

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: P685872

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

Issue Date: 05/10/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P685872  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 05/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 4CZL-12-UNV-W-LVR-L935-CD-U  
Description: METALUX CRUZE LINEAR 4FT LOUVER MODEL WITH WIDE LENS @90 CRI and 3500K  
Light Source: (588) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

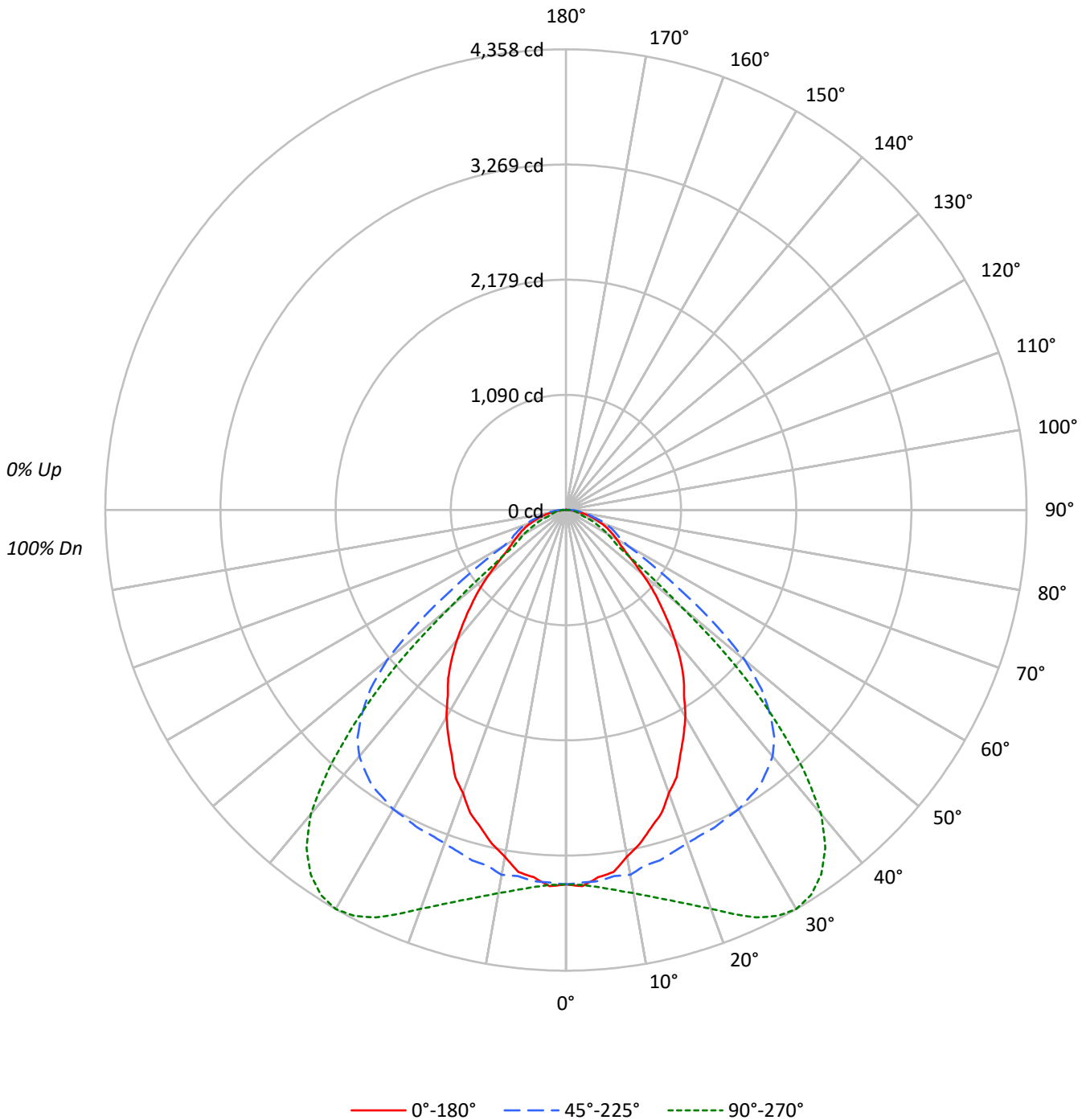
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8424.0 lumens  
Efficiency: N/A  
Efficacy: 109.4 lumens/watt  
Spacing Criteria (0/90/45): 1 / 1.64 / 1.46  
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 (A<sub>in</sub>): 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   | 110 | 106 | 103 | 99  | 108 | 104 | 101 | 98  | 100 | 97  | 95  | 96  | 94  | 92  | 92  | 91  | 89  | 87  |
| 2   | 102 | 95  | 89  | 84  | 99  | 93  | 87  | 83  | 89  | 85  | 81  | 86  | 82  | 79  | 83  | 80  | 77  | 75  |
| 3   | 94  | 85  | 78  | 72  | 92  | 83  | 77  | 71  | 80  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 66  |
| 4   | 87  | 76  | 68  | 62  | 85  | 75  | 68  | 62  | 72  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 59  | 57  |
| 5   | 80  | 69  | 61  | 55  | 78  | 68  | 60  | 54  | 66  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 51  |
| 6   | 75  | 62  | 54  | 48  | 73  | 62  | 54  | 48  | 60  | 53  | 48  | 58  | 52  | 47  | 57  | 51  | 47  | 45  |
| 7   | 69  | 57  | 49  | 43  | 68  | 56  | 48  | 43  | 55  | 48  | 43  | 53  | 47  | 42  | 52  | 46  | 42  | 40  |
| 8   | 65  | 52  | 44  | 39  | 63  | 51  | 44  | 39  | 50  | 43  | 38  | 49  | 43  | 38  | 48  | 42  | 38  | 36  |
| 9   | 61  | 48  | 40  | 35  | 59  | 47  | 40  | 35  | 46  | 40  | 35  | 45  | 39  | 35  | 44  | 39  | 34  | 33  |
| 10  | 57  | 44  | 37  | 32  | 56  | 44  | 37  | 32  | 43  | 36  | 32  | 42  | 36  | 32  | 41  | 35  | 31  | 30  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11434 | 11434 | 11434 |
| 5°  | 11303 | 11420 | 11608 |
| 10° | 10913 | 11490 | 12069 |
| 15° | 10399 | 11468 | 12779 |
| 20° | 9789  | 11530 | 13793 |
| 25° | 9114  | 11814 | 15149 |
| 30° | 8426  | 12187 | 16250 |
| 35° | 7655  | 12582 | 16591 |
| 40° | 6749  | 12819 | 15829 |
| 45° | 5753  | 12469 | 12690 |
| 50° | 4768  | 11088 | 7201  |
| 55° | 3884  | 7491  | 3445  |
| 60° | 3586  | 4356  | 2975  |
