

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: P474616

Luminaire Tested: **24CZ2-55-SQR-UNV-L835-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474616  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-55-SQR-UNV-L835-CD1-U  
Description: 2'X4' TROFFER LED MODULE, SQUARE LENS  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

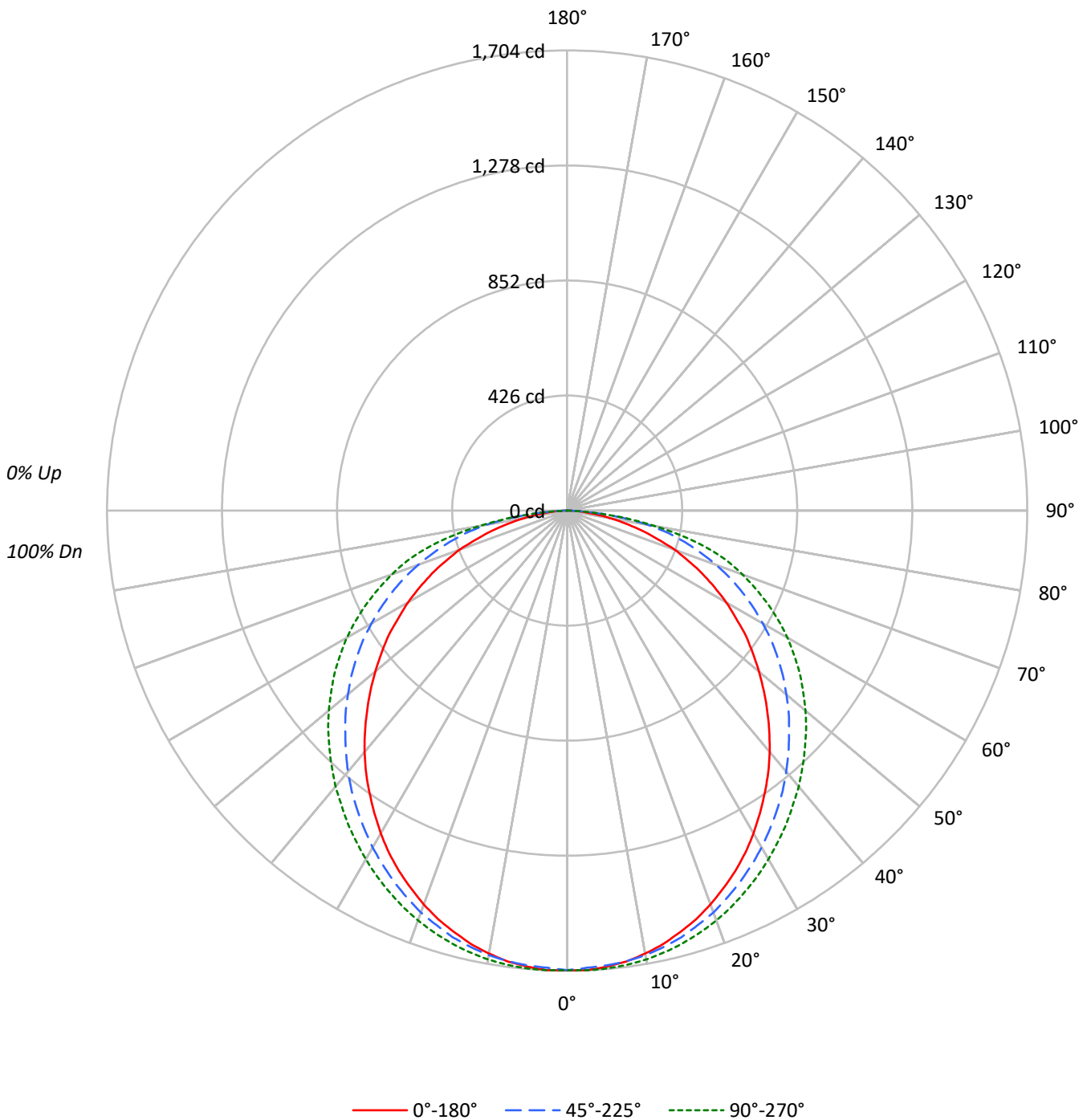
Lumens per Lamp: N/A  
Luminaire Lumens: 5181.6 lumens  
Efficiency: N/A  
Efficacy: 120.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 43  
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 | 96  | 93  | 96  | 93  | 90  | 92  | 90  | 87  | 89  | 87  | 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  | 62  | 86  | 76  | 68  | 62  | 73  | 66  | 61  | 70  | 64  | 60  | 68  | 63  | 59  | 56  |
| 4   | 81  | 69  | 59  | 53  | 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  | 43  | 38  | 49  | 43  | 38  | 36  |
| 7   | 64  | 50  | 41  | 34  | 62  | 49  | 40  | 34  | 47  | 40  | 34  | 46  | 39  | 34  | 44  | 38  | 33  | 31  |
| 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  | 27  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 27  | 25  |
| 10  | 52  | 38  | 30  | 25  | 50  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 29  | 25  | 35  | 29  | 24  | 23  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4580 | 4580 | 4580 |
| 5°  | 4580 | 4566 | 4598 |
| 10° | 4551 | 4567 | 4612 |
| 15° | 4502 | 4557 | 4619 |
| 20° | 4445 | 4535 | 4625 |
| 25° | 4373 | 4503 | 4626 |
| 30° | 4288 | 4476 | 4633 |
| 35° | 4191 | 4449 | 4650 |
| 40° | 4100 | 4435 | 4688 |
| 45° | 3988 | 4423 | 4738 |
| 50° | 3882 | 4436 | 4824 |
| 55° | 3790 | 4466 | 4932 |
| 60° | 3662 | 4500 | 5070 |
| 65° | 3516 | 4554 | 5224 |
| 70° | 3334 | 4618 | 5432 |
| 75° | 2987 | 4682 | 5611 |
| 80° | 2515 | 4696 | 5092 |
| 85° | 1865 | 3554 | 3347 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 161.3  | 3.1       |
| 10°-20°   | 462.2  | 8.9       |
| 20°-30°   | 699.7  | 13.5      |
| 30°-40°   | 846.5  | 16.3      |
| 40°-50°   | 893.5  | 17.2      |
| 50°-60°   | 842.6  | 16.3      |
| 60°-70°   | 694.7  | 13.4      |
| 70°-80°   | 455.7  | 8.8       |
| 80°-90°   | 125.3  | 2.4       |
| 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°    | 1323.3 | 25.5      |
| 0°-40°    | 2169.8 | 41.9      |
| 0°-60°    | 3905.9 | 75.4      |
| 0°-90°    | 5181.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5181.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1702 | 1702  | 1702 | 1702  | 1702 |      |
