

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: P277456

Luminaire Tested: **22CZ2-29HE-S-UNV-L92765-W2A1-U-4500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P277456  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-23)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-29HE-S-UNV-L92765-W2A1-U-4500K  
Description: CRUZE 2.0 2x2 TUNABLE WHITE LED TROFFER  
WITH SMOOTH LENS  
Light Source: (168) 90 CRI LEDS TUNED TO 4500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2538.0 lumens  
Efficiency: N/A  
Efficacy: 119.7 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.26 / 1.34  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

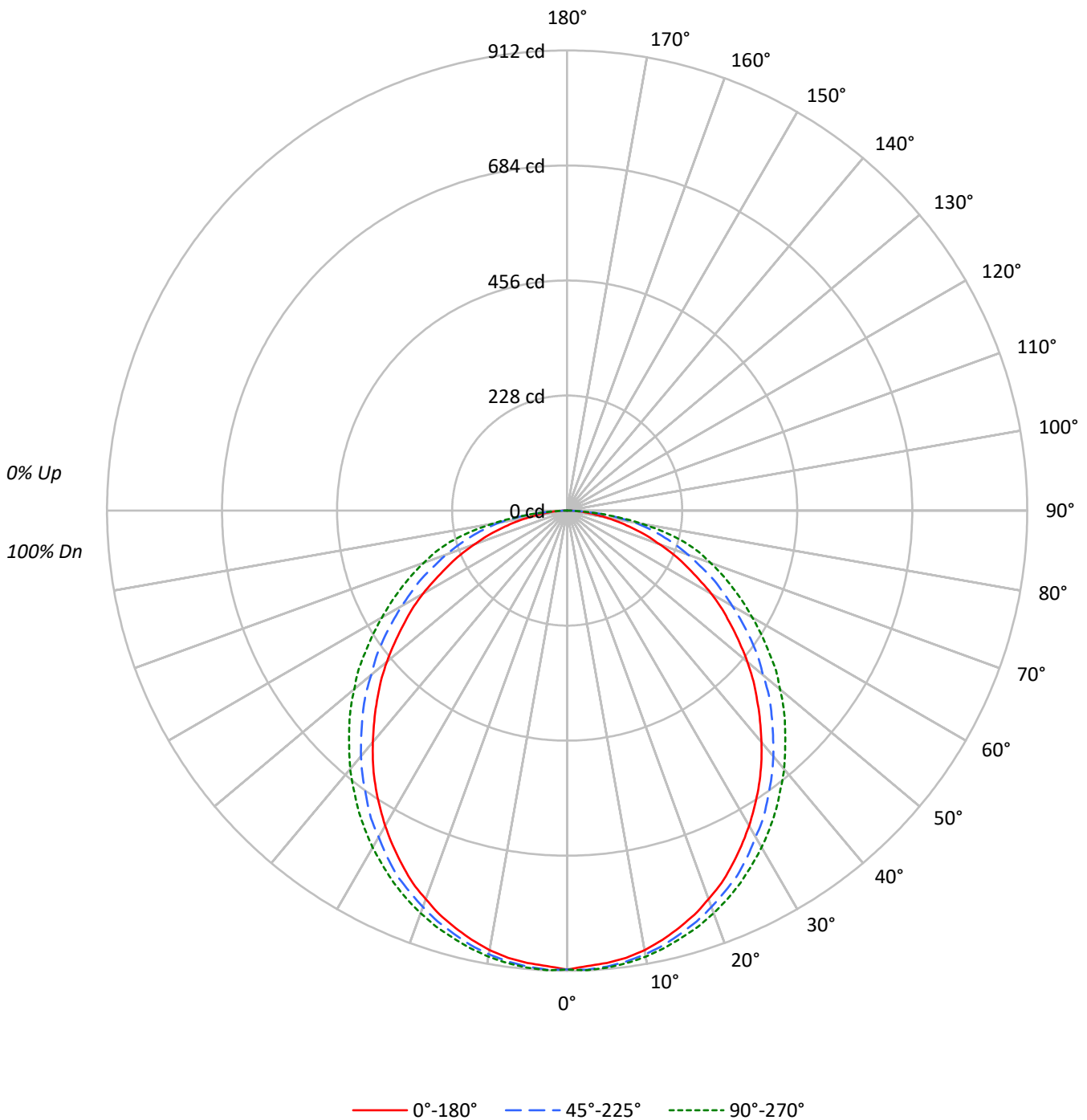
Input Watts (W): 21.204  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 106 | 101 | 97  | 94  | 97  | 94  | 91  | 93  | 90  | 88  | 89  | 87  | 85  | 83  |
| 2   | 98  | 90  | 83  | 77  | 96  | 88  | 82  | 76  | 84  | 79  | 74  | 81  | 77  | 73  | 78  | 74  | 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  | 69  | 60  | 54  | 66  | 59  | 53  | 64  | 57  | 52  | 61  | 56  | 52  | 49  |
| 5   | 75  | 62  | 53  | 47  | 73  | 61  | 53  | 46  | 59  | 52  | 46  | 57  | 51  | 45  | 55  | 50  | 45  | 43  |
| 6   | 70  | 56  | 47  | 41  | 68  | 55  | 47  | 41  | 53  | 46  | 40  | 52  | 45  | 40  | 50  | 44  | 39  | 37  |
| 7   | 65  | 51  | 42  | 36  | 63  | 50  | 42  | 36  | 49  | 41  | 36  | 47  | 40  | 35  | 46  | 40  | 35  | 33  |
| 8   | 60  | 47  | 38  | 32  | 59  | 46  | 38  | 32  | 45  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 31  | 30  |
| 9   | 56  | 43  | 35  | 29  | 55  | 42  | 34  | 29  | 41  | 34  | 29  | 40  | 33  | 29  | 39  | 33  | 28  | 27  |
| 10  | 53  | 40  | 32  | 26  | 51  | 39  | 31  | 26  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 30  | 26  | 24  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2447 | 2447 | 2447 |
