

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: P685523

Luminaire Tested: **4CZL-16-UNV-W-L940-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685523
Test Lab: INNOVATION CENTER(G2)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-16-UNV-W-L940-CD-U
Description: METALUX CRUZE LINEAR 4FT WIDE LENS MODEL @90 CRI and 4000K
Light Source: (588) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

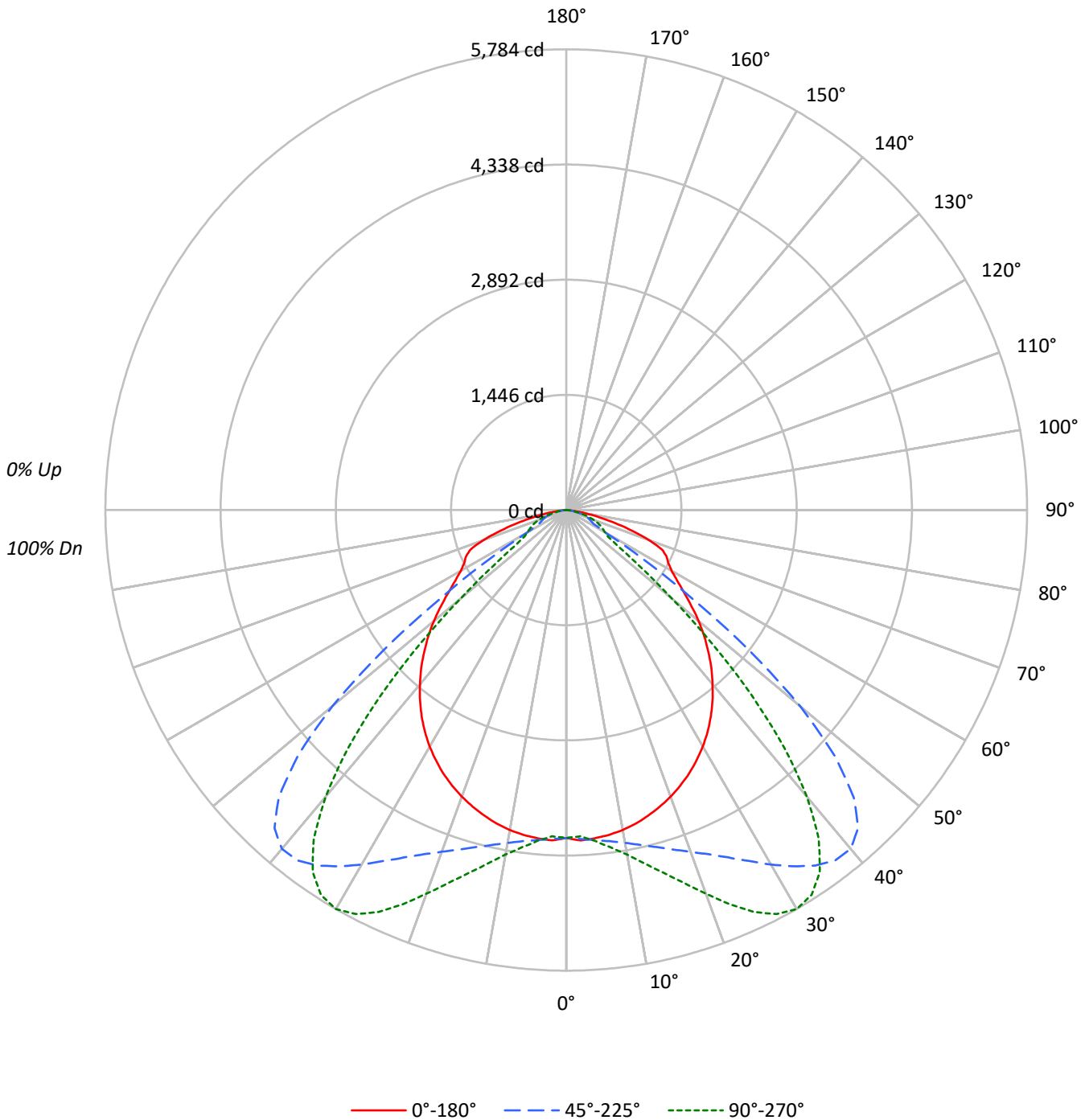
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13166.0 lumens
Efficiency: N/A
Efficacy: 127.8 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.69 / 1.65
Luminous Opening: Rectangular (W 0.83' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 103
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

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Luminous Intensity Polar Plot





TEST NUMBER: P685523
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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 | 106 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 89 | 89 | 89 | 87 |
| 2 | 102 | 94 | 88 | 83 | 99 | 93 | 87 | 82 | 89 | 85 | 81 | 86 | 82 | 79 | 83 | 80 | 77 | 77 | 77 | 77 | 75 |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | 67 | 67 | 67 | 65 |
| 4 | 86 | 75 | 67 | 61 | 84 | 73 | 66 | 60 | 71 | 65 | 59 | 69 | 63 | 59 | 67 | 62 | 58 | 58 | 58 | 58 | 56 |
| 5 | 79 | 67 | 59 | 52 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 51 | 51 | 51 | 49 |
| 6 | 73 | 60 | 52 | 46 | 71 | 59 | 51 | 46 | 58 | 51 | 45 | 56 | 50 | 45 | 55 | 49 | 45 | 45 | 45 | 45 | 43 |
| 7 | 68 | 55 | 46 | 40 | 66 | 54 | 46 | 40 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 39 | 39 | 39 | 39 | 38 |
| 8 | 63 | 50 | 42 | 36 | 61 | 49 | 41 | 36 | 48 | 41 | 36 | 47 | 40 | 35 | 45 | 40 | 35 | 35 | 35 | 35 | 33 |
| 9 | 59 | 46 | 38 | 32 | 57 | 45 | 37 | 32 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 32 | 32 | 32 | 30 |
