

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: P474814

Luminaire Tested: **22CZ2-90VHE-UNV-L835-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474814  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-90VHE-UNV-L835-CD1-U  
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,RIBBED LENS  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

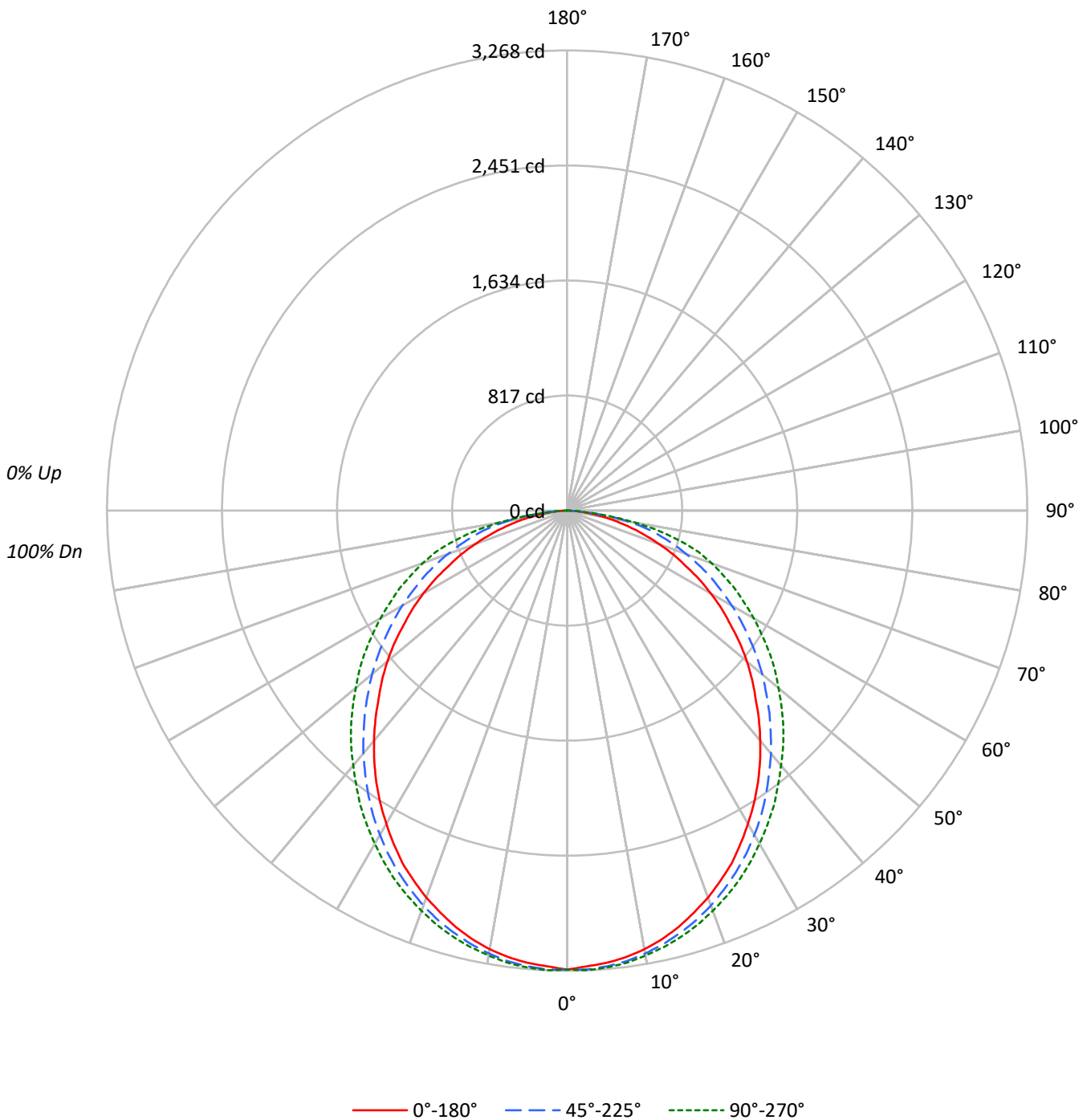
Lumens per Lamp: N/A  
Luminaire Lumens: 8989.7 lumens  
Efficiency: N/A  
Efficacy: 134.8 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.25 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 66.7  
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  | 87  | 85  | 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  | 73  | 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  | 31  | 26  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 30  | 26  | 24  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8773 | 8773 | 8773 |
| 5°  | 8709 | 8776 | 8796 |
| 10° | 8643 | 8726 | 8768 |
| 15° | 8527 | 8648 | 8728 |
| 20° | 8373 | 8547 | 8661 |
| 25° | 8208 | 8416 | 8591 |
| 30° | 7981 | 8265 | 8489 |
| 35° | 7758 | 8089 | 8407 |
| 40° | 7495 | 7908 | 8302 |
| 45° | 7208 | 7729 | 8264 |
| 50° | 6975 | 7572 | 8200 |
| 55° | 6649 | 7407 | 8218 |
| 60° | 6350 | 7280 | 8241 |
| 65° | 5903 | 7186 | 8371 |
| 70° | 5456 | 7085 | 8580 |
| 75° | 4879 | 7051 | 8632 |
| 80° | 4093 | 6684 | 7538 |
| 85° | 3168 | 4576 | 4282 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 308.0  | 3.4       |
| 10°-20°   | 874.4  | 9.7       |
| 20°-30°   | 1303.7 | 14.5      |
| 30°-40°   | 1539.0 | 17.1      |
| 40°-50°   | 1568.5 | 17.4      |
| 50°-60°   | 1414.5 | 15.7      |
| 60°-70°   | 1111.8 | 12.4      |
| 70°-80°   | 696.1  | 7.7       |
| 80°-90°   | 173.6  | 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°    | 2486.1 | 27.7      |
| 0°-40°    | 4025.1 | 44.8      |
| 0°-60°    | 7008.2 | 78.0      |
| 0°-90°    | 8989.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 8989.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3260 | 3260  | 3260 | 3260  | 3260 |      |
| 5°  | 3224 | 3232  | 3249 | 3256  | 3256 | 306  |
| 15° | 3061 | 3074  | 3104 | 3127  | 3133 | 862  |
| 25° | 2764 | 2785  | 2834 | 2878  | 2893 | 1271 |
| 35° | 2362 | 2392  | 2462 | 2531  | 2559 | 1476 |
