

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: P263635

Luminaire Tested: **24CZ-LD5-45SE-RDP-UNV-L93050-W2A1-U-4500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P263635  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25696)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ-LD5-45SE-RDP-UNV-L93050-W2A1-U-4500K  
Description: CRUZE 2x4 TUNABLE WHITE LED TROFFER  
WITH RDP LENS  
Light Source: (168) 90 CRI LEDS TUNED AT 4500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2941.8 lumens  
Efficiency: N/A  
Efficacy: 80.7 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

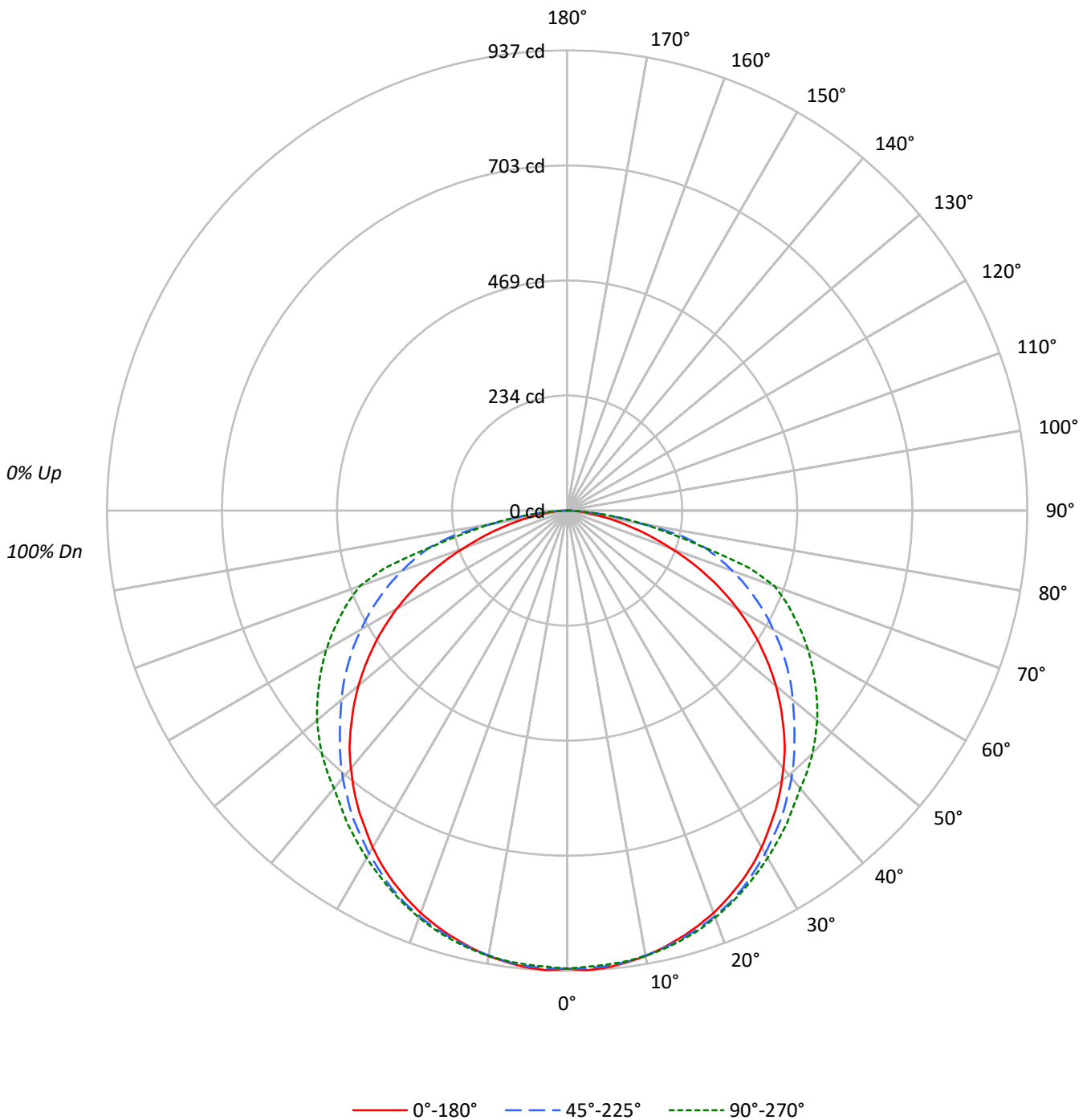
Input Watts (W): 36.436656  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 101 | 97  | 93  | 96  | 93  | 90  | 92  | 90  | 87  | 89  | 87  | 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  | 60  | 70  | 64  | 59  | 67  | 62  | 58  | 56  |
| 4   | 81  | 68  | 59  | 52  | 78  | 67  | 58  | 52  | 64  | 57  | 51  | 62  | 56  | 50  | 60  | 54  | 50  | 47  |
| 5   | 74  | 61  | 51  | 45  | 72  | 60  | 51  | 44  | 57  | 50  | 44  | 55  | 49  | 43  | 54  | 48  | 43  | 41  |
| 6   | 68  | 55  | 45  | 39  | 66  | 54  | 45  | 38  | 52  | 44  | 38  | 50  | 43  | 38  | 48  | 42  | 37  | 35  |
| 7   | 63  | 49  | 40  | 34  | 61  | 48  | 40  | 34  | 47  | 39  | 34  | 45  | 38  | 33  | 44  | 38  | 33  | 31  |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 35  | 30  | 42  | 35  | 30  | 40  | 34  | 29  | 27  |
| 9   | 55  | 41  | 33  | 27  | 53  | 41  | 32  | 27  | 39  | 32  | 27  | 38  | 32  | 27  | 37  | 31  | 27  | 25  |
| 10  | 51  | 38  | 30  | 24  | 50  | 37  | 30  | 24  | 36  | 29  | 24  | 35  | 29  | 24  | 35  | 28  | 24  | 22  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1255 | 1255 | 1255 |
