

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: P475220

Luminaire Tested: **22CZ2-90VHE-HRP-UNV-L850-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475220
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-90VHE-HRP-UNV-L850-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP
INSERT
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7420.6 lumens
Efficiency: N/A
Efficacy: 111.3 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

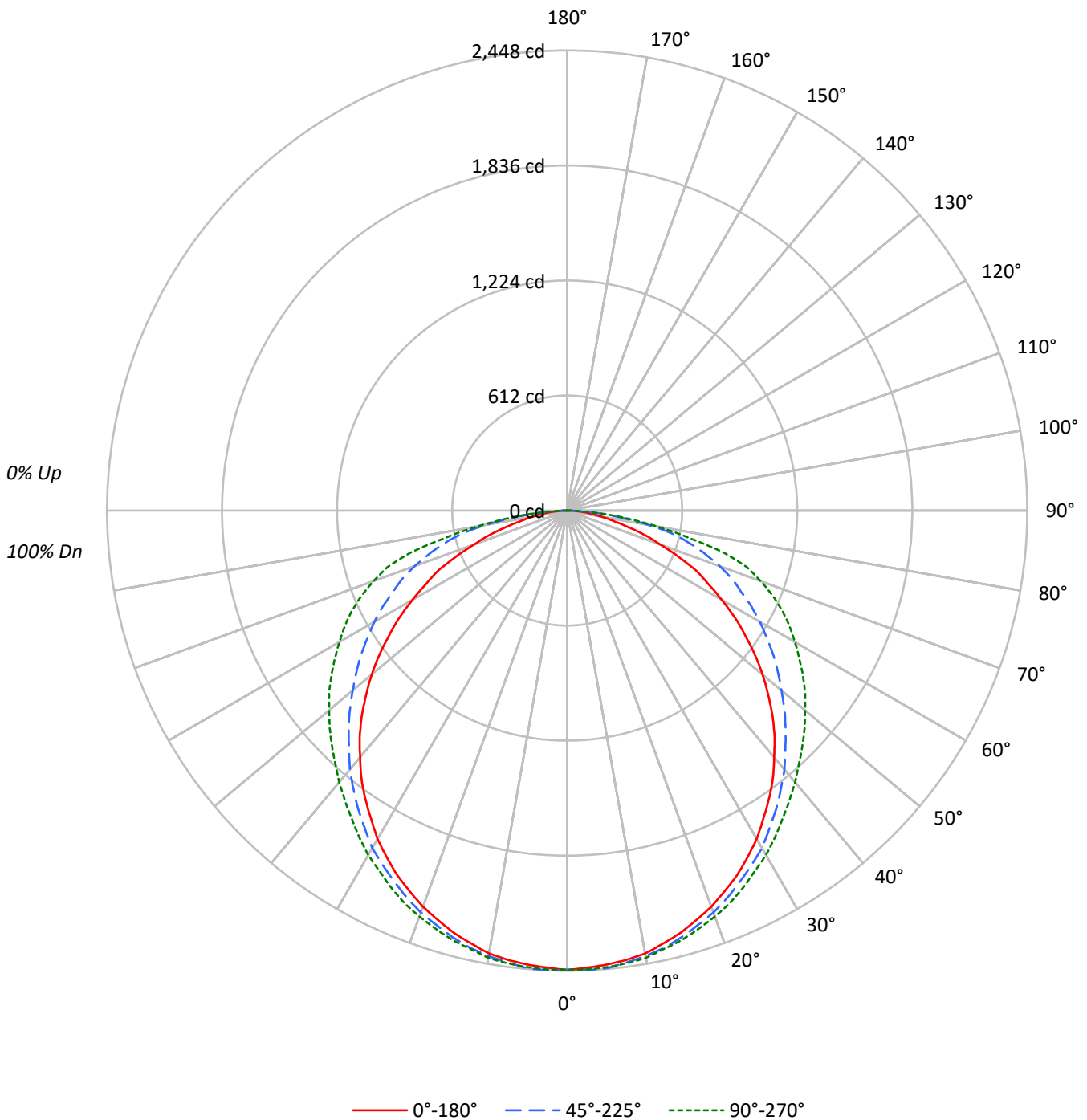
Input Watts (W): 66.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P475220

