

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: P685573

Luminaire Tested: **4CZL-16-UNV-FL-L935-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685573
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-16-UNV-FL-L935-CD-U
Description: METALUX CRUZE LINEAR 4FT FROSTED LENS MODEL @90 CRI and 3500K
Light Source: (588) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

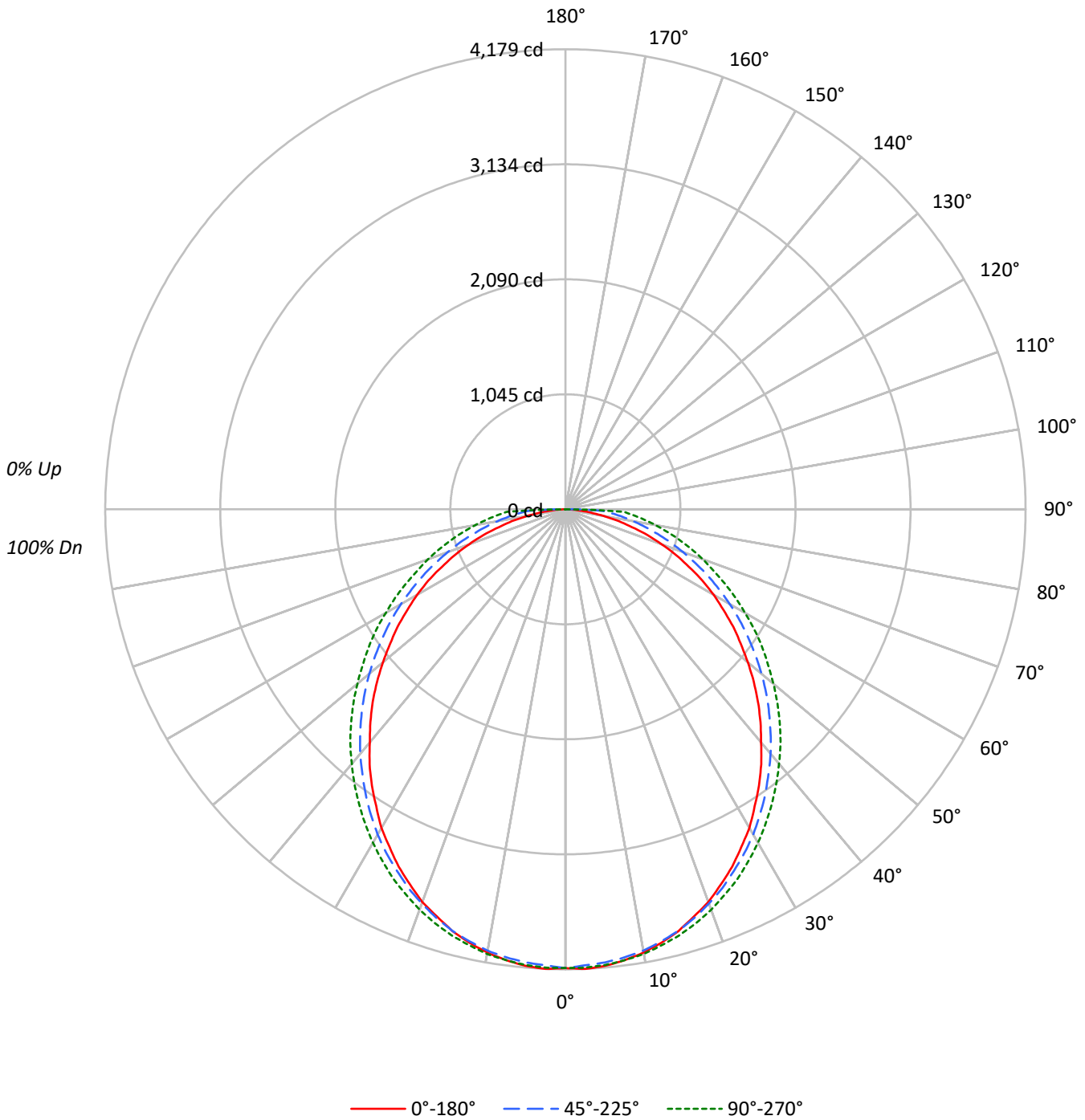
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11737.8 lumens
Efficiency: N/A
Efficacy: 114.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.25 / 1.34
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 4' x H: 0.08')
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