| 5°  | 1261 | 1258 | 1254 |
| 10° | 1258 | 1256 | 1258 |
| 15° | 1253 | 1257 | 1261 |
| 20° | 1248 | 1259 | 1263 |
| 25° | 1241 | 1258 | 1264 |
| 30° | 1231 | 1253 | 1269 |
| 35° | 1218 | 1251 | 1280 |
| 40° | 1203 | 1249 | 1297 |
| 45° | 1185 | 1246 | 1342 |
| 50° | 1161 | 1255 | 1391 |
| 55° | 1128 | 1277 | 1447 |
| 60° | 1079 | 1305 | 1524 |
| 65° | 1005 | 1346 | 1623 |
| 70° | 889  | 1407 | 1766 |
| 75° | 745  | 1506 | 1483 |
| 80° | 595  | 1189 | 1234 |
| 85° | 469  | 804  | 738  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 88.5   | 3.0       |
| 10°-20°   | 254.6  | 8.7       |
| 20°-30°   | 388.8  | 13.2      |
| 30°-40°   | 475.4  | 16.2      |
| 40°-50°   | 508.8  | 17.3      |
| 50°-60°   | 488.1  | 16.6      |
| 60°-70°   | 412.1  | 14.0      |
| 70°-80°   | 263.4  | 9.0       |
| 80°-90°   | 62.3   | 2.1       |
| 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°    | 731.8  | 24.9      |
| 0°-40°    | 1207.2 | 41.0      |
| 0°-60°    | 2204.1 | 74.9      |
| 0°-90°    | 2941.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2941.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 933 | 933   | 933 | 933   | 933 |      |
| 5°  | 934 | 928   | 931 | 930   | 928 | 89   |
| 15° | 899 | 896   | 902 | 905   | 905 | 254  |
| 25° | 836 | 834   | 847 | 850   | 852 | 385  |
| 35° | 741 | 747   | 762 | 772   | 779 | 464  |
| 45° | 623 | 633   | 655 | 685   | 705 | 480  |
| 55° | 481 | 497   | 544 | 594   | 617 | 429  |
| 65° | 316 | 346   | 423 | 482   | 510 | 311  |
| 75° | 143 | 204   | 290 | 295   | 285 | 154  |
| 85° | 30  | 51    | 52  | 51    | 48  | 36   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 932.6 | 932.6 | 932.6 | 932.6 | 932.6 |
| 2.5°  | 936.9 | 931.1 | 932.6 | 932.6 | 929.7 |
