

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: P475471

Luminaire Tested: **14CZ2-39-HRP-UNV-L840-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475471
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-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: 3235.3 lumens
Efficiency: N/A
Efficacy: 108.6 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

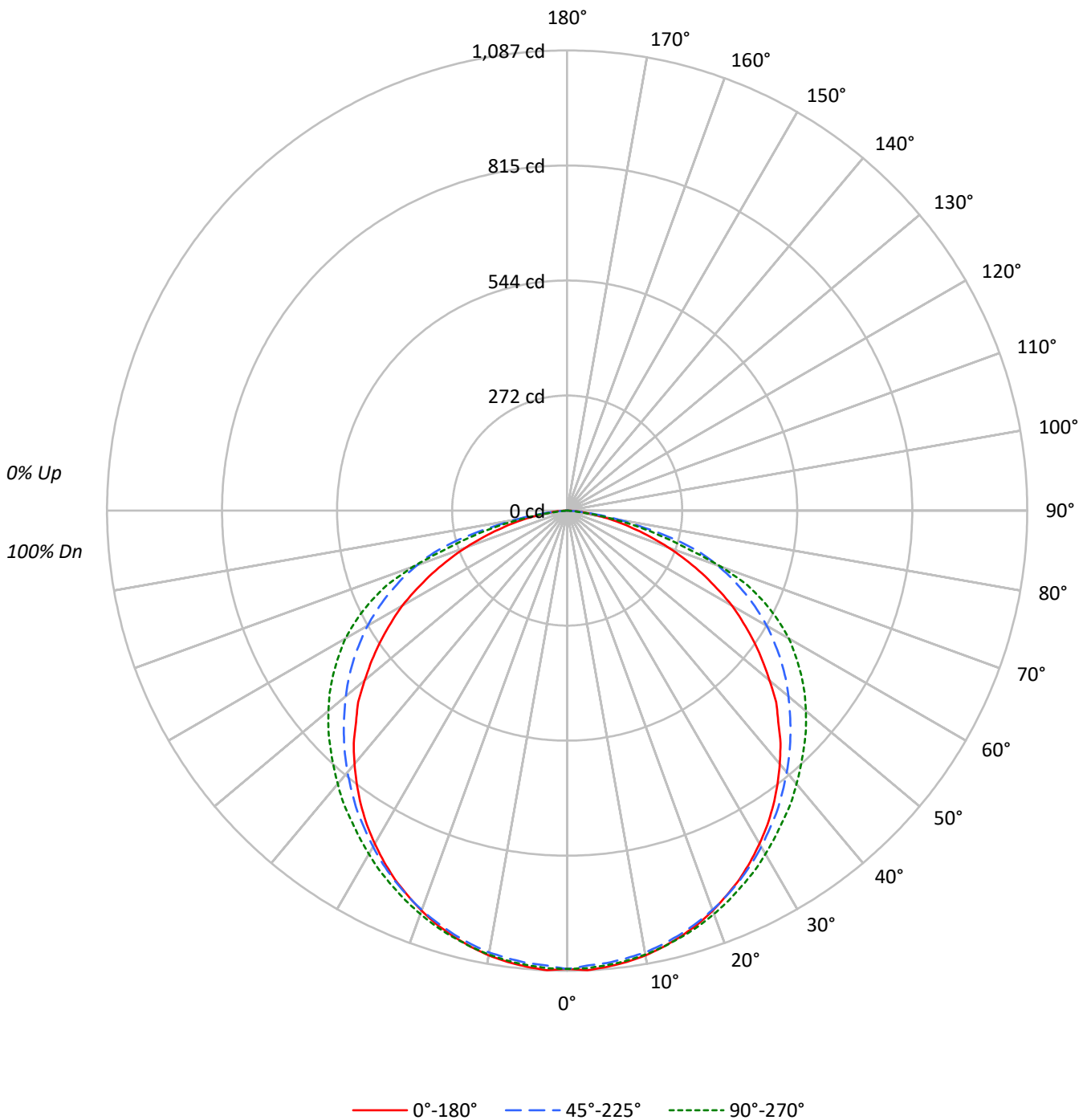
Input Watts (W): 29.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 2914 | 2914 | 2914 |
| 5° | 2922 | 2898 | 2911 |
| 10° | 2915 | 2896 | 2910 |
| 15° | 2900 | 2886 | 2905 |
| 20° | 2881 | 2875 | 2903 |
| 25° | 2856 | 2862 | 2904 |
| 30° | 2825 | 2849 | 2912 |
| 35° | 2789 | 2842 | 2927 |
| 40° | 2744 | 2835 | 2962 |
| 45° | 2684 | 2840 | 3011 |
| 50° | 2614 | 2856 | 3082 |
| 55° | 2526 | 2891 | 3164 |
| 60° | 2425 | 2930 | 3258 |
| 65° | 2239 | 2958 | 3275 |
| 70° | 1996 | 2971 | 3034 |
| 75° | 1672 | 2752 | 2358 |
| 80° | 1269 | 1936 | 1548 |
| 85° | 895 | 679 | 216 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 102.5 | 3.2 |
| 10°-20° | 293.7 | 9.1 |
| 20°-30° | 446.4 | 13.8 |
| 30°-40° | 543.5 | 16.8 |
| 40°-50° | 577.4 | 17.8 |
| 50°-60° | 546.2 | 16.9 |
| 60°-70° | 442.5 | 13.7 |
| 70°-80° | 242.6 | 7.5 |
| 80°-90° | 40.5 | 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° | 842.6 | 26.0 |
| 0°-40° | 1386.1 | 42.8 |
| 0°-60° | 2509.6 | 77.6 |
| 0°-90° | 3235.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3235.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1083 | 1083 | 1083 | 1083 | 1083 | |
| 5° | 1082 | 1080 | 1073 | 1080 | 1078 | 103 |
| 15° | 1041 | 1039 | 1036 | 1044 | 1043 | 294 |
| 25° | 962 | 962 | 964 | 977 | 978 | 443 |
| 35° | 849 | 852 | 865 | 886 | 891 | 531 |
| 45° | 705 | 716 | 746 | 780 | 791 | 545 |
| 55° | 538 | 562 | 616 | 661 | 674 | 481 |
| 65° | 352 | 392 | 464 | 506 | 514 | 348 |
| 75° | 161 | 222 | 265 | 234 | 227 | 172 |
| 85° | 29 | 38 | 22 | 11 | 7 | 36 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475471

