

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: P475388

Luminaire Tested: **14CZ2-29-S-UNV-L835-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475388
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 14CZ2-29-S-UNV-L835-CD1-U
Description: 1'X4' TROFFER LED MODULE, SMOOTH LENS
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

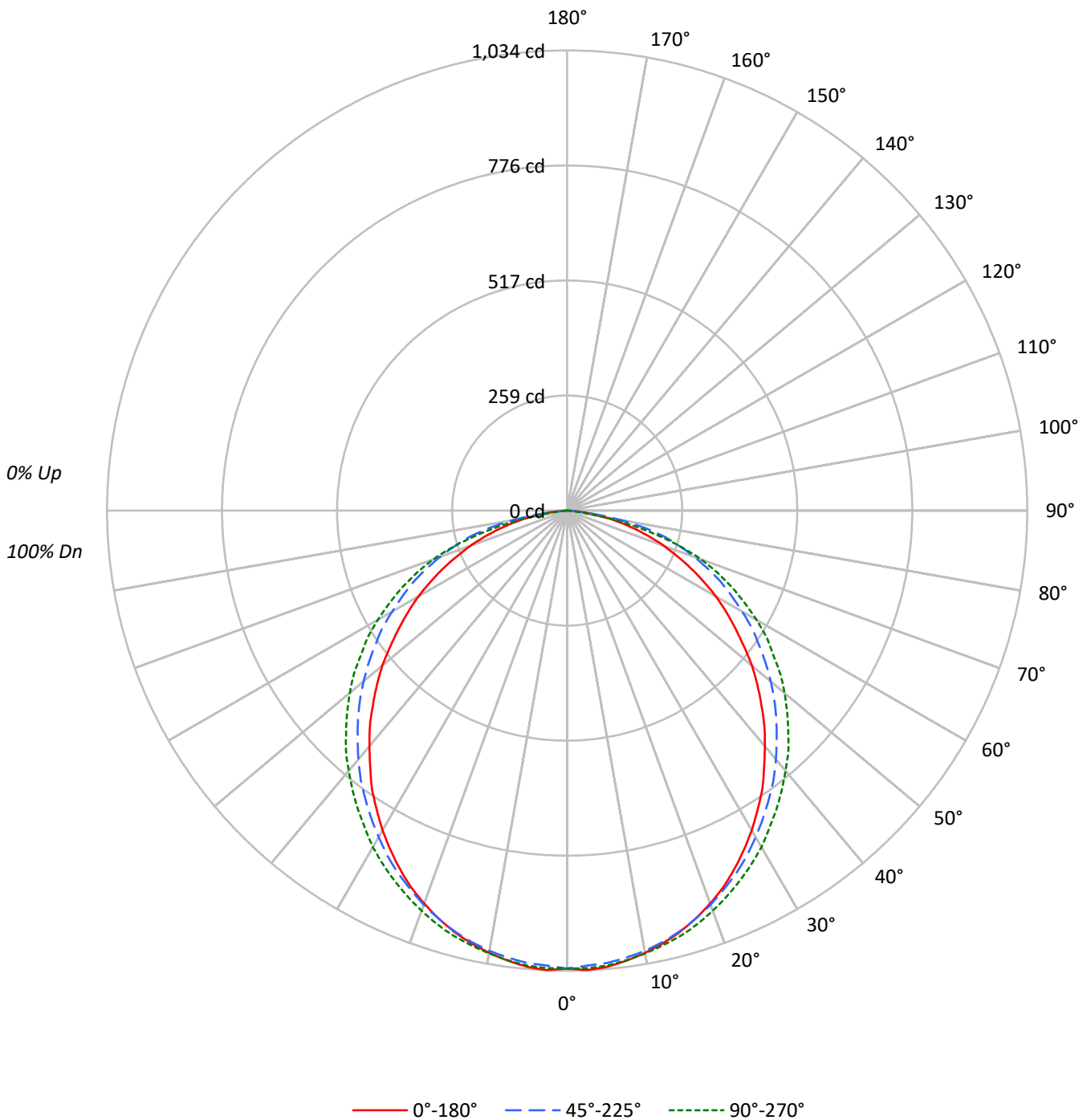
Lumens per Lamp: N/A
Luminaire Lumens: 2876.7 lumens
Efficiency: N/A
Efficacy: 134.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.36
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 21.4
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 | 100 | 96 | 106 | 102 | 98 | 94 | 98 | 94 | 91 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 74 | 79 | 75 | 72 | 70 |
| 3 | 90 | 79 | 71 | 65 | 88 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 59 |
| 4 | 82 | 70 | 61 | 55 | 80 | 69 | 61 | 54 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 60 | 52 | 46 | 58 | 51 | 46 | 56 | 50 | 45 | 43 |
| 6 | 70 | 57 | 48 | 41 | 68 | 56 | 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 | 31 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2769 | 2769 | 2769 |
| 5° | 2780 | 2757 | 2772 |
| 10° | 2757 | 2745 | 2761 |
| 15° | 2730 | 2726 | 2754 |
| 20° | 2690 | 2699 | 2740 |
| 25° | 2639 | 2670 | 2725 |
| 30° | 2578 | 2632 | 2713 |
| 35° | 2512 | 2597 | 2692 |
| 40° | 2427 | 2564 | 2681 |
| 45° | 2349 | 2530 | 2673 |
| 50° | 2269 | 2499 | 2668 |
| 55° | 2163 | 2468 | 2652 |
| 60° | 2077 | 2443 | 2645 |
| 65° | 1951 | 2430 | 2605 |
| 70° | 1820 | 2388 | 2513 |
| 75° | 1608 | 2345 | 2119 |
| 80° | 1299 | 1905 | 1254 |
| 85° | 939 | 534 | 133 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 97.3 | 3.4 |
| 10°-20° | 277.1 | 9.6 |
| 20°-30° | 415.7 | 14.5 |
| 30°-40° | 495.6 | 17.2 |
| 40°-50° | 511.7 | 17.8 |
| 50°-60° | 466.1 | 16.2 |
| 60°-70° | 365.1 | 12.7 |
| 70°-80° | 211.3 | 7.3 |
| 80°-90° | 36.7 | 1.3 |
| 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° | 790.2 | 27.5 |
| 0°-40° | 1285.8 | 44.7 |
| 0°-60° | 2263.6 | 78.7 |
| 0°-90° | 2876.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2876.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1029 | 1029 | 1029 | 1029 | 1029 | |
| 5° | 1029 | 1026 | 1020 | 1028 | 1026 | 98 |
| 15° | 980 | 979 | 979 | 989 | 989 | 276 |
| 25° | 889 | 892 | 899 | 916 | 918 | 409 |
| 35° | 765 | 772 | 791 | 815 | 820 | 477 |
| 45° | 617 | 633 | 665 | 695 | 702 | 477 |
| 55° | 461 | 484 | 526 | 559 | 565 | 413 |
| 65° | 306 | 334 | 382 | 406 | 409 | 304 |
| 75° | 155 | 188 | 226 | 218 | 204 | 165 |
| 85° | 30 | 40 | 17 | 6 | 4 | 37 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475388