TEST NUMBER: P685573
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Luminous Intensity Polar Plot





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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 | 102 | 102 | 102 | 100 |
| 1 | 108 | 103 | 98 | 94 | 105 | 101 | 96 | 93 | 96 | 93 | 90 | 92 | 90 | 87 | 89 | 86 | 84 | 84 | 84 | 84 | 82 |
| 2 | 98 | 89 | 82 | 76 | 95 | 87 | 81 | 75 | 84 | 78 | 74 | 81 | 76 | 72 | 78 | 74 | 70 | 70 | 70 | 70 | 68 |
| 3 | 89 | 78 | 70 | 63 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 65 | 61 | 68 | 64 | 59 | 59 | 59 | 59 | 57 |
| 4 | 82 | 69 | 60 | 54 | 79 | 68 | 60 | 53 | 66 | 58 | 52 | 63 | 57 | 52 | 61 | 56 | 51 | 51 | 51 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 44 | 44 | 44 | 42 |
| 6 | 69 | 56 | 47 | 40 | 68 | 55 | 46 | 40 | 53 | 45 | 40 | 51 | 45 | 39 | 50 | 44 | 39 | 39 | 39 | 39 | 37 |
| 7 | 64 | 51 | 42 | 36 | 63 | 50 | 41 | 36 | 48 | 41 | 35 | 47 | 40 | 35 | 46 | 39 | 35 | 35 | 35 | 35 | 33 |
| 8 | 60 | 46 | 38 | 32 | 58 | 46 | 37 | 32 | 44 | 37 | 32 | 43 | 36 | 31 | 42 | 36 | 31 | 31 | 31 | 31 | 29 |
| 9 | 56 | 43 | 34 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 28 | 28 | 28 | 26 |
| 10 | 53 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 30 | 26 | 36 | 30 | 26 | 26 | 26 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 13456 | 13456 | 13456 |
| 5° | 13470 | 13293 | 13352 |
| 10° | 13358 | 13152 | 13218 |
| 15° | 13185 | 12954 | 13039 |
| 20° | 12951 | 12703 | 12835 |
| 25° | 12642 | 12411 | 12603 |
| 30° | 12313 | 12120 | 12331 |
| 35° | 11907 | 11764 | 12037 |
| 40° | 11452 | 11406 | 11740 |
| 45° | 11066 | 11007 | 11430 |
| 50° | 10600 | 10596 | 11068 |
| 55° | 10168 | 10147 | 10742 |
| 60° | 9692 | 9696 | 10368 |
| 65° | 9061 | 9212 | 10041 |
| 70° | 8326 | 8673 | 9844 |
| 75° | 7243 | 8205 | 9730 |
| 80° | 5849 | 7868 | 9860 |
| 85° | 3744 | 7929 | 10681 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 394.2 | 3.4 |
| 10°-20° | 1121.6 | 9.6 |
| 20°-30° | 1675.2 | 14.3 |
| 30°-40° | 1981.2 | 16.9 |
| 40°-50° | 2018.7 | 17.2 |
| 50°-60° | 1808.9 | 15.4 |
| 60°-70° | 1409.0 | 12.0 |
| 70°-80° | 912.2 | 7.8 |
| 80°-90° | 416.8 | 3.6 |
| 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° | 3191.0 | 27.2 |
| 0°-40° | 5172.2 | 44.1 |
| 0°-60° | 8999.8 | 76.7 |
| 0°-90° | 11737.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 11737.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4167 | 4167 | 4167 | 4167 | 4167 | |
| 5° | 4163 | 4156 | 4131 | 4156 | 4155 | 395 |
| 15° | 3966 | 3966 | 3964 | 4001 | 4005 | 1117 |
| 25° | 3582 | 3595 | 3622 | 3686 | 3702 | 1649 |
| 35° | 3064 | 3094 | 3163 | 3248 | 3267 | 1915 |
| 45° | 2474 | 2518 | 2616 | 2716 | 2753 | 1906 |
| 55° | 1860 | 1912 | 2022 | 2139 | 2181 | 1660 |
| 65° | 1239 | 1293 | 1426 | 1546 | 1596 | 1230 |
| 75° | 626 | 706 | 867 | 1012 | 1071 | 671 |
| 85° | 125 | 242 | 423 | 576 | 618 | 160 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P685573

