

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: P685812

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

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685812
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-12-UNV-M-LVR-L935-CD-U
Description: METALUX CRUZE LINEAR 4FT LOUVER MODEL WITH MEDIUM LENS @90 CRI and 3500K
Light Source: (588) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

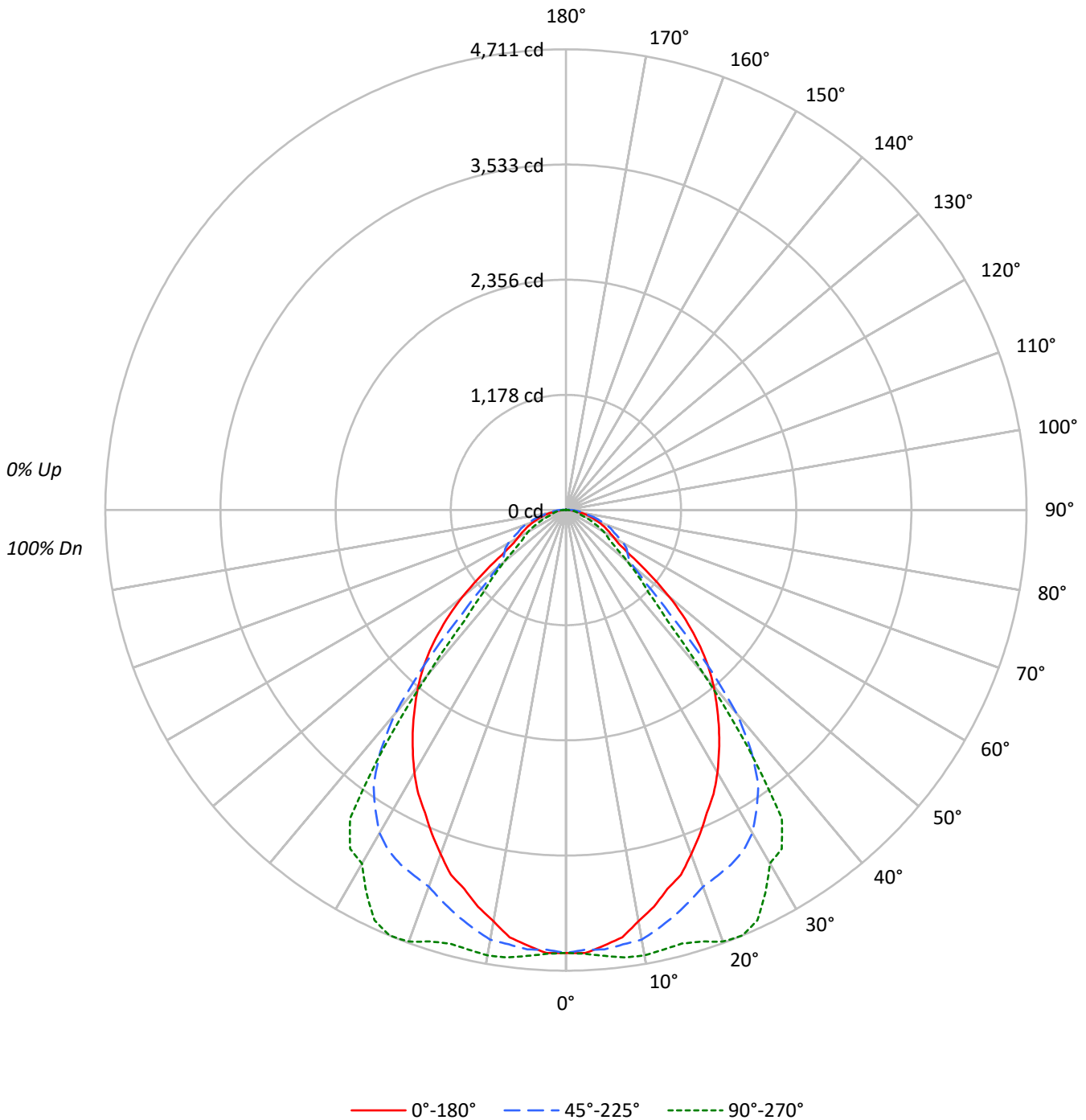
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8378.4 lumens
Efficiency: N/A
Efficacy: 108.8 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.34 / 1.2
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: P685812
CATALOG NUMBER: 4CZL-12-UNV-M-LVR-L935-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P685812

