

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: P475046

Luminaire Tested: **22CZ2-90VHE-RDP-UNV-L835-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475046
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-90VHE-RDP-UNV-L835-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ RDP
INSERT
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6023.5 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.41
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

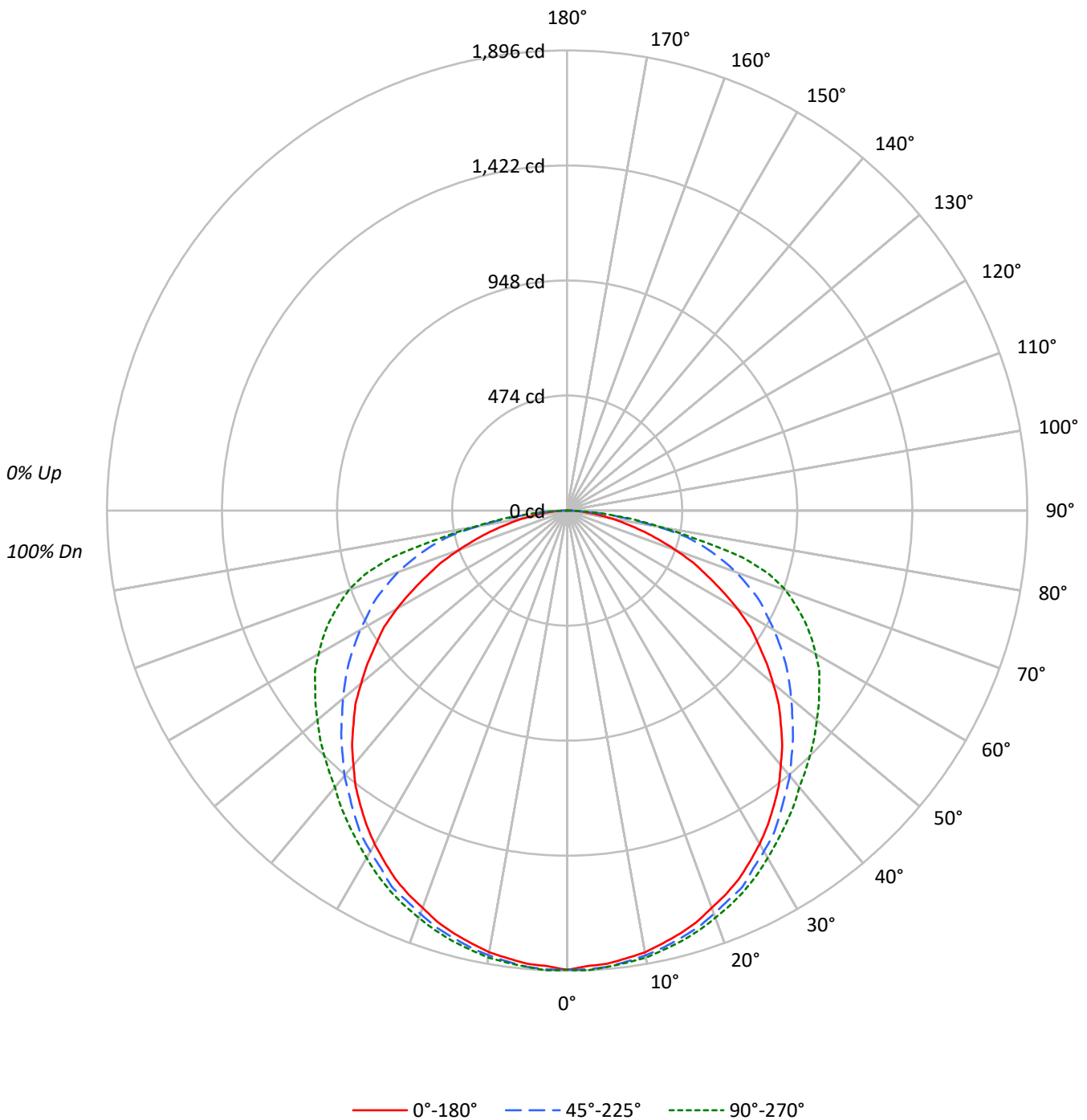
Input Watts (W): 66.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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 | 100 | 96 | 92 | 96 | 92 | 89 | | 92 | 89 | 86 | | 88 | 86 | 84 | 82 |
| 2 | 97 | 88 | 81 | 75 | 95 | 86 | 80 | 74 | 83 | 77 | 72 | | 80 | 75 | 71 | | 76 | 72 | 69 | 67 |
| 3 | 88 | 77 | 68 | 61 | 86 | 75 | 67 | 61 | 72 | 65 | 60 | | 70 | 64 | 59 | | 67 | 62 | 58 | 55 |
| 4 | 80 | 68 | 59 | 51 | 78 | 66 | 58 | 51 | 64 | 56 | 50 | | 61 | 55 | 50 | | 59 | 54 | 49 | 47 |
| 5 | 74 | 60 | 51 | 44 | 72 | 59 | 50 | 44 | 57 | 49 | 43 | | 55 | 48 | 43 | | 53 | 47 | 42 | 40 |
| 6 | 68 | 54 | 45 | 38 | 66 | 53 | 44 | 38 | 51 | 43 | 38 | | 50 | 43 | 37 | | 48 | 42 | 37 | 35 |
| 7 | 63 | 49 | 40 | 33 | 61 | 48 | 39 | 33 | 47 | 39 | 33 | | 45 | 38 | 33 | | 44 | 37 | 33 | 31 |
| 8 | 59 | 45 | 36 | 30 | 57 | 44 | 35 | 30 | 43 | 35 | 29 | | 41 | 34 | 29 | | 40 | 34 | 29 | 27 |
| 9 | 55 | 41 | 32 | 27 | 53 | 40 | 32 | 27 | 39 | 32 | 26 | | 38 | 31 | 26 | | 37 | 31 | 26 | 24 |
| 10 | 51 | 38 | 30 | 24 | 50 | 37 | 29 | 24 | 36 | 29 | 24 | | 35 | 29 | 24 | | 34 | 28 | 24 | 22 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5091 | 5091 | 5091 |
| 5° | 5063 | 5099 | 5099 |
| 10° | 5048 | 5085 | 5110 |