| 65° | 3457  | 4008  | 2419  |
| 70° | 3262  | 3931  | 1729  |
| 75° | 3036  | 3588  | 1681  |
| 80° | 2767  | 3526  | 1845  |
| 85° | 2123  | 4224  | 2034  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 336.7  | 4.0       |
| 10°-20°   | 977.3  | 11.6      |
| 20°-30°   | 1550.9 | 18.4      |
| 30°-40°   | 1937.0 | 23.0      |
| 40°-50°   | 1779.1 | 21.1      |
| 50°-60°   | 949.5  | 11.3      |
| 60°-70°   | 488.7  | 5.8       |
| 70°-80°   | 268.7  | 3.2       |
| 80°-90°   | 110.9  | 1.3       |
| 90°-100°  | 21.4   | 0.3       |
| 100°-110° | 1.2    | 0.0       |
| 110°-120° | 0.3    | 0.0       |
| 120°-130° | 0.4    | 0.0       |
| 130°-140° | 0.7    | 0.0       |
| 140°-150° | 0.6    | 0.0       |
| 150°-160° | 0.4    | 0.0       |
| 160°-170° | 0.3    | 0.0       |
| 170°-180° | 0.1    | 0.0       |
| 0°-30°    | 2864.8 | 34.0      |
| 0°-40°    | 4801.9 | 57.0      |
| 0°-60°    | 7530.4 | 89.4      |
| 0°-90°    | 8398.6 | 99.7      |
| 90°-120°  | 22.9   | 0.3       |
| 90°-150°  | 24.5   | 0.3       |
| 90°-180°  | 25.0   | 0.3       |
| 0°-180°   | 8424.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 3541 | 3541  | 3541 | 3541  | 3541 |      |
| 5°   | 3487 | 3496  | 3523 | 3577  | 3581 | 329  |
| 15°  | 3111 | 3212  | 3430 | 3710  | 3822 | 875  |
| 25°  | 2558 | 2798  | 3316 | 3923  | 4252 | 1179 |
| 35°  | 1942 | 2300  | 3192 | 3888  | 4209 | 1206 |
| 45°  | 1260 | 1816  | 2730 | 2830  | 2779 | 975  |
| 55°  | 690  | 1237  | 1331 | 745   | 612  | 637  |
| 65°  | 452  | 593   | 524  | 428   | 317  | 447  |
| 75°  | 243  | 270   | 288  | 256   | 135  | 258  |
| 85°  | 57   | 75    | 114  | 150   | 55   | 66   |
| 90°  | 0    | 21    | 56   | 91    | 12   | 2    |
| 95°  | 0    | 2     | 21   | 42    | 5    | 0    |
| 105° | 0    | 1     | 1    | 1     | 0    | 0    |
| 115° | 0    | 1     | 1    | 0     | 0    | 0    |
| 125° | 0    | 1     | 1    | 0     | 0    | 0    |
| 135° | 1    | 1     | 1    | 1     | 1    | 0    |
| 145° | 1    | 1     | 1    | 1     | 1    | 0    |
| 155° | 1    | 1     | 1    | 1     | 1    | 1    |
| 165° | 1    | 2     | 1    | 1     | 1    | 0    |
| 175° | 2    | 2     | 1    | 1     | 1    | 0    |
| 180° | 1    | 1     | 1    | 1     | 1    |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 3540.7 | 3540.7 | 3540.7 | 3540.7 | 3540.7 |
| 2.5°   | 3561.4 | 3553.7 | 3528.3 | 3551.3 | 3549.6 |
| 5°     | 3487.0 | 3495.8 | 3523.0 | 3577.3 | 3580.9 |
