

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: P685491

Luminaire Tested: **4CZL-9-UNV-W-L840-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685491
Test Lab: INNOVATION CENTER(G2)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-9-UNV-W-L840-CD-U
Description: METALUX CRUZE LINEAR 4FT WIDE LENS MODEL @80 CRI and 4000K
Light Source: (588) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

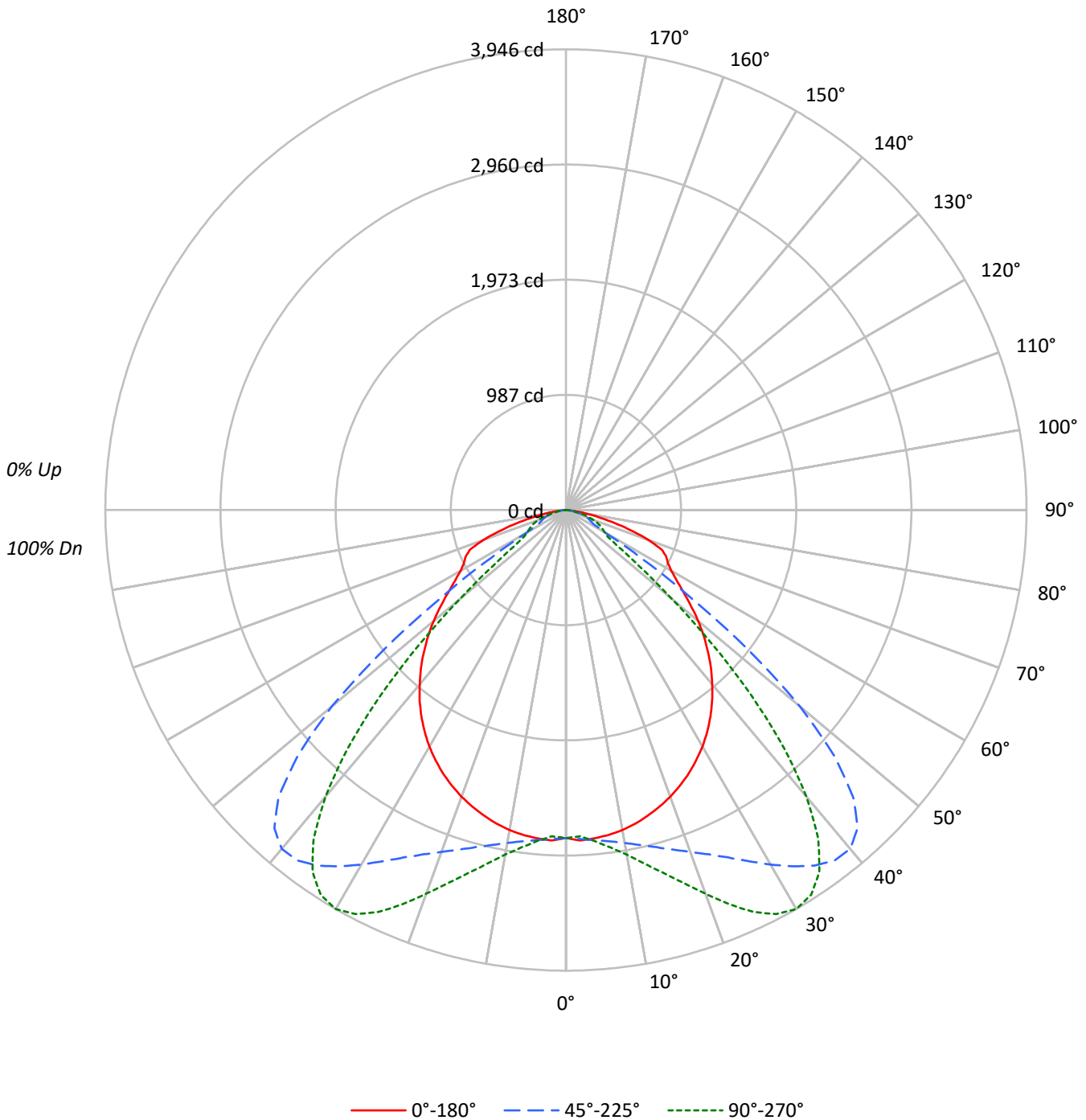
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8982.9 lumens
Efficiency: N/A
Efficacy: 166.4 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): 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

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Luminous Intensity Polar Plot