| 5°  | 2431 | 2450 | 2457 |
| 10° | 2417 | 2440 | 2453 |
| 15° | 2385 | 2418 | 2441 |
| 20° | 2346 | 2394 | 2432 |
| 25° | 2299 | 2370 | 2415 |
| 30° | 2241 | 2322 | 2395 |
| 35° | 2178 | 2280 | 2373 |
| 40° | 2105 | 2234 | 2350 |
| 45° | 2028 | 2181 | 2325 |
| 50° | 1953 | 2122 | 2305 |
| 55° | 1861 | 2084 | 2289 |
| 60° | 1778 | 2033 | 2281 |
| 65° | 1659 | 2021 | 2308 |
| 70° | 1528 | 2003 | 2376 |
| 75° | 1379 | 2032 | 2499 |
| 80° | 1193 | 2092 | 2349 |
| 85° | 988  | 1754 | 1754 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 86.0   | 3.4       |
| 10°-20°   | 244.8  | 9.6       |
| 20°-30°   | 366.2  | 14.4      |
| 30°-40°   | 433.7  | 17.1      |
| 40°-50°   | 442.0  | 17.4      |
| 50°-60°   | 396.1  | 15.6      |
| 60°-70°   | 310.2  | 12.2      |
| 70°-80°   | 200.0  | 7.9       |
| 80°-90°   | 59.1   | 2.3       |
| 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°    | 697.0  | 27.5      |
| 0°-40°    | 1130.7 | 44.5      |
| 0°-60°    | 1968.8 | 77.6      |
| 0°-90°    | 2538.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2538.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 909 | 909   | 909 | 909   | 909 |      |
| 5°  | 900 | 902   | 907 | 908   | 909 | 85   |
| 15° | 856 | 861   | 868 | 875   | 876 | 241  |
| 25° | 774 | 782   | 798 | 809   | 814 | 356  |
| 35° | 663 | 671   | 694 | 715   | 722 | 414  |
| 45° | 533 | 545   | 573 | 603   | 611 | 412  |
| 55° | 397 | 410   | 444 | 475   | 488 | 356  |
| 65° | 260 | 276   | 317 | 348   | 362 | 259  |
| 75° | 133 | 153   | 195 | 228   | 240 | 142  |
| 85° | 32  | 44    | 57  | 57    | 57  | 38   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 909.4 | 909.4 | 909.4 | 909.4 | 909.4 |
