

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: P685691

Luminaire Tested: **4CZL-9-UNV-LVR-L935-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685691
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-9-UNV-LVR-L935-CD-U
Description: METALUX CRUZE LINEAR 4FT LOUVER MODEL @90 CRI and 3500K
Light Source: (588) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

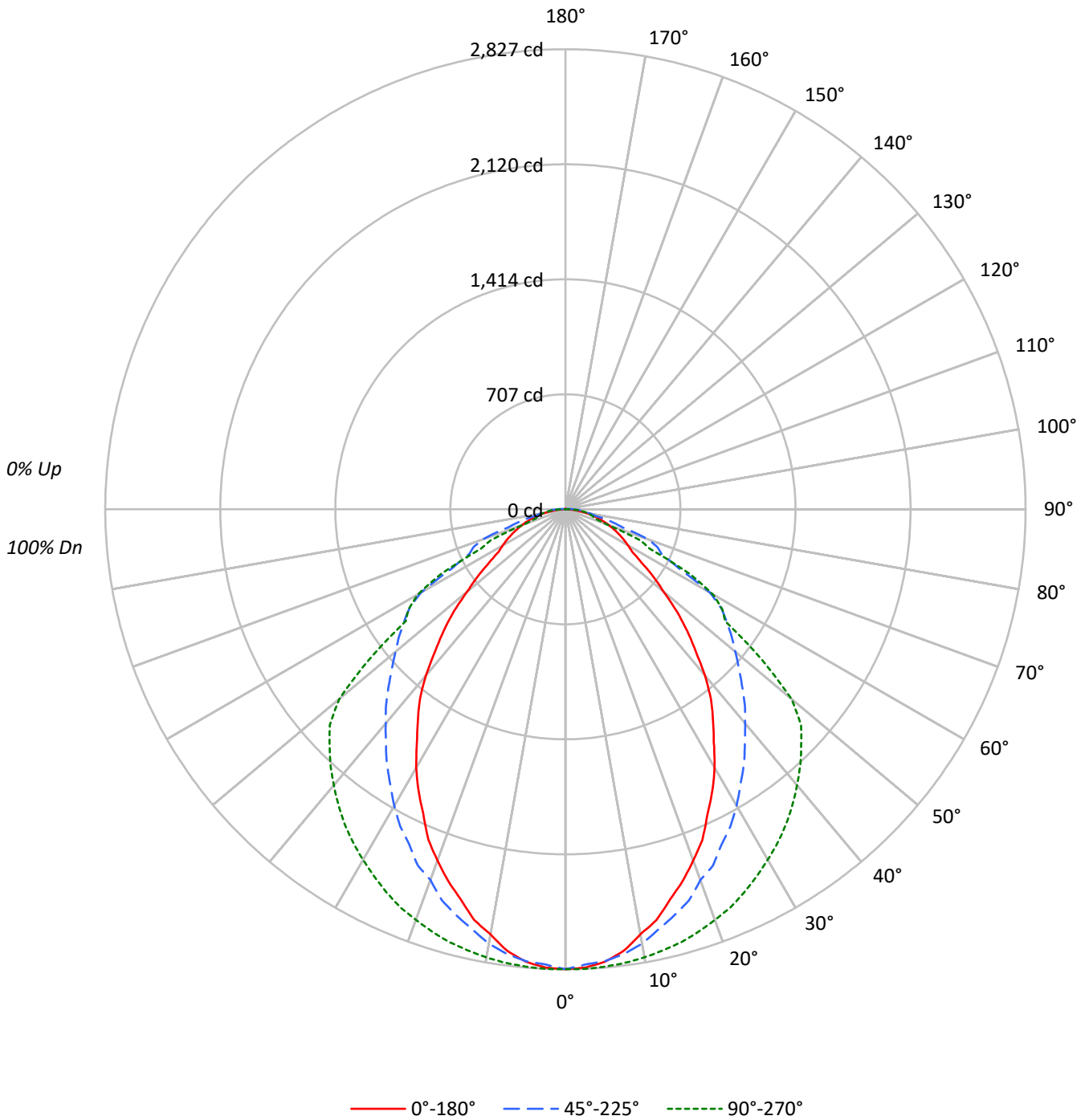
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6400.2 lumens
Efficiency: N/A
Efficacy: 118.5 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1.31 / 1.26
Luminous Opening: Rectangular (W 0.83' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 54
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: P685691
CATALOG NUMBER: 4CZL-9-UNV-LVR-L935-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P685691
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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF | 20 | | | | 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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 92 | 90 | 91 | 89 | 88 | 88 | 88 | 88 | 85 |
| 2 | 101 | 93 | 87 | 81 | 98 | 91 | 85 | 80 | 88 | 83 | 78 | 84 | 80 | 77 | 81 | 78 | 75 | 75 | 75 | 75 | 73 |
| 3 | 92 | 82 | 75 | 69 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 68 | 65 | 65 | 65 | 65 | 63 |
| 4 | 85 | 74 | 65 | 59 | 83 | 72 | 65 | 59 | 70 | 63 | 58 | 68 | 62 | 57 | 65 | 60 | 56 | 56 | 56 | 56 | 54 |
| 5 | 78 | 66 | 58 | 51 | 76 | 65 | 57 | 51 | 63 | 56 | 51 | 61 | 55 | 50 | 59 | 54 | 49 | 49 | 49 | 49 | 47 |
| 6 | 73 | 60 | 51 | 45 | 71 | 59 | 51 | 45 | 57 | 50 | 45 | 56 | 49 | 44 | 54 | 48 | 44 | 44 | 44 | 44 | 42 |
| 7 | 68 | 55 | 46 | 40 | 66 | 54 | 46 | 40 | 52 | 45 | 40 | 51 | 44 | 40 | 49 | 44 | 39 | 39 | 39 | 39 | 37 |
| 8 | 63 | 50 | 42 | 36 | 61 | 49 | 42 | 36 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | 35 | 35 | 35 | 34 |
| 9 | 59 | 46 | 38 | 33 | 58 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 32 | 32 | 32 | 30 |
