

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: P474924

Luminaire Tested: **22CZ2-60VHE-S-UNV-L835-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474924  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-60VHE-S-UNV-L835-CD1-U  
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6162.2 lumens  
Efficiency: N/A  
Efficacy: 146.4 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.25 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

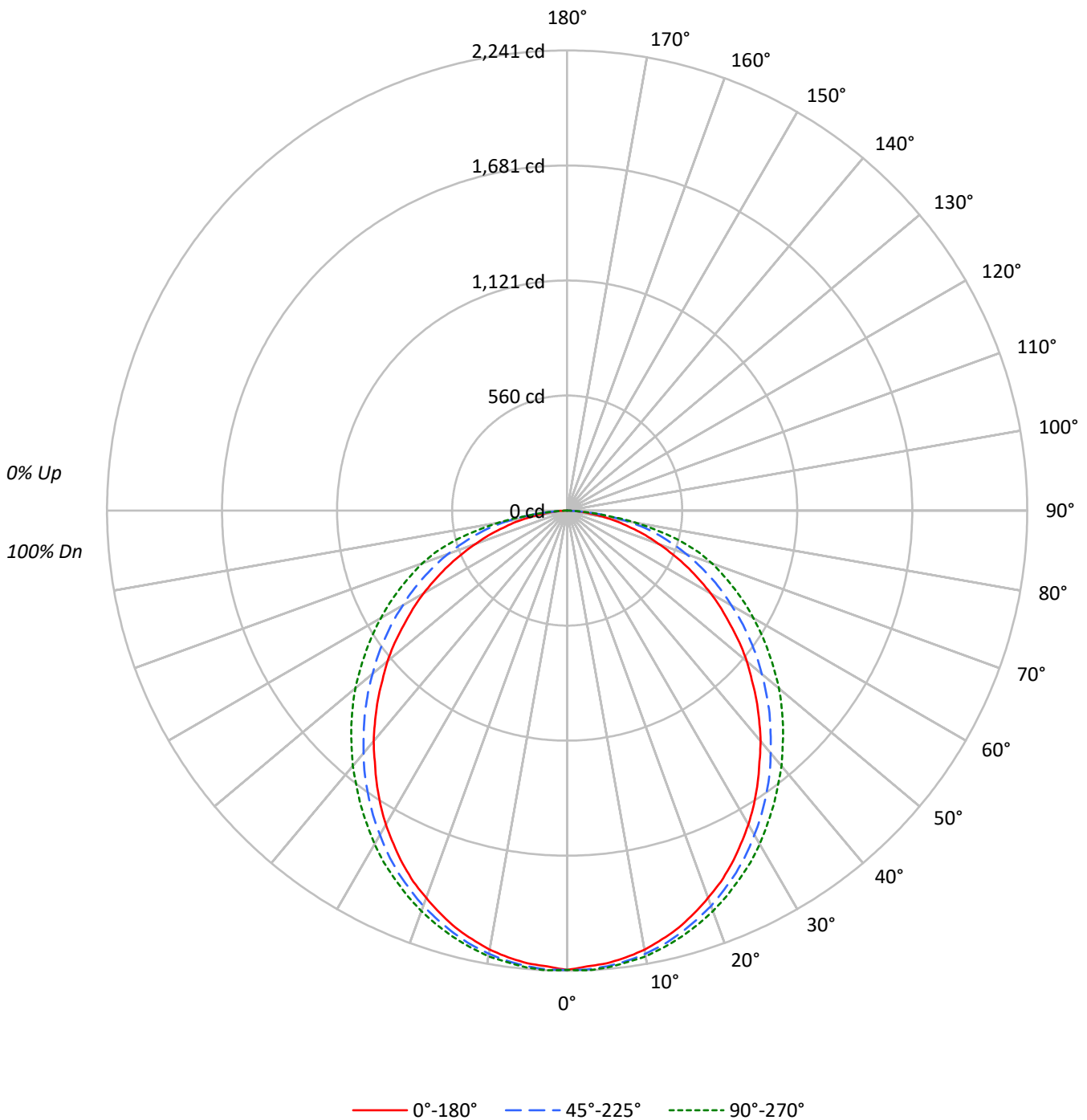
Input Watts (W): 42.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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   | 109 | 104 | 99  | 95  | 106 | 101 | 97  | 94  | 97  | 94  | 91  |  | 93  | 91  | 88  |  | 90  | 88  | 86  | 83  |
| 2   | 99  | 90  | 83  | 77  | 96  | 88  | 82  | 77  | 85  | 79  | 75  |  | 81  | 77  | 73  |  | 78  | 75  | 71  | 69  |
| 3   | 90  | 79  | 71  | 64  | 87  | 78  | 70  | 64  | 75  | 68  | 63  |  | 72  | 66  | 61  |  | 69  | 64  | 60  | 58  |
| 4   | 82  | 70  | 61  | 54  | 80  | 69  | 60  | 54  | 66  | 59  | 53  |  | 64  | 58  | 53  |  | 62  | 56  | 52  | 50  |
| 5   | 76  | 63  | 54  | 47  | 74  | 62  | 53  | 47  | 59  | 52  | 46  |  | 57  | 51  | 46  |  | 56  | 50  | 45  | 43  |
| 6   | 70  | 56  | 47  | 41  | 68  | 55  | 47  | 41  | 54  | 46  | 40  |  | 52  | 45  | 40  |  | 50  | 44  | 40  | 38  |
| 7   | 65  | 51  | 42  | 36  | 63  | 50  | 42  | 36  | 49  | 41  | 36  |  | 47  | 41  | 36  |  | 46  | 40  | 35  | 33  |
| 8   | 60  | 47  | 38  | 32  | 59  | 46  | 38  | 32  | 45  | 37  | 32  |  | 43  | 37  | 32  |  | 42  | 36  | 32  | 30  |
| 9   | 56  | 43  | 35  | 29  | 55  | 42  | 34  | 29  | 41  | 34  | 29  |  | 40  | 33  | 29  |  | 39  | 33  | 29  | 27  |
| 10  | 53  | 40  | 32  | 26  | 52  | 39  | 32  | 26  | 38  | 31  | 26  |  | 37  | 31  | 26  |  | 36  | 30  | 26  | 24  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 6019 | 6019 | 6019 |
