

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: P261089

Luminaire Tested: **24CZ-LD5-70-S-UNV-L93050-W2A1-U-4000K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P261089
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-LD5-70-S-UNV-L93050-W2A1-U-4000K
Description: CRUZE 2x4 TUNABLE WHITE LED TROFFER WITH SMOOTH LENS
Light Source: (336) 90 CRI LEDS TUNED AT 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6602.3 lumens
Efficiency: N/A
Efficacy: 119.9 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

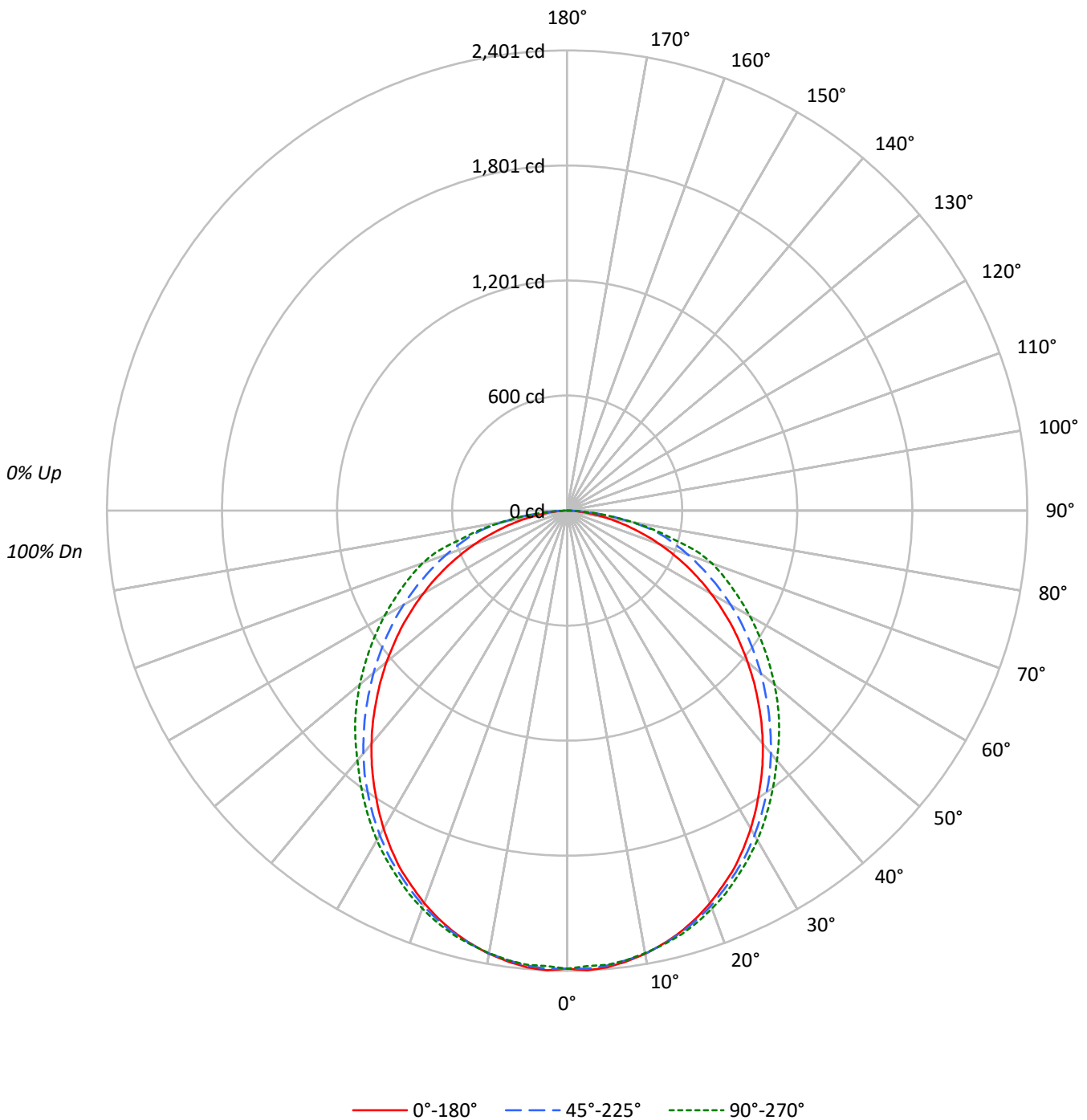
Input Watts (W): 55.056186
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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° | 3216 | 3216 | 3216 |
| 5° | 3231 | 3219 | 3213 |
| 10° | 3208 | 3205 | 3202 |
| 15° | 3173 | 3179 | 3192 |
| 20° | 3120 | 3142 | 3164 |
| 25° | 3059 | 3092 | 3124 |
| 30° | 2976 | 3038 | 3085 |
| 35° | 2883 | 2973 | 3035 |
| 40° | 2790 | 2905 | 2990 |
| 45° | 2684 | 2830 | 2976 |
| 50° | 2575 | 2759 | 2957 |
| 55° | 2463 | 2700 | 2948 |
| 60° | 2335 | 2654 | 2962 |
| 65° | 2196 | 2623 | 3021 |
| 70° | 2022 | 2636 | 3163 |
| 75° | 1793 | 2729 | 2947 |
| 80° | 1498 | 2587 | 2655 |
| 85° | 1119 | 2069 | 1899 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 226.0 | 3.4 |
| 10°-20° | 642.7 | 9.7 |
| 20°-30° | 957.8 | 14.5 |
| 30°-40° | 1127.4 | 17.1 |
| 40°-50° | 1145.7 | 17.4 |
| 50°-60° | 1030.1 | 15.6 |
| 60°-70° | 813.8 | 12.3 |
| 70°-80° | 516.3 | 7.8 |
| 80°-90° | 142.5 | 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° | 1826.4 | 27.7 |
| 0°-40° | 2953.9 | 44.7 |
| 0°-60° | 5129.7 | 77.7 |
| 0°-90° | 6602.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6602.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2390 | 2390 | 2390 | 2390 | 2390 | |
| 5° | 2392 | 2373 | 2384 | 2379 | 2379 | 227 |
| 15° | 2278 | 2267 | 2282 | 2289 | 2291 | 642 |
| 25° | 2061 | 2058 | 2083 | 2096 | 2105 | 947 |
| 35° | 1755 | 1766 | 1810 | 1830 | 1848 | 1098 |
| 45° | 1410 | 1430 | 1487 | 1531 | 1564 | 1088 |
| 55° | 1050 | 1076 | 1151 | 1226 | 1257 | 938 |
| 65° | 690 | 725 | 824 | 914 | 949 | 683 |
| 75° | 345 | 404 | 525 | 571 | 567 | 367 |
| 85° | 72 | 125 | 134 | 123 | 123 | 89 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P261089