| 10 | 55 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 39 | 34 | 29 | 29 | 29 | 29 | 28 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9126 | 9126 | 9126 |
| 5° | 9047 | 9034 | 9142 |
| 10° | 8696 | 8887 | 9169 |
| 15° | 8301 | 8638 | 9206 |
| 20° | 7893 | 8332 | 9228 |
| 25° | 7361 | 8091 | 9258 |
| 30° | 6834 | 7843 | 9273 |
| 35° | 6231 | 7535 | 9316 |
| 40° | 5621 | 7242 | 9332 |
| 45° | 4834 | 7010 | 9356 |
| 50° | 3951 | 6844 | 9111 |
| 55° | 3217 | 6818 | 6738 |
| 60° | 2869 | 6628 | 6761 |
| 65° | 2774 | 4973 | 4360 |
| 70° | 2664 | 5097 | 2478 |
| 75° | 2568 | 3592 | 2212 |
| 80° | 2343 | 2921 | 2637 |
| 85° | 2097 | 3642 | 3286 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 264.7 | 4.1 |
| 10°-20° | 733.8 | 11.5 |
| 20°-30° | 1061.7 | 16.6 |
| 30°-40° | 1211.8 | 18.9 |
| 40°-50° | 1190.7 | 18.6 |
| 50°-60° | 949.7 | 14.8 |
| 60°-70° | 598.2 | 9.3 |
| 70°-80° | 265.0 | 4.1 |
| 80°-90° | 101.6 | 1.6 |
| 90°-100° | 20.1 | 0.3 |
| 100°-110° | 1.3 | 0.0 |
| 110°-120° | 0.1 | 0.0 |
| 120°-130° | 0.2 | 0.0 |
| 130°-140° | 0.3 | 0.0 |
| 140°-150° | 0.3 | 0.0 |
| 150°-160° | 0.2 | 0.0 |
| 160°-170° | 0.2 | 0.0 |
| 170°-180° | 0.1 | 0.0 |
| 0°-30° | 2060.3 | 32.2 |
| 0°-40° | 3272.0 | 51.1 |
| 0°-60° | 5412.4 | 84.6 |
| 0°-90° | 6377.3 | 99.6 |
| 90°-120° | 21.6 | 0.3 |
| 90°-150° | 22.4 | 0.3 |
| 90°-180° | 23.0 | 0.4 |
| 0°-180° | 6400.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 2826 | 2826 | 2826 | 2826 | 2826 | |
| 5° | 2791 | 2797 | 2787 | 2810 | 2820 | 262 |
| 15° | 2483 | 2508 | 2584 | 2705 | 2754 | 699 |
| 25° | 2066 | 2133 | 2271 | 2479 | 2598 | 952 |
| 35° | 1580 | 1676 | 1912 | 2193 | 2363 | 988 |
| 45° | 1059 | 1213 | 1535 | 1878 | 2049 | 814 |
| 55° | 572 | 774 | 1211 | 1306 | 1197 | 525 |
| 65° | 363 | 494 | 651 | 694 | 571 | 360 |
| 75° | 206 | 238 | 288 | 218 | 177 | 216 |
| 85° | 57 | 69 | 98 | 127 | 89 | 60 |
| 90° | 0 | 24 | 52 | 76 | 14 | 3 |
