

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: P230414

Luminaire Tested: **24CZ-LD5-60-SQP-UNV-L940-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P230414  
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-LD5-60-SQP-UNV-L940-CD1-U  
Description: CRUZE 2x4 LED TROFFER  
WITH SQP LENS  
Light Source: (168) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3717.2 lumens  
Efficiency: N/A  
Efficacy: 71.3 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

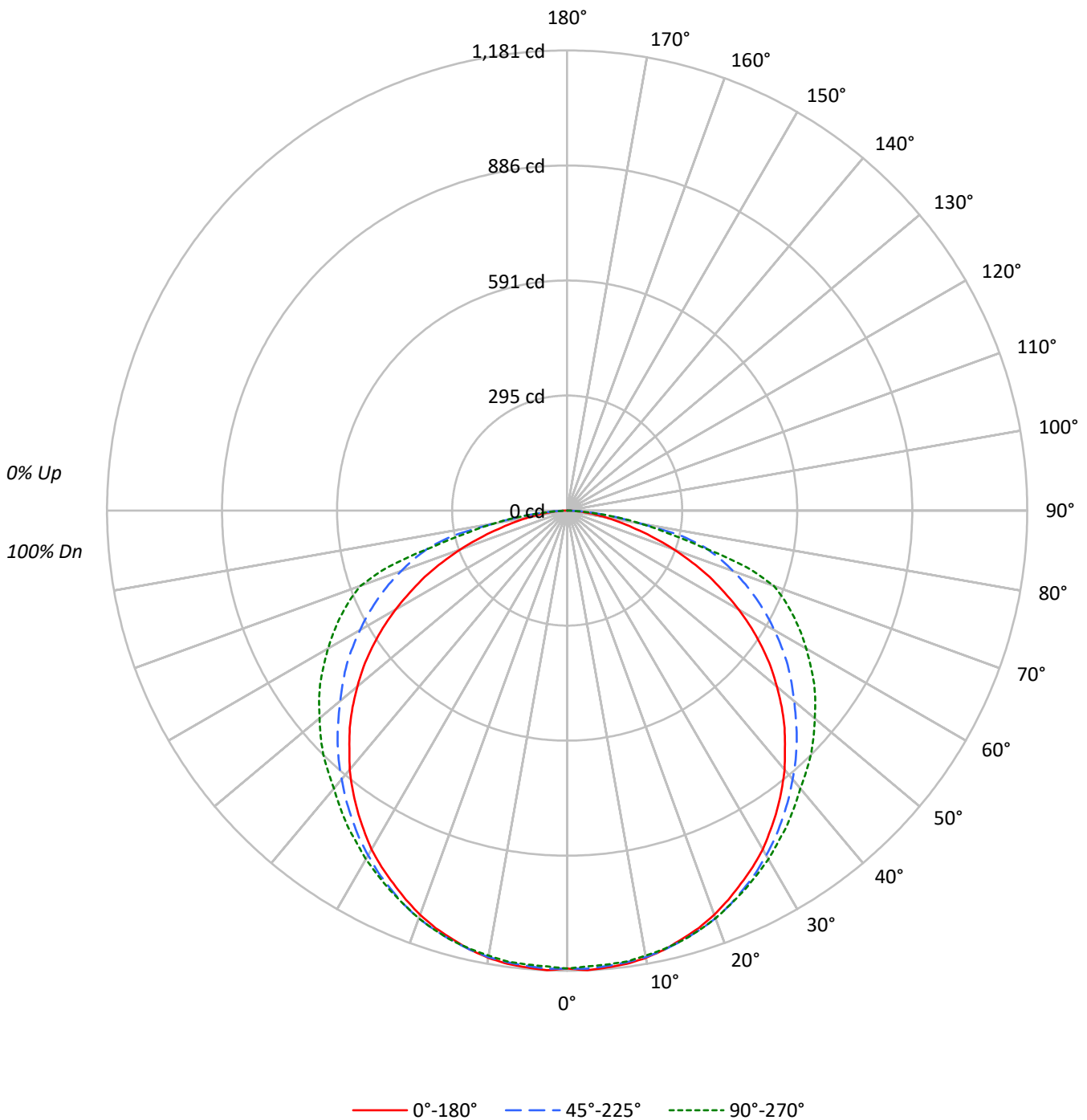
Input Watts (W): 52.17  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 |
| 1   | 108 | 103 | 98  | 94  | 105 | 101 | 97  | 93  | 96  | 93  | 90  | 92  | 90  | 87  | 89  | 87  | 84  |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  | 83  | 78  | 73  | 80  | 75  | 71  | 77  | 73  | 70  |
| 3   | 89  | 78  | 69  | 62  | 86  | 76  | 68  | 62  | 73  | 66  | 60  | 70  | 64  | 59  | 67  | 63  | 58  |
| 4   | 81  | 68  | 59  | 52  | 79  | 67  | 58  | 52  | 64  | 57  | 51  | 62  | 56  | 50  | 60  | 54  | 50  |
| 5   | 74  | 61  | 51  | 45  | 72  | 60  | 51  | 44  | 57  | 50  | 44  | 55  | 49  | 43  | 54  | 48  | 43  |
| 6   | 68  | 55  | 45  | 39  | 66  | 54  | 45  | 38  | 52  | 44  | 38  | 50  | 43  | 38  | 48  | 42  | 37  |
| 7   | 63  | 49  | 40  | 34  | 62  | 49  | 40  | 34  | 47  | 39  | 34  | 45  | 39  | 33  | 44  | 38  | 33  |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 35  | 30  | 42  | 35  | 30  | 40  | 34  | 29  |
| 9   | 55  | 41  | 33  | 27  | 54  | 41  | 33  | 27  | 39  | 32  | 27  | 38  | 32  | 27  | 37  | 31  | 27  |
| 10  | 51  | 38  | 30  | 24  | 50  | 37  | 30  | 24  | 36  | 29  | 24  | 35  | 29  | 24  | 35  | 28  | 24  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1581 | 1581 | 1581 |
| 5°  | 1590 | 1585 | 1579 |
| 10° | 1592 | 1590 | 1584 |