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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 | 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 | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 98 | 95 | 96 | 94 | 92 | 93 | 91 | 90 | 93 | 91 | 90 | 88 |
| 2 | 103 | 96 | 90 | 86 | 100 | 94 | 89 | 84 | 91 | 86 | 83 | 87 | 84 | 81 | 84 | 81 | 79 | 84 | 81 | 79 | 77 |
| 3 | 95 | 87 | 80 | 74 | 93 | 85 | 79 | 74 | 82 | 77 | 72 | 79 | 75 | 71 | 77 | 73 | 70 | 77 | 73 | 70 | 68 |
| 4 | 89 | 78 | 71 | 65 | 86 | 77 | 70 | 65 | 75 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 70 | 66 | 62 | 60 |
| 5 | 83 | 72 | 64 | 58 | 81 | 70 | 63 | 58 | 68 | 62 | 57 | 67 | 61 | 57 | 65 | 60 | 56 | 65 | 60 | 56 | 54 |
| 6 | 77 | 65 | 58 | 52 | 75 | 65 | 57 | 52 | 63 | 56 | 51 | 61 | 55 | 51 | 60 | 55 | 51 | 60 | 55 | 51 | 49 |
| 7 | 72 | 60 | 53 | 47 | 70 | 59 | 52 | 47 | 58 | 51 | 47 | 57 | 51 | 46 | 55 | 50 | 46 | 55 | 50 | 46 | 44 |
| 8 | 68 | 56 | 48 | 43 | 66 | 55 | 48 | 43 | 54 | 47 | 42 | 52 | 47 | 42 | 51 | 46 | 42 | 51 | 46 | 42 | 40 |
| 9 | 64 | 52 | 44 | 39 | 62 | 51 | 44 | 39 | 50 | 43 | 39 | 49 | 43 | 39 | 48 | 42 | 39 | 48 | 42 | 39 | 37 |
| 10 | 60 | 48 | 41 | 36 | 59 | 47 | 41 | 36 | 46 | 40 | 36 | 46 | 40 | 36 | 45 | 39 | 35 | 45 | 39 | 35 | 34 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 14626 | 14626 | 14626 |
| 5° | 14490 | 14620 | 14838 |
| 10° | 13999 | 14629 | 15163 |
| 15° | 13410 | 14356 | 15341 |
| 20° | 12869 | 14082 | 16139 |
| 25° | 12158 | 14250 | 16497 |
| 30° | 11557 | 14219 | 15560 |
| 35° | 10761 | 13522 | 15172 |
| 40° | 9906 | 11462 | 9246 |
| 45° | 8728 | 6831 | 5481 |
| 50° | 6928 | 4536 | 4136 |
| 55° | 4485 | 4316 | 3139 |
| 60° | 3662 | 4387 | 2884 |
| 65° | 3488 | 4134 | 2356 |
| 70° | 3312 | 4149 | 1863 |
| 75° | 3147 | 3883 | 1732 |
| 80° | 2910 | 3669 | 1943 |
| 85° | 2605 | 4487 | 2386 |



