

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: P475377

Luminaire Tested: **14CZ2-20-S-UNV-L830-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475377
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 14CZ2-20-S-UNV-L830-CD1-U
Description: 1'X4' TROFFER LED MODULE, SMOOTH LENS
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

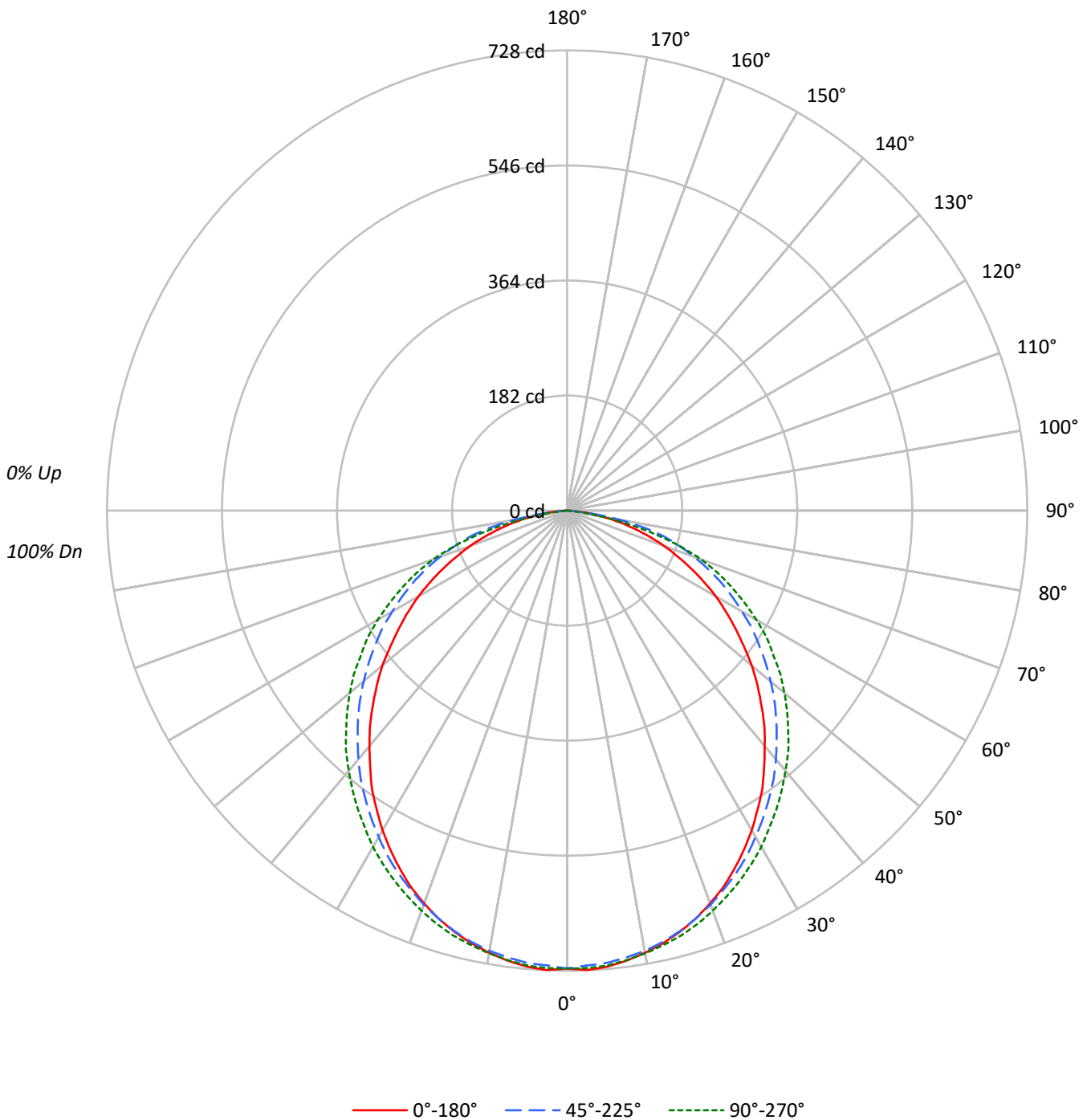
Lumens per Lamp: N/A
Luminaire Lumens: 2024.9 lumens
Efficiency: N/A
Efficacy: 129.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.36
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 15.6
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 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 94 | 98 | 94 | 91 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 74 | 79 | 75 | 72 | 70 |
| 3 | 90 | 79 | 71 | 65 | 88 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 59 |
| 4 | 82 | 70 | 61 | 55 | 80 | 69 | 61 | 54 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 60 | 52 | 46 | 58 | 51 | 46 | 56 | 50 | 45 | 43 |
| 6 | 70 | 57 | 48 | 41 | 68 | 56 | 47 | 41 | 54 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 40 | 38 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 45 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 30 |
| 9 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 26 | 52 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1949 | 1949 | 1949 |
| 5° | 1957 | 1940 | 1951 |
| 10° | 1941 | 1932 | 1943 |
| 15° | 1922 | 1919 | 1939 |
| 20° | 1894 | 1900 | 1929 |
| 25° | 1858 | 1879 | 1918 |
| 30° | 1815 | 1853 | 1909 |
| 35° | 1768 | 1828 | 1895 |
| 40° | 1708 | 1805 | 1887 |
| 45° | 1653 | 1781 | 1882 |
| 50° | 1597 | 1759 | 1878 |
| 55° | 1523 | 1737 | 1866 |
| 60° | 1462 | 1720 | 1862 |
| 65° | 1373 | 1710 | 1833 |
| 70° | 1281 | 1681 | 1769 |
| 75° | 1132 | 1650 | 1492 |
| 80° | 914 | 1340 | 883 |
| 85° | 661 | 377 | 96 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 68.5 | 3.4 |
| 10°-20° | 195.1 | 9.6 |
| 20°-30° | 292.6 | 14.5 |
| 30°-40° | 348.8 | 17.2 |
| 40°-50° | 360.2 | 17.8 |
| 50°-60° | 328.1 | 16.2 |
| 60°-70° | 257.0 | 12.7 |
| 70°-80° | 148.7 | 7.3 |
| 80°-90° | 25.9 | 1.3 |
| 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° | 556.2 | 27.5 |
| 0°-40° | 905.0 | 44.7 |
| 0°-60° | 1593.3 | 78.7 |
| 0°-90° | 2024.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2024.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 724 | 724 | 724 | 724 | 724 | |
| 5° | 724 | 722 | 718 | 723 | 722 | 69 |
| 15° | 690 | 689 | 689 | 696 | 696 | 194 |
| 25° | 626 | 628 | 633 | 645 | 646 | 288 |
| 35° | 538 | 543 | 556 | 574 | 577 | 336 |
| 45° | 434 | 446 | 468 | 489 | 494 | 335 |
| 55° | 325 | 341 | 370 | 394 | 398 | 291 |
| 65° | 216 | 235 | 269 | 286 | 288 | 214 |
| 75° | 109 | 132 | 159 | 154 | 144 | 116 |
| 85° | 21 | 28 | 12 | 4 | 3 | 26 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475377

