

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: P685692

Luminaire Tested: **4CZL-12-UNV-LVR-L935-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685692
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-12-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

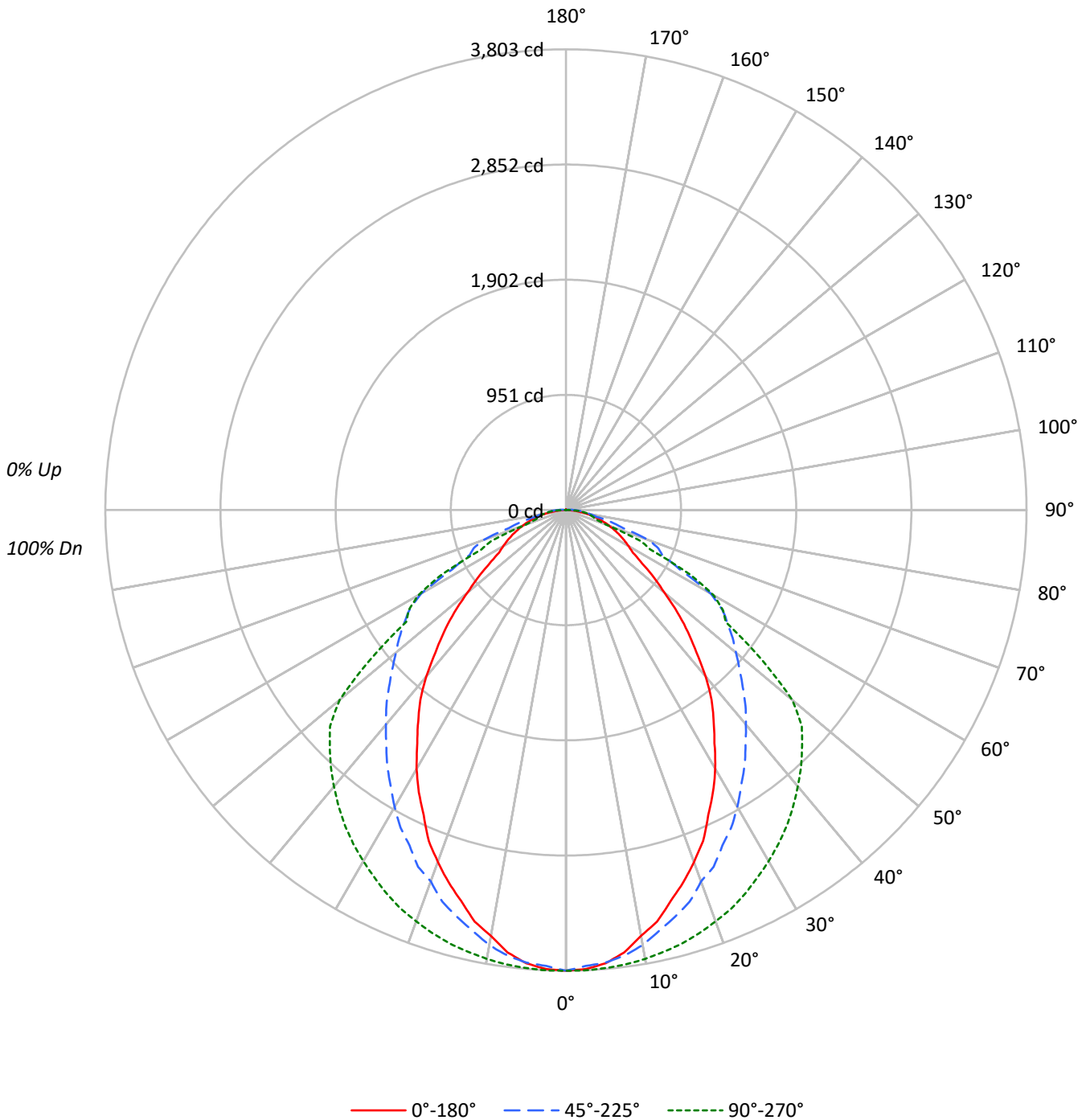
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8612.2 lumens
Efficiency: N/A
Efficacy: 111.8 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): 77
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: P685692
CATALOG NUMBER: 4CZL-12-UNV-LVR-L935-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P685692

