

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: P475453

Luminaire Tested: **14CZ2-39-HRP-UNV-L830-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475453
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 14CZ2-39-HRP-UNV-L830-CD1-U
Description: 1'X4' TROFFER LED MODULE, SMOOTH LENS W/ HRP INSERT
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3063.8 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.29 / 1.4
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

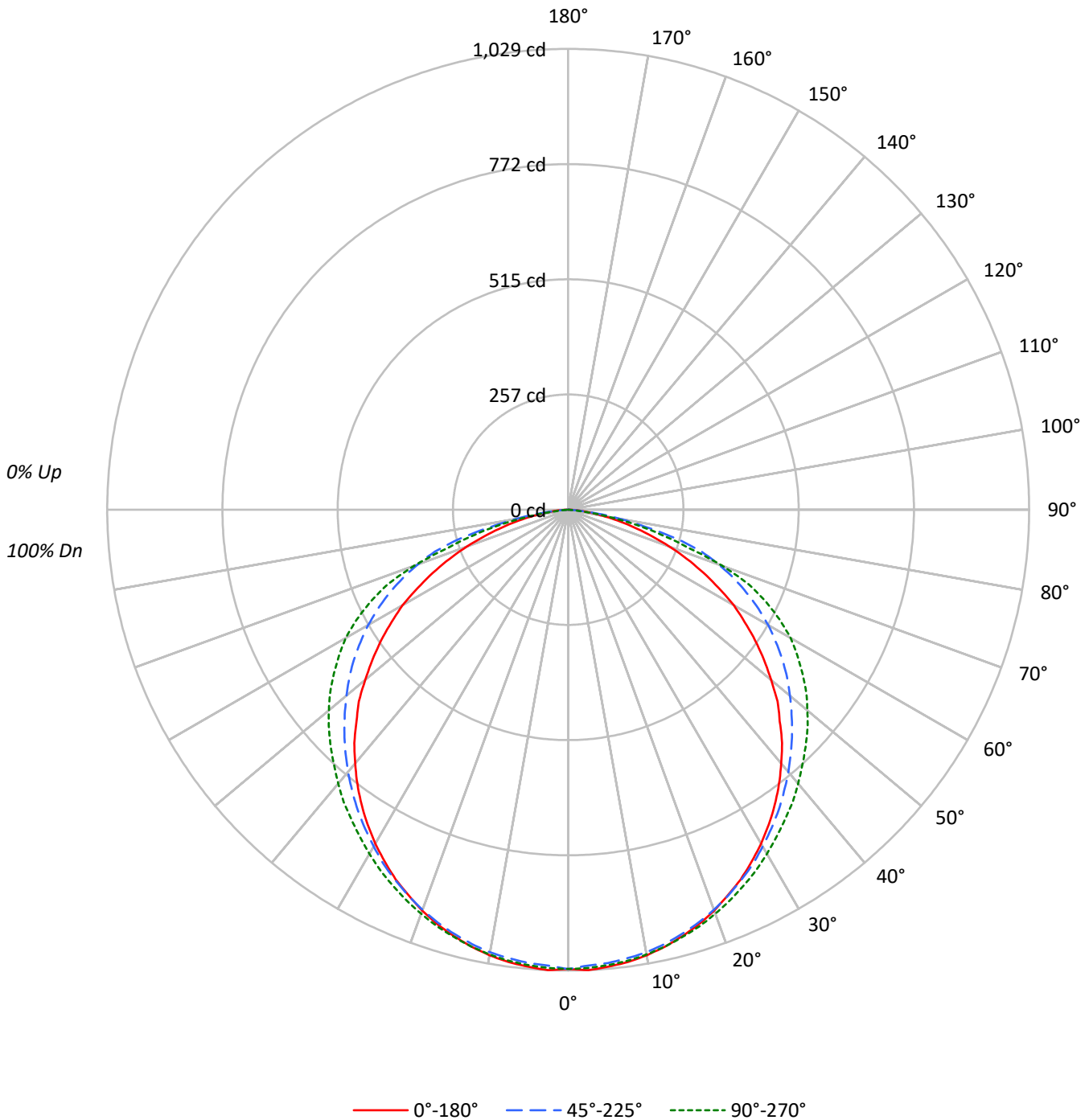
Input Watts (W): 29.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 88 | 86 | 84 |
| 2 | 99 | 90 | 83 | 77 | 96 | 88 | 82 | 76 | 85 | 79 | 75 | 81 | 77 | 73 | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 68 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 79 | 68 | 60 | 53 | 66 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 42 |
| 6 | 69 | 56 | 47 | 40 | 67 | 55 | 46 | 40 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 39 | 37 |
| 7 | 64 | 50 | 41 | 35 | 62 | 50 | 41 | 35 | 48 | 40 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 44 | 36 | 31 | 43 | 36 | 31 | 41 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 25 | 51 | 38 | 31 | 25 | 37 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 25 | 23 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2760 | 2760 | 2760 |
| 5° | 2767 | 2744 | 2757 |
| 10° | 2761 | 2743 | 2755 |
| 15° | 2746 | 2733 | 2751 |
| 20° | 2728 | 2723 | 2750 |
| 25° | 2705 | 2711 | 2750 |
| 30° | 2675 | 2698 | 2757 |
| 35° | 2642 | 2691 | 2772 |
| 40° | 2599 | 2685 | 2805 |
| 45° | 2542 | 2689 | 2851 |
| 50° | 2475 | 2705 | 2919 |
| 55° | 2392 | 2738 | 2996 |
| 60° | 2296 | 2775 | 3085 |
| 65° | 2120 | 2801 | 3102 |
| 70° | 1891 | 2814 | 2873 |
| 75° | 1583 | 2607 | 2232 |
| 80° | 1203 | 1832 | 1466 |
| 85° | 846 | 642 | 204 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 97.0 | 3.2 |
| 10°-20° | 278.1 | 9.1 |
| 20°-30° | 422.7 | 13.8 |
| 30°-40° | 514.7 | 16.8 |
| 40°-50° | 546.8 | 17.8 |
| 50°-60° | 517.2 | 16.9 |
| 60°-70° | 419.1 | 13.7 |
| 70°-80° | 229.8 | 7.5 |
| 80°-90° | 38.4 | 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° | 797.9 | 26.0 |
| 0°-40° | 1312.6 | 42.8 |
| 0°-60° | 2376.6 | 77.6 |
| 0°-90° | 3063.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3063.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1026 | 1026 | 1026 | 1026 | 1026 | |
| 5° | 1024 | 1023 | 1016 | 1023 | 1021 | 97 |
| 15° | 986 | 984 | 981 | 989 | 988 | 278 |
| 25° | 911 | 911 | 913 | 925 | 926 | 420 |
| 35° | 804 | 807 | 819 | 839 | 844 | 503 |
| 45° | 668 | 678 | 707 | 739 | 749 | 516 |
| 55° | 510 | 533 | 584 | 626 | 638 | 455 |
| 65° | 333 | 371 | 440 | 479 | 487 | 329 |
| 75° | 152 | 210 | 251 | 221 | 215 | 163 |
| 85° | 27 | 36 | 21 | 10 | 7 | 34 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475453