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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 | 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° | 6575 | 6575 | 6575 |
| 5° | 6550 | 6600 | 6588 |
| 10° | 6536 | 6575 | 6601 |
| 15° | 6481 | 6547 | 6586 |
| 20° | 6422 | 6515 | 6581 |
| 25° | 6352 | 6463 | 6575 |
| 30° | 6269 | 6444 | 6575 |
| 35° | 6151 | 6367 | 6566 |
| 40° | 6018 | 6314 | 6627 |
| 45° | 5879 | 6254 | 6733 |
| 50° | 5683 | 6232 | 6917 |
| 55° | 5424 | 6282 | 7182 |
| 60° | 5114 | 6373 | 7533 |
| 65° | 4829 | 6498 | 8049 |
| 70° | 4125 | 6777 | 8618 |
| 75° | 3457 | 7060 | 8955 |
| 80° | 2833 | 6819 | 7471 |
| 85° | 2452 | 5054 | 5490 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 231.6 | 3.1 |
| 10°-20° | 662.5 | 8.9 |
| 20°-30° | 1004.0 | 13.5 |
| 30°-40° | 1212.3 | 16.3 |
| 40°-50° | 1273.8 | 17.2 |
| 50°-60° | 1198.5 | 16.2 |
| 60°-70° | 999.3 | 13.5 |
| 70°-80° | 662.2 | 8.9 |
| 80°-90° | 176.4 | 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° | 1898.0 | 25.6 |
| 0°-40° | 3110.3 | 41.9 |
| 0°-60° | 5582.6 | 75.2 |
| 0°-90° | 7420.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 7420.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2443 | 2443 | 2443 | 2443 | 2443 | |
| 5° | 2425 | 2429 | 2443 | 2443 | 2439 | 230 |
| 15° | 2326 | 2336 | 2350 | 2359 | 2364 | 656 |
| 25° | 2139 | 2154 | 2177 | 2205 | 2214 | 985 |
| 35° | 1872 | 1891 | 1938 | 1980 | 1999 | 1171 |
| 45° | 1545 | 1568 | 1643 | 1727 | 1769 | 1190 |
| 55° | 1156 | 1208 | 1339 | 1474 | 1531 | 1034 |
| 65° | 758 | 824 | 1020 | 1189 | 1264 | 738 |
| 75° | 332 | 464 | 679 | 819 | 861 | 361 |
| 85° | 79 | 122 | 164 | 178 | 178 | 92 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475220

CATALOG NUMBER: 22CZ2-90VHE-HRP-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2443.3 | 2443.3 | 2443.3 | 2443.3 | 2443.3 |
| 2.5° | 2434.3 | 2438.8 | 2448.3 | 2448.3 | 2443.3 |
| 5° | 2424.7 | 2429.3 | 2443.3 | 2443.3 | 2438.8 |
| 7.5° | 2410.7 | 2415.7 | 2424.7 | 2434.3 | 2429.3 |
| 10° | 2392.1 | 2396.6 | 2406.1 | 2415.7 | 2415.7 |
| 12.5° | 2359.4 | 2364.0 | 2382.6 | 2387.5 | 2387.5 |
| 15° | 2326.3 | 2335.8 | 2349.9 | 2359.4 | 2364.0 |
| 17.5° | 2284.6 | 2293.7 | 2312.3 | 2331.3 | 2331.3 |
| 20° | 2242.4 | 2251.5 | 2275.1 | 2293.7 | 2298.2 |
| 22.5° | 2190.7 | 2204.8 | 2228.3 | 2251.5 | 2261.0 |
| 25° | 2139.4 | 2153.5 | 2176.6 | 2204.8 | 2214.3 |
| 27.5° | 2078.2 | 2092.3 | 2125.4 | 2158.0 | 2162.6 |
| 30° | 2017.4 | 2031.5 | 2073.7 | 2101.8 | 2115.9 |
| 32.5° | 1942.6 | 1961.2 | 2003.4 | 2045.6 | 2059.6 |
| 35° | 1872.3 | 1891.3 | 1938.1 | 1980.2 | 1998.8 |
| 37.5° | 1797.5 | 1816.1 | 1867.8 | 1919.5 | 1942.6 |
| 40° | 1713.1 | 1736.7 | 1797.5 | 1853.7 | 1886.4 |
| 42.5° | 1633.7 | 1657.3 | 1718.1 | 1792.9 | 1825.6 |
| 45° | 1544.8 | 1568.0 | 1643.3 | 1727.2 | 1769.3 |
| 47.5° | 1450.9 | 1479.1 | 1568.0 | 1671.4 | 1713.1 |
| 50° | 1357.5 | 1390.2 | 1488.6 | 1605.6 | 1652.3 |
| 52.5° | 1259.1 | 1301.3 | 1413.7 | 1540.3 | 1596.1 |
| 55° | 1156.1 | 1207.8 | 1338.9 | 1474.5 | 1530.8 |
| 57.5° | 1057.7 | 1104.9 | 1259.1 | 1404.2 | 1465.0 |
| 60° | 950.2 | 1011.0 | 1184.2 | 1333.9 | 1399.7 |
| 62.5° | 847.3 | 913.0 | 1104.9 | 1264.1 | 1333.9 |
| 65° | 758.4 | 823.7 | 1020.5 | 1188.8 | 1264.1 |
| 67.5° | 641.3 | 730.2 | 950.2 | 1109.4 | 1184.2 |
| 70° | 524.3 | 645.9 | 861.3 | 1025.0 | 1095.3 |
| 72.5° | 435.4 | 552.4 | 772.4 | 936.1 | 1001.9 |
| 75° | 332.5 | 463.5 | 679.0 | 819.1 | 861.3 |
| 77.5° | 248.1 | 383.7 | 580.6 | 650.9 | 655.4 |
| 80° | 182.8 | 294.8 | 440.0 | 463.5 | 482.1 |
| 82.5° | 126.5 | 205.9 | 285.7 | 313.4 | 322.9 |
| 85° | 79.4 | 121.6 | 163.7 | 177.8 | 177.8 |
| 87.5° | 42.2 | 46.7 | 56.2 | 56.2 | 56.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)