

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: P475198

Luminaire Tested: **22CZ2-32-HRP-UNV-L850-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475198
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-32-HRP-UNV-L850-CD1-U
Description: 2'X2' TROFFER LED MODULE, SMOOTH LENS W/ HRP INSERT
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2700.8 lumens
Efficiency: N/A
Efficacy: 111.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

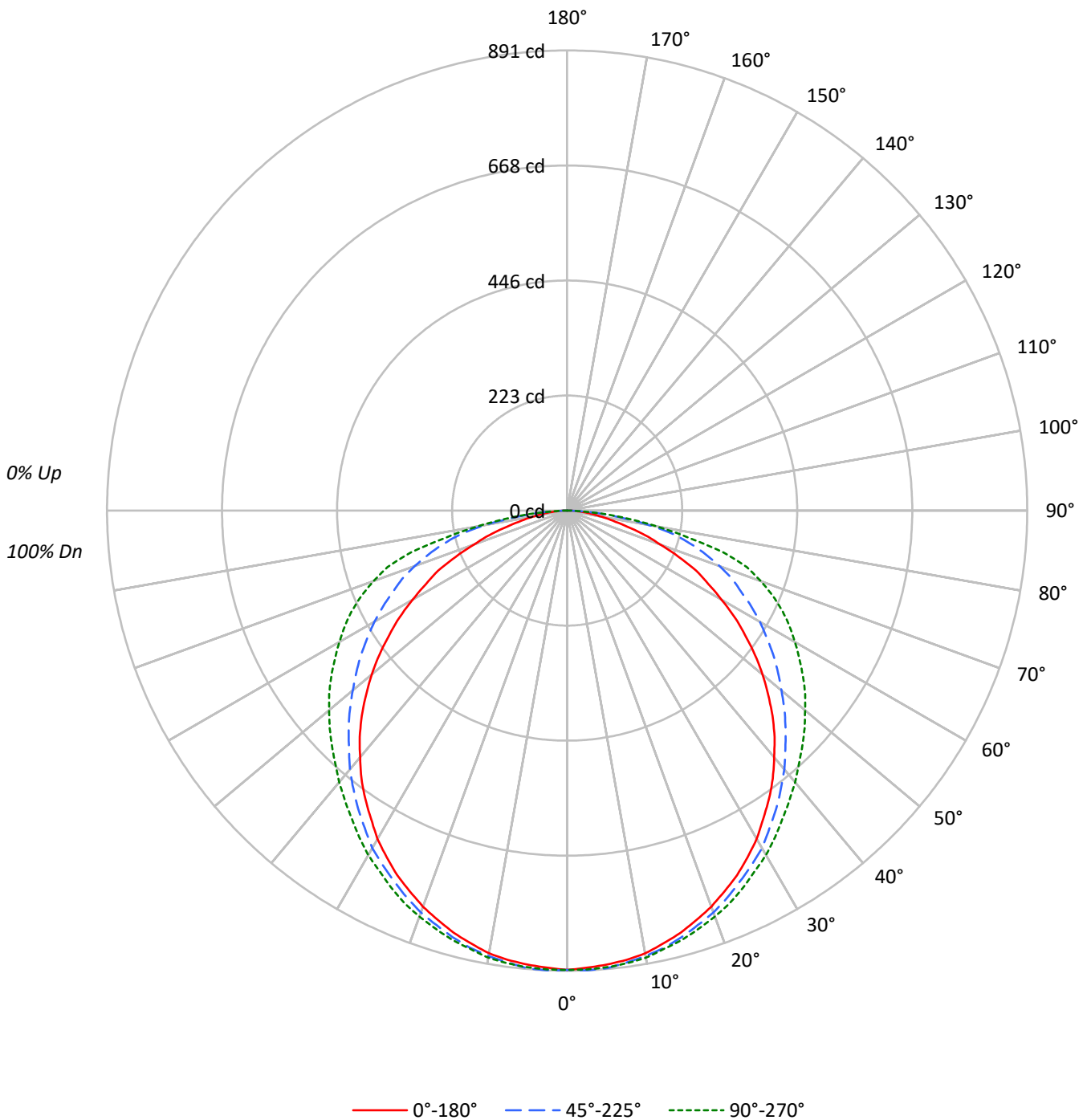
Input Watts (W): 24.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P475198

