

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: P685661

Luminaire Tested: **4CZL-9-UNV-LVR-L835-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685661
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-9-UNV-LVR-L835-CD-U
Description: METALUX CRUZE LINEAR 4FT LOUVER MODEL @80 CRI and 3500K
Light Source: (588) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

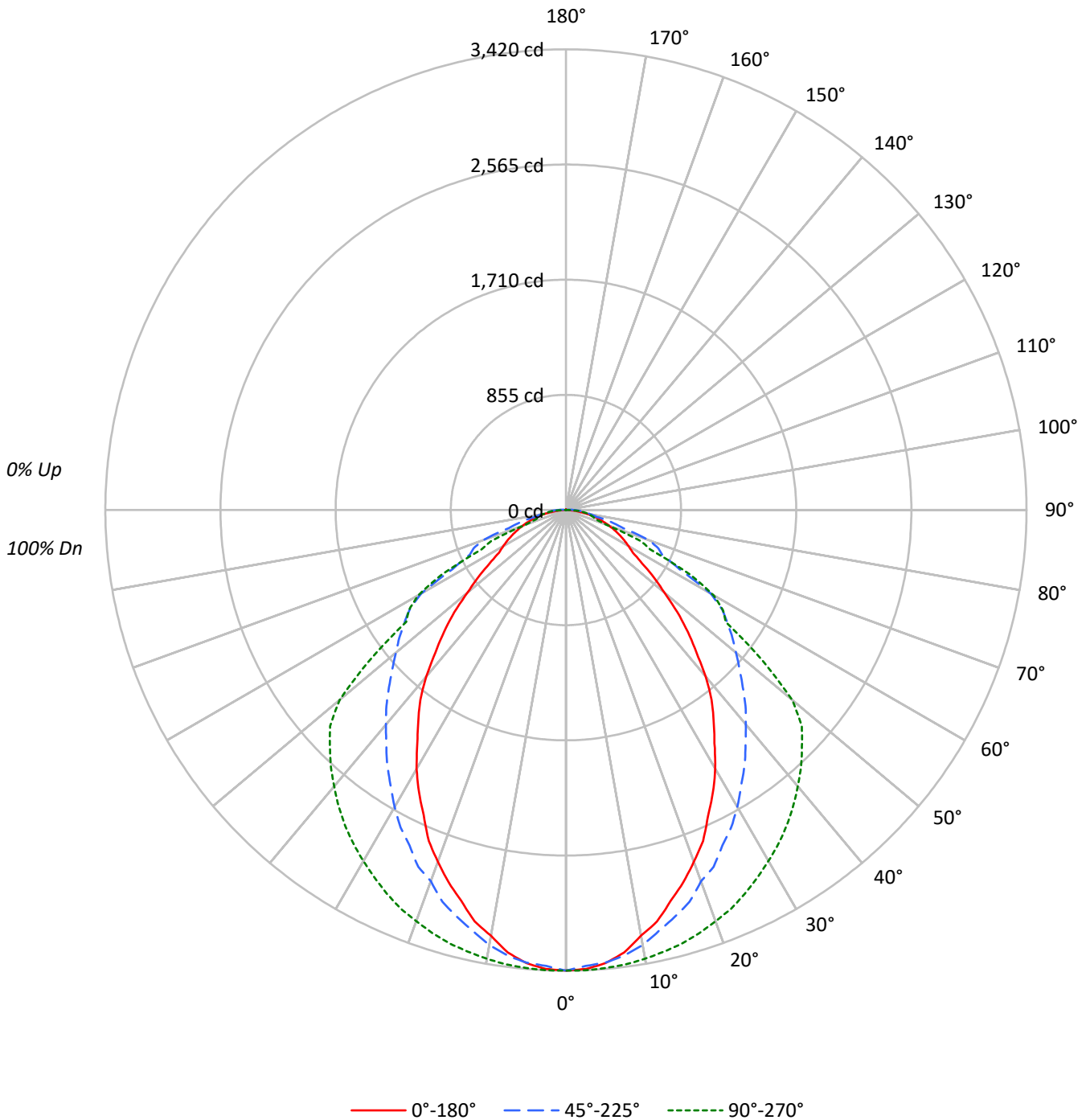
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7743.2 lumens
Efficiency: N/A
Efficacy: 143.4 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1.31 / 1.26
Luminous Opening: Rectangular (W 0.83' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 54
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: P685661
CATALOG NUMBER: 4CZL-9-UNV-LVR-L835-CD-U

