

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: P475312

Luminaire Tested: **22CZ2-20-SQR-UNV-L850-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475312
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-20-SQR-UNV-L850-CD1-U
Description: 2'X2' TROFFER LED MODULE, SQUARE LENS
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

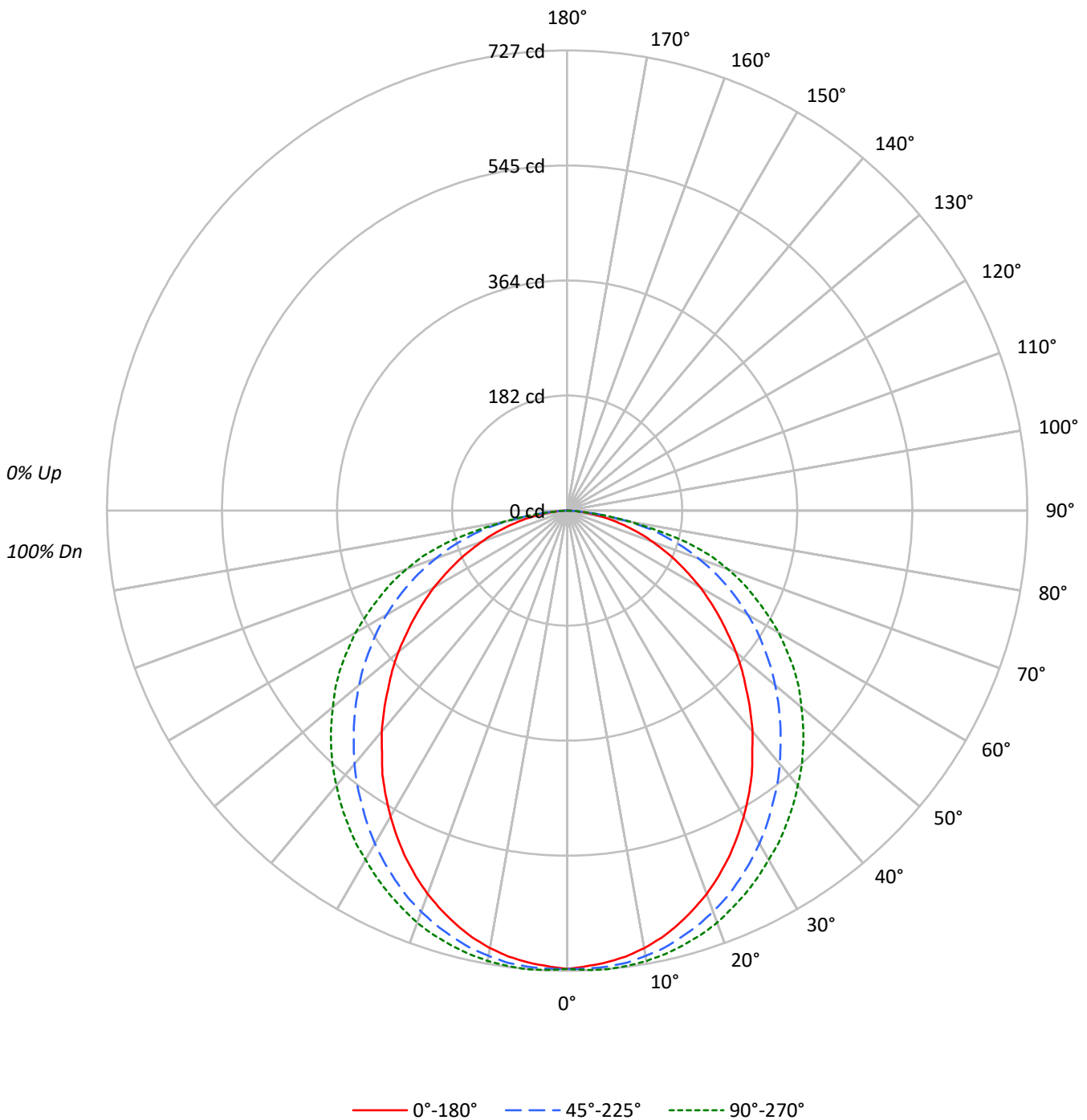
Lumens per Lamp: N/A
Luminaire Lumens: 2073.7 lumens
Efficiency: N/A
Efficacy: 128.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.31 / 1.37
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 16.2
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° | 1949 | 1949 | 1949 |
| 5° | 1935 | 1954 | 1965 |
| 10° | 1918 | 1952 | 1974 |
| 15° | 1887 | 1944 | 1980 |
| 20° | 1846 | 1931 | 1984 |
| 25° | 1794 | 1911 | 1981 |
| 30° | 1734 | 1887 | 1979 |
| 35° | 1671 | 1859 | 1985 |
| 40° | 1601 | 1836 | 1992 |
| 45° | 1525 | 1813 | 2007 |
| 50° | 1459 | 1796 | 2023 |
| 55° | 1381 | 1782 | 2055 |
| 60° | 1308 | 1775 | 2077 |
| 65° | 1222 | 1761 | 2093 |
| 70° | 1123 | 1734 | 2122 |
| 75° | 1014 | 1688 | 2046 |
| 80° | 869 | 1495 | 1540 |
| 85° | 701 | 880 | 701 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 68.7 | 3.3 |
| 10°-20° | 196.3 | 9.5 |
| 20°-30° | 294.9 | 14.2 |
| 30°-40° | 351.7 | 17.0 |
| 40°-50° | 363.6 | 17.5 |
| 50°-60° | 334.3 | 16.1 |
| 60°-70° | 266.1 | 12.8 |
| 70°-80° | 162.6 | 7.8 |
| 80°-90° | 35.3 | 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° | 559.9 | 27.0 |
| 0°-40° | 911.6 | 44.0 |
| 0°-60° | 1609.6 | 77.6 |
| 0°-90° | 2073.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2073.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 724 | 724 | 724 | 724 | 724 | |
| 5° | 716 | 718 | 723 | 726 | 727 | 68 |
| 15° | 677 | 685 | 698 | 708 | 711 | 191 |
| 25° | 604 | 619 | 644 | 661 | 667 | 278 |
| 35° | 509 | 530 | 566 | 596 | 604 | 317 |
| 45° | 401 | 429 | 476 | 515 | 528 | 310 |
| 55° | 294 | 327 | 380 | 423 | 438 | 263 |
