

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: P475470

Luminaire Tested: **14CZ2-35-HRP-UNV-L840-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475470
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 14CZ2-35-HRP-UNV-L840-CD1-U
Description: 1'X4' TROFFER LED MODULE, SMOOTH LENS W/ HRP INSERT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

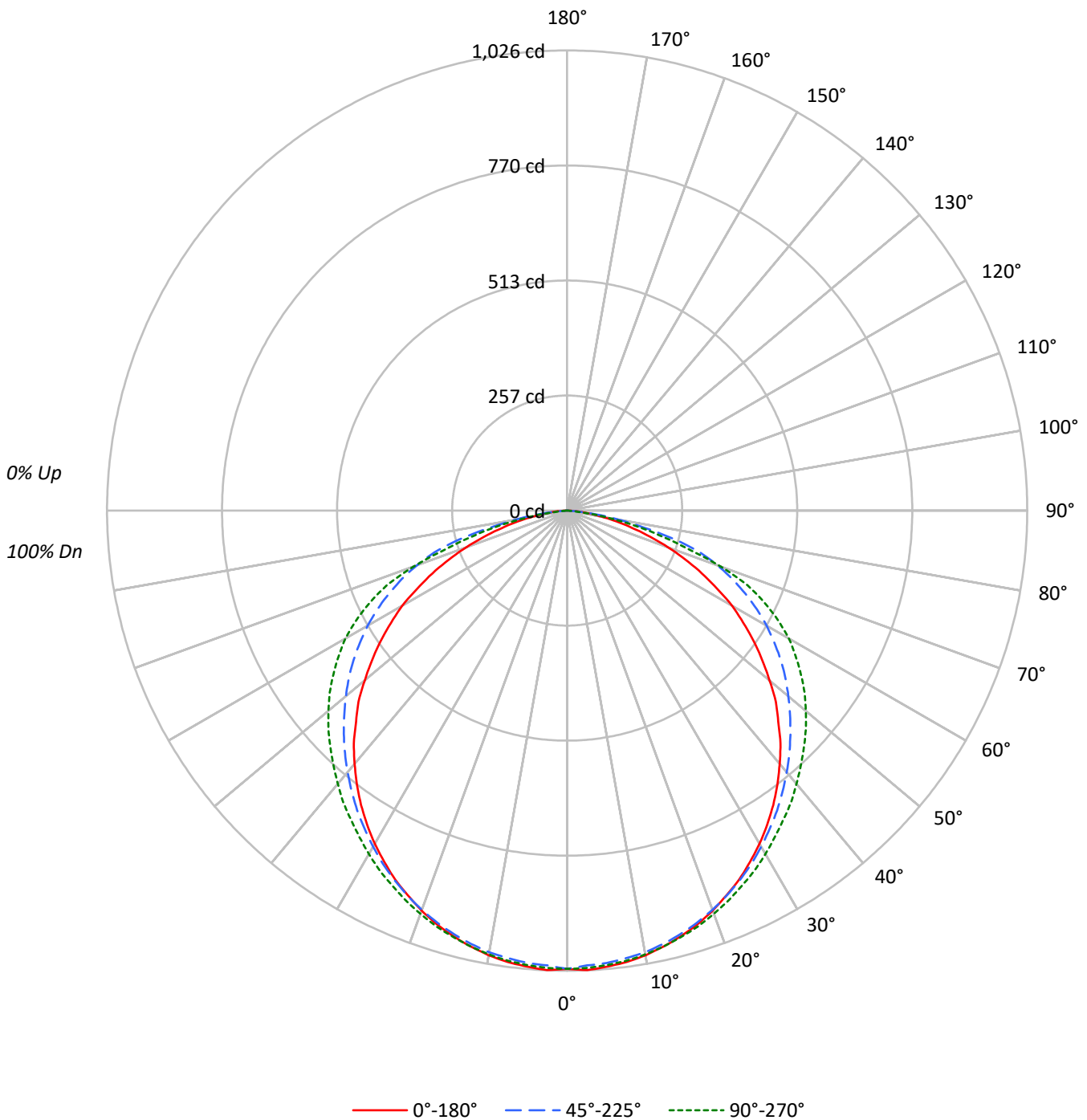
Lumens per Lamp: N/A
Luminaire Lumens: 3052.9 lumens
Efficiency: N/A
Efficacy: 107.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.29 / 1.4
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 28.5
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° | 2750 | 2750 | 2750 |
| 5° | 2757 | 2735 | 2747 |
| 10° | 2751 | 2733 | 2746 |
| 15° | 2736 | 2723 | 2742 |
| 20° | 2718 | 2713 | 2740 |
| 25° | 2695 | 2701 | 2740 |
| 30° | 2665 | 2689 | 2747 |
| 35° | 2632 | 2682 | 2762 |
| 40° | 2589 | 2675 | 2795 |
| 45° | 2533 | 2680 | 2841 |
| 50° | 2466 | 2695 | 2908 |
| 55° | 2384 | 2729 | 2985 |
| 60° | 2288 | 2765 | 3074 |
| 65° | 2113 | 2791 | 3091 |
| 70° | 1884 | 2803 | 2862 |
| 75° | 1578 | 2597 | 2225 |
| 80° | 1198 | 1826 | 1461 |
| 85° | 843 | 639 | 204 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 96.7 | 3.2 |
| 10°-20° | 277.1 | 9.1 |
| 20°-30° | 421.2 | 13.8 |
| 30°-40° | 512.9 | 16.8 |
| 40°-50° | 544.8 | 17.8 |
| 50°-60° | 515.4 | 16.9 |
| 60°-70° | 417.6 | 13.7 |
| 70°-80° | 228.9 | 7.5 |
| 80°-90° | 38.2 | 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° | 795.1 | 26.0 |
| 0°-40° | 1307.9 | 42.8 |
| 0°-60° | 2368.1 | 77.6 |
| 0°-90° | 3052.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3052.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1022 | 1022 | 1022 | 1022 | 1022 | |
| 5° | 1021 | 1019 | 1012 | 1019 | 1017 | 97 |
| 15° | 982 | 980 | 978 | 985 | 984 | 277 |
| 25° | 908 | 908 | 910 | 922 | 923 | 418 |
| 35° | 801 | 804 | 816 | 836 | 841 | 501 |
| 45° | 666 | 676 | 704 | 736 | 746 | 514 |
| 55° | 508 | 531 | 582 | 624 | 636 | 454 |
| 65° | 332 | 370 | 438 | 477 | 485 | 328 |
| 75° | 152 | 209 | 250 | 221 | 214 | 162 |
| 85° | 27 | 36 | 21 | 10 | 7 | 34 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475470