CATALOG NUMBER: 4CZL-12-UNV-LVR-L935-CD-U

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 12280 | 12280 | 12280 |
| 5° | 12174 | 12157 | 12302 |
| 10° | 11701 | 11958 | 12338 |
| 15° | 11169 | 11623 | 12388 |
| 20° | 10621 | 11211 | 12417 |
| 25° | 9905 | 10888 | 12457 |
| 30° | 9196 | 10553 | 12477 |
| 35° | 8384 | 10139 | 12535 |
| 40° | 7563 | 9744 | 12558 |
| 45° | 6505 | 9432 | 12590 |
| 50° | 5317 | 9209 | 12259 |
| 55° | 4329 | 9173 | 9067 |
| 60° | 3860 | 8918 | 9097 |
| 65° | 3732 | 6693 | 5867 |
| 70° | 3586 | 6858 | 3335 |
| 75° | 3456 | 4833 | 2977 |
| 80° | 3152 | 3931 | 3548 |
| 85° | 2823 | 4902 | 4420 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 356.2 | 4.1 |
| 10°-20° | 987.5 | 11.5 |
| 20°-30° | 1428.6 | 16.6 |
| 30°-40° | 1630.6 | 18.9 |
| 40°-50° | 1602.2 | 18.6 |
| 50°-60° | 1278.0 | 14.8 |
| 60°-70° | 805.0 | 9.3 |
| 70°-80° | 356.6 | 4.1 |
| 80°-90° | 136.8 | 1.6 |
| 90°-100° | 27.1 | 0.3 |
| 100°-110° | 1.8 | 0.0 |
| 110°-120° | 0.2 | 0.0 |
| 120°-130° | 0.3 | 0.0 |
| 130°-140° | 0.4 | 0.0 |
| 140°-150° | 0.4 | 0.0 |
| 150°-160° | 0.3 | 0.0 |
| 160°-170° | 0.3 | 0.0 |
| 170°-180° | 0.1 | 0.0 |
| 0°-30° | 2772.3 | 32.2 |
| 0°-40° | 4402.8 | 51.1 |
| 0°-60° | 7282.9 | 84.6 |
| 0°-90° | 8581.3 | 99.6 |
| 90°-120° | 29.2 | 0.3 |
| 90°-150° | 30.2 | 0.4 |
| 90°-180° | 31.0 | 0.4 |
| 0°-180° | 8612.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 3803 | 3803 | 3803 | 3803 | 3803 | |
| 5° | 3756 | 3764 | 3750 | 3782 | 3795 | 353 |
| 15° | 3341 | 3374 | 3477 | 3640 | 3705 | 941 |
| 25° | 2780 | 2870 | 3056 | 3336 | 3496 | 1281 |
| 35° | 2127 | 2256 | 2572 | 2951 | 3180 | 1329 |
| 45° | 1424 | 1632 | 2065 | 2528 | 2757 | 1095 |
| 55° | 769 | 1041 | 1629 | 1757 | 1610 | 707 |
| 65° | 488 | 665 | 876 | 933 | 768 | 484 |
| 75° | 277 | 320 | 387 | 294 | 239 | 290 |
| 85° | 76 | 93 | 132 | 171 | 119 | 80 |
| 90° | 1 | 32 | 70 | 102 | 20 | 4 |
| 95° | 1 | 5 | 29 | 50 | 6 | 0 |
| 105° | 1 | 1 | 1 | 2 | 0 | 1 |
| 115° | 1 | 1 | 0 | 0 | 0 | 1 |
| 125° | 1 | 1 | 0 | 0 | 0 | 1 |
| 135° | 1 | 1 | 1 | 0 | 0 | 1 |
| 145° | 1 | 1 | 1 | 0 | 0 | 1 |
| 155° | 1 | 1 | 1 | 0 | 0 | 1 |
| 165° | 2 | 2 | 1 | 1 | 0 | 1 |
| 175° | 2 | 2 | 1 | 1 | 1 | 0 |
| 180° | 1 | 1 | 1 | 1 | 1 | |



