

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: P685432

Luminaire Tested: **4CZL-12-UNV-M-L840-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685432
Test Lab: INNOVATION CENTER(G2)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-12-UNV-M-L840-CD-U
Description: METALUX CRUZE LINEAR 4FT MEDIUM LENS MODEL @80 CRI and 4000K
Light Source: (588) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

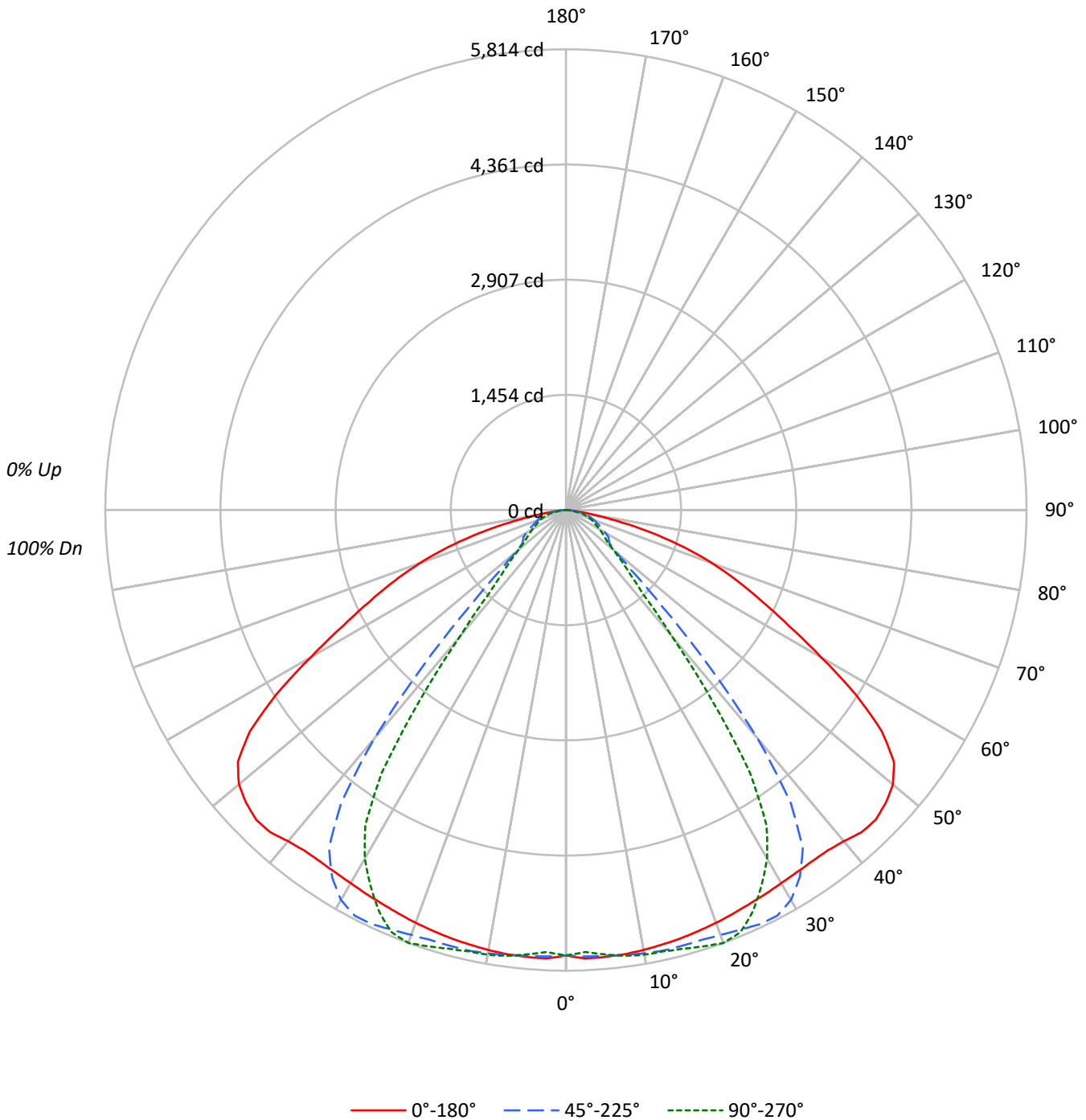
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12143.4 lumens
Efficiency: N/A
Efficacy: 157.7 lumens/watt
Spacing Criteria (0/90/45): 1.48 / 1.28 / 1.22
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_{in}): 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





TEST NUMBER: P685432

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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 | 104 | 101 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 90 | 90 | 90 | 88 |
| 2 | 103 | 96 | 90 | 86 | 100 | 94 | 89 | 85 | 91 | 87 | 83 | 88 | 84 | 81 | 85 | 82 | 79 | 79 | 79 | 79 | 77 |
| 3 | 95 | 86 | 80 | 74 | 93 | 85 | 79 | 73 | 82 | 77 | 72 | 79 | 75 | 71 | 77 | 73 | 70 | 70 | 70 | 70 | 68 |
| 4 | 88 | 78 | 71 | 65 | 86 | 77 | 70 | 64 | 74 | 68 | 64 | 72 | 67 | 63 | 70 | 66 | 62 | 62 | 62 | 62 | 60 |
| 5 | 82 | 71 | 63 | 57 | 80 | 70 | 63 | 57 | 68 | 61 | 56 | 66 | 60 | 56 | 64 | 59 | 55 | 55 | 55 | 55 | 53 |
| 6 | 76 | 65 | 57 | 51 | 75 | 64 | 56 | 51 | 62 | 55 | 51 | 61 | 55 | 50 | 59 | 54 | 50 | 50 | 50 | 50 | 48 |
| 7 | 71 | 59 | 51 | 46 | 70 | 59 | 51 | 46 | 57 | 50 | 46 | 56 | 50 | 45 | 54 | 49 | 45 | 45 | 45 | 45 | 43 |
| 8 | 67 | 55 | 47 | 42 | 65 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 41 | 41 | 41 | 39 |
| 9 | 63 | 50 | 43 | 38 | 61 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 37 | 47 | 41 | 37 | 37 | 37 | 37 | 36 |