| 5°  | 5978 | 6018 | 6034 |
| 10° | 5933 | 5990 | 6023 |
| 15° | 5858 | 5937 | 5987 |
| 20° | 5748 | 5868 | 5944 |
| 25° | 5632 | 5778 | 5885 |
| 30° | 5486 | 5667 | 5829 |
| 35° | 5315 | 5550 | 5756 |
| 40° | 5149 | 5416 | 5705 |
| 45° | 4960 | 5300 | 5658 |
| 50° | 4782 | 5182 | 5637 |
| 55° | 4555 | 5079 | 5611 |
| 60° | 4350 | 4976 | 5634 |
| 65° | 4083 | 4919 | 5716 |
| 70° | 3731 | 4858 | 5902 |
| 75° | 3349 | 4822 | 5908 |
| 80° | 2819 | 4553 | 5246 |
| 85° | 2118 | 3084 | 2856 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 211.3  | 3.4       |
| 10°-20°   | 600.0  | 9.7       |
| 20°-30°   | 894.6  | 14.5      |
| 30°-40°   | 1055.6 | 17.1      |
| 40°-50°   | 1075.5 | 17.5      |
| 50°-60°   | 969.9  | 15.7      |
| 60°-70°   | 761.7  | 12.4      |
| 70°-80°   | 476.2  | 7.7       |
| 80°-90°   | 117.4  | 1.9       |
| 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°    | 1705.9 | 27.7      |
| 0°-40°    | 2761.5 | 44.8      |
| 0°-60°    | 4806.9 | 78.0      |
| 0°-90°    | 6162.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6162.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2237 | 2237  | 2237 | 2237  | 2237 |      |
| 5°  | 2213 | 2218  | 2228 | 2232  | 2234 | 210  |
| 15° | 2103 | 2110  | 2131 | 2146  | 2149 | 592  |
| 25° | 1897 | 1907  | 1946 | 1974  | 1982 | 873  |
| 35° | 1618 | 1640  | 1690 | 1736  | 1752 | 1012 |
| 45° | 1303 | 1326  | 1393 | 1460  | 1487 | 1005 |
| 55° | 971  | 1002  | 1083 | 1166  | 1196 | 871  |
| 65° | 641  | 676   | 772  | 859   | 898  | 633  |
| 75° | 322  | 367   | 464  | 543   | 568  | 344  |
| 85° | 69   | 88    | 100  | 98    | 92   | 84   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2236.9 | 2236.9 | 2236.9 | 2236.9 | 2236.9 |
| 2.5°  | 2222.0 | 2226.4 | 2236.9 | 2241.3 | 2241.3 |
| 5°    | 2213.0 | 2217.5 | 2227.9 | 2232.4 | 2233.9 |