| 10 | 55 | 42 | 34 | 29 | 54 | 41 | 34 | 29 | 40 | 34 | 29 | 39 | 33 | 29 | 39 | 33 | 29 | 29 | 29 | 29 | 27 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 13293 | 13293 | 13293 |
| 5° | 13409 | 13479 | 13520 |
| 10° | 13376 | 13911 | 14400 |
| 15° | 13279 | 14647 | 15762 |
| 20° | 13163 | 15691 | 17609 |
| 25° | 13005 | 17146 | 19834 |
| 30° | 12783 | 19161 | 21568 |
| 35° | 12470 | 21476 | 21865 |
| 40° | 12038 | 23399 | 19809 |
| 45° | 11518 | 23310 | 15035 |
| 50° | 10894 | 19264 | 8665 |
| 55° | 10154 | 10597 | 4456 |
| 60° | 9854 | 3697 | 3633 |
| 65° | 10620 | 2690 | 3642 |
| 70° | 10487 | 2757 | 3514 |
| 75° | 7929 | 2410 | 2822 |
| 80° | 4790 | 1969 | 1997 |
| 85° | 2386 | 1008 | 426 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 398.4 | 3.0 |
| 10°-20° | 1238.9 | 9.4 |
| 20°-30° | 2176.3 | 16.5 |
| 30°-40° | 3023.4 | 23.0 |
| 40°-50° | 3066.1 | 23.3 |
| 50°-60° | 1967.7 | 14.9 |
| 60°-70° | 920.3 | 7.0 |
| 70°-80° | 319.1 | 2.4 |
| 80°-90° | 55.6 | 0.4 |
| 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° | 3813.6 | 29.0 |
| 0°-40° | 6837.1 | 51.9 |
| 0°-60° | 11870.9 | 90.2 |
| 0°-90° | 13166.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 13166.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4117 | 4117 | 4117 | 4117 | 4117 | |
| 5° | 4137 | 4107 | 4158 | 4171 | 4171 | 393 |
| 15° | 3972 | 4066 | 4381 | 4617 | 4715 | 1121 |
| 25° | 3650 | 4024 | 4812 | 5376 | 5567 | 1680 |
| 35° | 3163 | 4058 | 5448 | 5635 | 5547 | 1975 |
| 45° | 2522 | 4344 | 5104 | 3807 | 3292 | 1944 |
| 55° | 1804 | 4487 | 1882 | 906 | 792 | 1628 |
| 65° | 1390 | 1434 | 352 | 441 | 477 | 1352 |
| 75° | 636 | 220 | 193 | 223 | 226 | 688 |
| 85° | 64 | 58 | 27 | 15 | 12 | 97 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P685523