| 10 | 59 | 47 | 39 | 35 | 58 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 44 | 38 | 34 | 34 | 34 | 34 | 33 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 18151 | 18151 | 18151 |
| 5° | 18353 | 18302 | 18250 |
| 10° | 18487 | 18631 | 18683 |
| 15° | 18706 | 19027 | 19160 |
| 20° | 19050 | 19608 | 19978 |
| 25° | 19539 | 20563 | 19904 |
| 30° | 20274 | 21182 | 18934 |
| 35° | 21339 | 20547 | 15989 |
| 40° | 22998 | 15847 | 8745 |
| 45° | 25250 | 7790 | 5226 |
| 50° | 27074 | 4071 | 3897 |
| 55° | 27419 | 3716 | 3364 |
| 60° | 24046 | 3704 | 3171 |
| 65° | 20925 | 3558 | 3071 |
| 70° | 18569 | 3606 | 3090 |
| 75° | 14245 | 3702 | 3138 |
| 80° | 7251 | 3762 | 2598 |
| 85° | 2860 | 2119 | 741 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 538.6 | 4.4 |
| 10°-20° | 1605.2 | 13.2 |
| 20°-30° | 2590.5 | 21.3 |
| 30°-40° | 3033.9 | 25.0 |
| 40°-50° | 2065.4 | 17.0 |
| 50°-60° | 1195.9 | 9.8 |
| 60°-70° | 683.7 | 5.6 |
| 70°-80° | 351.9 | 2.9 |
| 80°-90° | 78.4 | 0.6 |
| 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° | 4734.2 | 39.0 |
| 0°-40° | 7768.1 | 64.0 |
| 0°-60° | 11029.4 | 90.8 |
| 0°-90° | 12143.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 12143.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5621 | 5621 | 5621 | 5621 | 5621 | |
| 5° | 5662 | 5606 | 5646 | 5639 | 5630 | 540 |
| 15° | 5596 | 5587 | 5691 | 5706 | 5731 | 1584 |
| 25° | 5484 | 5561 | 5771 | 5682 | 5586 | 2538 |
| 35° | 5413 | 5681 | 5212 | 4396 | 4056 | 3408 |
| 45° | 5529 | 4114 | 1706 | 1149 | 1144 | 4248 |
| 55° | 4870 | 1412 | 660 | 614 | 598 | 4244 |
| 65° | 2738 | 504 | 466 | 411 | 402 | 2746 |
| 75° | 1142 | 311 | 297 | 259 | 252 | 1214 |
| 85° | 77 | 94 | 57 | 27 | 20 | 131 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P685432

CATALOG NUMBER: 4CZL-12-UNV-M-L840-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 | 5620.8 |
