

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: P277168

Luminaire Tested: **22CZ2-34HE-UNV-L83050-W2A1-U-3500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P277168  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-27)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-34HE-UNV-L83050-W2A1-U-3500K  
Description: CRUZE 2.0 2x2 TUNABLE WHITE LED TROFFER  
WITH RIBBED LENS  
Light Source: (168) 80 CRI LEDS TUNED TO 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3202.0 lumens  
Efficiency: N/A  
Efficacy: 124.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.36  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

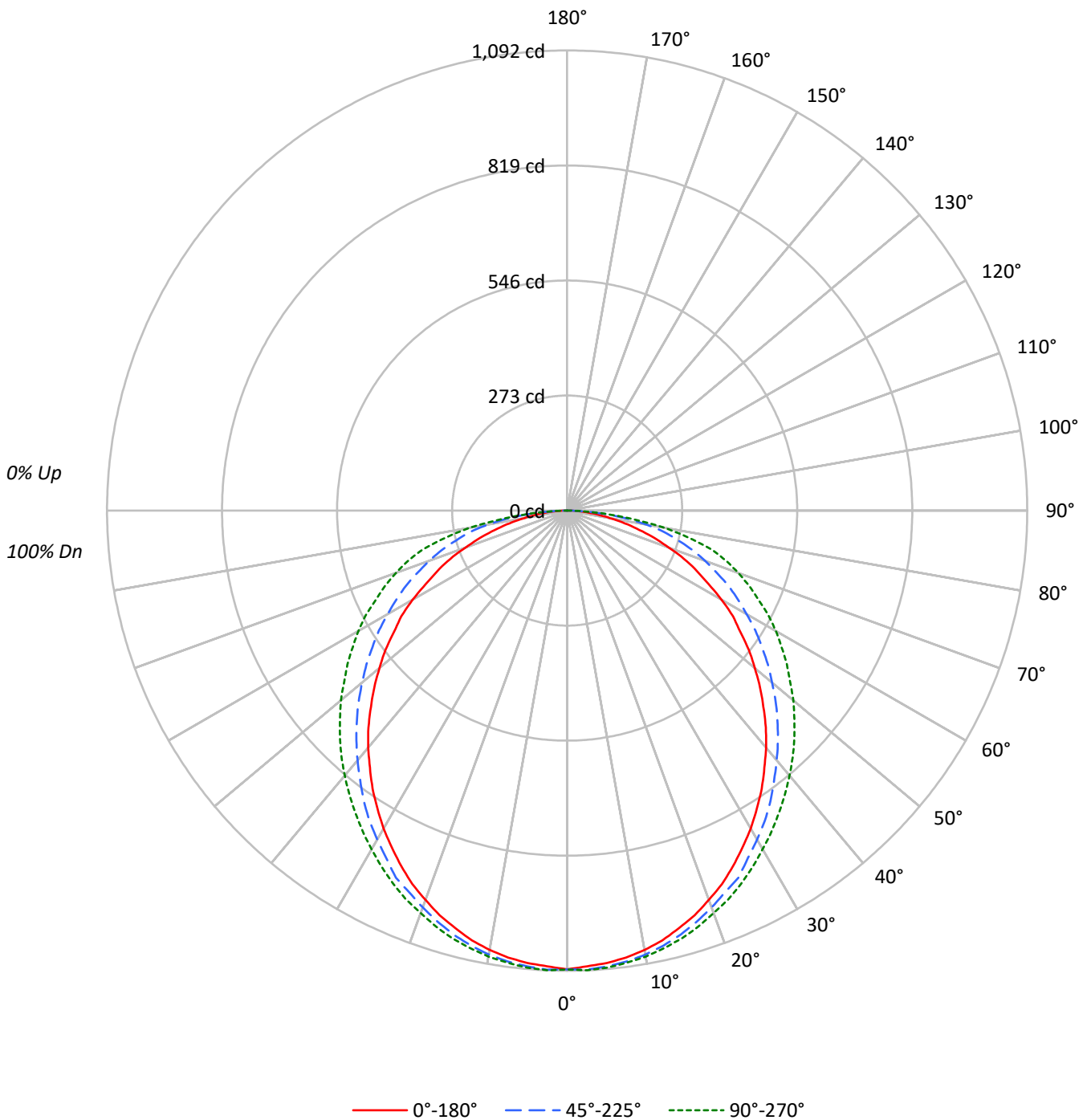
Input Watts (W): 25.668  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 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 | 98  | 94  | 105 | 101 | 96  | 93  | 96  | 93  | 90  | 92  | 90  | 87  | 89  | 86  | 84  | 82  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 81  | 75  | 84  | 78  | 73  | 80  | 76  | 71  | 77  | 73  | 70  | 68  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 89  | 78  | 69  | 63  | 86  | 76  | 68  | 62  | 73  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 59  | 56  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 81  | 69  | 60  | 53  | 79  | 67  | 59  | 52  | 65  | 57  | 52  | 63  | 56  | 51  | 60  | 55  | 50  | 48  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 75  | 61  | 52  | 45  | 72  | 60  | 52  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 44  | 41  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 69  | 55  | 46  | 39  | 67  | 54  | 46  | 39  | 52  | 45  | 39  | 51  | 44  | 39  | 49  | 43  | 38  | 36  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 64  | 50  | 41  | 35  | 62  | 49  | 41  | 35  | 48  | 40  | 34  | 46  | 39  | 34  | 45  | 39  | 34  | 32  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 59  | 46  | 37  | 31  | 58  | 45  | 37  | 31  | 44  | 36  | 31  | 42  | 35  | 30  | 41  | 35  | 30  | 28  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 