CATALOG NUMBER: 4CZL-16-UNV-W-L940-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 | 4116.6 |
| 2.5° | 4152.4 | 4139.5 | 4118.1 | 4109.5 | 4113.8 | 4135.2 | 4142.4 | 4126.6 | 4122.4 | 4110.9 | 4099.5 |
| 5° | 4136.7 | 4125.2 | 4109.5 | 4106.6 | 4122.4 | 4158.1 | 4173.9 | 4169.6 | 4176.7 | 4178.2 | 4171.0 |
| 7.5° | 4113.8 | 4103.7 | 4090.9 | 4103.7 | 4136.7 | 4193.9 | 4229.7 | 4241.2 | 4266.9 | 4272.6 | 4271.2 |
| 10° | 4079.4 | 4070.8 | 4066.5 | 4099.5 | 4156.7 | 4242.6 | 4305.6 | 4337.1 | 4374.3 | 4387.2 | 4391.5 |
| 12.5° | 4033.6 | 4025.0 | 4036.5 | 4093.7 | 4183.9 | 4307.0 | 4400.0 | 4455.9 | 4508.8 | 4536.0 | 4544.6 |
| 15° | 3972.1 | 3969.2 | 3997.8 | 4089.4 | 4218.3 | 4381.4 | 4510.3 | 4597.6 | 4673.4 | 4703.5 | 4714.9 |
| 17.5° | 3904.8 | 3906.2 | 3957.7 | 4088.0 | 4259.8 | 4468.7 | 4633.4 | 4757.9 | 4850.9 | 4893.9 | 4906.7 |
| 20° | 3830.4 | 3834.6 | 3911.9 | 4086.6 | 4311.3 | 4566.1 | 4769.3 | 4932.5 | 5048.5 | 5105.7 | 5124.3 |
| 22.5° | 3743.0 | 3751.6 | 3861.8 | 4088.0 | 4365.7 | 4677.7 | 4929.7 | 5124.3 | 5263.2 | 5331.9 | 5354.8 |
| 25° | 3650.0 | 3662.9 | 3810.3 | 4095.2 | 4434.4 | 4812.3 | 5112.9 | 5340.5 | 5480.7 | 5540.8 | 5566.6 |
| 27.5° | 3542.6 | 3564.1 | 3754.5 | 4105.2 | 4516.0 | 4968.3 | 5300.4 | 5519.4 | 5649.6 | 5695.4 | 5718.3 |
| 30° | 3428.1 | 3452.5 | 3700.1 | 4125.2 | 4621.9 | 5138.6 | 5473.6 | 5658.2 | 5745.5 | 5771.3 | 5784.2 |
| 32.5° | 3302.2 | 3342.3 | 3645.7 | 4158.1 | 4746.4 | 5303.2 | 5601.0 | 5711.2 | 5732.7 | 5724.1 | 5728.4 |
| 35° | 3163.3 | 3206.3 | 3594.2 | 4212.5 | 4888.1 | 5447.8 | 5651.1 | 5651.1 | 5588.1 | 5549.4 | 5546.6 |
| 37.5° | 3015.9 | 3070.3 | 3542.6 | 4275.5 | 5052.7 | 5543.7 | 5596.7 | 5455.0 | 5301.8 | 5218.8 | 5205.9 |
| 40° | 2855.6 | 2928.6 | 3506.9 | 4361.4 | 5201.6 | 5550.9 | 5402.0 | 5110.0 | 4849.5 | 4714.9 | 4699.2 |
| 42.5° | 2696.7 | 2786.9 | 3491.1 | 4473.0 | 5313.3 | 5419.2 | 5035.6 | 4584.7 | 4231.1 | 4072.3 | 4055.1 |