| 2.5° | 5666.0 | 5650.0 | 5618.1 | 5604.8 | 5604.8 | 5639.4 | 5644.7 | 5623.4 | 5619.4 | 5600.8 | 5583.5 |
| 5° | 5662.0 | 5646.1 | 5615.4 | 5603.5 | 5607.5 | 5646.1 | 5655.4 | 5638.1 | 5643.4 | 5638.1 | 5630.1 |
| 7.5° | 5654.0 | 5636.7 | 5608.8 | 5600.8 | 5612.8 | 5662.0 | 5678.0 | 5668.7 | 5680.6 | 5678.0 | 5675.3 |
| 10° | 5638.1 | 5624.8 | 5598.1 | 5596.8 | 5620.8 | 5682.0 | 5701.9 | 5690.0 | 5694.0 | 5692.6 | 5697.9 |
| 12.5° | 5616.8 | 5604.8 | 5582.2 | 5594.2 | 5628.8 | 5694.0 | 5707.3 | 5688.6 | 5694.0 | 5695.3 | 5704.6 |
| 15° | 5595.5 | 5580.8 | 5566.2 | 5594.2 | 5630.1 | 5691.3 | 5704.6 | 5701.9 | 5717.9 | 5719.2 | 5731.2 |
| 17.5° | 5568.9 | 5559.6 | 5555.6 | 5592.8 | 5620.8 | 5688.6 | 5719.2 | 5735.2 | 5756.5 | 5761.8 | 5773.8 |
| 20° | 5543.6 | 5535.6 | 5544.9 | 5586.2 | 5616.8 | 5705.9 | 5748.5 | 5772.5 | 5795.1 | 5801.7 | 5813.7 |
| 22.5° | 5513.0 | 5507.7 | 5532.9 | 5576.9 | 5623.4 | 5732.5 | 5780.4 | 5783.1 | 5773.8 | 5756.5 | 5764.5 |
| 25° | 5483.7 | 5483.7 | 5521.0 | 5574.2 | 5643.4 | 5771.1 | 5775.1 | 5699.3 | 5631.4 | 5586.2 | 5586.2 |
| 27.5° | 5459.8 | 5465.1 | 5511.7 | 5586.2 | 5682.0 | 5773.8 | 5663.3 | 5513.0 | 5413.2 | 5348.0 | 5344.0 |
| 30° | 5437.1 | 5446.4 | 5511.7 | 5619.4 | 5709.9 | 5680.6 | 5466.4 | 5284.1 | 5145.7 | 5083.2 | 5077.9 |
| 32.5° | 5421.2 | 5435.8 | 5535.6 | 5670.0 | 5676.7 | 5493.0 | 5213.6 | 4983.4 | 4819.7 | 4726.6 | 4710.6 |
| 35° | 5413.2 | 5430.5 | 5580.8 | 5713.9 | 5542.3 | 5212.3 | 4815.7 | 4460.4 | 4200.9 | 4081.2 | 4055.9 |
| 37.5° | 5418.5 | 5449.1 | 5643.4 | 5676.7 | 5205.6 | 4660.0 | 4090.5 | 3580.8 | 3224.2 | 3111.1 | 3032.6 |
| 40° | 5455.8 | 5507.7 | 5692.6 | 5373.3 | 4499.0 | 3759.2 | 3004.7 | 2456.4 | 2210.3 | 2129.1 | 2074.5 |
| 42.5° | 5518.3 | 5570.2 | 5563.5 | 4678.7 | 3514.3 | 2670.7 | 1936.1 | 1607.5 | 1487.7 | 1474.4 | 1449.1 |