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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° | 9070 | 9070 | 9070 |
| 5° | 9149 | 9196 | 9225 |
| 10° | 9126 | 9492 | 9825 |
| 15° | 9060 | 9994 | 10754 |
| 20° | 8981 | 10706 | 12015 |
| 25° | 8873 | 11699 | 13532 |
| 30° | 8722 | 13073 | 14715 |
| 35° | 8508 | 14653 | 14918 |
| 40° | 8213 | 15965 | 13515 |
| 45° | 7858 | 15904 | 10258 |
| 50° | 7433 | 13144 | 5912 |
| 55° | 6928 | 7230 | 3041 |
| 60° | 6724 | 2523 | 2479 |
| 65° | 7246 | 1835 | 2485 |
| 70° | 7155 | 1881 | 2397 |
| 75° | 5410 | 1644 | 1925 |
| 80° | 3269 | 1345 | 1361 |
| 85° | 1627 | 689 | 289 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 271.8 | 3.0 |
| 10°-20° | 845.3 | 9.4 |
| 20°-30° | 1484.9 | 16.5 |
| 30°-40° | 2062.9 | 23.0 |
| 40°-50° | 2092.0 | 23.3 |
| 50°-60° | 1342.5 | 14.9 |
| 60°-70° | 627.9 | 7.0 |
| 70°-80° | 217.7 | 2.4 |
| 80°-90° | 38.0 | 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° | 2602.0 | 29.0 |
| 0°-40° | 4664.8 | 51.9 |
| 0°-60° | 8099.3 | 90.2 |
| 0°-90° | 8982.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8982.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2809 | 2809 | 2809 | 2809 | 2809 | |
| 5° | 2822 | 2802 | 2837 | 2846 | 2846 | 268 |
| 15° | 2710 | 2775 | 2989 | 3150 | 3217 | 765 |
| 25° | 2490 | 2746 | 3283 | 3668 | 3798 | 1146 |
| 35° | 2158 | 2769 | 3717 | 3845 | 3784 | 1348 |
| 45° | 1721 | 2964 | 3483 | 2598 | 2246 | 1327 |
| 55° | 1230 | 3061 | 1284 | 618 | 540 | 1111 |
| 65° | 948 | 978 | 240 | 301 | 325 | 923 |
| 75° | 434 | 150 | 132 | 152 | 154 | 469 |
| 85° | 44 | 40 | 19 | 10 | 8 | 66 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P685491