TEST NUMBER: P685692

CATALOG NUMBER: 4CZL-12-UNV-LVR-L935-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 3802.8 | 3802.8 | 3802.8 | 3802.8 | 3802.8 |
| 2.5° | 3792.8 | 3790.4 | 3767.4 | 3799.9 | 3803.4 |
| 5° | 3755.6 | 3763.9 | 3750.3 | 3781.6 | 3795.2 |
| 7.5° | 3684.1 | 3693.0 | 3708.9 | 3766.2 | 3782.8 |
| 10° | 3568.4 | 3590.8 | 3646.9 | 3727.2 | 3762.7 |
| 12.5° | 3479.8 | 3507.5 | 3557.7 | 3694.2 | 3734.9 |
| 15° | 3341.0 | 3374.1 | 3476.8 | 3639.8 | 3705.4 |
| 17.5° | 3222.9 | 3283.1 | 3392.4 | 3571.3 | 3662.9 |
| 20° | 3090.6 | 3139.0 | 3262.4 | 3504.0 | 3613.3 |
| 22.5° | 2958.3 | 3019.7 | 3188.0 | 3414.2 | 3563.1 |
| 25° | 2779.9 | 2869.7 | 3055.7 | 3335.7 | 3496.3 |
| 27.5° | 2628.7 | 2742.1 | 2955.9 | 3243.0 | 3421.9 |
| 30° | 2466.3 | 2554.3 | 2830.1 | 3148.5 | 3346.3 |
| 32.5° | 2283.2 | 2421.4 | 2694.3 | 3040.4 | 3267.2 |
| 35° | 2126.7 | 2255.5 | 2572.0 | 2951.2 | 3179.8 |
| 37.5° | 1975.5 | 2096.6 | 2436.8 | 2850.2 | 3082.9 |
| 40° | 1794.2 | 1953.7 | 2311.6 | 2735.0 | 2979.0 |
| 42.5° | 1593.4 | 1788.9 | 2195.2 | 2626.4 | 2873.2 |
| 45° | 1424.5 | 1631.8 | 2065.3 | 2527.7 | 2756.9 |
| 47.5° | 1249.1 | 1467.6 | 1943.6 | 2407.9 | 2641.7 |
| 50° | 1058.3 | 1324.1 | 1833.2 | 2296.8 | 2440.3 |
| 52.5° | 919.0 | 1174.7 | 1734.0 | 2096.0 | 2057.0 |
| 55° | 769.0 | 1041.2 | 1629.4 | 1757.0 | 1610.5 |
| 57.5° | 655.0 | 920.7 | 1531.4 | 1379.6 | 1537.3 |
| 60° | 597.7 | 824.5 | 1380.8 | 1313.5 | 1408.6 |
| 62.5° | 543.9 | 740.0 | 1056.0 | 1232.0 | 1158.7 |
| 65° | 488.4 | 665.0 | 875.9 | 933.1 | 767.8 |
| 67.5° | 434.7 | 600.0 | 825.7 | 696.9 | 668.6 |
| 70° | 379.8 | 549.8 | 726.4 | 594.1 | 353.2 |
| 72.5° | 327.8 | 492.0 | 496.7 | 329.0 | 262.2 |
| 75° | 277.0 | 320.1 | 387.4 | 293.5 | 238.6 |
| 77.5° | 221.5 | 274.6 | 259.3 | 262.8 | 216.2 |
| 80° | 169.5 | 189.0 | 211.4 | 235.1 | 190.8 |
| 82.5° | 119.9 | 140.6 | 171.3 | 205.5 | 156.5 |
| 85° | 76.2 | 92.7 | 132.3 | 170.7 | 119.3 |
| 87.5° | 30.1 | 58.5 | 98.6 | 137.6 | 70.3 |
| 90° | 0.6 | 31.9 | 69.7 | 101.6 | 19.5 |
| 92.5° | 0.6 | 14.8 | 46.7 | 74.4 | 10.0 |
| 95° | 0.6 | 4.7 | 28.9 | 49.6 | 6.5 |
| 97.5° | 0.6 | 1.8 | 15.4 | 30.7 | 3.5 |
| 100° | 0.6 | 0.6 | 6.5 | 16.5 | 1.8 |
| 102.5° | 0.6 | 0.6 | 2.4 | 6.5 | 0.6 |
| 105° | 0.6 | 0.6 | 0.6 | 1.8 | 0.0 |
| 107.5° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 110° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P685692
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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 115° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 120° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 125° | 0.6 | 1.2 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 |
| 130° | 0.6 | 1.2 | 0.6 | 0.0 | 0.0 |
| 132.5° | 0.6 | 1.2 | 0.6 | 0.0 | 0.0 |
| 135° | 0.6 | 1.2 | 0.6 | 0.0 | 0.0 |
| 137.5° | 0.6 | 1.2 | 0.6 | 0.0 | 0.0 |
| 140° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 142.5° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 145° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 147.5° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 150° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 152.5° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 155° | 1.2 | 1.2 | 0.6 | 0.0 | 0.0 |
| 157.5° | 1.2 | 1.8 | 0.6 | 0.0 | 0.0 |
| 160° | 1.8 | 1.8 | 0.6 | 0.0 | 0.0 |
| 162.5° | 1.8 | 1.8 | 1.2 | 0.6 | 0.0 |
| 165° | 1.8 | 1.8 | 1.2 | 0.6 | 0.0 |
| 167.5° | 1.8 | 1.8 | 1.2 | 0.6 | 0.0 |
| 170° | 1.8 | 1.8 | 1.2 | 0.6 | 0.6 |
| 172.5° | 1.8 | 1.8 | 1.2 | 0.6 | 0.6 |
| 175° | 1.8 | 1.8 | 1.2 | 0.6 | 0.6 |
| 177.5° | 1.8 | 1.8 | 1.2 | 0.6 | 0.6 |
| 180° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |

(END OF REPORT)