TEST NUMBER: P685812
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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 429.8 | 5.1 |
| 10°-20° | 1219.1 | 14.6 |
| 20°-30° | 1838.3 | 21.9 |
| 30°-40° | 2031.3 | 24.2 |
| 40°-50° | 1273.6 | 15.2 |
| 50°-60° | 685.7 | 8.2 |
| 60°-70° | 465.7 | 5.6 |
| 70°-80° | 278.1 | 3.3 |
| 80°-90° | 120.9 | 1.4 |
| 90°-100° | 26.5 | 0.3 |
| 100°-110° | 3.1 | 0.0 |
| 110°-120° | 1.1 | 0.0 |
| 120°-130° | 1.0 | 0.0 |
| 130°-140° | 1.2 | 0.0 |
| 140°-150° | 1.1 | 0.0 |
| 150°-160° | 0.9 | 0.0 |
| 160°-170° | 0.7 | 0.0 |
| 170°-180° | 0.3 | 0.0 |
| 0°-30° | 3487.2 | 41.6 |
| 0°-40° | 5518.6 | 65.9 |
| 0°-60° | 7477.9 | 89.3 |
| 0°-90° | 8342.6 | 99.6 |
| 90°-120° | 30.7 | 0.4 |
| 90°-150° | 34.0 | 0.4 |
| 90°-180° | 36.0 | 0.4 |
| 0°-180° | 8378.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 4529 | 4529 | 4529 | 4529 | 4529 | |
| 5° | 4470 | 4478 | 4510 | 4563 | 4578 | 421 |
| 15° | 4011 | 4152 | 4294 | 4502 | 4589 | 1132 |
| 25° | 3412 | 3620 | 3999 | 4426 | 4630 | 1575 |
| 35° | 2730 | 3050 | 3430 | 3690 | 3849 | 1703 |
| 45° | 1911 | 2081 | 1496 | 1220 | 1200 | 1458 |
| 55° | 797 | 833 | 767 | 663 | 558 | 774 |
| 65° | 456 | 502 | 541 | 439 | 308 | 452 |
| 75° | 252 | 280 | 311 | 256 | 139 | 266 |
| 85° | 70 | 86 | 121 | 160 | 64 | 76 |
| 90° | 2 | 27 | 61 | 102 | 19 | 5 |
| 95° | 1 | 4 | 24 | 53 | 9 | 0 |
| 105° | 1 | 1 | 2 | 4 | 2 | 1 |
| 115° | 1 | 1 | 1 | 1 | 1 | 1 |
| 125° | 1 | 1 | 1 | 1 | 1 | 1 |
| 135° | 1 | 1 | 2 | 2 | 2 | 1 |
| 145° | 1 | 2 | 2 | 2 | 2 | 1 |
| 155° | 2 | 2 | 2 | 2 | 2 | 1 |
| 165° | 2 | 2 | 2 | 2 | 2 | 1 |
| 175° | 2 | 2 | 2 | 3 | 3 | 0 |
| 180° | 3 | 3 | 3 | 3 | 3 | |