CATALOG NUMBER: 22CZ2-32-HRP-UNV-L850-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P475198

CATALOG NUMBER: 22CZ2-32-HRP-UNV-L850-CD1-U

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 | 108 | 103 | 98 | 94 | 105 | 101 | 96 | 93 | 96 | 93 | 90 | 92 | 90 | 87 | 89 | 87 | 84 | 82 |
| 2 | 98 | 89 | 82 | 76 | 95 | 87 | 80 | 75 | 84 | 78 | 73 | 80 | 75 | 71 | 77 | 73 | 70 | 68 |
| 3 | 89 | 78 | 69 | 62 | 86 | 76 | 68 | 62 | 73 | 66 | 61 | 70 | 64 | 60 | 68 | 63 | 59 | 56 |
| 4 | 81 | 69 | 59 | 52 | 79 | 67 | 59 | 52 | 65 | 57 | 51 | 62 | 56 | 51 | 60 | 55 | 50 | 48 |
| 5 | 74 | 61 | 52 | 45 | 72 | 60 | 51 | 45 | 58 | 50 | 44 | 56 | 49 | 44 | 54 | 48 | 43 | 41 |
| 6 | 69 | 55 | 46 | 39 | 67 | 54 | 45 | 39 | 52 | 44 | 39 | 50 | 43 | 38 | 49 | 43 | 38 | 36 |
| 7 | 64 | 50 | 41 | 34 | 62 | 49 | 40 | 34 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 38 | 33 | 31 |
| 8 | 59 | 45 | 37 | 31 | 58 | 45 | 36 | 31 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 28 |
| 9 | 55 | 42 | 33 | 28 | 54 | 41 | 33 | 27 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 25 |
| 10 | 52 | 38 | 30 | 25 | 50 | 38 | 30 | 25 | 37 | 30 | 25 | 36 | 29 | 25 | 35 | 29 | 24 | 23 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2393 | 2393 | 2393 |
| 5° | 2384 | 2402 | 2398 |
| 10° | 2379 | 2393 | 2402 |
| 15° | 2359 | 2383 | 2397 |
| 20° | 2337 | 2371 | 2395 |
| 25° | 2312 | 2352 | 2393 |
| 30° | 2282 | 2345 | 2393 |
| 35° | 2238 | 2317 | 2390 |
| 40° | 2190 | 2298 | 2412 |
| 45° | 2140 | 2276 | 2451 |
| 50° | 2069 | 2268 | 2518 |
| 55° | 1974 | 2286 | 2614 |
| 60° | 1861 | 2320 | 2742 |
| 65° | 1757 | 2365 | 2930 |
| 70° | 1501 | 2467 | 3137 |
| 75° | 1258 | 2569 | 3260 |
| 80° | 1031 | 2481 | 2720 |
| 85° | 892 | 1840 | 1998 |



TEST NUMBER: P475198

CATALOG NUMBER: 22CZ2-32-HRP-UNV-L850-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 84.3 | 3.1 |
| 10°-20° | 241.1 | 8.9 |
| 20°-30° | 365.4 | 13.5 |
| 30°-40° | 441.2 | 16.3 |
| 40°-50° | 463.6 | 17.2 |
| 50°-60° | 436.2 | 16.2 |
| 60°-70° | 363.7 | 13.5 |
| 70°-80° | 241.0 | 8.9 |
| 80°-90° | 64.2 | 2.4 |
| 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° | 690.8 | 25.6 |
| 0°-40° | 1132.0 | 41.9 |
| 0°-60° | 2031.9 | 75.2 |
| 0°-90° | 2700.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2700.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 889 | 889 | 889 | 889 | 889 | |
| 5° | 882 | 884 | 889 | 889 | 888 | 84 |
| 15° | 847 | 850 | 855 | 859 | 860 | 239 |
| 25° | 779 | 784 | 792 | 802 | 806 | 358 |
| 35° | 681 | 688 | 705 | 721 | 728 | 426 |
| 45° | 562 | 571 | 598 | 629 | 644 | 433 |
| 55° | 421 | 440 | 487 | 537 | 557 | 376 |
| 65° | 276 | 300 | 371 | 433 | 460 | 269 |
| 75° | 121 | 169 | 247 | 298 | 314 | 131 |
| 85° | 29 | 44 | 60 | 65 | 65 | 34 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475198