| 45° | 1894 | 1936  | 2031 | 2130  | 2172 | 1465 |
| 55° | 1417 | 1461  | 1579 | 1700  | 1752 | 1272 |
| 65° | 927  | 984   | 1128 | 1254  | 1315 | 924  |
| 75° | 469  | 540   | 678  | 800   | 830  | 498  |
| 85° | 103  | 131   | 148  | 148   | 139  | 124  |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 3260.1 | 3260.1 | 3260.1 | 3260.1 | 3260.1 |
| 2.5°  | 3239.2 | 3246.8 | 3262.0 | 3267.7 | 3267.7 |
| 5°    | 3224.0 | 3231.6 | 3248.7 | 3256.3 | 3256.3 |
| 7.5°  | 3199.3 | 3206.9 | 3227.8 | 3237.3 | 3239.2 |
| 10°   | 3163.2 | 3172.7 | 3193.6 | 3208.8 | 3208.8 |
| 12.5° | 3117.6 | 3127.1 | 3153.7 | 3172.7 | 3174.6 |
| 15°   | 3060.6 | 3073.9 | 3104.3 | 3127.1 | 3132.8 |
| 17.5° | 2994.1 | 3015.0 | 3049.2 | 3077.7 | 3083.4 |
| 20°   | 2923.8 | 2944.7 | 2984.6 | 3016.9 | 3024.5 |
| 22.5° | 2845.9 | 2864.9 | 2912.4 | 2952.3 | 2961.8 |
| 25°   | 2764.3 | 2785.2 | 2834.5 | 2878.2 | 2893.4 |
| 27.5° | 2667.4 | 2692.1 | 2751.0 | 2800.4 | 2815.5 |
| 30°   | 2568.6 | 2599.0 | 2659.8 | 2714.9 | 2732.0 |
| 32.5° | 2467.9 | 2496.4 | 2564.8 | 2623.7 | 2646.5 |
| 35°   | 2361.5 | 2391.9 | 2462.2 | 2530.6 | 2559.1 |
| 37.5° | 2249.4 | 2279.8 | 2355.8 | 2433.7 | 2460.3 |
| 40°   | 2133.5 | 2169.6 | 2251.3 | 2334.9 | 2363.4 |
| 42.5° | 2015.7 | 2053.7 | 2139.2 | 2232.3 | 2270.3 |
| 45°   | 1894.1 | 1935.9 | 2030.9 | 2129.7 | 2171.5 |
| 47.5° | 1783.9 | 1818.1 | 1916.9 | 2025.2 | 2065.1 |
| 50°   | 1666.2 | 1698.4 | 1808.6 | 1916.9 | 1958.7 |
| 52.5° | 1546.5 | 1576.9 | 1694.6 | 1808.6 | 1859.9 |
| 55°   | 1417.3 | 1461.0 | 1578.8 | 1700.3 | 1751.6 |
| 57.5° | 1303.3 | 1343.2 | 1464.8 | 1588.3 | 1637.7 |
| 60°   | 1179.8 | 1221.6 | 1352.7 | 1478.1 | 1531.3 |
| 62.5° | 1056.3 | 1101.9 | 1234.9 | 1369.8 | 1419.2 |
| 65°   | 927.1  | 984.1  | 1128.5 | 1253.9 | 1314.7 |
| 67.5° | 816.9  | 872.0  | 1014.5 | 1145.6 | 1198.8 |
| 70°   | 693.4  | 758.0  | 900.5  | 1033.5 | 1090.5 |
| 72.5° | 577.5  | 642.1  | 788.4  | 921.4  | 978.4  |
| 75°   | 469.3  | 539.6  | 678.2  | 799.8  | 830.2  |
| 77.5° | 364.8  | 431.3  | 569.9  | 640.2  | 672.5  |
| 80°   | 264.1  | 328.7  | 431.3  | 478.8  | 486.4  |
| 82.5° | 178.6  | 233.7  | 292.6  | 305.9  | 298.3  |
| 85°   | 102.6  | 131.1  | 148.2  | 148.2  | 138.7  |
| 87.5° | 41.8   | 41.8   | 36.1   | 22.8   | 13.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)