| 45° | 2522.1 | 2640.9 | 3496.8 | 4626.2 | 5343.3 | 5104.3 | 4490.2 | 3906.2 | 3509.7 | 3309.3 | 3292.2 |
| 47.5° | 2348.9 | 2496.3 | 3511.2 | 4799.4 | 5211.6 | 4570.4 | 3764.5 | 3088.9 | 2695.3 | 2484.9 | 2482.0 |
| 50° | 2168.5 | 2360.3 | 3545.5 | 4941.1 | 4855.2 | 3834.6 | 2872.8 | 2212.9 | 1898.0 | 1737.7 | 1724.8 |
| 52.5° | 1981.0 | 2241.5 | 3619.9 | 4966.9 | 4221.1 | 2889.9 | 1949.5 | 1477.2 | 1272.5 | 1170.9 | 1150.8 |
| 55° | 1803.5 | 2141.3 | 3741.6 | 4735.0 | 3309.3 | 1882.3 | 1228.1 | 931.8 | 828.8 | 787.3 | 791.5 |
| 57.5° | 1650.4 | 2066.9 | 3883.3 | 4129.5 | 2148.5 | 1107.9 | 711.4 | 619.8 | 616.9 | 621.2 | 622.6 |
| 60° | 1525.8 | 2021.1 | 3946.3 | 3097.5 | 1179.5 | 572.5 | 496.7 | 516.7 | 543.9 | 559.7 | 562.5 |
| 62.5° | 1444.3 | 1996.8 | 3754.5 | 1794.9 | 523.9 | 399.4 | 433.7 | 470.9 | 502.4 | 516.7 | 518.2 |
| 65° | 1389.9 | 1932.4 | 3071.7 | 887.5 | 320.6 | 352.1 | 395.1 | 433.7 | 462.3 | 473.8 | 476.6 |
| 67.5° | 1305.4 | 1750.6 | 2105.6 | 367.9 | 282.0 | 317.8 | 359.3 | 396.5 | 420.8 | 429.4 | 430.8 |
| 70° | 1110.7 | 1465.7 | 1223.8 | 244.8 | 254.8 | 292.0 | 324.9 | 353.5 | 369.3 | 373.6 | 372.2 |
| 72.5° | 867.4 | 1160.8 | 618.4 | 221.9 | 236.2 | 256.2 | 274.8 | 290.6 | 299.2 | 303.5 | 303.5 |
| 75° | 635.5 | 848.8 | 290.6 | 196.1 | 176.1 | 193.2 | 211.8 | 221.9 | 224.7 | 226.2 | 226.2 |
| 77.5° | 426.5 | 585.4 | 173.2 | 151.7 | 136.0 | 150.3 | 157.5 | 153.2 | 150.3 | 153.2 | 153.2 |
| 80° | 257.6 | 360.7 | 151.7 | 110.2 | 104.5 | 105.9 | 100.2 | 100.2 | 105.9 | 108.8 | 107.4 |
| 82.5° | 138.8 | 204.7 | 133.1 | 80.2 | 70.1 | 64.4 | 63.0 | 60.1 | 57.3 | 55.8 | 55.8 |
| 85° | 64.4 | 104.5 | 85.9 | 48.7 | 37.2 | 27.2 | 21.5 | 15.7 | 14.3 | 11.5 | 11.5 |
| 87.5° | 25.8 | 40.1 | 25.8 | 15.7 | 8.6 | 5.7 | 4.3 | 2.9 | 1.4 | 1.4 | 1.4 |
| 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)