

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: P475330

Luminaire Tested: **22CZ2-60VHE-SQR-UNV-L850-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475330
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-60VHE-SQR-UNV-L850-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SQUARE LENS
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5848.2 lumens
Efficiency: N/A
Efficacy: 138.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.31 / 1.37
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

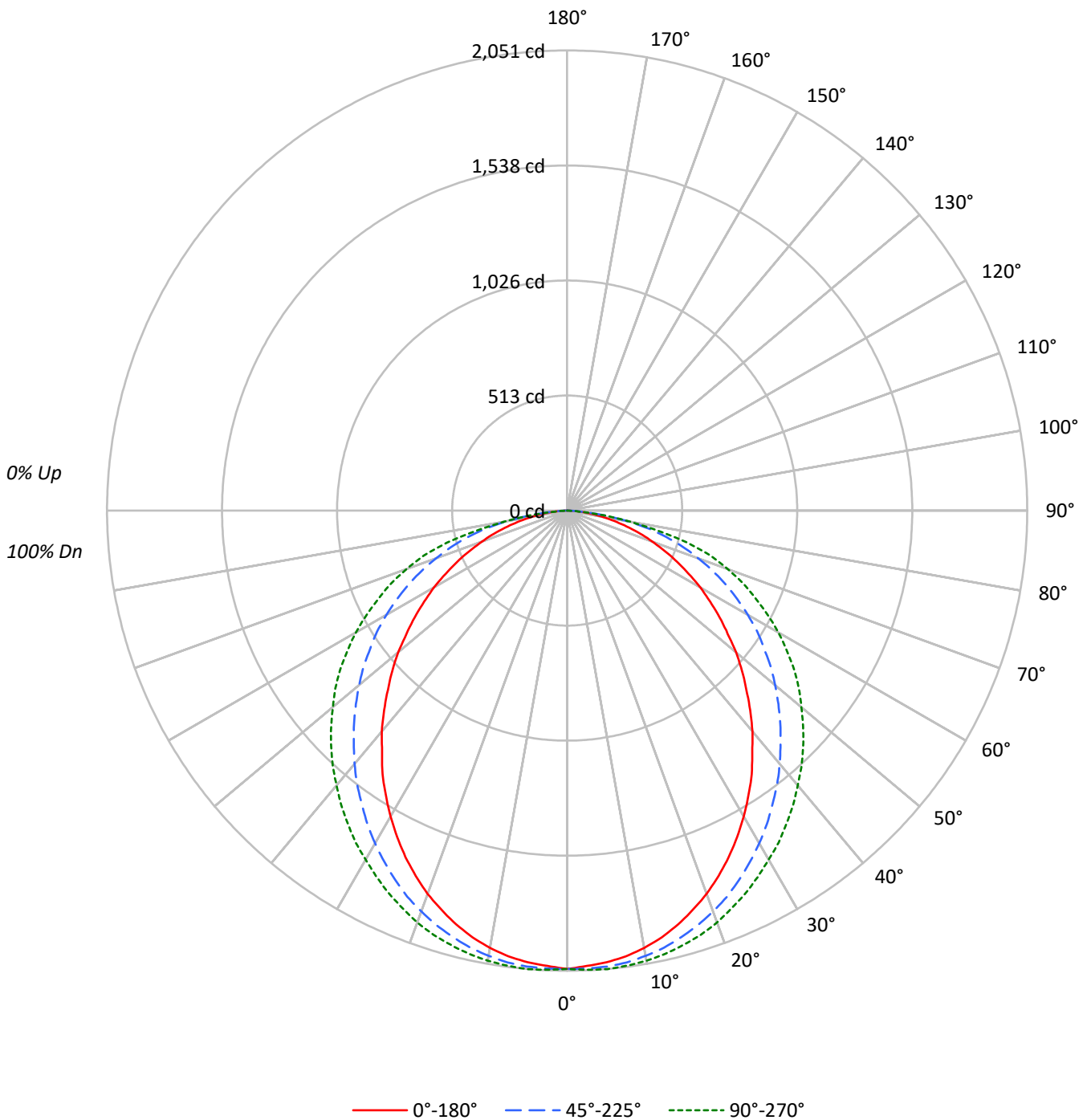
Input Watts (W): 42.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 99 | 95 | 106 | 101 | 97 | 94 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 87 | 85 | 83 |
| 2 | 99 | 90 | 83 | 77 | 96 | 88 | 82 | 76 | 85 | 79 | 75 | 81 | 77 | 73 | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 77 | 70 | 63 | 74 | 68 | 62 | 72 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 68 | 60 | 54 | 66 | 59 | 53 | 64 | 57 | 52 | 61 | 56 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 53 | 46 | 59 | 51 | 46 | 57 | 50 | 45 | 55 | 49 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 40 | 53 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 48 | 41 | 35 | 47 | 40 | 35 | 46 | 39 | 35 | 33 |
| 8 | 60 | 46 | 38 | 32 | 58 | 46 | 37 | 32 | 44 | 37 | 32 | 43 | 36 | 31 | 42 | 36 | 31 | 29 |
| 9 | 56 | 43 | 34 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 26 |
| 10 | 53 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 30 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5497 | 5497 | 5497 |
| 5° | 5458 | 5511 | 5541 |
| 10° | 5408 | 5507 | 5567 |
| 15° | 5321 | 5482 | 5583 |
| 20° | 5206 | 5445 | 5596 |
| 25° | 5060 | 5390 | 5588 |
| 30° | 4890 | 5322 | 5580 |
| 35° | 4714 | 5243 | 5599 |
| 40° | 4514 | 5178 | 5617 |
| 45° | 4299 | 5112 | 5662 |
| 50° | 4113 | 5066 | 5705 |
| 55° | 3894 | 5026 | 5796 |
| 60° | 3689 | 5005 | 5857 |
| 65° | 3446 | 4965 | 5903 |
| 70° | 3166 | 4891 | 5984 |
| 75° | 2858 | 4761 | 5770 |
| 80° | 2452 | 4217 | 4345 |
| 85° | 1973 | 2485 | 1973 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 193.7 | 3.3 |
| 10°-20° | 553.7 | 9.5 |
| 20°-30° | 831.7 | 14.2 |
| 30°-40° | 991.9 | 17.0 |
| 40°-50° | 1025.5 | 17.5 |
| 50°-60° | 942.8 | 16.1 |
| 60°-70° | 750.6 | 12.8 |
| 70°-80° | 458.6 | 7.8 |
| 80°-90° | 99.6 | 1.7 |
| 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° | 1579.1 | 27.0 |
| 0°-40° | 2571.0 | 44.0 |
| 0°-60° | 4539.4 | 77.6 |
| 0°-90° | 5848.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5848.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2043 | 2043 | 2043 | 2043 | 2043 | |
| 5° | 2021 | 2026 | 2040 | 2049 | 2051 | 192 |
| 15° | 1910 | 1932 | 1968 | 1996 | 2004 | 538 |
| 25° | 1704 | 1746 | 1815 | 1865 | 1882 | 784 |
| 35° | 1435 | 1496 | 1596 | 1680 | 1704 | 895 |
| 45° | 1130 | 1210 | 1343 | 1452 | 1488 | 874 |
| 55° | 830 | 921 | 1071 | 1194 | 1235 | 742 |
| 65° | 541 | 633 | 780 | 888 | 927 | 536 |
| 75° | 275 | 355 | 458 | 538 | 555 | 293 |
| 85° | 64 | 78 | 80 | 69 | 64 | 74 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475330