| 95° | 0 | 4 | 22 | 37 | 5 | 0 |
| 105° | 0 | 0 | 0 | 1 | 0 | 0 |
| 115° | 0 | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 1 | 0 | 0 | 0 | 0 |
| 135° | 0 | 1 | 0 | 0 | 0 | 0 |
| 145° | 1 | 1 | 0 | 0 | 0 | 1 |
| 155° | 1 | 1 | 0 | 0 | 0 | 0 |
| 165° | 1 | 1 | 1 | 0 | 0 | 0 |
| 175° | 1 | 1 | 1 | 0 | 0 | 0 |
| 180° | 1 | 1 | 1 | 1 | 1 | |

TEST NUMBER: P685691

CATALOG NUMBER: 4CZL-9-UNV-LVR-L935-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 2826.1 | 2826.1 | 2826.1 | 2826.1 | 2826.1 |
| 2.5° | 2818.7 | 2816.9 | 2799.8 | 2823.9 | 2826.6 |
| 5° | 2791.0 | 2797.2 | 2787.1 | 2810.3 | 2820.4 |
| 7.5° | 2737.9 | 2744.5 | 2756.4 | 2798.9 | 2811.2 |
| 10° | 2651.9 | 2668.6 | 2710.3 | 2770.0 | 2796.3 |
| 12.5° | 2586.1 | 2606.7 | 2644.0 | 2745.4 | 2775.7 |
| 15° | 2482.9 | 2507.5 | 2583.9 | 2705.0 | 2753.7 |
| 17.5° | 2395.1 | 2439.9 | 2521.1 | 2654.1 | 2722.1 |
| 20° | 2296.8 | 2332.8 | 2424.5 | 2604.1 | 2685.2 |
| 22.5° | 2198.5 | 2244.1 | 2369.2 | 2537.3 | 2647.9 |
| 25° | 2065.9 | 2132.7 | 2270.9 | 2479.0 | 2598.3 |
| 27.5° | 1953.6 | 2037.9 | 2196.7 | 2410.1 | 2543.0 |
| 30° | 1832.9 | 1898.3 | 2103.3 | 2339.8 | 2486.9 |
| 32.5° | 1696.8 | 1799.5 | 2002.3 | 2259.5 | 2428.0 |
| 35° | 1580.5 | 1676.2 | 1911.5 | 2193.2 | 2363.1 |
| 37.5° | 1468.2 | 1558.1 | 1810.9 | 2118.2 | 2291.1 |
| 40° | 1333.4 | 1451.9 | 1717.9 | 2032.6 | 2213.9 |
| 42.5° | 1184.2 | 1329.5 | 1631.4 | 1951.8 | 2135.3 |
| 45° | 1058.6 | 1212.7 | 1534.9 | 1878.5 | 2048.8 |
| 47.5° | 928.3 | 1090.7 | 1444.5 | 1789.4 | 1963.2 |
| 50° | 786.5 | 984.0 | 1362.4 | 1706.9 | 1813.6 |
| 52.5° | 682.9 | 873.0 | 1288.6 | 1557.7 | 1528.7 |
| 55° | 571.5 | 773.8 | 1211.0 | 1305.8 | 1196.9 |
| 57.5° | 486.8 | 684.3 | 1138.1 | 1025.3 | 1142.5 |
| 60° | 444.2 | 612.7 | 1026.2 | 976.1 | 1046.8 |
| 62.5° | 404.2 | 550.0 | 784.8 | 915.6 | 861.1 |
| 65° | 363.0 | 494.2 | 650.9 | 693.5 | 570.6 |
| 67.5° | 323.0 | 445.9 | 613.6 | 517.9 | 496.8 |