| 2.5°  | 903.5 | 905.9 | 910.6 | 911.8 | 911.8 |
| 5°    | 900.0 | 902.3 | 907.1 | 908.3 | 909.4 |
| 7.5°  | 894.1 | 895.2 | 901.2 | 903.5 | 904.7 |
| 10°   | 884.6 | 886.9 | 892.9 | 896.4 | 897.6 |
| 12.5° | 871.6 | 875.1 | 882.2 | 886.9 | 888.1 |
| 15°   | 856.2 | 860.9 | 868.0 | 875.1 | 876.3 |
| 17.5° | 839.6 | 844.3 | 853.8 | 862.1 | 864.4 |
| 20°   | 819.4 | 825.4 | 836.0 | 845.5 | 849.1 |
| 22.5° | 799.3 | 804.1 | 817.1 | 828.9 | 832.5 |
| 25°   | 774.4 | 781.6 | 798.1 | 808.8 | 813.5 |
| 27.5° | 748.4 | 756.7 | 773.3 | 787.5 | 792.2 |
| 30°   | 721.2 | 729.5 | 747.2 | 765.0 | 770.9 |
| 32.5° | 692.7 | 702.2 | 723.5 | 741.3 | 747.2 |
| 35°   | 663.1 | 671.4 | 693.9 | 715.2 | 722.3 |
| 37.5° | 632.3 | 639.5 | 665.5 | 688.0 | 695.1 |
| 40°   | 599.2 | 608.7 | 635.9 | 662.0 | 669.1 |
| 42.5° | 566.0 | 576.7 | 603.9 | 632.3 | 639.5 |
| 45°   | 532.9 | 544.7 | 573.1 | 602.7 | 611.0 |
| 47.5° | 500.9 | 510.4 | 542.4 | 570.8 | 582.6 |
| 50°   | 466.6 | 476.0 | 506.8 | 538.8 | 550.6 |
| 52.5° | 431.0 | 444.1 | 477.2 | 508.0 | 522.2 |
| 55°   | 396.7 | 409.7 | 444.1 | 474.9 | 487.9 |
| 57.5° | 364.7 | 375.4 | 410.9 | 442.9 | 455.9 |
| 60°   | 330.4 | 339.9 | 377.8 | 412.1 | 423.9 |
| 62.5° | 293.7 | 307.9 | 347.0 | 378.9 | 393.1 |
| 65°   | 260.5 | 275.9 | 317.4 | 348.1 | 362.4 |
| 67.5° | 229.7 | 243.9 | 284.2 | 317.4 | 332.8 |
| 70°   | 194.2 | 213.2 | 254.6 | 287.8 | 302.0 |
| 72.5° | 165.8 | 182.4 | 225.0 | 258.1 | 273.5 |
| 75°   | 132.6 | 152.8 | 195.4 | 228.5 | 240.4 |
| 77.5° | 105.4 | 125.5 | 165.8 | 191.8 | 197.8 |
| 80°   | 77.0  | 97.1  | 135.0 | 148.0 | 151.6 |
| 82.5° | 52.1  | 71.1  | 97.1  | 100.7 | 101.8 |
| 85°   | 32.0  | 43.8  | 56.8  | 56.8  | 56.8  |
| 87.5° | 15.4  | 17.8  | 20.1  | 18.9  | 18.9  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)