

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: P685543

Luminaire Tested: **4CZL-16-UNV-FL-L835-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685543
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-L835-CD-U
Description: METALUX CRUZE LINEAR 4FT FROSTED LENS MODEL @80 CRI and 3500K
Light Source: (588) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

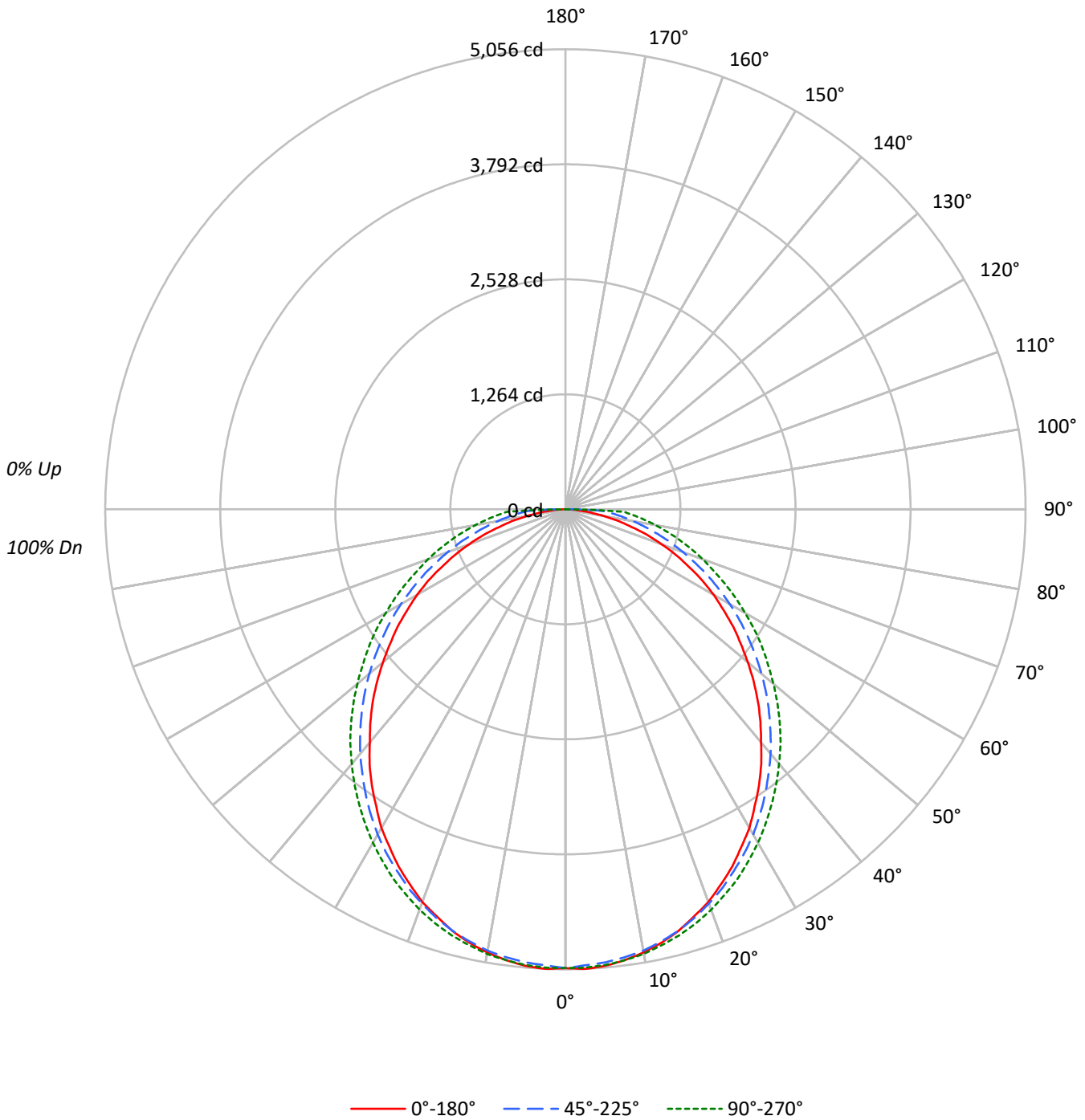
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14200.7 lumens
Efficiency: N/A
Efficacy: 137.9 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 (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

TEST NUMBER: P685543
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Luminous Intensity Polar Plot





