

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: P276201

Luminaire Tested: **24CZ2-40HE-UNV-L92765-W2A1-U-5500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P276201  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-5)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-40HE-UNV-L92765-W2A1-U-5500K  
Description: CRUZE 2.0 2x4 TUNABLE WHITE LED TROFFER  
WITH RIBBED LENS  
Light Source: (336) 90 CRI LEDS TUNED TO 5500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3616.6 lumens  
Efficiency: N/A  
Efficacy: 124.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.27 / 1.37  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

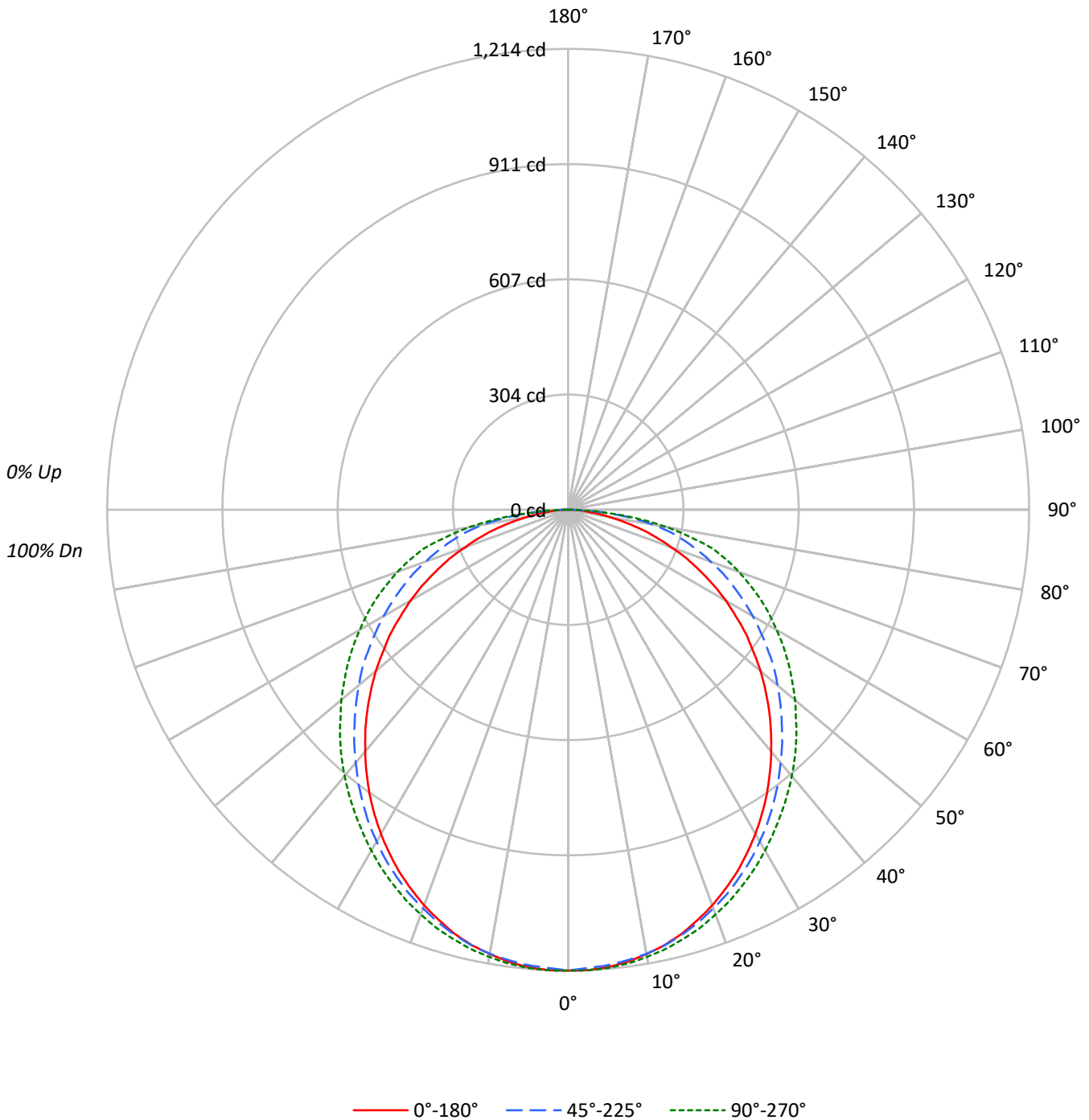
Input Watts (W): 29.109  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 98  | 94  | 105 | 100 | 96  | 92  | 96  | 93  | 89  | 92  | 89  | 87  | 89  | 86  | 84  | 82  |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  | 83  | 78  | 73  | 80  | 75  | 71  | 77  | 73  | 70  | 67  |
| 3   | 89  | 78  | 69  | 62  | 86  | 76  | 68  | 62  | 73  | 66  | 61  | 70  | 64  | 60  | 68  | 63  | 58  | 56  |
| 4   | 81  | 69  | 59  | 52  | 79  | 67  | 59  | 52  | 65  | 57  | 51  | 62  | 56  | 51  | 60  | 55  | 50  | 48  |
| 5   | 74  | 61  | 52  | 45  | 72  | 60  | 51  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 43  | 41  |
| 6   | 69  | 55  | 46  | 39  | 67  | 54  | 45  | 39  | 52  | 44  | 39  | 50  | 44  | 38  | 49  | 43  | 38  | 36  |
| 7   | 64  | 50  | 41  | 35  | 62  | 49  | 40  | 34  | 47  | 40  | 34  | 46  | 39  | 34  | 45  | 38  | 34  | 32  |
| 8   | 59  | 45  | 37  | 31  | 58  | 45  | 36  | 31  | 43  | 36  | 30  | 42  | 35  | 30  | 41  | 35  | 30  | 28  |
| 9   | 55  | 42  | 33  | 28  | 54  | 41  | 33  | 28  | 40  | 33  | 27  | 39  | 32  | 27  | 38  | 32  | 27  | 25  |
| 10  | 52  | 38  | 30  | 25  | 51  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 29  | 25  | 35  | 29  | 25  | 23  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1634 | 1634 | 1634 |