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2390.1 | 2390.1 | 2390.1 | 2390.1 | 2390.1 |
| 2.5° | 2401.1 | 2383.6 | 2392.3 | 2387.9 | 2379.2 |
| 5° | 2392.3 | 2372.6 | 2383.6 | 2379.2 | 2379.2 |
| 7.5° | 2372.6 | 2357.2 | 2366.0 | 2363.8 | 2366.0 |
| 10° | 2348.4 | 2333.0 | 2346.2 | 2346.2 | 2344.0 |
| 12.5° | 2315.5 | 2302.3 | 2317.6 | 2317.6 | 2319.8 |
| 15° | 2278.1 | 2267.1 | 2282.5 | 2289.1 | 2291.3 |
| 17.5° | 2232.0 | 2221.0 | 2240.8 | 2247.4 | 2253.9 |
| 20° | 2179.2 | 2174.9 | 2194.6 | 2201.2 | 2210.0 |
| 22.5° | 2119.9 | 2119.9 | 2139.7 | 2148.5 | 2161.7 |
| 25° | 2060.6 | 2058.4 | 2082.6 | 2095.8 | 2104.6 |
| 27.5° | 1990.3 | 1992.5 | 2023.3 | 2036.5 | 2047.4 |
| 30° | 1915.6 | 1920.0 | 1955.2 | 1970.6 | 1985.9 |
| 32.5° | 1836.5 | 1845.3 | 1884.9 | 1902.4 | 1917.8 |
| 35° | 1755.3 | 1766.2 | 1810.2 | 1830.0 | 1847.5 |
| 37.5° | 1674.0 | 1689.4 | 1735.5 | 1755.3 | 1775.0 |
| 40° | 1588.3 | 1601.5 | 1654.2 | 1678.4 | 1702.5 |
| 42.5° | 1500.4 | 1518.0 | 1570.7 | 1605.9 | 1634.4 |
| 45° | 1410.4 | 1430.1 | 1487.3 | 1531.2 | 1564.1 |
| 47.5° | 1320.3 | 1346.7 | 1401.6 | 1460.9 | 1489.4 |
| 50° | 1230.2 | 1256.6 | 1318.1 | 1384.0 | 1412.6 |
| 52.5° | 1138.0 | 1164.3 | 1234.6 | 1302.7 | 1333.5 |
| 55° | 1050.1 | 1076.4 | 1151.1 | 1225.8 | 1256.6 |
| 57.5° | 957.8 | 986.4 | 1069.9 | 1146.7 | 1177.5 |
| 60° | 867.7 | 896.3 | 986.4 | 1067.7 | 1100.6 |
| 62.5° | 779.9 | 810.6 | 905.1 | 990.8 | 1023.7 |
| 65° | 689.8 | 725.0 | 823.8 | 913.9 | 949.0 |
| 67.5° | 601.9 | 641.5 | 744.7 | 839.2 | 876.5 |
| 70° | 514.1 | 560.2 | 670.0 | 766.7 | 804.0 |
| 72.5° | 428.4 | 478.9 | 595.3 | 692.0 | 711.8 |
| 75° | 344.9 | 404.2 | 525.0 | 571.2 | 566.8 |
| 77.5° | 265.8 | 331.7 | 446.0 | 454.7 | 467.9 |
| 80° | 193.3 | 265.8 | 333.9 | 351.5 | 342.7 |
| 82.5° | 127.4 | 199.9 | 239.5 | 230.7 | 228.5 |
| 85° | 72.5 | 125.2 | 134.0 | 123.0 | 123.0 |
| 87.5° | 30.8 | 50.5 | 43.9 | 33.0 | 30.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)