Luminous Intensity Polar Plot





TEST NUMBER: P685661

CATALOG NUMBER: 4CZL-9-UNV-LVR-L835-CD-U

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 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 92 | 90 | 91 | 89 | 88 | 88 | 88 | 88 | 85 |
| 2 | 101 | 93 | 87 | 81 | 98 | 91 | 85 | 80 | 88 | 83 | 78 | 84 | 80 | 77 | 81 | 78 | 75 | 75 | 75 | 75 | 73 |
| 3 | 92 | 82 | 75 | 69 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 68 | 65 | 65 | 65 | 65 | 63 |
| 4 | 85 | 74 | 65 | 59 | 83 | 72 | 65 | 59 | 70 | 63 | 58 | 68 | 62 | 57 | 65 | 60 | 56 | 56 | 56 | 56 | 54 |
| 5 | 78 | 66 | 58 | 51 | 76 | 65 | 57 | 51 | 63 | 56 | 51 | 61 | 55 | 50 | 59 | 54 | 49 | 49 | 49 | 49 | 47 |
| 6 | 73 | 60 | 51 | 45 | 71 | 59 | 51 | 45 | 57 | 50 | 45 | 56 | 49 | 44 | 54 | 48 | 44 | 44 | 44 | 44 | 42 |
| 7 | 68 | 55 | 46 | 40 | 66 | 54 | 46 | 40 | 52 | 45 | 40 | 51 | 44 | 40 | 49 | 44 | 39 | 39 | 39 | 39 | 37 |
| 8 | 63 | 50 | 42 | 36 | 61 | 49 | 42 | 36 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | 35 | 35 | 35 | 34 |
| 9 | 59 | 46 | 38 | 33 | 58 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 32 | 32 | 32 | 30 |
| 10 | 55 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 39 | 34 | 29 | 29 | 29 | 29 | 28 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 11041 | 11041 | 11041 |
| 5° | 10946 | 10930 | 11061 |
| 10° | 10520 | 10752 | 11093 |
| 15° | 10042 | 10451 | 11138 |
| 20° | 9549 | 10080 | 11164 |
| 25° | 8905 | 9789 | 11200 |
| 30° | 8268 | 9488 | 11219 |
| 35° | 7538 | 9116 | 11270 |
| 40° | 6800 | 8761 | 11291 |
| 45° | 5849 | 8480 | 11320 |
| 50° | 4781 | 8280 | 11023 |
| 55° | 3893 | 8248 | 8152 |
| 60° | 3471 | 8018 | 8179 |
| 65° | 3355 | 6017 | 5275 |
| 70° | 3223 | 6166 | 2998 |
| 75° | 3107 | 4346 | 2676 |
| 80° | 2834 | 3535 | 3189 |
| 85° | 2538 | 4405 | 3976 |