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 724.4 | 724.4 | 724.4 | 724.4 | 724.4 |
| 2.5° | 727.5 | 724.4 | 720.3 | 724.4 | 724.4 |
| 5° | 724.4 | 722.4 | 718.3 | 723.4 | 722.4 |
| 7.5° | 718.3 | 716.3 | 713.2 | 718.3 | 717.3 |
| 10° | 710.2 | 709.2 | 707.1 | 713.2 | 711.2 |
| 12.5° | 701.0 | 700.0 | 699.0 | 705.1 | 704.1 |
| 15° | 689.8 | 688.8 | 688.8 | 695.9 | 695.9 |
| 17.5° | 676.6 | 676.6 | 676.6 | 685.8 | 685.8 |
| 20° | 661.3 | 661.3 | 663.4 | 673.5 | 673.5 |
| 22.5° | 645.1 | 645.1 | 648.1 | 659.3 | 660.3 |
| 25° | 625.7 | 627.8 | 632.8 | 645.1 | 646.1 |
| 27.5° | 605.4 | 608.4 | 615.6 | 628.8 | 630.8 |
| 30° | 584.0 | 587.1 | 596.2 | 611.5 | 614.5 |
| 32.5° | 560.6 | 565.7 | 576.9 | 592.1 | 595.2 |
| 35° | 538.2 | 543.3 | 556.5 | 573.8 | 576.9 |
| 37.5° | 511.8 | 519.9 | 536.2 | 552.5 | 557.6 |
| 40° | 486.3 | 495.5 | 513.8 | 533.1 | 537.2 |
| 42.5° | 461.9 | 470.1 | 490.4 | 511.8 | 517.9 |
| 45° | 434.4 | 445.6 | 468.0 | 489.4 | 494.5 |
| 47.5° | 408.0 | 419.2 | 444.6 | 467.0 | 472.1 |
| 50° | 381.5 | 392.7 | 420.2 | 442.6 | 448.7 |
| 52.5° | 352.0 | 368.3 | 395.8 | 418.2 | 425.3 |
| 55° | 324.6 | 340.8 | 370.3 | 393.7 | 397.8 |
| 57.5° | 298.1 | 314.4 | 346.9 | 368.3 | 374.4 |
| 60° | 271.7 | 287.9 | 319.5 | 340.8 | 345.9 |
| 62.5° | 243.2 | 261.5 | 294.0 | 312.4 | 316.4 |
| 65° | 215.7 | 235.0 | 268.6 | 285.9 | 287.9 |
| 67.5° | 188.2 | 208.6 | 241.1 | 255.4 | 257.4 |
| 70° | 162.8 | 183.1 | 213.7 | 226.9 | 224.9 |
| 72.5° | 136.3 | 156.7 | 186.2 | 193.3 | 187.2 |
| 75° | 108.9 | 132.3 | 158.7 | 153.6 | 143.5 |
| 77.5° | 84.4 | 106.8 | 124.1 | 108.9 | 100.7 |
| 80° | 59.0 | 82.4 | 86.5 | 67.2 | 57.0 |
| 82.5° | 38.7 | 58.0 | 46.8 | 28.5 | 25.4 |
| 85° | 21.4 | 28.5 | 12.2 | 4.1 | 3.1 |
| 87.5° | 7.1 | 4.1 | 2.0 | 1.0 | 1.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)