| 15° | 1586 | 1591 | 1591 |
| 20° | 1581 | 1594 | 1594 |
| 25° | 1568 | 1591 | 1596 |
| 30° | 1560 | 1587 | 1605 |
| 35° | 1542 | 1583 | 1618 |
| 40° | 1524 | 1582 | 1636 |
| 45° | 1502 | 1586 | 1684 |
| 50° | 1471 | 1591 | 1736 |
| 55° | 1432 | 1621 | 1815 |
| 60° | 1369 | 1653 | 1907 |
| 65° | 1284 | 1706 | 2042 |
| 70° | 1148 | 1782 | 2221 |
| 75° | 948  | 1906 | 1837 |
| 80° | 773  | 1473 | 1488 |
| 85° | 622  | 979  | 919  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 111.6  | 3.0       |
| 10°-20°   | 322.0  | 8.7       |
| 20°-30°   | 492.2  | 13.2      |
| 30°-40°   | 602.0  | 16.2      |
| 40°-50°   | 644.1  | 17.3      |
| 50°-60°   | 616.8  | 16.6      |
| 60°-70°   | 521.7  | 14.0      |
| 70°-80°   | 330.7  | 8.9       |
| 80°-90°   | 76.1   | 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       |
| 0°-30°    | 925.8  | 24.9      |
| 0°-40°    | 1527.8 | 41.1      |
| 0°-60°    | 2788.6 | 75.0      |
| 0°-90°    | 3717.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3717.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1175 | 1175  | 1175 | 1175  | 1175 |      |
| 5°  | 1177 | 1171  | 1173 | 1171  | 1169 | 112  |
| 15° | 1139 | 1137  | 1142 | 1142  | 1142 | 322  |
| 25° | 1056 | 1056  | 1071 | 1075  | 1075 | 487  |
| 35° | 939  | 945   | 964  | 977   | 985  | 587  |
| 45° | 789  | 803   | 833  | 868   | 885  | 608  |
| 55° | 611  | 630   | 691  | 749   | 774  | 545  |
| 65° | 403  | 442   | 536  | 609   | 641  | 397  |
| 75° | 182  | 257   | 367  | 365   | 353  | 198  |
| 85° | 40   | 61    | 63   | 58    | 60   | 48   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1175.1 | 1175.1 | 1175.1 | 1175.1 | 1175.1 |
| 2.5°  | 1180.8 | 1175.1 | 1177.0 | 1175.1 | 1171.2 |
| 5°    | 1177.0 | 1171.2 | 1173.2 | 1171.2 | 1169.3 |
| 7.5°  | 1173.2 | 1167.4 | 1169.3 | 1167.4 | 1167.4 |