TEST NUMBER: P685543

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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° | 16280 | 16280 | 16280 |
| 5° | 16297 | 16082 | 16154 |
| 10° | 16161 | 15911 | 15991 |
| 15° | 15951 | 15672 | 15775 |
| 20° | 15668 | 15368 | 15528 |
| 25° | 15295 | 15016 | 15248 |
| 30° | 14896 | 14663 | 14918 |
| 35° | 14405 | 14233 | 14563 |
| 40° | 13856 | 13799 | 14203 |
| 45° | 13388 | 13317 | 13829 |
| 50° | 12824 | 12819 | 13390 |
| 55° | 12301 | 12276 | 12996 |
| 60° | 11726 | 11731 | 12545 |
| 65° | 10962 | 11145 | 12149 |
| 70° | 10073 | 10493 | 11910 |
| 75° | 8763 | 9926 | 11772 |
| 80° | 7077 | 9519 | 11928 |
| 85° | 4531 | 9592 | 12924 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 476.9 | 3.4 |
| 10°-20° | 1357.0 | 9.6 |
| 20°-30° | 2026.7 | 14.3 |
| 30°-40° | 2396.9 | 16.9 |
| 40°-50° | 2442.3 | 17.2 |
| 50°-60° | 2188.5 | 15.4 |
| 60°-70° | 1704.6 | 12.0 |
| 70°-80° | 1103.6 | 7.8 |
| 80°-90° | 504.3 | 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° | 3860.5 | 27.2 |
| 0°-40° | 6257.5 | 44.1 |
| 0°-60° | 10888.3 | 76.7 |
| 0°-90° | 14200.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 14200.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5042 | 5042 | 5042 | 5042 | 5042 | |
| 5° | 5037 | 5028 | 4998 | 5028 | 5027 | 478 |
| 15° | 4798 | 4798 | 4795 | 4840 | 4845 | 1351 |
| 25° | 4334 | 4350 | 4382 | 4460 | 4479 | 1994 |
| 35° | 3708 | 3743 | 3826 | 3930 | 3953 | 2317 |
| 45° | 2993 | 3046 | 3165 | 3286 | 3331 | 2306 |
| 55° | 2250 | 2313 | 2446 | 2587 | 2638 | 2009 |
| 65° | 1499 | 1564 | 1726 | 1870 | 1931 | 1489 |
| 75° | 757 | 854 | 1049 | 1224 | 1296 | 812 |
| 85° | 151 | 292 | 512 | 697 | 748 | 194 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P685543

CATALOG NUMBER: 4CZL-16-UNV-FL-L835-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 5041.5 | 5041.5 | 5041.5 | 5041.5 | 5041.5 |
| 2.5° | 5055.8 | 5047.2 | 5016.5 | 5043.4 | 5042.4 |
| 5° | 5036.7 | 5028.0 | 4998.3 | 5028.0 | 5027.1 |
| 7.5° | 4997.4 | 4994.5 | 4967.7 | 5000.3 | 4997.4 |
| 10° | 4946.6 | 4942.8 | 4925.5 | 4958.1 | 4962.9 |
| 12.5° | 4879.5 | 4877.6 | 4864.2 | 4902.5 | 4905.4 |
| 15° | 4798.1 | 4798.1 | 4795.2 | 4840.2 | 4845.0 |
| 17.5° | 4693.6 | 4707.0 | 4709.9 | 4758.8 | 4769.3 |
| 20° | 4593.9 | 4597.8 | 4611.2 | 4670.6 | 4683.1 |
| 22.5° | 4462.7 | 4479.0 | 4505.8 | 4570.9 | 4581.5 |
| 25° | 4334.3 | 4349.6 | 4382.2 | 4459.8 | 4479.0 |
| 27.5° | 4184.8 | 4214.5 | 4259.5 | 4337.1 | 4356.3 |
| 30° | 4042.9 | 4067.9 | 4126.3 | 4212.6 | 4231.7 |
| 32.5° | 3869.5 | 3911.7 | 3978.7 | 4069.8 | 4095.6 |
| 35° | 3707.5 | 3743.0 | 3826.4 | 3929.9 | 3952.9 |
| 37.5° | 3534.1 | 3576.3 | 3664.4 | 3774.6 | 3806.2 |
| 40° | 3344.4 | 3405.7 | 3508.2 | 3618.4 | 3652.0 |
| 42.5° | 3170.9 | 3227.5 | 3335.7 | 3460.3 | 3498.6 |
| 45° | 2992.7 | 3046.3 | 3165.2 | 3285.9 | 3330.9 |
| 47.5° | 2806.8 | 2862.4 | 2991.7 | 3120.1 | 3160.4 |
| 50° | 2616.1 | 2682.2 | 2811.6 | 2946.7 | 2983.1 |
| 52.5° | 2426.3 | 2492.5 | 2629.5 | 2764.6 | 2805.8 |
| 55° | 2250.0 | 2313.3 | 2446.5 | 2587.3 | 2638.1 |
| 57.5° | 2058.4 | 2125.4 | 2272.1 | 2408.1 | 2462.8 |
| 60° | 1881.1 | 1930.0 | 2085.2 | 2226.1 | 2278.8 |
| 62.5° | 1698.1 | 1750.8 | 1902.2 | 2046.9 | 2109.2 |
| 65° | 1498.7 | 1563.9 | 1725.8 | 1870.5 | 1930.9 |
| 67.5° | 1316.7 | 1379.0 | 1545.7 | 1708.6 | 1757.5 |
| 70° | 1127.9 | 1199.8 | 1372.2 | 1539.0 | 1608.0 |
| 72.5° | 947.7 | 1022.5 | 1212.2 | 1378.0 | 1447.9 |
| 75° | 757.0 | 853.8 | 1049.3 | 1223.7 | 1295.6 |
| 77.5° | 599.9 | 695.7 | 896.0 | 1078.1 | 1147.0 |
| 80° | 425.5 | 543.3 | 759.9 | 943.9 | 1005.2 |
| 82.5° | 283.6 | 403.4 | 630.5 | 809.7 | 875.9 |
| 85° | 151.4 | 292.3 | 511.7 | 696.7 | 747.5 |
| 87.5° | 66.1 | 204.1 | 414.9 | 579.8 | 640.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)