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1021.8 | 1021.8 | 1021.8 | 1021.8 | 1021.8 |
| 2.5° | 1025.6 | 1021.8 | 1015.2 | 1021.8 | 1020.8 |
| 5° | 1020.8 | 1019.0 | 1012.4 | 1019.0 | 1017.1 |
| 7.5° | 1015.2 | 1013.3 | 1006.7 | 1014.2 | 1012.4 |
| 10° | 1006.7 | 1004.8 | 1000.1 | 1006.7 | 1004.8 |
| 12.5° | 995.4 | 994.5 | 989.7 | 997.3 | 995.4 |
| 15° | 982.2 | 980.3 | 977.5 | 985.0 | 984.1 |
| 17.5° | 967.1 | 965.2 | 963.3 | 972.8 | 971.8 |
| 20° | 949.2 | 948.3 | 947.3 | 957.7 | 956.8 |
| 22.5° | 928.5 | 928.5 | 929.4 | 940.7 | 940.7 |
| 25° | 907.7 | 907.7 | 909.6 | 921.9 | 922.8 |
| 27.5° | 883.2 | 885.1 | 888.9 | 902.1 | 904.9 |
| 30° | 857.8 | 859.7 | 865.3 | 880.4 | 884.2 |
| 32.5° | 830.4 | 833.3 | 840.8 | 858.7 | 862.5 |
| 35° | 801.2 | 804.0 | 816.3 | 836.1 | 840.8 |
| 37.5° | 770.1 | 774.8 | 789.0 | 811.6 | 820.1 |
| 40° | 737.1 | 744.7 | 761.6 | 786.1 | 795.6 |
| 42.5° | 704.1 | 710.7 | 733.4 | 761.6 | 771.1 |
| 45° | 665.5 | 675.9 | 704.1 | 736.2 | 746.5 |
| 47.5° | 631.5 | 641.0 | 674.0 | 709.8 | 722.0 |
| 50° | 589.1 | 603.3 | 643.8 | 683.4 | 694.7 |
| 52.5° | 548.6 | 567.5 | 613.6 | 654.2 | 667.4 |
| 55° | 508.1 | 530.7 | 581.6 | 624.0 | 636.3 |
| 57.5° | 465.6 | 490.2 | 547.7 | 591.0 | 604.2 |
| 60° | 425.1 | 451.5 | 513.7 | 558.0 | 571.2 |
| 62.5° | 377.0 | 410.0 | 477.0 | 519.4 | 530.7 |
| 65° | 331.8 | 369.5 | 438.3 | 477.0 | 485.4 |
| 67.5° | 285.6 | 329.9 | 398.7 | 432.7 | 435.5 |
| 70° | 239.4 | 289.4 | 356.3 | 377.0 | 363.8 |
| 72.5° | 194.2 | 249.8 | 311.1 | 294.1 | 279.0 |
| 75° | 151.8 | 209.3 | 249.8 | 220.6 | 214.0 |
| 77.5° | 112.2 | 171.6 | 174.4 | 160.2 | 155.5 |
| 80° | 77.3 | 132.9 | 117.8 | 101.8 | 94.3 |
| 82.5° | 50.0 | 82.0 | 65.0 | 48.1 | 43.4 |
| 85° | 27.3 | 35.8 | 20.7 | 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)