

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: P230401

Luminaire Tested: **24CZ-LD5-45-SQP-UNV-L935-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P230401  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25695)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ-LD5-45-SQP-UNV-L935-CD1-U  
Description: CRUZE 2x4 LED TROFFER  
WITH SQP LENS  
Light Source: (168) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2658.2 lumens  
Efficiency: N/A  
Efficacy: 74.5 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.31 / 1.42  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

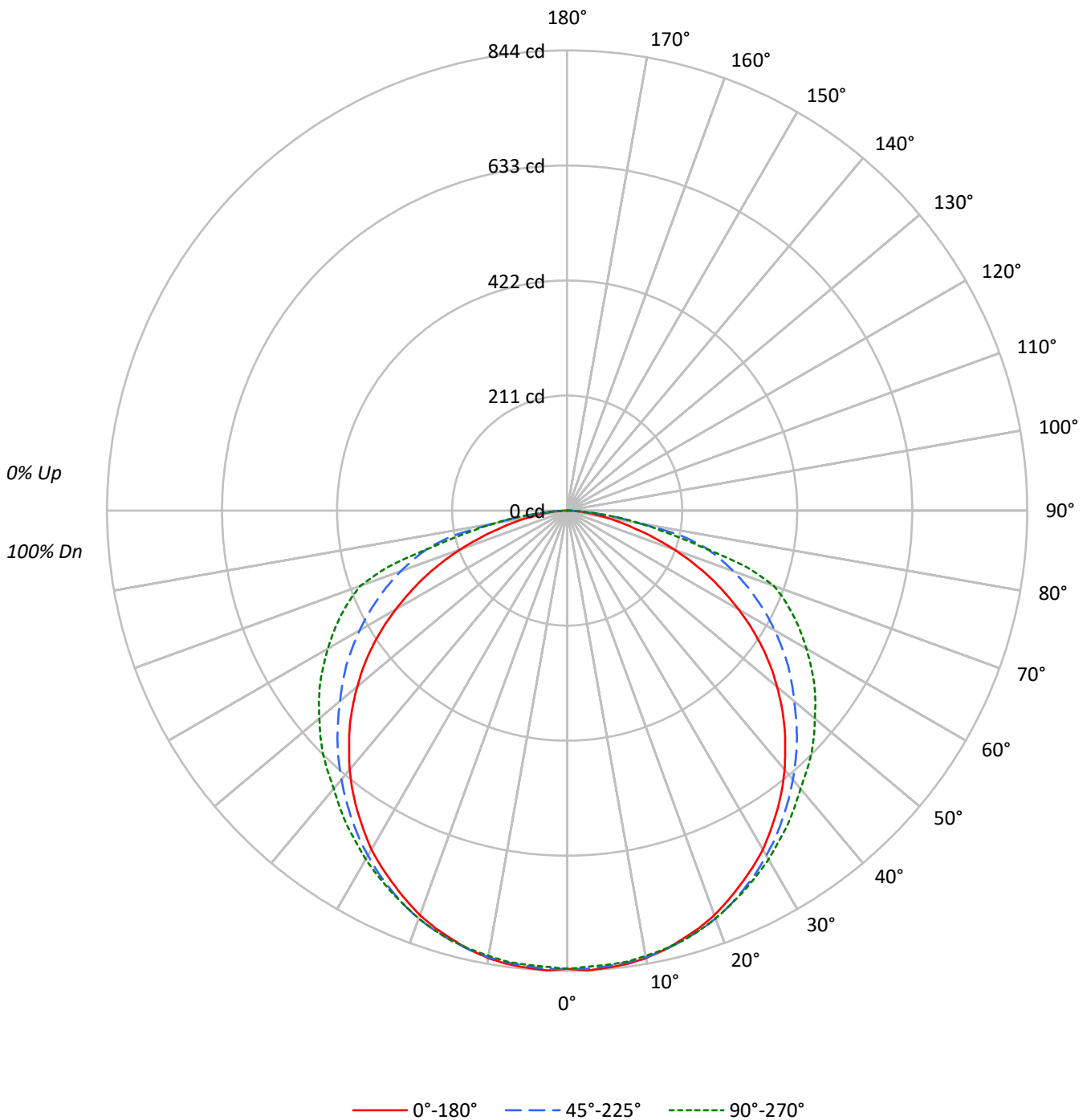
Input Watts (W): 35.69  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 63  | 58  | 56  |
| 4   | 81  | 68  | 59  | 52  | 79  | 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  | 62  | 49  | 40  | 34  | 47  | 39  | 34  | 45  | 39  | 33  | 44  | 38  | 33  | 31  |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 35  | 30  | 42  | 35  | 30  | 40  | 34  | 29  | 28  |
| 9   | 55  | 41  | 33  | 27  | 54  | 41  | 33  | 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°  | 1131 | 1131 | 1131 |
| 5°  | 1137 | 1133 | 1129 |
| 10° | 1139 | 1137 | 1133 |
| 15° | 1134 | 1138 | 1138 |
| 20° | 1130 | 1140 | 1140 |
| 25° | 1121 | 1137 | 1141 |
| 30° | 1116 | 1135 | 1148 |
| 35° | 1103 | 1132 | 1157 |
| 40° | 1090 | 1131 | 1170 |
| 45° | 1074 | 1134 | 1204 |
| 50° | 1052 | 1138 | 1242 |
| 55° | 1024 | 1160 | 1298 |
| 60° | 979  | 1182 | 1364 |
| 65° | 918  | 1220 | 1460 |
| 70° | 821  | 1275 | 1588 |
| 75° | 678  | 1364 | 1313 |
| 80° | 553  | 1053 | 1064 |
| 85° | 445  | 699  | 658  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 79.8   | 3.0       |
| 10°-20°   | 230.3  | 8.7       |
| 20°-30°   | 352.0  | 13.2      |
| 30°-40°   | 430.5  | 16.2      |
| 40°-50°   | 460.6  | 17.3      |
| 50°-60°   | 441.1  | 16.6      |
| 60°-70°   | 373.1  | 14.0      |
| 70°-80°   | 236.5  | 8.9       |
| 80°-90°   | 54.4   | 2.0       |
| 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       |
| <hr/>     |        |           |
| 0°-30°    | 662.1  | 24.9      |
| 0°-40°    | 1092.5 | 41.1      |
| 0°-60°    | 1994.2 | 75.0      |
| 0°-90°    | 2658.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2658.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 840 | 840   | 840 | 840   | 840 |      |