| 5°  | 1695 | 1695  | 1690 | 1702  | 1702 | 161  |
| 15° | 1616 | 1625  | 1636 | 1655  | 1658 | 456  |
| 25° | 1473 | 1491  | 1517 | 1548  | 1558 | 678  |
| 35° | 1276 | 1309  | 1354 | 1401  | 1416 | 799  |
| 45° | 1048 | 1095  | 1162 | 1224  | 1245 | 809  |
| 55° | 808  | 865   | 952  | 1023  | 1051 | 720  |
| 65° | 552  | 618   | 715  | 791   | 820  | 545  |
| 75° | 287  | 361   | 450  | 522   | 540  | 304  |
| 85° | 60   | 104   | 115  | 112   | 108  | 75   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1702.0 | 1702.0 | 1702.0 | 1702.0 | 1702.0 |
| 2.5°  | 1703.6 | 1702.0 | 1694.5 | 1704.5 | 1703.6 |
| 5°    | 1695.4 | 1695.4 | 1690.4 | 1702.0 | 1702.0 |
| 7.5°  | 1683.8 | 1684.6 | 1682.9 | 1696.2 | 1696.2 |
| 10°   | 1665.6 | 1668.9 | 1671.4 | 1686.3 | 1687.9 |
| 12.5° | 1644.0 | 1649.8 | 1654.8 | 1673.0 | 1674.7 |
| 15°   | 1615.9 | 1625.0 | 1635.8 | 1654.8 | 1658.1 |
| 17.5° | 1586.9 | 1597.7 | 1609.3 | 1634.1 | 1638.2 |
| 20°   | 1552.2 | 1564.6 | 1583.6 | 1608.4 | 1615.1 |
| 22.5° | 1513.2 | 1530.6 | 1550.5 | 1580.3 | 1588.6 |
| 25°   | 1472.7 | 1490.9 | 1516.6 | 1548.0 | 1557.9 |
| 27.5° | 1428.8 | 1450.3 | 1479.3 | 1515.7 | 1526.5 |
| 30°   | 1380.0 | 1404.8 | 1440.4 | 1479.3 | 1490.9 |
| 32.5° | 1328.6 | 1357.6 | 1397.4 | 1440.4 | 1453.6 |
| 35°   | 1275.7 | 1308.8 | 1354.3 | 1400.7 | 1415.6 |
| 37.5° | 1223.5 | 1256.6 | 1310.4 | 1359.3 | 1373.3 |
| 40°   | 1167.2 | 1203.6 | 1262.4 | 1314.6 | 1334.4 |
| 42.5° | 1107.6 | 1150.7 | 1212.8 | 1270.7 | 1289.7 |
| 45°   | 1048.0 | 1095.2 | 1162.3 | 1224.3 | 1245.0 |
| 47.5° | 987.6  | 1039.7 | 1113.4 | 1176.3 | 1200.3 |
| 50°   | 927.2  | 982.6  | 1059.6 | 1127.5 | 1152.3 |
| 52.5° | 865.9  | 923.8  | 1007.5 | 1079.5 | 1101.8 |
| 55°   | 807.9  | 865.1  | 952.0  | 1023.2 | 1051.3 |
| 57.5° | 740.9  | 805.5  | 897.4  | 969.4  | 996.7  |
| 60°   | 680.5  | 743.4  | 836.1  | 912.3  | 942.1  |
| 62.5° | 615.1  | 679.6  | 777.3  | 853.5  | 882.5  |
| 65°   | 552.2  | 618.4  | 715.2  | 791.4  | 820.4  |
| 67.5° | 484.3  | 553.8  | 653.1  | 726.8  | 755.0  |
| 70°   | 423.8  | 489.2  | 586.9  | 662.3  | 690.4  |
| 72.5° | 350.2  | 424.7  | 518.2  | 592.7  | 623.3  |
| 75°   | 287.3  | 360.9  | 450.3  | 521.5  | 539.7  |
| 77.5° | 221.0  | 294.7  | 383.3  | 429.6  | 442.1  |
| 80°   | 162.3  | 231.8  | 303.0  | 327.8  | 328.6  |
| 82.5° | 109.3  | 170.5  | 211.1  | 223.5  | 221.9  |
| 85°   | 60.4   | 104.3  | 115.1  | 111.8  | 108.4  |
| 87.5° | 24.8   | 34.8   | 28.1   | 19.9   | 15.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)