

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: P475215

Luminaire Tested: **22CZ2-65VHE-HRP-UNV-L850-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475215
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-65VHE-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: 5371.9 lumens
Efficiency: N/A
Efficacy: 117.5 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

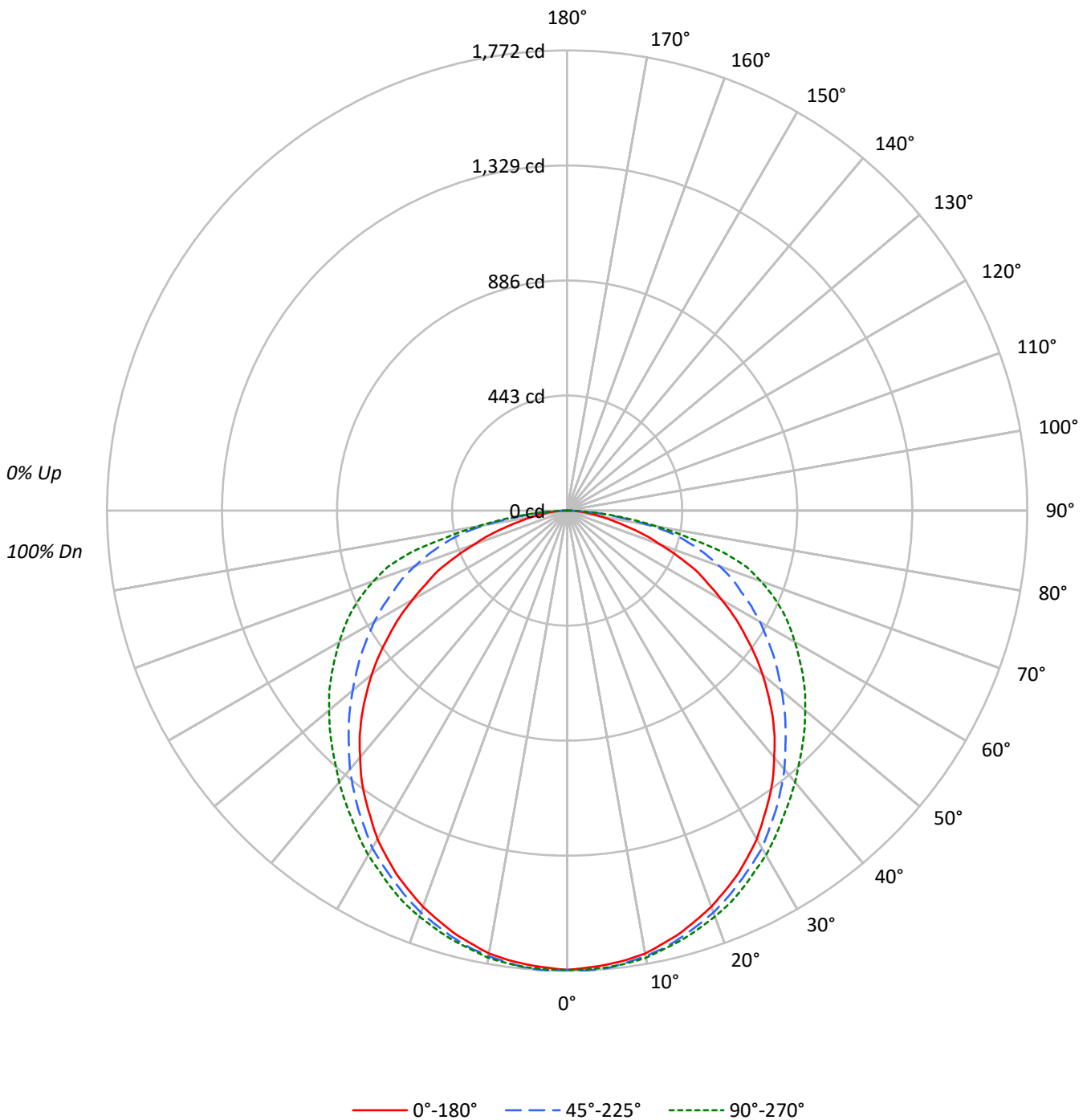
Input Watts (W): 45.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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° | 4760 | 4760 | 4760 |
| 5° | 4742 | 4778 | 4769 |
| 10° | 4732 | 4759 | 4778 |
| 15° | 4692 | 4739 | 4768 |
| 20° | 4649 | 4716 | 4764 |
| 25° | 4599 | 4679 | 4760 |
| 30° | 4538 | 4665 | 4759 |
| 35° | 4453 | 4609 | 4754 |
| 40° | 4356 | 4571 | 4797 |
| 45° | 4256 | 4527 | 4875 |
| 50° | 4114 | 4511 | 5007 |
| 55° | 3926 | 4548 | 5199 |
| 60° | 3702 | 4614 | 5454 |
| 65° | 3496 | 4704 | 5827 |
| 70° | 2987 | 4906 | 6238 |
| 75° | 2503 | 5110 | 6483 |
| 80° | 2050 | 4936 | 5408 |
| 85° | 1775 | 3659 | 3974 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 167.7 | 3.1 |
| 10°-20° | 479.6 | 8.9 |
| 20°-30° | 726.8 | 13.5 |
| 30°-40° | 877.6 | 16.3 |
| 40°-50° | 922.1 | 17.2 |
| 50°-60° | 867.6 | 16.2 |
| 60°-70° | 723.4 | 13.5 |
| 70°-80° | 479.4 | 8.9 |
| 80°-90° | 127.7 | 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° | 1374.0 | 25.6 |
| 0°-40° | 2251.6 | 41.9 |
| 0°-60° | 4041.3 | 75.2 |
| 0°-90° | 5371.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5371.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1769 | 1769 | 1769 | 1769 | 1769 | |
| 5° | 1755 | 1759 | 1769 | 1769 | 1766 | 167 |
| 15° | 1684 | 1691 | 1701 | 1708 | 1711 | 475 |
| 25° | 1549 | 1559 | 1576 | 1596 | 1603 | 713 |
| 35° | 1355 | 1369 | 1403 | 1434 | 1447 | 847 |
| 45° | 1118 | 1135 | 1190 | 1250 | 1281 | 861 |
| 55° | 837 | 874 | 969 | 1067 | 1108 | 749 |
| 65° | 549 | 596 | 739 | 861 | 915 | 534 |
| 75° | 241 | 336 | 492 | 593 | 624 | 261 |
| 85° | 58 | 88 | 118 | 129 | 129 | 67 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475215

