

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: P474023

Luminaire Tested: **24CZ2-50HE-S-UNV-L835-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P474023
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-50HE-S-UNV-L835-CD1-U
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY,SMOOTH LENS
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

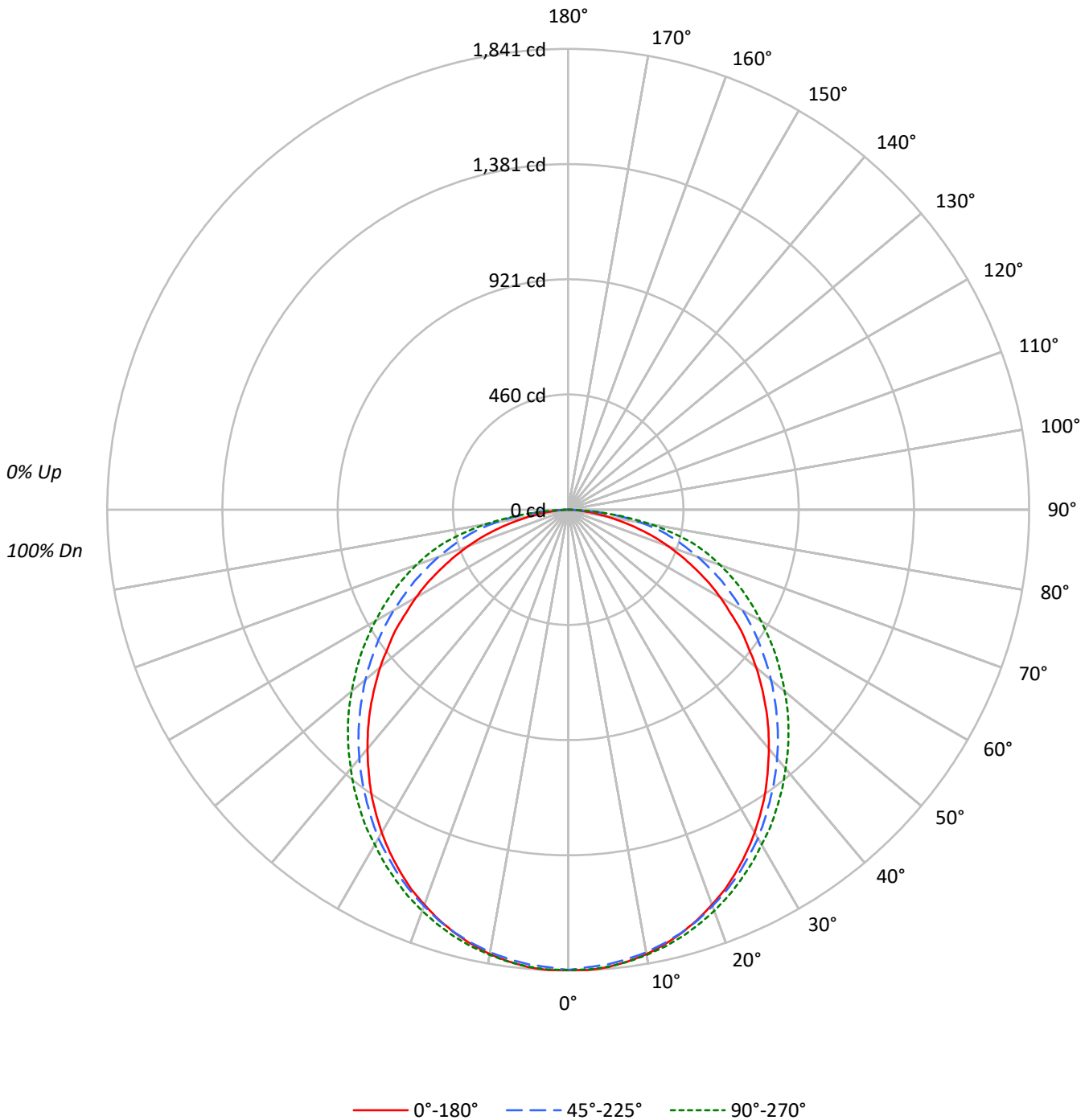
Lumens per Lamp: N/A
Luminaire Lumens: 5267.3 lumens
Efficiency: N/A
Efficacy: 136.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 38.6
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 | 99 | 95 | 105 | 101 | 97 | 93 | 97 | 93 | 90 | 93 | 90 | 87 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 95 | 88 | 81 | 76 | 84 | 79 | 74 | 81 | 76 | 72 | 78 | 74 | 71 | 68 |
| 3 | 89 | 78 | 70 | 63 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 65 | 61 | 68 | 64 | 59 | 57 |
| 4 | 82 | 69 | 60 | 54 | 79 | 68 | 60 | 53 | 66 | 58 | 52 | 63 | 57 | 52 | 61 | 55 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 42 |
| 6 | 69 | 56 | 47 | 40 | 67 | 55 | 46 | 40 | 53 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 35 | 63 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 38 | 32 | 58 | 45 | 37 | 31 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 41 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 30 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2474 | 2474 | 2474 |
| 5° | 2477 | 2462 | 2475 |
| 10° | 2463 | 2453 | 2467 |
| 15° | 2438 | 2437 | 2457 |
| 20° | 2404 | 2412 | 2442 |
| 25° | 2365 | 2385 | 2422 |
| 30° | 2315 | 2355 | 2399 |
| 35° | 2257 | 2314 | 2386 |
| 40° | 2190 | 2279 | 2372 |
| 45° | 2124 | 2244 | 2367 |
| 50° | 2052 | 2213 | 2362 |
| 55° | 1979 | 2186 | 2375 |
| 60° | 1888 | 2165 | 2391 |
| 65° | 1788 | 2157 | 2449 |
| 70° | 1668 | 2168 | 2536 |
| 75° | 1484 | 2231 | 2672 |
| 80° | 1213 | 2280 | 2608 |
| 85° | 855 | 1990 | 2030 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 173.8 | 3.3 |
| 10°-20° | 495.0 | 9.4 |
| 20°-30° | 742.1 | 14.1 |
| 30°-40° | 883.8 | 16.8 |
| 40°-50° | 911.3 | 17.3 |
| 50°-60° | 831.6 | 15.8 |
| 60°-70° | 665.0 | 12.6 |
| 70°-80° | 434.3 | 8.2 |
| 80°-90° | 130.4 | 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° | 1410.9 | 26.8 |
| 0°-40° | 2294.7 | 43.6 |
| 0°-60° | 4037.6 | 76.7 |
| 0°-90° | 5267.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5267.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1838 | 1838 | 1838 | 1838 | 1838 | |
| 5° | 1834 | 1831 | 1823 | 1834 | 1832 | 174 |
| 15° | 1750 | 1751 | 1749 | 1764 | 1764 | 493 |
| 25° | 1593 | 1595 | 1607 | 1630 | 1632 | 733 |
| 35° | 1374 | 1383 | 1408 | 1444 | 1453 | 858 |
| 45° | 1116 | 1136 | 1179 | 1229 | 1244 | 861 |
| 55° | 844 | 868 | 932 | 993 | 1012 | 751 |
| 65° | 562 | 600 | 677 | 744 | 769 | 557 |
| 75° | 286 | 333 | 429 | 498 | 514 | 303 |
| 85° | 55 | 100 | 129 | 132 | 132 | 70 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P474023