TEST NUMBER: P685661
 CATALOG NUMBER: 4CZL-9-UNV-LVR-L835-CD-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 320.3 | 4.1 |
| 10°-20° | 887.8 | 11.5 |
| 20°-30° | 1284.5 | 16.6 |
| 30°-40° | 1466.0 | 18.9 |
| 40°-50° | 1440.5 | 18.6 |
| 50°-60° | 1149.0 | 14.8 |
| 60°-70° | 723.7 | 9.3 |
| 70°-80° | 320.6 | 4.1 |
| 80°-90° | 123.0 | 1.6 |
| 90°-100° | 24.4 | 0.3 |
| 100°-110° | 1.6 | 0.0 |
| 110°-120° | 0.2 | 0.0 |
| 120°-130° | 0.2 | 0.0 |
| 130°-140° | 0.4 | 0.0 |
| 140°-150° | 0.3 | 0.0 |
| 150°-160° | 0.3 | 0.0 |
| 160°-170° | 0.3 | 0.0 |
| 170°-180° | 0.1 | 0.0 |
| 0°-30° | 2492.6 | 32.2 |
| 0°-40° | 3958.6 | 51.1 |
| 0°-60° | 6548.1 | 84.6 |
| 0°-90° | 7715.4 | 99.6 |
| 90°-120° | 26.2 | 0.3 |
| 90°-150° | 27.1 | 0.3 |
| 90°-180° | 28.0 | 0.4 |
| 0°-180° | 7743.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 3419 | 3419 | 3419 | 3419 | 3419 | |
| 5° | 3377 | 3384 | 3372 | 3400 | 3412 | 317 |
| 15° | 3004 | 3034 | 3126 | 3273 | 3332 | 846 |
| 25° | 2499 | 2580 | 2747 | 2999 | 3144 | 1152 |
| 35° | 1912 | 2028 | 2312 | 2653 | 2859 | 1195 |
| 45° | 1281 | 1467 | 1857 | 2273 | 2479 | 984 |
| 55° | 691 | 936 | 1465 | 1580 | 1448 | 636 |
| 65° | 439 | 598 | 788 | 839 | 690 | 435 |
| 75° | 249 | 288 | 348 | 264 | 214 | 261 |
| 85° | 68 | 83 | 119 | 154 | 107 | 72 |
| 90° | 0 | 29 | 63 | 91 | 18 | 4 |
| 95° | 0 | 4 | 26 | 45 | 6 | 0 |
| 105° | 0 | 0 | 0 | 2 | 0 | 1 |
| 115° | 0 | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 1 | 0 | 0 | 0 | 0 |
| 135° | 0 | 1 | 0 | 0 | 0 | 0 |
| 145° | 1 | 1 | 0 | 0 | 0 | 1 |
| 155° | 1 | 1 | 0 | 0 | 0 | 1 |
| 165° | 2 | 2 | 1 | 0 | 0 | 0 |
| 175° | 2 | 2 | 1 | 0 | 0 | 0 |
| 180° | 1 | 1 | 1 | 1 | 1 | |