CATALOG NUMBER: 4CZL-16-UNV-FL-L935-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4167.1 | 4167.1 | 4167.1 | 4167.1 | 4167.1 |
| 2.5° | 4179.0 | 4171.8 | 4146.5 | 4168.7 | 4167.9 |
| 5° | 4163.1 | 4156.0 | 4131.4 | 4156.0 | 4155.2 |
| 7.5° | 4130.7 | 4128.3 | 4106.1 | 4133.0 | 4130.7 |
| 10° | 4088.7 | 4085.5 | 4071.3 | 4098.2 | 4102.1 |
| 12.5° | 4033.2 | 4031.6 | 4020.6 | 4052.2 | 4054.6 |
| 15° | 3965.9 | 3965.9 | 3963.5 | 4000.8 | 4004.7 |
| 17.5° | 3879.6 | 3890.7 | 3893.0 | 3933.4 | 3942.1 |
| 20° | 3797.2 | 3800.4 | 3811.5 | 3860.6 | 3870.9 |
| 22.5° | 3688.7 | 3702.1 | 3724.3 | 3778.2 | 3786.9 |
| 25° | 3582.5 | 3595.2 | 3622.1 | 3686.3 | 3702.1 |
| 27.5° | 3459.0 | 3483.5 | 3520.8 | 3584.9 | 3600.8 |
| 30° | 3341.8 | 3362.3 | 3410.7 | 3482.0 | 3497.8 |
| 32.5° | 3198.4 | 3233.2 | 3288.7 | 3363.9 | 3385.3 |
| 35° | 3064.5 | 3093.8 | 3162.7 | 3248.3 | 3267.3 |
| 37.5° | 2921.2 | 2956.0 | 3028.9 | 3120.0 | 3146.1 |
| 40° | 2764.3 | 2815.0 | 2899.8 | 2990.9 | 3018.6 |
| 42.5° | 2621.0 | 2667.7 | 2757.2 | 2860.2 | 2891.9 |
| 45° | 2473.6 | 2518.0 | 2616.2 | 2716.0 | 2753.2 |
| 47.5° | 2320.0 | 2365.9 | 2472.9 | 2579.0 | 2612.3 |
| 50° | 2162.4 | 2217.0 | 2323.9 | 2435.6 | 2465.7 |
| 52.5° | 2005.5 | 2060.2 | 2173.4 | 2285.1 | 2319.2 |
| 55° | 1859.8 | 1912.1 | 2022.2 | 2138.6 | 2180.6 |
| 57.5° | 1701.4 | 1756.8 | 1878.0 | 1990.5 | 2035.6 |
| 60° | 1554.8 | 1595.2 | 1723.5 | 1840.0 | 1883.5 |
| 62.5° | 1403.6 | 1447.1 | 1572.3 | 1691.9 | 1743.4 |
| 65° | 1238.8 | 1292.7 | 1426.5 | 1546.1 | 1596.0 |
| 67.5° | 1088.3 | 1139.8 | 1277.6 | 1412.3 | 1452.7 |
| 70° | 932.3 | 991.7 | 1134.2 | 1272.1 | 1329.1 |
| 72.5° | 783.4 | 845.1 | 1002.0 | 1139.0 | 1196.8 |
| 75° | 625.7 | 705.7 | 867.3 | 1011.5 | 1070.9 |
| 77.5° | 495.8 | 575.0 | 740.6 | 891.1 | 948.1 |
| 80° | 351.7 | 449.1 | 628.1 | 780.2 | 830.9 |
| 82.5° | 234.5 | 333.5 | 521.2 | 669.3 | 724.0 |
| 85° | 125.1 | 241.6 | 423.0 | 575.8 | 617.8 |
| 87.5° | 54.7 | 168.7 | 343.0 | 479.2 | 529.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)