CATALOG NUMBER: 22CZ2-65VHE-HRP-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1768.8 | 1768.8 | 1768.8 | 1768.8 | 1768.8 |
| 2.5° | 1762.2 | 1765.5 | 1772.4 | 1772.4 | 1768.8 |
| 5° | 1755.3 | 1758.6 | 1768.8 | 1768.8 | 1765.5 |
| 7.5° | 1745.1 | 1748.7 | 1755.3 | 1762.2 | 1758.6 |
| 10° | 1731.7 | 1734.9 | 1741.8 | 1748.7 | 1748.7 |
| 12.5° | 1708.0 | 1711.3 | 1724.8 | 1728.4 | 1728.4 |
| 15° | 1684.1 | 1690.9 | 1701.1 | 1708.0 | 1711.3 |
| 17.5° | 1653.8 | 1660.4 | 1673.9 | 1687.7 | 1687.7 |
| 20° | 1623.3 | 1629.9 | 1647.0 | 1660.4 | 1663.7 |
| 22.5° | 1585.9 | 1596.1 | 1613.1 | 1629.9 | 1636.8 |
| 25° | 1548.8 | 1559.0 | 1575.7 | 1596.1 | 1603.0 |
| 27.5° | 1504.5 | 1514.6 | 1538.6 | 1562.2 | 1565.5 |
| 30° | 1460.5 | 1470.6 | 1501.2 | 1521.5 | 1531.7 |
| 32.5° | 1406.3 | 1419.7 | 1450.3 | 1480.8 | 1491.0 |
| 35° | 1355.4 | 1369.2 | 1403.0 | 1433.5 | 1447.0 |
| 37.5° | 1301.2 | 1314.7 | 1352.1 | 1389.5 | 1406.3 |
| 40° | 1240.1 | 1257.2 | 1301.2 | 1341.9 | 1365.6 |
| 42.5° | 1182.7 | 1199.8 | 1243.8 | 1297.9 | 1321.6 |
| 45° | 1118.3 | 1135.1 | 1189.6 | 1250.3 | 1280.9 |
| 47.5° | 1050.4 | 1070.7 | 1135.1 | 1209.9 | 1240.1 |
| 50° | 982.7 | 1006.4 | 1077.6 | 1162.3 | 1196.1 |
| 52.5° | 911.5 | 942.0 | 1023.4 | 1115.0 | 1155.4 |
| 55° | 836.9 | 874.4 | 969.3 | 1067.4 | 1108.1 |
| 57.5° | 765.7 | 799.8 | 911.5 | 1016.5 | 1060.5 |
| 60° | 687.9 | 731.9 | 857.3 | 965.6 | 1013.3 |
| 62.5° | 613.3 | 660.9 | 799.8 | 915.1 | 965.6 |
| 65° | 549.0 | 596.3 | 738.8 | 860.6 | 915.1 |
| 67.5° | 464.3 | 528.6 | 687.9 | 803.1 | 857.3 |
| 70° | 379.6 | 467.6 | 623.5 | 742.0 | 792.9 |
| 72.5° | 315.2 | 399.9 | 559.2 | 677.7 | 725.3 |
| 75° | 240.7 | 335.6 | 491.5 | 593.0 | 623.5 |
| 77.5° | 179.6 | 277.8 | 420.3 | 471.2 | 474.5 |
| 80° | 132.3 | 213.4 | 318.5 | 335.6 | 349.0 |
| 82.5° | 91.6 | 149.1 | 206.9 | 226.9 | 233.8 |
| 85° | 57.5 | 88.0 | 118.5 | 128.7 | 128.7 |
| 87.5° | 30.5 | 33.8 | 40.7 | 40.7 | 40.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)