| 5°    | 934.0 | 928.2 | 931.1 | 929.7 | 928.2 |
| 7.5°  | 928.2 | 923.9 | 926.8 | 926.8 | 925.4 |
| 10°   | 921.0 | 916.7 | 919.6 | 921.0 | 921.0 |
| 12.5° | 910.9 | 908.0 | 912.3 | 912.3 | 913.8 |
| 15°   | 899.3 | 896.4 | 902.2 | 905.1 | 905.1 |
| 17.5° | 886.3 | 884.8 | 892.0 | 893.5 | 894.9 |
| 20°   | 871.8 | 870.3 | 879.0 | 879.0 | 881.9 |
| 22.5° | 854.4 | 852.9 | 864.5 | 864.5 | 867.4 |
| 25°   | 835.6 | 834.1 | 847.2 | 850.1 | 851.5 |
| 27.5° | 815.3 | 813.8 | 826.9 | 831.2 | 834.1 |
| 30°   | 792.1 | 792.1 | 806.6 | 812.4 | 816.7 |
| 32.5° | 766.1 | 770.4 | 783.4 | 792.1 | 797.9 |
| 35°   | 741.4 | 747.2 | 761.7 | 771.9 | 779.1 |
| 37.5° | 713.9 | 719.7 | 735.6 | 748.7 | 757.4 |
| 40°   | 685.0 | 692.2 | 711.0 | 725.5 | 738.5 |
| 42.5° | 656.0 | 663.2 | 683.5 | 705.2 | 722.6 |
| 45°   | 622.7 | 632.8 | 654.6 | 685.0 | 705.2 |
| 47.5° | 589.4 | 599.5 | 627.0 | 664.7 | 685.0 |
| 50°   | 554.6 | 566.2 | 599.5 | 643.0 | 664.7 |
| 52.5° | 518.4 | 531.5 | 573.5 | 619.8 | 641.5 |
| 55°   | 480.8 | 496.7 | 544.5 | 593.7 | 616.9 |
| 57.5° | 441.7 | 459.1 | 515.5 | 567.7 | 592.3 |
| 60°   | 401.1 | 422.9 | 485.1 | 540.2 | 566.2 |
| 62.5° | 359.1 | 385.2 | 454.7 | 511.2 | 538.7 |
| 65°   | 315.7 | 346.1 | 422.9 | 482.2 | 509.7 |
| 67.5° | 270.8 | 311.3 | 391.0 | 453.3 | 480.8 |
| 70°   | 225.9 | 273.7 | 357.7 | 421.4 | 448.9 |
| 72.5° | 183.9 | 238.9 | 324.4 | 383.8 | 389.5 |
| 75°   | 143.4 | 204.2 | 289.6 | 295.4 | 285.3 |
| 77.5° | 107.2 | 169.4 | 238.9 | 212.9 | 211.4 |
| 80°   | 76.8  | 136.1 | 153.5 | 157.8 | 159.3 |
| 82.5° | 50.7  | 102.8 | 99.9  | 102.8 | 101.4 |
| 85°   | 30.4  | 50.7  | 52.1  | 50.7  | 47.8  |
| 87.5° | 14.5  | 18.8  | 14.5  | 13.0  | 11.6  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)