3 |
| 85° | 61.6 | 104.5 | 113.8 | 110.1 | 108.2 |
| 87.5° | 26.1 | 39.2 | 35.5 | 28.0 | 24.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)