| 7.5°   | 3453.9 | 3478.1 | 3493.5 | 3611.0 | 3626.3 |
| 10°    | 3328.1 | 3365.9 | 3504.1 | 3626.3 | 3680.7 |
| 12.5°  | 3233.6 | 3309.8 | 3443.9 | 3651.2 | 3745.7 |
| 15°    | 3110.7 | 3212.3 | 3430.3 | 3709.6 | 3822.4 |
| 17.5°  | 3006.2 | 3110.2 | 3388.9 | 3753.9 | 3911.6 |
| 20°    | 2848.5 | 3036.9 | 3355.3 | 3800.0 | 4013.8 |
| 22.5°  | 2735.7 | 2926.5 | 3329.3 | 3840.7 | 4134.9 |
| 25°    | 2557.9 | 2798.3 | 3315.7 | 3922.8 | 4251.8 |
| 27.5°  | 2409.1 | 2690.2 | 3285.6 | 3975.4 | 4329.2 |
| 30°    | 2259.7 | 2557.9 | 3268.4 | 3984.9 | 4358.1 |
| 32.5°  | 2079.5 | 2450.4 | 3225.3 | 3963.0 | 4316.8 |
| 35°    | 1941.9 | 2300.4 | 3191.7 | 3888.0 | 4208.7 |
| 37.5°  | 1774.2 | 2182.3 | 3117.8 | 3752.1 | 4031.5 |
| 40°    | 1601.1 | 2073.0 | 3041.1 | 3540.1 | 3755.1 |
| 42.5°  | 1426.3 | 1950.2 | 2918.2 | 3257.2 | 3322.8 |
| 45°    | 1259.8 | 1816.1 | 2730.4 | 2829.6 | 2778.8 |
| 47.5°  | 1110.3 | 1672.0 | 2508.3 | 2293.3 | 2174.0 |
| 50°    | 949.1  | 1525.5 | 2207.1 | 1745.8 | 1433.4 |
| 52.5°  | 803.8  | 1403.3 | 1792.5 | 1182.4 | 891.8  |
| 55°    | 689.8  | 1236.7 | 1330.6 | 745.4  | 611.9  |
| 57.5°  | 608.9  | 1109.2 | 960.3  | 589.4  | 523.9  |
| 60°    | 555.2  | 949.7  | 674.5  | 541.0  | 460.7  |
| 62.5°  | 502.0  | 751.3  | 577.0  | 493.2  | 387.4  |
| 65°    | 452.4  | 593.0  | 524.5  | 427.6  | 316.6  |
| 67.5°  | 401.0  | 481.3  | 473.7  | 388.0  | 264.0  |
| 70°    | 345.5  | 395.7  | 416.4  | 324.8  | 183.1  |
| 72.5°  | 295.9  | 331.9  | 354.4  | 277.6  | 155.3  |
| 75°    | 243.3  | 269.9  | 287.6  | 255.7  | 134.7  |
| 77.5°  | 193.1  | 217.3  | 234.5  | 231.5  | 118.1  |
| 80°    | 148.8  | 164.8  | 189.6  | 207.3  | 99.2   |
| 82.5°  | 101.6  | 113.4  | 149.4  | 179.0  | 77.4   |
| 85°    | 57.3   | 75.0   | 114.0  | 150.0  | 54.9   |
| 87.5°  | 16.5   | 44.3   | 82.7   | 120.5  | 31.9   |
| 90°    | 0.0    | 21.3   | 56.1   | 91.0   | 11.8   |
| 92.5°  | 0.0    | 8.3    | 36.6   | 63.8   | 8.3    |
| 95°    | 0.0    | 2.4    | 21.3   | 41.9   | 5.3    |
| 97.5°  | 0.0    | 0.6    | 10.0   | 24.8   | 2.4    |
| 100°   | 0.0    | 0.6    | 3.5    | 11.8   | 0.6    |
| 102.5° | 0.0    | 0.6    | 1.2    | 4.1    | 0.0    |
| 105°   | 0.0    | 0.6    | 0.6    | 0.6    | 0.0    |
| 107.5° | 0.0    | 0.6    | 0.6    | 0.0    | 0.0    |
| 110°   | 0.0    | 0.6    | 0.6    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

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

(END OF REPORT)