| 5°  | 1633 | 1627 | 1637 |
| 10° | 1624 | 1623 | 1634 |
| 15° | 1611 | 1614 | 1631 |
| 20° | 1588 | 1600 | 1625 |
| 25° | 1563 | 1586 | 1618 |
| 30° | 1532 | 1568 | 1611 |
| 35° | 1499 | 1548 | 1606 |
| 40° | 1461 | 1529 | 1609 |
| 45° | 1424 | 1513 | 1617 |
| 50° | 1384 | 1506 | 1632 |
| 55° | 1342 | 1503 | 1662 |
| 60° | 1290 | 1510 | 1705 |
| 65° | 1222 | 1533 | 1779 |
| 70° | 1135 | 1572 | 1880 |
| 75° | 1036 | 1650 | 2039 |
| 80° | 851  | 1777 | 2039 |
| 85° | 651  | 1639 | 1752 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 114.8  | 3.2       |
| 10°-20°   | 327.9  | 9.1       |
| 20°-30°   | 493.4  | 13.6      |
| 30°-40°   | 591.3  | 16.3      |
| 40°-50°   | 616.1  | 17.0      |
| 50°-60°   | 573.2  | 15.9      |
| 60°-70°   | 472.1  | 13.1      |
| 70°-80°   | 321.6  | 8.9       |
| 80°-90°   | 106.2  | 2.9       |
| 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°    | 936.1  | 25.9      |
| 0°-40°    | 1527.3 | 42.2      |
| 0°-60°    | 2716.7 | 75.1      |
| 0°-90°    | 3616.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3616.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1214 | 1214  | 1214 | 1214  | 1214 |      |
| 5°  | 1209 | 1209  | 1205 | 1211  | 1212 | 115  |
| 15° | 1156 | 1158  | 1159 | 1170  | 1171 | 326  |
| 25° | 1052 | 1057  | 1068 | 1086  | 1090 | 485  |
| 35° | 912  | 923   | 943  | 968   | 978  | 570  |
| 45° | 748  | 764   | 795  | 835   | 850  | 577  |
| 55° | 572  | 591   | 641  | 692   | 708  | 510  |
| 65° | 384  | 416   | 482  | 538   | 559  | 381  |
| 75° | 199  | 244   | 317  | 374   | 392  | 210  |
| 85° | 42   | 82    | 106  | 114   | 114  | 52   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1214.2 | 1214.2 | 1214.2 | 1214.2 | 1214.2 |
| 2.5°  | 1214.2 | 1214.2 | 1208.2 | 1214.2 | 1214.2 |