CATALOG NUMBER: 22CZ2-32-HRP-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 889.3 | 889.3 | 889.3 | 889.3 | 889.3 |
| 2.5° | 886.0 | 887.6 | 891.1 | 891.1 | 889.3 |
| 5° | 882.5 | 884.2 | 889.3 | 889.3 | 887.6 |
| 7.5° | 877.4 | 879.2 | 882.5 | 886.0 | 884.2 |
| 10° | 870.6 | 872.3 | 875.7 | 879.2 | 879.2 |
| 12.5° | 858.7 | 860.4 | 867.2 | 869.0 | 869.0 |
| 15° | 846.7 | 850.2 | 855.3 | 858.7 | 860.4 |
| 17.5° | 831.5 | 834.8 | 841.6 | 848.5 | 848.5 |
| 20° | 816.1 | 819.4 | 828.0 | 834.8 | 836.5 |
| 22.5° | 797.3 | 802.4 | 811.0 | 819.4 | 822.9 |
| 25° | 778.7 | 783.8 | 792.2 | 802.4 | 805.9 |
| 27.5° | 756.4 | 761.5 | 773.6 | 785.4 | 787.1 |
| 30° | 734.3 | 739.4 | 754.7 | 765.0 | 770.1 |
| 32.5° | 707.0 | 713.8 | 729.1 | 744.5 | 749.6 |
| 35° | 681.4 | 688.4 | 705.4 | 720.7 | 727.5 |
| 37.5° | 654.2 | 661.0 | 679.8 | 698.6 | 707.0 |
| 40° | 623.5 | 632.1 | 654.2 | 674.7 | 686.6 |
| 42.5° | 594.6 | 603.2 | 625.3 | 652.6 | 664.4 |
| 45° | 562.3 | 570.7 | 598.1 | 628.6 | 644.0 |
| 47.5° | 528.1 | 538.3 | 570.7 | 608.3 | 623.5 |
| 50° | 494.1 | 506.0 | 541.8 | 584.4 | 601.4 |
| 52.5° | 458.3 | 473.6 | 514.5 | 560.6 | 580.9 |
| 55° | 420.8 | 439.6 | 487.3 | 536.7 | 557.1 |
| 57.5° | 385.0 | 402.1 | 458.3 | 511.1 | 533.2 |
| 60° | 345.8 | 368.0 | 431.0 | 485.5 | 509.4 |
| 62.5° | 308.4 | 332.3 | 402.1 | 460.1 | 485.5 |
| 65° | 276.0 | 299.8 | 371.4 | 432.7 | 460.1 |
| 67.5° | 233.4 | 265.8 | 345.8 | 403.8 | 431.0 |
| 70° | 190.8 | 235.1 | 313.5 | 373.1 | 398.7 |
| 72.5° | 158.5 | 201.1 | 281.1 | 340.7 | 364.7 |
| 75° | 121.0 | 168.7 | 247.1 | 298.1 | 313.5 |
| 77.5° | 90.3 | 139.7 | 211.3 | 236.9 | 238.5 |
| 80° | 66.5 | 107.3 | 160.1 | 168.7 | 175.5 |
| 82.5° | 46.1 | 74.9 | 104.0 | 114.1 | 117.5 |
| 85° | 28.9 | 44.2 | 59.6 | 64.7 | 64.7 |
| 87.5° | 15.4 | 17.0 | 20.5 | 20.5 | 20.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)