CATALOG NUMBER: 24CZ2-50HE-S-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1838.5 | 1838.5 | 1838.5 | 1838.5 | 1838.5 |
| 2.5° | 1841.1 | 1838.5 | 1829.0 | 1840.3 | 1838.5 |
| 5° | 1834.2 | 1830.7 | 1823.0 | 1834.2 | 1832.5 |
| 7.5° | 1820.4 | 1818.6 | 1810.8 | 1823.8 | 1822.1 |
| 10° | 1803.1 | 1801.3 | 1795.3 | 1808.2 | 1805.7 |
| 12.5° | 1778.8 | 1778.0 | 1773.6 | 1789.2 | 1787.5 |
| 15° | 1750.3 | 1751.1 | 1749.4 | 1764.1 | 1764.1 |
| 17.5° | 1717.4 | 1716.5 | 1720.0 | 1738.2 | 1736.4 |
| 20° | 1679.3 | 1680.2 | 1684.5 | 1705.3 | 1705.3 |
| 22.5° | 1639.5 | 1638.7 | 1648.2 | 1669.0 | 1670.7 |
| 25° | 1592.8 | 1595.4 | 1606.7 | 1630.0 | 1631.7 |
| 27.5° | 1542.6 | 1547.0 | 1560.8 | 1587.6 | 1590.2 |
| 30° | 1489.9 | 1495.0 | 1515.8 | 1540.9 | 1544.4 |
| 32.5° | 1431.9 | 1443.1 | 1462.2 | 1494.2 | 1502.8 |
| 35° | 1373.9 | 1383.4 | 1408.5 | 1444.0 | 1452.7 |
| 37.5° | 1309.9 | 1325.5 | 1354.0 | 1393.0 | 1404.2 |
| 40° | 1246.7 | 1262.3 | 1297.8 | 1338.4 | 1350.6 |
| 42.5° | 1182.7 | 1199.2 | 1239.8 | 1285.7 | 1298.7 |
| 45° | 1116.1 | 1136.0 | 1179.3 | 1228.6 | 1244.1 |
| 47.5° | 1047.7 | 1071.1 | 1117.8 | 1171.5 | 1188.8 |
| 50° | 980.3 | 1003.6 | 1057.3 | 1112.6 | 1128.2 |
| 52.5° | 907.6 | 937.0 | 994.1 | 1053.8 | 1069.4 |
| 55° | 843.6 | 867.8 | 931.8 | 993.2 | 1012.3 |
| 57.5° | 768.3 | 801.2 | 869.5 | 931.8 | 950.0 |
| 60° | 701.7 | 732.0 | 804.6 | 867.8 | 888.6 |
| 62.5° | 634.2 | 665.3 | 738.0 | 809.8 | 828.9 |
| 65° | 561.5 | 599.6 | 677.4 | 744.1 | 769.2 |
| 67.5° | 492.3 | 532.1 | 611.7 | 682.6 | 708.6 |
| 70° | 423.9 | 464.6 | 551.1 | 623.8 | 644.6 |
| 72.5° | 356.5 | 398.9 | 488.8 | 559.8 | 584.0 |
| 75° | 285.5 | 333.1 | 429.1 | 498.3 | 513.9 |
| 77.5° | 218.9 | 271.7 | 368.6 | 415.3 | 426.5 |
| 80° | 156.6 | 214.6 | 294.2 | 327.9 | 336.6 |
| 82.5° | 103.0 | 159.2 | 219.8 | 237.9 | 235.3 |
| 85° | 55.4 | 99.5 | 128.9 | 131.5 | 131.5 |
| 87.5° | 21.6 | 39.8 | 40.7 | 31.1 | 29.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)