| 65° | 192 | 224 | 276 | 315 | 329 | 190 |
| 75° | 98 | 126 | 162 | 191 | 197 | 104 |
| 85° | 23 | 28 | 28 | 25 | 23 | 26 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 724.3 | 724.3 | 724.3 | 724.3 | 724.3 |
| 2.5° | 720.4 | 721.4 | 724.3 | 726.4 | 726.4 |
| 5° | 716.5 | 718.5 | 723.4 | 726.4 | 727.4 |
| 7.5° | 710.6 | 713.5 | 720.4 | 724.3 | 725.4 |
| 10° | 701.8 | 705.7 | 714.5 | 720.4 | 722.4 |
| 12.5° | 690.9 | 696.8 | 707.7 | 715.5 | 717.5 |
| 15° | 677.2 | 685.0 | 697.8 | 707.7 | 710.6 |
| 17.5° | 661.4 | 671.2 | 687.0 | 698.8 | 702.8 |
| 20° | 644.6 | 654.5 | 674.2 | 688.0 | 692.9 |
| 22.5° | 625.0 | 637.8 | 660.4 | 676.2 | 680.1 |
| 25° | 604.3 | 619.0 | 643.6 | 661.4 | 667.3 |
| 27.5° | 581.7 | 599.4 | 626.0 | 647.7 | 652.6 |
| 30° | 558.0 | 576.8 | 607.3 | 630.9 | 636.8 |
| 32.5° | 533.4 | 555.1 | 587.5 | 614.1 | 622.1 |
| 35° | 508.8 | 530.5 | 565.9 | 595.5 | 604.3 |
| 37.5° | 480.3 | 505.9 | 545.3 | 575.8 | 586.6 |
| 40° | 455.7 | 480.3 | 522.6 | 556.1 | 567.0 |
| 42.5° | 428.1 | 454.7 | 499.0 | 535.4 | 548.2 |
| 45° | 400.6 | 429.1 | 476.4 | 514.8 | 527.5 |
| 47.5° | 375.0 | 403.5 | 452.7 | 493.1 | 505.9 |
| 50° | 348.4 | 377.9 | 429.1 | 470.5 | 483.2 |
| 52.5° | 319.9 | 352.3 | 405.5 | 446.8 | 461.7 |
| 55° | 294.3 | 326.7 | 379.9 | 423.2 | 438.0 |
| 57.5° | 267.7 | 301.1 | 356.3 | 397.6 | 411.4 |
| 60° | 243.1 | 275.5 | 329.8 | 370.1 | 385.9 |
| 62.5° | 216.5 | 249.9 | 303.1 | 342.5 | 357.3 |
| 65° | 191.9 | 224.5 | 276.5 | 315.0 | 328.7 |
| 67.5° | 167.3 | 199.8 | 249.0 | 285.4 | 301.1 |
| 70° | 142.7 | 175.2 | 220.4 | 255.9 | 269.7 |
| 72.5° | 121.1 | 149.6 | 192.9 | 225.4 | 238.2 |
| 75° | 97.5 | 126.0 | 162.4 | 190.9 | 196.8 |
| 77.5° | 75.8 | 101.4 | 131.9 | 144.6 | 146.7 |
| 80° | 56.1 | 75.8 | 96.5 | 99.4 | 99.4 |
| 82.5° | 37.4 | 52.2 | 60.0 | 61.0 | 60.0 |
| 85° | 22.7 | 27.6 | 28.5 | 24.6 | 22.7 |
| 87.5° | 7.8 | 7.8 | 4.9 | 2.9 | 1.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)