TEST NUMBER: P685812

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

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 4529.2 | 4529.2 | 4529.2 | 4529.2 | 4529.2 |
| 2.5° | 4535.1 | 4522.7 | 4499.6 | 4541.0 | 4541.6 |
| 5° | 4470.1 | 4477.8 | 4510.3 | 4563.4 | 4577.6 |
| 7.5° | 4406.9 | 4436.5 | 4480.2 | 4608.3 | 4614.8 |
| 10° | 4269.3 | 4330.7 | 4461.3 | 4584.7 | 4624.3 |
| 12.5° | 4154.7 | 4245.7 | 4380.3 | 4542.8 | 4604.2 |
| 15° | 4011.2 | 4151.8 | 4294.1 | 4502.0 | 4588.8 |
| 17.5° | 3910.8 | 4023.6 | 4197.9 | 4483.1 | 4625.4 |
| 20° | 3744.9 | 3903.7 | 4098.0 | 4496.1 | 4696.3 |
| 22.5° | 3583.7 | 3776.8 | 4047.8 | 4500.8 | 4711.1 |
| 25° | 3412.4 | 3619.7 | 3999.4 | 4425.8 | 4630.2 |
| 27.5° | 3270.6 | 3444.3 | 3927.4 | 4269.3 | 4417.0 |
| 30° | 3099.4 | 3303.7 | 3813.4 | 4030.1 | 4173.1 |
| 32.5° | 2915.1 | 3174.4 | 3628.5 | 3847.1 | 4106.9 |
| 35° | 2729.7 | 3050.4 | 3430.1 | 3690.0 | 3848.8 |
| 37.5° | 2536.0 | 2948.2 | 3118.3 | 3160.2 | 3051.5 |
| 40° | 2349.9 | 2805.9 | 2719.0 | 2313.3 | 2193.4 |
| 42.5° | 2146.8 | 2499.9 | 2120.8 | 1591.6 | 1537.9 |
| 45° | 1911.1 | 2080.6 | 1495.9 | 1219.6 | 1200.1 |
| 47.5° | 1660.1 | 1611.1 | 1115.6 | 1019.3 | 1008.1 |
| 50° | 1379.0 | 1288.1 | 903.0 | 899.5 | 823.3 |
| 52.5° | 1074.9 | 1022.9 | 809.7 | 780.2 | 659.1 |
| 55° | 796.7 | 833.3 | 766.6 | 663.2 | 557.5 |
| 57.5° | 637.8 | 722.9 | 736.5 | 579.4 | 498.5 |
| 60° | 567.0 | 632.5 | 679.2 | 532.7 | 446.5 |
| 62.5° | 508.5 | 560.5 | 608.3 | 494.3 | 385.1 |
| 65° | 456.5 | 502.0 | 541.0 | 439.4 | 308.3 |
| 67.5° | 401.6 | 448.8 | 496.7 | 377.4 | 262.2 |
| 70° | 350.8 | 401.0 | 439.4 | 334.9 | 197.3 |
| 72.5° | 298.2 | 350.2 | 367.3 | 279.9 | 157.7 |
| 75° | 252.2 | 280.5 | 311.2 | 255.7 | 138.8 |
| 77.5° | 203.8 | 228.0 | 240.4 | 234.5 | 122.3 |
| 80° | 156.5 | 176.0 | 197.3 | 213.2 | 104.5 |
| 82.5° | 114.6 | 128.7 | 157.7 | 187.8 | 83.9 |
| 85° | 70.3 | 86.2 | 121.1 | 159.5 | 64.4 |
| 87.5° | 31.3 | 51.4 | 89.2 | 131.7 | 41.3 |
| 90° | 1.8 | 26.6 | 61.4 | 102.2 | 18.9 |
| 92.5° | 0.6 | 11.8 | 40.2 | 75.6 | 13.0 |
| 95° | 0.6 | 4.1 | 24.2 | 52.6 | 9.4 |
| 97.5° | 0.6 | 1.8 | 13.6 | 33.7 | 5.9 |
| 100° | 0.6 | 1.2 | 6.5 | 19.5 | 4.1 |
| 102.5° | 0.6 | 1.2 | 3.0 | 9.4 | 3.0 |
| 105° | 0.6 | 1.2 | 1.8 | 4.1 | 1.8 |
| 107.5° | 0.6 | 1.2 | 1.2 | 1.8 | 1.2 |
| 110° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |



TEST NUMBER: P685812
CATALOG NUMBER: 4CZL-12-UNV-M-LVR-L935-CD-U

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 115° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 117.5° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 120° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 122.5° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 125° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 127.5° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 130° | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 132.5° | 1.2 | 1.2 | 1.8 | 1.8 | 1.8 |
| 135° | 1.2 | 1.2 | 1.8 | 1.8 | 1.8 |
| 137.5° | 1.2 | 1.8 | 1.8 | 1.8 | 1.8 |
| 140° | 1.2 | 1.8 | 1.8 | 1.8 | 1.8 |
| 142.5° | 1.2 | 1.8 | 1.8 | 1.8 | 1.8 |
| 145° | 1.2 | 1.8 | 1.8 | 1.8 | 2.4 |
| 147.5° | 1.2 | 1.8 | 1.8 | 1.8 | 2.4 |
| 150° | 1.2 | 1.8 | 1.8 | 1.8 | 1.8 |
| 152.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 155° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 157.5° | 1.8 | 1.8 | 1.8 | 2.4 | 2.4 |
| 160° | 1.8 | 2.4 | 2.4 | 2.4 | 2.4 |
| 162.5° | 1.8 | 2.4 | 2.4 | 2.4 | 2.4 |
| 165° | 1.8 | 2.4 | 2.4 | 2.4 | 2.4 |
| 167.5° | 1.8 | 2.4 | 2.4 | 2.4 | 3.0 |
| 170° | 2.4 | 2.4 | 2.4 | 3.0 | 3.0 |
| 172.5° | 2.4 | 2.4 | 2.4 | 3.0 | 3.0 |
| 175° | 2.4 | 2.4 | 2.4 | 3.0 | 3.0 |
| 177.5° | 2.4 | 3.0 | 2.4 | 3.0 | 3.5 |
| 180° | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |

(END OF REPORT)