| 45° | 5529.0 | 5548.9 | 5145.7 | 3769.8 | 2556.2 | 1705.9 | 1246.8 | 1149.7 | 1147.0 | 1156.4 | 1144.4 |
| 47.5° | 5473.1 | 5434.5 | 4542.9 | 2883.6 | 1760.5 | 1103.1 | 938.1 | 954.1 | 962.1 | 955.4 | 946.1 |
| 50° | 5389.2 | 5246.8 | 3866.9 | 2119.8 | 1173.7 | 810.4 | 818.4 | 833.0 | 805.1 | 786.4 | 775.8 |
| 52.5° | 5218.9 | 4942.1 | 3116.4 | 1502.3 | 811.7 | 692.0 | 755.8 | 713.2 | 673.3 | 662.7 | 661.3 |
| 55° | 4870.3 | 4489.7 | 2397.9 | 1083.2 | 620.1 | 660.0 | 672.0 | 617.4 | 605.5 | 600.1 | 597.5 |
| 57.5° | 4339.3 | 3926.8 | 1803.1 | 782.4 | 544.2 | 637.4 | 584.2 | 562.9 | 550.9 | 546.9 | 542.9 |
| 60° | 3723.2 | 3297.4 | 1344.0 | 574.9 | 528.3 | 573.5 | 529.6 | 509.6 | 496.3 | 491.0 | 491.0 |
| 62.5° | 3177.7 | 2729.2 | 994.0 | 467.1 | 524.3 | 517.6 | 477.7 | 456.4 | 448.4 | 445.8 | 443.1 |
| 65° | 2738.5 | 2195.6 | 717.2 | 432.5 | 489.7 | 465.7 | 427.1 | 412.5 | 407.2 | 401.9 | 401.9 |
| 67.5° | 2347.3 | 1719.2 | 528.3 | 424.5 | 449.8 | 419.2 | 389.9 | 377.9 | 371.3 | 369.9 | 368.6 |
| 70° | 1966.7 | 1266.8 | 401.9 | 415.2 | 427.1 | 381.9 | 354.0 | 339.3 | 331.3 | 327.3 | 327.3 |
| 72.5° | 1566.2 | 868.9 | 320.7 | 381.9 | 391.2 | 338.0 | 310.0 | 299.4 | 292.7 | 288.8 | 287.4 |
| 75° | 1141.7 | 545.6 | 282.1 | 320.7 | 336.7 | 296.7 | 268.8 | 259.5 | 256.8 | 252.8 | 251.5 |
| 77.5° | 726.5 | 326.0 | 240.9 | 262.1 | 275.4 | 250.2 | 228.9 | 216.9 | 215.6 | 211.6 | 210.2 |
| 80° | 389.9 | 208.9 | 192.9 | 206.3 | 214.2 | 202.3 | 177.0 | 153.0 | 146.4 | 141.1 | 139.7 |
| 82.5° | 181.0 | 133.1 | 143.7 | 155.7 | 159.7 | 129.1 | 106.5 | 95.8 | 89.2 | 82.5 | 78.5 |
| 85° | 77.2 | 71.9 | 89.2 | 95.8 | 78.5 | 57.2 | 37.3 | 27.9 | 22.6 | 21.3 | 20.0 |
| 87.5° | 27.9 | 27.9 | 33.3 | 22.6 | 13.3 | 10.6 | 10.6 | 9.3 | 8.0 | 6.7 | 6.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)