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1029.1 | 1029.1 | 1029.1 | 1029.1 | 1029.1 |
| 2.5° | 1033.5 | 1029.1 | 1023.4 | 1029.1 | 1029.1 |
| 5° | 1029.1 | 1026.3 | 1020.5 | 1027.7 | 1026.3 |
| 7.5° | 1020.5 | 1017.6 | 1013.2 | 1020.5 | 1019.0 |
| 10° | 1008.9 | 1007.5 | 1004.6 | 1013.2 | 1010.4 |
| 12.5° | 995.9 | 994.5 | 993.0 | 1001.7 | 1000.2 |
| 15° | 980.0 | 978.6 | 978.6 | 988.7 | 988.7 |
| 17.5° | 961.2 | 961.2 | 961.2 | 974.2 | 974.2 |
| 20° | 939.5 | 939.5 | 942.4 | 956.9 | 956.9 |
| 22.5° | 916.4 | 916.4 | 920.7 | 936.6 | 938.1 |
| 25° | 888.9 | 891.8 | 899.1 | 916.4 | 917.8 |
| 27.5° | 860.0 | 864.4 | 874.5 | 893.3 | 896.2 |
| 30° | 829.7 | 834.0 | 847.0 | 868.7 | 873.0 |
| 32.5° | 796.4 | 803.7 | 819.6 | 841.2 | 845.6 |
| 35° | 764.6 | 771.9 | 790.6 | 815.2 | 819.6 |
| 37.5° | 727.0 | 738.6 | 761.7 | 784.9 | 792.1 |
| 40° | 690.9 | 703.9 | 729.9 | 757.4 | 763.2 |
| 42.5° | 656.2 | 667.8 | 696.7 | 727.0 | 735.7 |
| 45° | 617.2 | 633.1 | 664.9 | 695.3 | 702.5 |
| 47.5° | 579.6 | 595.5 | 631.7 | 663.5 | 670.7 |
| 50° | 542.0 | 557.9 | 597.0 | 628.8 | 637.4 |
| 52.5° | 500.1 | 523.2 | 562.3 | 594.1 | 604.2 |
| 55° | 461.1 | 484.2 | 526.1 | 559.4 | 565.2 |
| 57.5° | 423.5 | 446.6 | 492.9 | 523.2 | 531.9 |
| 60° | 385.9 | 409.1 | 453.9 | 484.2 | 491.4 |
| 62.5° | 345.5 | 371.5 | 417.7 | 443.7 | 449.5 |
| 65° | 306.4 | 333.9 | 381.6 | 406.2 | 409.1 |
| 67.5° | 267.4 | 296.3 | 342.6 | 362.8 | 365.7 |
| 70° | 231.3 | 260.2 | 303.5 | 322.3 | 319.4 |
| 72.5° | 193.7 | 222.6 | 264.5 | 274.6 | 266.0 |
| 75° | 154.7 | 187.9 | 225.5 | 218.3 | 203.8 |
| 77.5° | 120.0 | 151.8 | 176.3 | 154.7 | 143.1 |
| 80° | 83.8 | 117.1 | 122.9 | 95.4 | 80.9 |
| 82.5° | 54.9 | 82.4 | 66.5 | 40.5 | 36.1 |
| 85° | 30.4 | 40.5 | 17.3 | 5.8 | 4.3 |
| 87.5° | 10.1 | 5.8 | 2.9 | 1.4 | 1.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)