56  | 42  | 34  | 28  | 54  | 41  | 33  | 28  | 40  | 33  | 28  | 39  | 32  | 27  | 38  | 32  | 27  | 25  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 52  | 39  | 31  | 25  | 51  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 30  | 25  | 35  | 29  | 25  | 23  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2930 | 2930 | 2930 |
| 5°  | 2911 | 2932 | 2941 |
| 10° | 2893 | 2923 | 2936 |
| 15° | 2858 | 2902 | 2928 |
| 20° | 2816 | 2870 | 2910 |
| 25° | 2765 | 2854 | 2901 |
| 30° | 2707 | 2800 | 2884 |
| 35° | 2645 | 2764 | 2878 |
| 40° | 2579 | 2718 | 2884 |
| 45° | 2506 | 2686 | 2902 |
| 50° | 2434 | 2658 | 2935 |
| 55° | 2350 | 2647 | 2986 |
| 60° | 2281 | 2646 | 3078 |
| 65° | 2167 | 2689 | 3190 |
| 70° | 2020 | 2740 | 3397 |
| 75° | 1851 | 2834 | 3669 |
| 80° | 1612 | 2954 | 3614 |
| 85° | 1411 | 2628 | 2871 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 103.0  | 3.2       |
| 10°-20°   | 293.3  | 9.2       |
| 20°-30°   | 440.3  | 13.7      |
| 30°-40°   | 526.1  | 16.4      |
| 40°-50°   | 547.0  | 17.1      |
| 50°-60°   | 507.0  | 15.8      |
| 60°-70°   | 415.9  | 13.0      |
| 70°-80°   | 281.1  | 8.8       |
| 80°-90°   | 88.3   | 2.8       |
| 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°    | 836.5  | 26.1      |
| 0°-40°    | 1362.6 | 42.6      |
| 0°-60°    | 2416.6 | 75.5      |
| 0°-90°    | 3202.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3202.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1089 | 1089  | 1089 | 1089  | 1089 |      |
| 5°  | 1078 | 1079  | 1086 | 1087  | 1089 | 102  |
| 15° | 1026 | 1030  | 1042 | 1048  | 1051 | 289  |
| 25° | 931  | 939   | 961  | 972   | 977  | 429  |
| 35° | 805  | 816   | 841  | 867   | 876  | 503  |
| 45° | 659  | 671   | 706  | 747   | 763  | 509  |
| 55° | 501  | 517   | 564  | 614   | 636  | 450  |
| 65° | 340  | 359   | 422  | 477   | 501  | 336  |
| 75° | 178  | 208   | 273  | 328   | 353  | 189  |
| 85° | 46   | 63    | 85   | 94    | 93   | 52   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1088.7 | 1088.7 | 1088.7 | 1088.7 | 1088.7 |