| 5°  | 842 | 838   | 839 | 838   | 836 | 80   |
| 15° | 814 | 813   | 817 | 817   | 817 | 230  |
| 25° | 755 | 755   | 766 | 769   | 769 | 348  |
| 35° | 671 | 676   | 689 | 699   | 704 | 420  |
| 45° | 564 | 574   | 596 | 621   | 633 | 435  |
| 55° | 437 | 450   | 494 | 536   | 553 | 389  |
| 65° | 288 | 316   | 383 | 435   | 459 | 284  |
| 75° | 130 | 184   | 262 | 261   | 253 | 142  |
| 85° | 29  | 44    | 45  | 41    | 43  | 34   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 840.3 | 840.3 | 840.3 | 840.3 | 840.3 |
| 2.5°  | 844.4 | 840.3 | 841.7 | 840.3 | 837.6 |
| 5°    | 841.7 | 837.6 | 838.9 | 837.6 | 836.2 |
| 7.5°  | 838.9 | 834.8 | 836.2 | 834.8 | 834.8 |
| 10°   | 833.4 | 829.3 | 832.1 | 830.7 | 829.3 |
| 12.5° | 825.2 | 822.5 | 825.2 | 823.8 | 823.8 |
| 15°   | 814.2 | 812.8 | 817.0 | 817.0 | 817.0 |
| 17.5° | 803.2 | 801.9 | 807.4 | 807.4 | 807.4 |
| 20°   | 789.5 | 788.1 | 796.4 | 796.4 | 796.4 |
| 22.5° | 773.0 | 771.7 | 782.6 | 782.6 | 782.6 |
| 25°   | 755.2 | 755.2 | 766.2 | 768.9 | 768.9 |
| 27.5° | 737.3 | 737.3 | 749.7 | 753.8 | 753.8 |
| 30°   | 718.1 | 718.1 | 730.5 | 736.0 | 738.7 |
| 32.5° | 694.8 | 697.5 | 711.2 | 718.1 | 720.9 |
| 35°   | 671.4 | 675.5 | 689.3 | 698.9 | 704.4 |
| 37.5° | 646.7 | 650.8 | 667.3 | 678.3 | 685.2 |
| 40°   | 620.6 | 626.1 | 644.0 | 657.7 | 665.9 |
| 42.5° | 591.8 | 600.0 | 620.6 | 638.5 | 649.5 |
| 45°   | 564.3 | 573.9 | 595.9 | 620.6 | 633.0 |
| 47.5° | 534.1 | 545.1 | 569.8 | 601.4 | 613.8 |
| 50°   | 502.5 | 513.5 | 543.7 | 579.4 | 593.2 |
| 52.5° | 471.0 | 483.3 | 519.0 | 557.5 | 573.9 |
| 55°   | 436.6 | 450.4 | 494.3 | 535.5 | 553.3 |
| 57.5° | 400.9 | 417.4 | 466.8 | 510.8 | 530.0 |
| 60°   | 363.9 | 384.5 | 439.4 | 486.1 | 506.7 |
| 62.5° | 325.4 | 350.1 | 411.9 | 461.3 | 483.3 |
| 65°   | 288.3 | 315.8 | 383.1 | 435.3 | 458.6 |
| 67.5° | 248.5 | 282.8 | 354.2 | 410.5 | 432.5 |
| 70°   | 208.7 | 248.5 | 324.0 | 381.7 | 403.7 |
| 72.5° | 168.9 | 216.9 | 293.8 | 346.0 | 346.0 |
| 75°   | 130.4 | 184.0 | 262.3 | 260.9 | 252.6 |
| 77.5° | 98.9  | 153.8 | 215.6 | 184.0 | 185.4 |
| 80°   | 71.4  | 123.6 | 135.9 | 135.9 | 137.3 |
| 82.5° | 48.1  | 94.7  | 87.9  | 86.5  | 89.2  |
| 85°   | 28.8  | 43.9  | 45.3  | 41.2  | 42.6  |
| 87.5° | 13.7  | 15.1  | 12.4  | 8.2   | 8.2   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)