| 70° | 282.2 | 408.6 | 539.9 | 441.5 | 262.5 |
| 72.5° | 243.6 | 365.6 | 369.1 | 244.5 | 194.9 |
| 75° | 205.8 | 237.9 | 287.9 | 218.1 | 177.3 |
| 77.5° | 164.6 | 204.1 | 192.7 | 195.3 | 160.6 |
| 80° | 126.0 | 140.5 | 157.1 | 174.7 | 141.8 |
| 82.5° | 89.1 | 104.5 | 127.3 | 152.7 | 116.3 |
| 85° | 56.6 | 68.9 | 98.3 | 126.8 | 88.7 |
| 87.5° | 22.4 | 43.5 | 73.3 | 102.3 | 52.2 |
| 90° | 0.4 | 23.7 | 51.8 | 75.5 | 14.5 |
| 92.5° | 0.4 | 11.0 | 34.7 | 55.3 | 7.5 |
| 95° | 0.4 | 3.5 | 21.5 | 36.9 | 4.8 |
| 97.5° | 0.4 | 1.3 | 11.4 | 22.8 | 2.6 |
| 100° | 0.4 | 0.4 | 4.8 | 12.3 | 1.3 |
| 102.5° | 0.4 | 0.4 | 1.8 | 4.8 | 0.4 |
| 105° | 0.4 | 0.4 | 0.4 | 1.3 | 0.0 |
| 107.5° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 110° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 115° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 120° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 125° | 0.4 | 0.9 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 130° | 0.4 | 0.9 | 0.4 | 0.0 | 0.0 |
| 132.5° | 0.4 | 0.9 | 0.4 | 0.0 | 0.0 |
| 135° | 0.4 | 0.9 | 0.4 | 0.0 | 0.0 |
| 137.5° | 0.4 | 0.9 | 0.4 | 0.0 | 0.0 |
| 140° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 142.5° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 145° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 147.5° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 150° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 152.5° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 155° | 0.9 | 0.9 | 0.4 | 0.0 | 0.0 |
| 157.5° | 0.9 | 1.3 | 0.4 | 0.0 | 0.0 |
| 160° | 1.3 | 1.3 | 0.4 | 0.0 | 0.0 |
| 162.5° | 1.3 | 1.3 | 0.9 | 0.4 | 0.0 |
| 165° | 1.3 | 1.3 | 0.9 | 0.4 | 0.0 |
| 167.5° | 1.3 | 1.3 | 0.9 | 0.4 | 0.0 |
| 170° | 1.3 | 1.3 | 0.9 | 0.4 | 0.4 |
| 172.5° | 1.3 | 1.3 | 0.9 | 0.4 | 0.4 |
| 175° | 1.3 | 1.3 | 0.9 | 0.4 | 0.4 |
| 177.5° | 1.3 | 1.3 | 0.9 | 0.4 | 0.4 |
| 180° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |

(END OF REPORT)