CATALOG NUMBER: 22CZ2-60VHE-SQR-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2042.8 | 2042.8 | 2042.8 | 2042.8 | 2042.8 |
| 2.5° | 2031.7 | 2034.5 | 2042.8 | 2048.6 | 2048.6 |
| 5° | 2020.7 | 2026.2 | 2040.0 | 2048.6 | 2051.4 |
| 7.5° | 2004.1 | 2012.4 | 2031.7 | 2042.8 | 2045.9 |
| 10° | 1979.2 | 1990.3 | 2015.2 | 2031.7 | 2037.3 |
| 12.5° | 1948.5 | 1965.1 | 1995.8 | 2017.9 | 2023.5 |
| 15° | 1909.8 | 1931.9 | 1967.9 | 1995.8 | 2004.1 |
| 17.5° | 1865.3 | 1892.9 | 1937.5 | 1970.9 | 1982.0 |
| 20° | 1818.0 | 1845.9 | 1901.5 | 1940.2 | 1954.0 |
| 22.5° | 1762.7 | 1798.6 | 1862.5 | 1907.0 | 1918.1 |
| 25° | 1704.3 | 1745.8 | 1815.2 | 1865.3 | 1881.9 |
| 27.5° | 1640.4 | 1690.5 | 1765.5 | 1826.6 | 1840.4 |
| 30° | 1573.8 | 1626.6 | 1712.6 | 1779.3 | 1795.9 |
| 32.5° | 1504.4 | 1565.5 | 1657.0 | 1732.0 | 1754.4 |
| 35° | 1435.0 | 1496.1 | 1595.9 | 1679.5 | 1704.3 |
| 37.5° | 1354.5 | 1426.7 | 1537.9 | 1623.9 | 1654.3 |
| 40° | 1285.1 | 1354.5 | 1474.0 | 1568.3 | 1599.0 |
| 42.5° | 1207.4 | 1282.3 | 1407.3 | 1509.9 | 1546.2 |
| 45° | 1129.7 | 1210.1 | 1343.4 | 1451.9 | 1487.8 |
| 47.5° | 1057.5 | 1138.0 | 1276.8 | 1390.7 | 1426.7 |
| 50° | 982.5 | 1065.8 | 1210.1 | 1326.9 | 1362.8 |
| 52.5° | 902.1 | 993.6 | 1143.5 | 1260.2 | 1302.0 |
| 55° | 829.9 | 921.4 | 1071.3 | 1193.6 | 1235.3 |
| 57.5° | 755.0 | 849.2 | 1005.0 | 1121.4 | 1160.4 |
| 60° | 685.5 | 777.1 | 930.0 | 1043.7 | 1088.2 |
| 62.5° | 610.6 | 704.9 | 854.8 | 966.0 | 1007.7 |
| 65° | 541.2 | 633.0 | 779.8 | 888.3 | 927.0 |
| 67.5° | 471.8 | 563.6 | 702.1 | 805.0 | 849.2 |
| 70° | 402.4 | 494.2 | 621.7 | 721.8 | 760.5 |
| 72.5° | 341.5 | 422.0 | 543.9 | 635.8 | 671.7 |
| 75° | 274.9 | 355.4 | 457.9 | 538.4 | 555.0 |
| 77.5° | 213.8 | 285.9 | 371.9 | 407.9 | 413.7 |
| 80° | 158.2 | 213.8 | 272.1 | 280.4 | 280.4 |
| 82.5° | 105.3 | 147.1 | 169.2 | 172.0 | 169.2 |
| 85° | 63.9 | 77.7 | 80.5 | 69.4 | 63.9 |
| 87.5° | 22.1 | 22.1 | 13.8 | 8.3 | 2.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)