

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: P474977

Luminaire Tested: **22CZ2-29VHE-S-UNV-L850-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P474977
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-29VHE-S-UNV-L850-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3039.3 lumens
Efficiency: N/A
Efficacy: 152.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.25 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

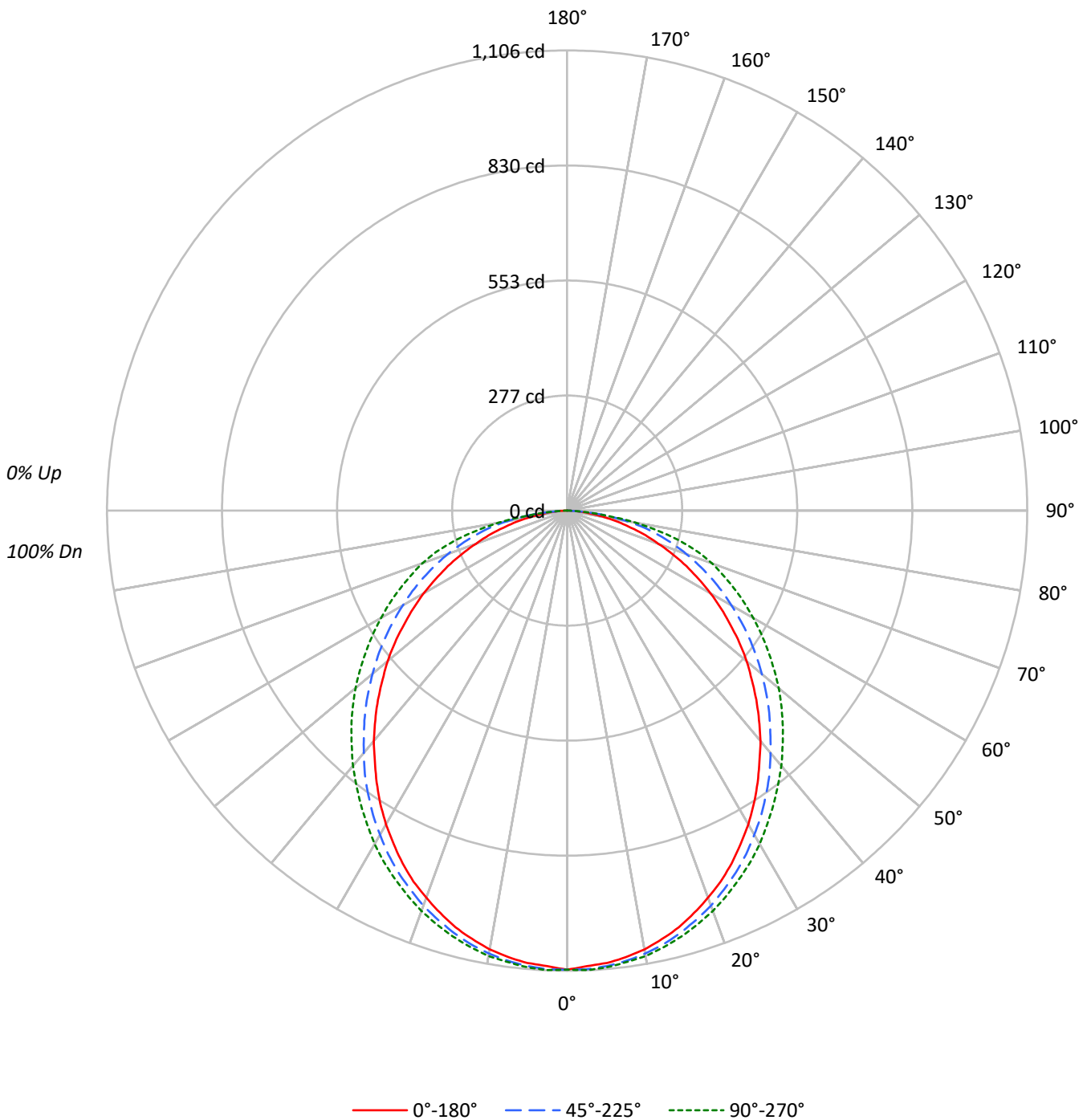
Input Watts (W): 19.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 99 | 95 | 106 | 101 | 97 | 94 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 88 | 86 | 83 |
| 2 | 99 | 90 | 83 | 77 | 96 | 88 | 82 | 77 | 85 | 79 | 75 | 81 | 77 | 73 | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 69 | 60 | 54 | 66 | 59 | 53 | 64 | 58 | 53 | 62 | 56 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 59 | 52 | 46 | 57 | 51 | 46 | 56 | 50 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 41 | 54 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 40 | 38 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 45 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 30 |
| 9 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 26 | 52 | 39 | 32 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2969 | 2969 | 2969 |
| 5° | 2948 | 2968 | 2976 |
| 10° | 2926 | 2954 | 2970 |
| 15° | 2889 | 2928 | 2953 |
| 20° | 2835 | 2894 | 2932 |
| 25° | 2778 | 2850 | 2902 |
| 30° | 2706 | 2795 | 2875 |
| 35° | 2621 | 2737 | 2839 |
| 40° | 2540 | 2672 | 2814 |
| 45° | 2446 | 2614 | 2791 |
| 50° | 2359 | 2556 | 2781 |
| 55° | 2246 | 2505 | 2768 |
| 60° | 2145 | 2454 | 2779 |
| 65° | 2014 | 2426 | 2819 |
| 70° | 1840 | 2396 | 2911 |
| 75° | 1652 | 2378 | 2913 |
| 80° | 1390 | 2245 | 2588 |
| 85° | 1044 | 1522 | 1408 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 104.2 | 3.4 |
| 10°-20° | 295.9 | 9.7 |
| 20°-30° | 441.2 | 14.5 |
| 30°-40° | 520.6 | 17.1 |
| 40°-50° | 530.4 | 17.5 |
| 50°-60° | 478.4 | 15.7 |
| 60°-70° | 375.7 | 12.4 |
| 70°-80° | 234.9 | 7.7 |
| 80°-90° | 57.9 | 1.9 |
| 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° | 841.4 | 27.7 |
| 0°-40° | 1362.0 | 44.8 |
| 0°-60° | 2370.8 | 78.0 |
| 0°-90° | 3039.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3039.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1103 | 1103 | 1103 | 1103 | 1103 | |
| 5° | 1092 | 1094 | 1099 | 1101 | 1102 | 104 |
| 15° | 1037 | 1041 | 1051 | 1058 | 1060 | 292 |
| 25° | 936 | 941 | 960 | 974 | 978 | 430 |
| 35° | 798 | 809 | 833 | 856 | 864 | 499 |
| 45° | 643 | 654 | 687 | 720 | 733 | 496 |
| 55° | 479 | 494 | 534 | 575 | 590 | 429 |
| 65° | 316 | 333 | 381 | 424 | 443 | 312 |
| 75° | 159 | 181 | 229 | 268 | 280 | 170 |
| 85° | 34 | 43 | 49 | 48 | 46 | 41 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P474977