| 5°    | 1209.4 | 1209.4 | 1204.6 | 1210.6 | 1211.8 |
| 7.5°  | 1201.0 | 1202.2 | 1197.3 | 1204.6 | 1205.8 |
| 10°   | 1188.9 | 1190.1 | 1187.7 | 1194.9 | 1196.1 |
| 12.5° | 1174.4 | 1175.6 | 1175.6 | 1184.1 | 1185.3 |
| 15°   | 1156.3 | 1157.5 | 1158.7 | 1169.6 | 1170.8 |
| 17.5° | 1133.4 | 1137.0 | 1139.4 | 1152.7 | 1155.1 |
| 20°   | 1109.2 | 1112.9 | 1117.7 | 1132.2 | 1134.6 |
| 22.5° | 1081.5 | 1086.3 | 1094.8 | 1110.4 | 1114.1 |
| 25°   | 1052.5 | 1057.3 | 1068.2 | 1086.3 | 1089.9 |
| 27.5° | 1019.9 | 1027.2 | 1040.4 | 1059.8 | 1064.6 |
| 30°   | 986.1  | 993.4  | 1009.1 | 1029.6 | 1036.8 |
| 32.5° | 949.9  | 959.6  | 977.7  | 1000.6 | 1007.8 |
| 35°   | 912.5  | 923.4  | 942.7  | 968.0  | 977.7  |
| 37.5° | 872.7  | 884.7  | 907.7  | 935.4  | 947.5  |
| 40°   | 831.6  | 846.1  | 870.3  | 902.8  | 916.1  |
| 42.5° | 790.6  | 803.9  | 834.0  | 869.0  | 883.5  |
| 45°   | 748.3  | 764.0  | 795.4  | 835.2  | 849.7  |
| 47.5° | 704.9  | 720.6  | 758.0  | 800.2  | 813.5  |
| 50°   | 661.4  | 677.1  | 719.4  | 764.0  | 779.7  |
| 52.5° | 614.4  | 634.9  | 683.2  | 727.8  | 743.5  |
| 55°   | 572.1  | 591.4  | 640.9  | 691.6  | 708.5  |
| 57.5° | 523.8  | 546.8  | 601.1  | 654.2  | 672.3  |
| 60°   | 479.2  | 503.3  | 561.3  | 615.6  | 633.7  |
| 62.5° | 433.3  | 459.9  | 521.4  | 576.9  | 597.5  |
| 65°   | 383.8  | 416.4  | 481.6  | 538.3  | 558.8  |
| 67.5° | 339.2  | 373.0  | 441.8  | 499.7  | 517.8  |
| 70°   | 288.5  | 329.5  | 399.5  | 457.5  | 478.0  |
| 72.5° | 245.0  | 286.1  | 359.7  | 416.4  | 436.9  |
| 75°   | 199.2  | 243.8  | 317.4  | 374.2  | 392.3  |
| 77.5° | 153.3  | 202.8  | 276.4  | 319.9  | 325.9  |
| 80°   | 109.8  | 161.7  | 229.3  | 254.7  | 263.1  |
| 82.5° | 77.2   | 124.3  | 169.0  | 185.9  | 190.7  |
| 85°   | 42.2   | 82.1   | 106.2  | 113.5  | 113.5  |
| 87.5° | 18.1   | 35.0   | 42.2   | 43.5   | 44.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)