CATALOG NUMBER: 4CZL-9-UNV-W-L840-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 | 2808.7 |
| 2.5° | 2833.1 | 2824.3 | 2809.7 | 2803.8 | 2806.8 | 2821.4 | 2826.3 | 2815.6 | 2812.6 | 2804.8 | 2797.0 |
| 5° | 2822.4 | 2814.6 | 2803.8 | 2801.9 | 2812.6 | 2837.0 | 2847.8 | 2844.9 | 2849.7 | 2850.7 | 2845.8 |
| 7.5° | 2806.8 | 2799.9 | 2791.1 | 2799.9 | 2822.4 | 2861.5 | 2885.9 | 2893.7 | 2911.3 | 2915.2 | 2914.2 |
| 10° | 2783.3 | 2777.5 | 2774.5 | 2797.0 | 2836.1 | 2894.7 | 2937.6 | 2959.1 | 2984.5 | 2993.3 | 2996.2 |
| 12.5° | 2752.1 | 2746.2 | 2754.0 | 2793.1 | 2854.6 | 2938.6 | 3002.1 | 3040.2 | 3076.3 | 3094.9 | 3100.7 |
| 15° | 2710.1 | 2708.1 | 2727.7 | 2790.2 | 2878.1 | 2989.4 | 3077.3 | 3136.9 | 3188.6 | 3209.1 | 3216.9 |
| 17.5° | 2664.2 | 2665.2 | 2700.3 | 2789.2 | 2906.4 | 3049.0 | 3161.3 | 3246.2 | 3309.7 | 3339.0 | 3347.8 |
| 20° | 2613.4 | 2616.3 | 2669.1 | 2788.2 | 2941.5 | 3115.4 | 3254.1 | 3365.4 | 3444.5 | 3483.6 | 3496.3 |
| 22.5° | 2553.8 | 2559.7 | 2634.9 | 2789.2 | 2978.6 | 3191.5 | 3363.4 | 3496.3 | 3591.0 | 3637.9 | 3653.5 |
| 25° | 2490.3 | 2499.1 | 2599.7 | 2794.1 | 3025.5 | 3283.4 | 3488.4 | 3643.7 | 3739.4 | 3780.4 | 3798.0 |
| 27.5° | 2417.1 | 2431.7 | 2561.6 | 2800.9 | 3081.2 | 3389.8 | 3616.4 | 3765.8 | 3854.7 | 3885.9 | 3901.5 |
| 30° | 2339.0 | 2355.6 | 2524.5 | 2814.6 | 3153.5 | 3506.0 | 3734.5 | 3860.5 | 3920.1 | 3937.7 | 3946.5 |
| 32.5° | 2253.0 | 2280.4 | 2487.4 | 2837.0 | 3238.4 | 3618.3 | 3821.5 | 3896.7 | 3911.3 | 3905.4 | 3908.4 |
| 35° | 2158.3 | 2187.6 | 2452.3 | 2874.2 | 3335.1 | 3717.0 | 3855.6 | 3855.6 | 3812.7 | 3786.3 | 3784.3 |
| 37.5° | 2057.7 | 2094.8 | 2417.1 | 2917.1 | 3447.4 | 3782.4 | 3818.5 | 3721.8 | 3617.4 | 3560.7 | 3551.9 |
| 40° | 1948.3 | 1998.1 | 2392.7 | 2975.7 | 3549.0 | 3787.3 | 3685.7 | 3486.5 | 3308.7 | 3216.9 | 3206.2 |
| 42.5° | 1839.9 | 1901.5 | 2381.9 | 3051.9 | 3625.2 | 3697.4 | 3435.7 | 3128.1 | 2886.8 | 2778.4 | 2766.7 |
| 45° | 1720.8 | 1801.8 | 2385.8 | 3156.4 | 3645.7 | 3482.6 | 3063.6 | 2665.2 | 2394.6 | 2257.9 | 2246.2 |
| 47.5° | 1602.6 | 1703.2 | 2395.6 | 3274.6 | 3555.8 | 3118.3 | 2568.5 | 2107.5 | 1838.9 | 1695.4 | 1693.4 |
| 50° | 1479.6 | 1610.4 | 2419.1 | 3371.2 | 3312.6 | 2616.3 | 1960.0 | 1509.8 | 1295.0 | 1185.6 | 1176.8 |
| 52.5° | 1351.6 | 1529.4 | 2469.8 | 3388.8 | 2880.0 | 1971.8 | 1330.1 | 1007.9 | 868.2 | 798.9 | 785.2 |
| 55° | 1230.5 | 1461.0 | 2552.8 | 3230.6 | 2257.9 | 1284.2 | 837.9 | 635.8 | 565.5 | 537.1 | 540.1 |
| 57.5° | 1126.0 | 1410.2 | 2649.5 | 2817.5 | 1465.9 | 755.9 | 485.4 | 422.9 | 420.9 | 423.8 | 424.8 |
| 60° | 1041.1 | 1379.0 | 2692.5 | 2113.4 | 804.7 | 390.6 | 338.9 | 352.6 | 371.1 | 381.9 | 383.8 |
| 62.5° | 985.4 | 1362.4 | 2561.6 | 1224.7 | 357.4 | 272.5 | 295.9 | 321.3 | 342.8 | 352.6 | 353.5 |
| 65° | 948.3 | 1318.4 | 2095.8 | 605.5 | 218.8 | 240.2 | 269.5 | 295.9 | 315.4 | 323.3 | 325.2 |
| 67.5° | 890.7 | 1194.4 | 1436.6 | 251.0 | 192.4 | 216.8 | 245.1 | 270.5 | 287.1 | 293.0 | 294.0 |
| 70° | 757.8 | 1000.0 | 835.0 | 167.0 | 173.8 | 199.2 | 221.7 | 241.2 | 252.0 | 254.9 | 253.9 |
| 72.5° | 591.8 | 792.0 | 421.9 | 151.4 | 161.1 | 174.8 | 187.5 | 198.3 | 204.1 | 207.0 | 207.0 |
| 75° | 433.6 | 579.1 | 198.3 | 133.8 | 120.1 | 131.8 | 144.5 | 151.4 | 153.3 | 154.3 | 154.3 |
| 77.5° | 291.0 | 399.4 | 118.2 | 103.5 | 92.8 | 102.5 | 107.4 | 104.5 | 102.5 | 104.5 | 104.5 |
| 80° | 175.8 | 246.1 | 103.5 | 75.2 | 71.3 | 72.3 | 68.4 | 68.4 | 72.3 | 74.2 | 73.2 |
| 82.5° | 94.7 | 139.7 | 90.8 | 54.7 | 47.9 | 43.9 | 43.0 | 41.0 | 39.1 | 38.1 | 38.1 |
| 85° | 43.9 | 71.3 | 58.6 | 33.2 | 25.4 | 18.6 | 14.6 | 10.7 | 9.8 | 7.8 | 7.8 |
| 87.5° | 17.6 | 27.3 | 17.6 | 10.7 | 5.9 | 3.9 | 2.9 | 2.0 | 1.0 | 1.0 | 1.0 |
| 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)