CATALOG NUMBER: 14CZ2-39-HRP-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1025.5 | 1025.5 | 1025.5 | 1025.5 | 1025.5 |
| 2.5° | 1029.2 | 1025.5 | 1018.8 | 1025.5 | 1024.5 |
| 5° | 1024.5 | 1022.6 | 1016.0 | 1022.6 | 1020.7 |
| 7.5° | 1018.8 | 1016.9 | 1010.3 | 1017.9 | 1016.0 |
| 10° | 1010.3 | 1008.4 | 1003.7 | 1010.3 | 1008.4 |
| 12.5° | 999.0 | 998.0 | 993.3 | 1000.9 | 999.0 |
| 15° | 985.7 | 983.8 | 981.0 | 988.6 | 987.6 |
| 17.5° | 970.6 | 968.7 | 966.8 | 976.3 | 975.3 |
| 20° | 952.6 | 951.7 | 950.7 | 961.1 | 960.2 |
| 22.5° | 931.8 | 931.8 | 932.7 | 944.1 | 944.1 |
| 25° | 911.0 | 911.0 | 912.9 | 925.2 | 926.1 |
| 27.5° | 886.4 | 888.3 | 892.1 | 905.3 | 908.2 |
| 30° | 860.9 | 862.7 | 868.4 | 883.6 | 887.3 |
| 32.5° | 833.4 | 836.3 | 843.8 | 861.8 | 865.6 |
| 35° | 804.1 | 806.9 | 819.2 | 839.1 | 843.8 |
| 37.5° | 772.9 | 777.6 | 791.8 | 814.5 | 823.0 |
| 40° | 739.8 | 747.3 | 764.4 | 789.0 | 798.4 |
| 42.5° | 706.7 | 713.3 | 736.0 | 764.4 | 773.8 |
| 45° | 667.9 | 678.3 | 706.7 | 738.8 | 749.2 |
| 47.5° | 633.8 | 643.3 | 676.4 | 712.3 | 724.6 |
| 50° | 591.2 | 605.4 | 646.1 | 685.8 | 697.2 |
| 52.5° | 550.6 | 569.5 | 615.8 | 656.5 | 669.8 |
| 55° | 509.9 | 532.6 | 583.7 | 626.2 | 638.5 |
| 57.5° | 467.3 | 491.9 | 549.6 | 593.1 | 606.4 |
| 60° | 426.6 | 453.1 | 515.6 | 560.0 | 573.3 |
| 62.5° | 378.4 | 411.5 | 478.7 | 521.2 | 532.6 |
| 65° | 333.0 | 370.8 | 439.9 | 478.7 | 487.2 |
| 67.5° | 286.6 | 331.1 | 400.2 | 434.2 | 437.0 |
| 70° | 240.3 | 290.4 | 357.6 | 378.4 | 365.2 |
| 72.5° | 194.9 | 250.7 | 312.2 | 295.1 | 280.0 |
| 75° | 152.3 | 210.0 | 250.7 | 221.4 | 214.7 |
| 77.5° | 112.6 | 172.2 | 175.0 | 160.8 | 156.1 |
| 80° | 77.6 | 133.4 | 118.2 | 102.2 | 94.6 |
| 82.5° | 50.1 | 82.3 | 65.3 | 48.2 | 43.5 |
| 85° | 27.4 | 35.9 | 20.8 | 10.4 | 6.6 |
| 87.5° | 10.4 | 6.6 | 2.8 | 2.8 | 1.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)