| 10°   | 1165.5 | 1159.7 | 1163.6 | 1161.6 | 1159.7 |
| 12.5° | 1154.0 | 1150.1 | 1154.0 | 1152.0 | 1152.0 |
| 15°   | 1138.6 | 1136.7 | 1142.4 | 1142.4 | 1142.4 |
| 17.5° | 1123.2 | 1121.3 | 1129.0 | 1129.0 | 1129.0 |
| 20°   | 1104.0 | 1102.1 | 1113.6 | 1113.6 | 1113.6 |
| 22.5° | 1081.0 | 1079.1 | 1094.4 | 1094.4 | 1094.4 |
| 25°   | 1056.0 | 1056.0 | 1071.4 | 1075.2 | 1075.2 |
| 27.5° | 1031.1 | 1031.1 | 1048.4 | 1054.1 | 1054.1 |
| 30°   | 1004.2 | 1004.2 | 1021.5 | 1029.2 | 1033.0 |
| 32.5° | 971.5  | 975.4  | 994.6  | 1004.2 | 1008.0 |
| 35°   | 938.9  | 944.7  | 963.9  | 977.3  | 985.0  |
| 37.5° | 904.3  | 910.1  | 933.1  | 948.5  | 958.1  |
| 40°   | 867.9  | 875.5  | 900.5  | 919.7  | 931.2  |
| 42.5° | 827.5  | 839.1  | 867.9  | 892.8  | 908.2  |
| 45°   | 789.1  | 802.6  | 833.3  | 867.9  | 885.1  |
| 47.5° | 746.9  | 762.3  | 796.8  | 841.0  | 858.3  |
| 50°   | 702.7  | 718.1  | 760.3  | 810.3  | 829.5  |
| 52.5° | 658.6  | 675.9  | 725.8  | 779.5  | 802.6  |
| 55°   | 610.6  | 629.8  | 691.2  | 748.8  | 773.8  |
| 57.5° | 560.7  | 583.7  | 652.8  | 714.3  | 741.1  |
| 60°   | 508.8  | 537.6  | 614.4  | 679.7  | 708.5  |
| 62.5° | 455.1  | 489.6  | 576.0  | 645.1  | 675.9  |
| 65°   | 403.2  | 441.6  | 535.7  | 608.7  | 641.3  |
| 67.5° | 347.5  | 395.5  | 495.4  | 574.1  | 604.8  |
| 70°   | 291.8  | 347.5  | 453.1  | 533.8  | 564.5  |
| 72.5° | 236.2  | 303.4  | 410.9  | 483.9  | 483.9  |
| 75°   | 182.4  | 257.3  | 366.7  | 364.8  | 353.3  |
| 77.5° | 138.2  | 215.0  | 301.4  | 257.3  | 259.2  |
| 80°   | 99.8   | 172.8  | 190.1  | 190.1  | 192.0  |
| 82.5° | 67.2   | 132.5  | 122.9  | 121.0  | 124.8  |
| 85°   | 40.3   | 61.4   | 63.4   | 57.6   | 59.5   |
| 87.5° | 19.2   | 21.1   | 17.3   | 11.5   | 11.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)