CATALOG NUMBER: 14CZ2-39-HRP-UNV-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1082.8 | 1082.8 | 1082.8 | 1082.8 | 1082.8 |
| 2.5° | 1086.8 | 1082.8 | 1075.8 | 1082.8 | 1081.8 |
| 5° | 1081.8 | 1079.8 | 1072.8 | 1079.8 | 1077.8 |
| 7.5° | 1075.8 | 1073.8 | 1066.9 | 1074.8 | 1072.8 |
| 10° | 1066.9 | 1064.9 | 1059.9 | 1066.9 | 1064.9 |
| 12.5° | 1054.9 | 1053.9 | 1048.9 | 1056.9 | 1054.9 |
| 15° | 1040.9 | 1038.9 | 1035.9 | 1043.9 | 1042.9 |
| 17.5° | 1024.9 | 1022.9 | 1020.9 | 1030.9 | 1029.9 |
| 20° | 1005.9 | 1004.9 | 1003.9 | 1014.9 | 1013.9 |
| 22.5° | 983.9 | 983.9 | 984.9 | 996.9 | 996.9 |
| 25° | 962.0 | 962.0 | 964.0 | 977.0 | 978.0 |
| 27.5° | 936.0 | 938.0 | 942.0 | 956.0 | 959.0 |
| 30° | 909.0 | 911.0 | 917.0 | 933.0 | 937.0 |
| 32.5° | 880.1 | 883.1 | 891.0 | 910.0 | 914.0 |
| 35° | 849.1 | 852.1 | 865.1 | 886.0 | 891.0 |
| 37.5° | 816.1 | 821.1 | 836.1 | 860.1 | 869.1 |
| 40° | 781.2 | 789.2 | 807.1 | 833.1 | 843.1 |
| 42.5° | 746.2 | 753.2 | 777.2 | 807.1 | 817.1 |
| 45° | 705.2 | 716.2 | 746.2 | 780.2 | 791.2 |
| 47.5° | 669.3 | 679.3 | 714.2 | 752.2 | 765.2 |
| 50° | 624.3 | 639.3 | 682.3 | 724.2 | 736.2 |
| 52.5° | 581.4 | 601.4 | 650.3 | 693.3 | 707.2 |
| 55° | 538.4 | 562.4 | 616.3 | 661.3 | 674.3 |
| 57.5° | 493.5 | 519.4 | 580.4 | 626.3 | 640.3 |
| 60° | 450.5 | 478.5 | 544.4 | 591.4 | 605.4 |
| 62.5° | 399.6 | 434.5 | 505.5 | 550.4 | 562.4 |
| 65° | 351.6 | 391.6 | 464.5 | 505.5 | 514.4 |
| 67.5° | 302.7 | 349.6 | 422.5 | 458.5 | 461.5 |
| 70° | 253.7 | 306.7 | 377.6 | 399.6 | 385.6 |
| 72.5° | 205.8 | 264.7 | 329.6 | 311.7 | 295.7 |
| 75° | 160.8 | 221.8 | 264.7 | 233.7 | 226.8 |
| 77.5° | 118.9 | 181.8 | 184.8 | 169.8 | 164.8 |
| 80° | 81.9 | 140.8 | 124.9 | 107.9 | 99.9 |
| 82.5° | 52.9 | 86.9 | 68.9 | 50.9 | 46.0 |
| 85° | 29.0 | 38.0 | 22.0 | 11.0 | 7.0 |
| 87.5° | 11.0 | 7.0 | 3.0 | 3.0 | 2.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)