CATALOG NUMBER: 22CZ2-29VHE-S-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1103.3 | 1103.3 | 1103.3 | 1103.3 | 1103.3 |
| 2.5° | 1095.9 | 1098.1 | 1103.3 | 1105.5 | 1105.5 |
| 5° | 1091.5 | 1093.7 | 1098.9 | 1101.1 | 1101.8 |
| 7.5° | 1082.7 | 1085.6 | 1091.5 | 1094.4 | 1094.4 |
| 10° | 1070.9 | 1074.6 | 1081.2 | 1085.6 | 1087.1 |
| 12.5° | 1054.7 | 1059.1 | 1068.0 | 1073.1 | 1074.6 |
| 15° | 1037.1 | 1040.8 | 1051.1 | 1058.4 | 1059.9 |
| 17.5° | 1014.3 | 1020.2 | 1031.2 | 1040.8 | 1043.0 |
| 20° | 990.0 | 996.6 | 1010.6 | 1021.6 | 1023.8 |
| 22.5° | 965.0 | 970.1 | 985.6 | 998.8 | 1001.8 |
| 25° | 935.6 | 940.7 | 959.8 | 973.8 | 977.5 |
| 27.5° | 903.2 | 912.0 | 931.2 | 947.3 | 953.2 |
| 30° | 870.8 | 879.7 | 899.5 | 918.7 | 925.3 |
| 32.5° | 835.5 | 845.1 | 867.9 | 887.8 | 894.4 |
| 35° | 798.0 | 809.1 | 833.3 | 856.1 | 864.2 |
| 37.5° | 759.1 | 771.6 | 798.8 | 823.0 | 831.9 |
| 40° | 723.0 | 731.8 | 760.5 | 788.5 | 801.0 |
| 42.5° | 682.6 | 694.3 | 723.0 | 754.6 | 766.4 |
| 45° | 642.8 | 653.9 | 687.0 | 720.1 | 733.3 |
| 47.5° | 601.7 | 615.6 | 648.7 | 685.5 | 698.7 |
| 50° | 563.4 | 575.2 | 610.5 | 649.5 | 664.2 |
| 52.5° | 522.2 | 534.7 | 573.0 | 613.4 | 626.7 |
| 55° | 478.8 | 494.3 | 534.0 | 575.2 | 589.9 |
| 57.5° | 439.1 | 453.8 | 495.7 | 538.4 | 553.8 |
| 60° | 398.6 | 413.4 | 456.0 | 499.4 | 516.3 |
| 62.5° | 356.0 | 372.9 | 419.2 | 461.2 | 480.3 |
| 65° | 316.3 | 333.2 | 381.0 | 423.7 | 442.8 |
| 67.5° | 274.3 | 294.2 | 342.0 | 386.9 | 406.0 |
| 70° | 233.9 | 257.4 | 304.5 | 348.6 | 370.0 |
| 72.5° | 197.9 | 217.0 | 266.3 | 312.6 | 330.2 |
| 75° | 158.9 | 180.9 | 228.7 | 267.7 | 280.2 |
| 77.5° | 125.8 | 144.9 | 190.5 | 216.2 | 224.3 |
| 80° | 89.7 | 111.1 | 144.9 | 160.3 | 167.0 |
| 82.5° | 59.6 | 77.2 | 98.6 | 101.5 | 100.0 |
| 85° | 33.8 | 43.4 | 49.3 | 48.5 | 45.6 |
| 87.5° | 13.2 | 14.7 | 11.0 | 6.6 | 5.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)