| 15° | 5024 | 5073 | 5110 |
| 20° | 4987 | 5062 | 5114 |
| 25° | 4973 | 5079 | 5131 |
| 30° | 4929 | 5039 | 5136 |
| 35° | 4876 | 5022 | 5168 |
| 40° | 4810 | 5011 | 5230 |
| 45° | 4739 | 5009 | 5396 |
| 50° | 4638 | 5045 | 5620 |
| 55° | 4511 | 5156 | 5945 |
| 60° | 4365 | 5294 | 6367 |
| 65° | 4062 | 5559 | 6886 |
| 70° | 3731 | 5823 | 7531 |
| 75° | 3273 | 6125 | 7786 |
| 80° | 2817 | 5835 | 6113 |
| 85° | 2461 | 4242 | 4650 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 179.0 | 3.0 |
| 10°-20° | 513.9 | 8.5 |
| 20°-30° | 784.0 | 13.0 |
| 30°-40° | 957.3 | 15.9 |
| 40°-50° | 1023.6 | 17.0 |
| 50°-60° | 988.0 | 16.4 |
| 60°-70° | 850.5 | 14.1 |
| 70°-80° | 575.4 | 9.6 |
| 80°-90° | 151.9 | 2.5 |
| 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° | 1476.9 | 24.5 |
| 0°-40° | 2434.2 | 40.4 |
| 0°-60° | 4445.7 | 73.8 |
| 0°-90° | 6023.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6023.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1892 | 1892 | 1892 | 1892 | 1892 | |
| 5° | 1874 | 1879 | 1888 | 1888 | 1888 | 178 |
| 15° | 1804 | 1808 | 1821 | 1830 | 1834 | 509 |
| 25° | 1675 | 1684 | 1711 | 1719 | 1728 | 771 |
| 35° | 1484 | 1498 | 1529 | 1560 | 1573 | 929 |
| 45° | 1245 | 1267 | 1316 | 1382 | 1418 | 961 |
| 55° | 962 | 992 | 1099 | 1210 | 1267 | 862 |
| 65° | 638 | 700 | 873 | 1010 | 1081 | 635 |
| 75° | 315 | 416 | 589 | 709 | 749 | 338 |
| 85° | 80 | 111 | 137 | 142 | 151 | 90 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475046

CATALOG NUMBER: 22CZ2-90VHE-RDP-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1892.0 | 1892.0 | 1892.0 | 1892.0 | 1892.0 |
| 2.5° | 1878.8 | 1883.2 | 1892.0 | 1892.0 | 1896.4 |
| 5° | 1874.4 | 1878.8 | 1887.6 | 1887.6 | 1887.6 |