| 7.5°  | 2195.1 | 2201.1 | 2213.0 | 2219.0 | 2219.0 |
| 10°   | 2171.3 | 2178.7 | 2192.1 | 2201.1 | 2204.1 |
| 12.5° | 2138.4 | 2147.4 | 2165.3 | 2175.7 | 2178.7 |
| 15°   | 2102.7 | 2110.1 | 2131.0 | 2145.9 | 2148.9 |
| 17.5° | 2056.4 | 2068.4 | 2090.7 | 2110.1 | 2114.6 |
| 20°   | 2007.2 | 2020.6 | 2049.0 | 2071.3 | 2075.8 |
| 22.5° | 1956.5 | 1967.0 | 1998.3 | 2025.1 | 2031.1 |
| 25°   | 1896.9 | 1907.3 | 1946.1 | 1974.4 | 1981.9 |
| 27.5° | 1831.2 | 1849.1 | 1887.9 | 1920.7 | 1932.7 |
| 30°   | 1765.6 | 1783.5 | 1823.8 | 1862.6 | 1876.0 |
| 32.5° | 1694.1 | 1713.4 | 1759.7 | 1799.9 | 1813.4 |
| 35°   | 1618.0 | 1640.4 | 1689.6 | 1735.8 | 1752.2 |
| 37.5° | 1539.0 | 1564.3 | 1619.5 | 1668.7 | 1686.6 |
| 40°   | 1465.9 | 1483.8 | 1541.9 | 1598.6 | 1624.0 |
| 42.5° | 1383.9 | 1407.7 | 1465.9 | 1530.0 | 1553.9 |
| 45°   | 1303.3 | 1325.7 | 1392.8 | 1459.9 | 1486.8 |
| 47.5° | 1219.8 | 1248.2 | 1315.3 | 1389.8 | 1416.7 |
| 50°   | 1142.3 | 1166.2 | 1237.7 | 1316.8 | 1346.6 |
| 52.5° | 1058.8 | 1084.1 | 1161.7 | 1243.7 | 1270.5 |
| 55°   | 970.8  | 1002.1 | 1082.6 | 1166.2 | 1196.0 |
| 57.5° | 890.3  | 920.1  | 1005.1 | 1091.6 | 1122.9 |
| 60°   | 808.3  | 838.1  | 924.6  | 1012.6 | 1046.9 |
| 62.5° | 721.8  | 756.1  | 850.0  | 935.0  | 973.8  |
| 65°   | 641.2  | 675.5  | 772.5  | 859.0  | 897.7  |
| 67.5° | 556.2  | 596.5  | 693.4  | 784.4  | 823.2  |
| 70°   | 474.2  | 521.9  | 617.4  | 706.8  | 750.1  |
| 72.5° | 401.1  | 439.9  | 539.8  | 633.8  | 669.6  |
| 75°   | 322.1  | 366.8  | 463.8  | 542.8  | 568.2  |
| 77.5° | 255.0  | 293.8  | 386.2  | 438.4  | 454.8  |
| 80°   | 181.9  | 225.2  | 293.8  | 325.1  | 338.5  |
| 82.5° | 120.8  | 156.6  | 199.8  | 205.8  | 202.8  |
| 85°   | 68.6   | 88.0   | 99.9   | 98.4   | 92.5   |
| 87.5° | 26.8   | 29.8   | 22.4   | 13.4   | 10.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)