| 2.5°  | 1082.4 | 1085.6 | 1090.3 | 1091.9 | 1091.9 |
| 5°    | 1077.7 | 1079.3 | 1085.6 | 1087.2 | 1088.7 |
| 7.5°  | 1069.8 | 1073.0 | 1079.3 | 1080.9 | 1082.4 |
| 10°   | 1058.8 | 1062.0 | 1069.8 | 1073.0 | 1074.6 |
| 12.5° | 1044.6 | 1047.8 | 1057.2 | 1062.0 | 1063.5 |
| 15°   | 1025.7 | 1030.4 | 1041.5 | 1047.8 | 1050.9 |
| 17.5° | 1006.8 | 1011.5 | 1022.6 | 1032.0 | 1035.2 |
| 20°   | 983.2  | 994.2  | 1002.1 | 1014.7 | 1016.3 |
| 22.5° | 959.5  | 965.8  | 980.0  | 992.6  | 998.9  |
| 25°   | 931.2  | 939.1  | 961.1  | 972.1  | 976.9  |
| 27.5° | 901.2  | 912.3  | 929.6  | 946.9  | 953.2  |
| 30°   | 871.3  | 879.2  | 901.2  | 921.7  | 928.0  |
| 32.5° | 838.2  | 849.2  | 872.9  | 893.4  | 902.8  |
| 35°   | 805.1  | 816.2  | 841.4  | 866.6  | 876.0  |
| 37.5° | 768.9  | 781.5  | 806.7  | 836.6  | 849.2  |
| 40°   | 734.2  | 743.7  | 773.6  | 809.9  | 820.9  |
| 42.5° | 698.0  | 709.0  | 740.5  | 779.9  | 792.5  |
| 45°   | 658.6  | 671.2  | 705.9  | 746.8  | 762.6  |
| 47.5° | 620.8  | 633.4  | 671.2  | 712.2  | 731.1  |
| 50°   | 581.4  | 597.2  | 635.0  | 682.2  | 701.1  |
| 52.5° | 543.6  | 557.8  | 600.3  | 649.1  | 666.5  |
| 55°   | 501.0  | 516.8  | 564.1  | 614.5  | 636.5  |
| 57.5° | 466.4  | 477.4  | 529.4  | 581.4  | 603.5  |
| 60°   | 423.8  | 438.0  | 491.6  | 546.7  | 571.9  |
| 62.5° | 378.1  | 401.8  | 456.9  | 513.6  | 538.9  |
| 65°   | 340.3  | 359.2  | 422.3  | 477.4  | 501.0  |
| 67.5° | 300.9  | 321.4  | 382.9  | 441.2  | 468.0  |
| 70°   | 256.8  | 283.6  | 348.2  | 406.5  | 431.7  |
| 72.5° | 217.4  | 245.8  | 312.0  | 368.7  | 395.5  |
| 75°   | 178.0  | 208.0  | 272.6  | 327.7  | 352.9  |
| 77.5° | 140.2  | 173.3  | 236.3  | 278.9  | 294.6  |
| 80°   | 104.0  | 135.5  | 190.6  | 220.6  | 233.2  |
| 82.5° | 72.5   | 99.3   | 140.2  | 156.0  | 159.1  |
| 85°   | 45.7   | 63.0   | 85.1   | 94.5   | 93.0   |
| 87.5° | 20.5   | 25.2   | 31.5   | 34.7   | 33.1   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)