| 7.5° | 1861.1 | 1865.5 | 1874.4 | 1878.8 | 1878.8 |
| 10° | 1847.5 | 1852.3 | 1861.1 | 1865.5 | 1870.0 |
| 12.5° | 1825.5 | 1829.9 | 1843.1 | 1852.3 | 1852.3 |
| 15° | 1803.5 | 1807.9 | 1821.1 | 1829.9 | 1834.3 |
| 17.5° | 1776.6 | 1785.9 | 1799.1 | 1807.9 | 1812.3 |
| 20° | 1741.4 | 1750.2 | 1767.8 | 1781.5 | 1785.9 |
| 22.5° | 1710.6 | 1719.4 | 1737.0 | 1750.2 | 1759.0 |
| 25° | 1674.9 | 1683.7 | 1710.6 | 1719.4 | 1728.2 |
| 27.5° | 1630.4 | 1639.7 | 1661.7 | 1679.3 | 1692.5 |
| 30° | 1586.4 | 1595.2 | 1621.6 | 1644.1 | 1652.9 |
| 32.5° | 1537.5 | 1550.7 | 1582.0 | 1599.6 | 1612.8 |
| 35° | 1484.3 | 1497.5 | 1528.7 | 1559.5 | 1573.2 |
| 37.5° | 1431.4 | 1444.6 | 1475.4 | 1515.5 | 1533.1 |
| 40° | 1369.3 | 1386.9 | 1426.6 | 1479.8 | 1488.7 |
| 42.5° | 1311.7 | 1333.7 | 1369.3 | 1431.4 | 1453.4 |
| 45° | 1245.2 | 1267.2 | 1316.1 | 1382.5 | 1417.8 |
| 47.5° | 1183.1 | 1205.1 | 1258.4 | 1338.1 | 1382.5 |
| 50° | 1107.8 | 1138.6 | 1205.1 | 1298.4 | 1342.5 |
| 52.5° | 1036.9 | 1063.3 | 1152.3 | 1254.0 | 1307.2 |
| 55° | 961.6 | 992.4 | 1099.0 | 1209.5 | 1267.2 |
| 57.5° | 895.1 | 921.5 | 1041.3 | 1165.5 | 1232.0 |
| 60° | 811.0 | 846.3 | 983.6 | 1116.6 | 1183.1 |
| 62.5° | 722.1 | 775.4 | 926.0 | 1063.3 | 1134.2 |
| 65° | 638.0 | 700.1 | 873.1 | 1010.0 | 1081.4 |
| 67.5° | 562.7 | 629.2 | 806.6 | 952.8 | 1019.3 |
| 70° | 474.2 | 558.3 | 740.1 | 881.9 | 957.2 |
| 72.5° | 394.5 | 487.4 | 664.9 | 806.6 | 873.1 |
| 75° | 314.8 | 416.5 | 589.1 | 708.9 | 748.9 |
| 77.5° | 243.5 | 341.2 | 505.0 | 540.7 | 545.1 |
| 80° | 181.8 | 270.3 | 376.5 | 380.9 | 394.5 |
| 82.5° | 124.2 | 190.6 | 243.5 | 265.9 | 270.3 |
| 85° | 79.7 | 111.0 | 137.4 | 141.8 | 150.6 |
| 87.5° | 35.7 | 40.1 | 48.9 | 44.5 | 44.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)