TEST NUMBER: P685661

CATALOG NUMBER: 4CZL-9-UNV-LVR-L835-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 3419.1 | 3419.1 | 3419.1 | 3419.1 | 3419.1 |
| 2.5° | 3410.1 | 3408.0 | 3387.3 | 3416.5 | 3419.7 |
| 5° | 3376.7 | 3384.1 | 3371.9 | 3400.0 | 3412.2 |
| 7.5° | 3312.4 | 3320.4 | 3334.7 | 3386.2 | 3401.1 |
| 10° | 3208.3 | 3228.5 | 3279.0 | 3351.2 | 3383.0 |
| 12.5° | 3128.7 | 3153.6 | 3198.8 | 3321.4 | 3358.1 |
| 15° | 3003.9 | 3033.6 | 3126.0 | 3272.6 | 3331.5 |
| 17.5° | 2897.7 | 2951.9 | 3050.1 | 3211.0 | 3293.3 |
| 20° | 2778.7 | 2822.3 | 2933.3 | 3150.4 | 3248.7 |
| 22.5° | 2659.8 | 2715.0 | 2866.4 | 3069.7 | 3203.5 |
| 25° | 2499.4 | 2580.2 | 2747.4 | 2999.1 | 3143.5 |
| 27.5° | 2363.5 | 2465.5 | 2657.7 | 2915.7 | 3076.6 |
| 30° | 2217.5 | 2296.6 | 2544.6 | 2830.8 | 3008.7 |
| 32.5° | 2052.9 | 2177.1 | 2422.4 | 2733.6 | 2937.5 |
| 35° | 1912.1 | 2027.9 | 2312.5 | 2653.4 | 2858.9 |
| 37.5° | 1776.2 | 1885.1 | 2190.9 | 2562.6 | 2771.8 |
| 40° | 1613.2 | 1756.6 | 2078.4 | 2459.1 | 2678.4 |
| 42.5° | 1432.6 | 1608.4 | 1973.7 | 2361.4 | 2583.3 |
| 45° | 1280.8 | 1467.2 | 1856.9 | 2272.7 | 2478.7 |
| 47.5° | 1123.1 | 1319.5 | 1747.5 | 2164.9 | 2375.2 |
| 50° | 951.6 | 1190.5 | 1648.2 | 2065.1 | 2194.1 |
| 52.5° | 826.2 | 1056.2 | 1559.0 | 1884.5 | 1849.5 |
| 55° | 691.4 | 936.2 | 1465.0 | 1579.7 | 1448.0 |
| 57.5° | 588.9 | 827.8 | 1376.9 | 1240.4 | 1382.2 |
| 60° | 537.4 | 741.3 | 1241.5 | 1181.0 | 1266.4 |
| 62.5° | 489.1 | 665.3 | 949.4 | 1107.7 | 1041.8 |
| 65° | 439.1 | 597.9 | 787.5 | 839.0 | 690.3 |
| 67.5° | 390.8 | 539.5 | 742.3 | 626.6 | 601.1 |
| 70° | 341.4 | 494.4 | 653.1 | 534.2 | 317.5 |
| 72.5° | 294.7 | 442.3 | 446.6 | 295.8 | 235.8 |
| 75° | 249.0 | 287.8 | 348.3 | 263.9 | 214.5 |
| 77.5° | 199.1 | 246.9 | 233.1 | 236.3 | 194.3 |
| 80° | 152.4 | 169.9 | 190.1 | 211.3 | 171.5 |
| 82.5° | 107.8 | 126.4 | 154.0 | 184.8 | 140.7 |
| 85° | 68.5 | 83.4 | 118.9 | 153.5 | 107.3 |
| 87.5° | 27.1 | 52.6 | 88.7 | 123.7 | 63.2 |
| 90° | 0.5 | 28.7 | 62.7 | 91.3 | 17.5 |
| 92.5° | 0.5 | 13.3 | 41.9 | 66.9 | 9.0 |
| 95° | 0.5 | 4.2 | 26.0 | 44.6 | 5.8 |
| 97.5° | 0.5 | 1.6 | 13.8 | 27.6 | 3.2 |
| 100° | 0.5 | 0.5 | 5.8 | 14.9 | 1.6 |
| 102.5° | 0.5 | 0.5 | 2.1 | 5.8 | 0.5 |
| 105° | 0.5 | 0.5 | 0.5 | 1.6 | 0.0 |
| 107.5° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 110° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P685661
 CATALOG NUMBER: 4CZL-9-UNV-LVR-L835-CD-U

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 115° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 120° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 125° | 0.5 | 1.1 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| 130° | 0.5 | 1.1 | 0.5 | 0.0 | 0.0 |
| 132.5° | 0.5 | 1.1 | 0.5 | 0.0 | 0.0 |
| 135° | 0.5 | 1.1 | 0.5 | 0.0 | 0.0 |
| 137.5° | 0.5 | 1.1 | 0.5 | 0.0 | 0.0 |
| 140° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 142.5° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 145° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 147.5° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 150° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 152.5° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 155° | 1.1 | 1.1 | 0.5 | 0.0 | 0.0 |
| 157.5° | 1.1 | 1.6 | 0.5 | 0.0 | 0.0 |
| 160° | 1.6 | 1.6 | 0.5 | 0.0 | 0.0 |
| 162.5° | 1.6 | 1.6 | 1.1 | 0.5 | 0.0 |
| 165° | 1.6 | 1.6 | 1.1 | 0.5 | 0.0 |
| 167.5° | 1.6 | 1.6 | 1.1 | 0.5 | 0.0 |
| 170° | 1.6 | 1.6 | 1.1 | 0.5 | 0.5 |
| 172.5° | 1.6 | 1.6 | 1.1 | 0.5 | 0.5 |
| 175° | 1.6 | 1.6 | 1.1 | 0.5 | 0.5 |
| 177.5° | 1.6 | 1.6 | 1.1 | 0.5 | 0.5 |
| 180° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |

(END OF REPORT)