

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: P474818

Luminaire Tested: **22CZ2-110VHE-UNV-L835-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474818  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-110VHE-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: 11019.5 lumens  
Efficiency: N/A  
Efficacy: 131.0 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

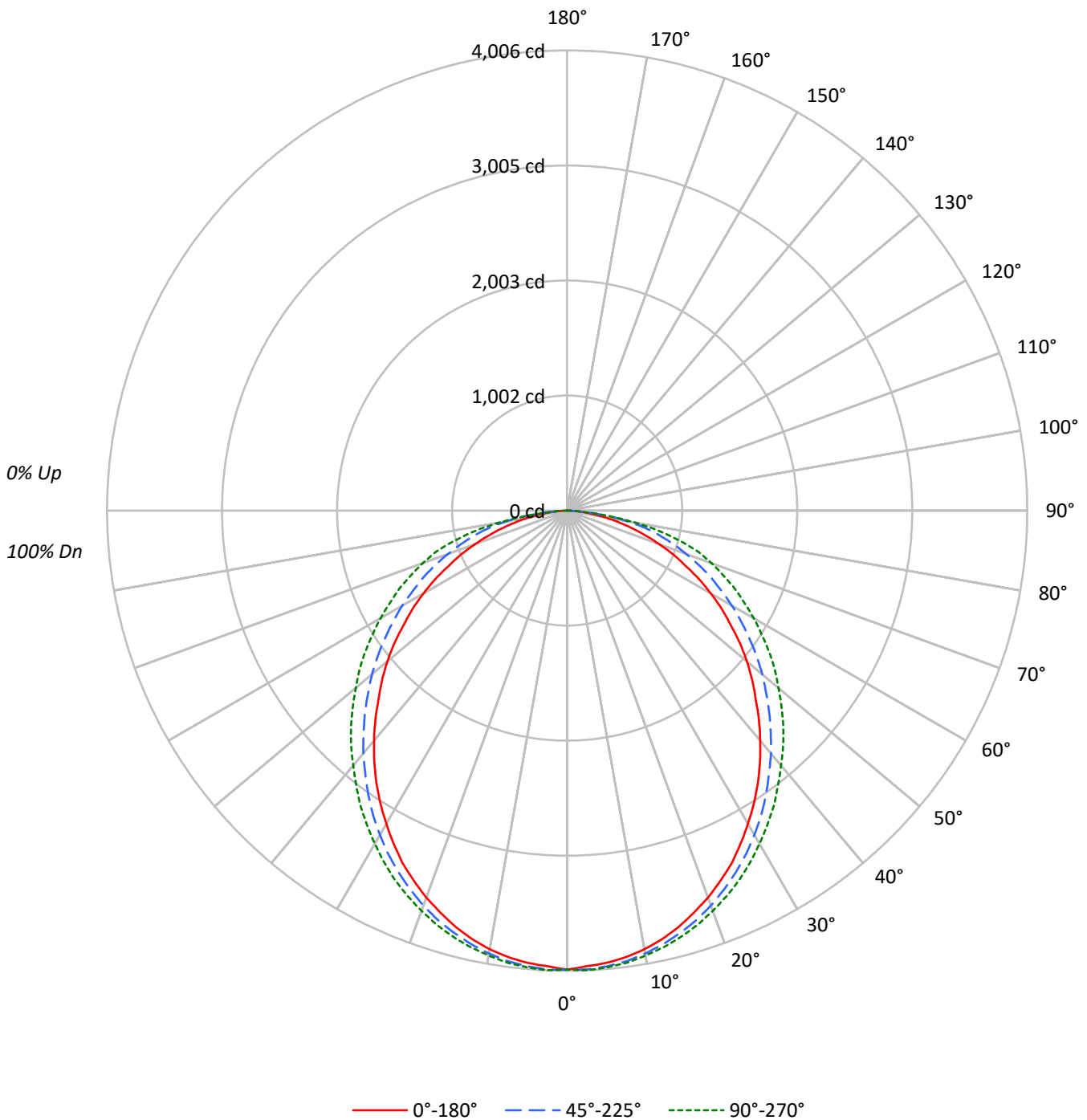
Input Watts (W): 84.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P474818

CATALOG NUMBER: 22CZ2-110VHE-UNV-L835-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P474818

CATALOG NUMBER: 22CZ2-110VHE-UNV-L835-CD1-U

**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°  | 10754 | 10754 | 10754 |
| 5°  | 10675 | 10757 | 10782 |
| 10° | 10595 | 10697 | 10748 |
| 15° | 10452 | 10601 | 10698 |
| 20° | 10264 | 10477 | 10617 |
| 25° | 10061 | 10317 | 10531 |
| 30° | 9784  | 10131 | 10406 |
| 35° | 9509  | 9915  | 10305 |
| 40° | 9187  | 9694  | 10177 |
| 45° | 8836  | 9474  | 10130 |
| 50° | 8550  | 9281  | 10052 |
| 55° | 8151  | 9080  | 10074 |
| 60° | 7783  | 8924  | 10102 |
| 65° | 7237  | 8808  | 10261 |
| 70° | 6688  | 8685  | 10517 |
| 75° | 5980  | 8644  | 10581 |
| 80° | 5016  | 8192  | 9239  |
| 85° | 3884  | 5607  | 5249  |



TEST NUMBER: P474818

CATALOG NUMBER: 22CZ2-110VHE-UNV-L835-CD1-U

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 377.5   | 3.4       |
| 10°-20°   | 1071.8  | 9.7       |
| 20°-30°   | 1598.1  | 14.5      |
| 30°-40°   | 1886.5  | 17.1      |
| 40°-50°   | 1922.8  | 17.4      |
| 50°-60°   | 1733.9  | 15.7      |
| 60°-70°   | 1362.9  | 12.4      |
| 70°-80°   | 853.3   | 7.7       |
| 80°-90°   | 212.7   | 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°    | 3047.4  | 27.7      |
| 0°-40°    | 4934.0  | 44.8      |
| 0°-60°    | 8590.7  | 78.0      |
| 0°-90°    | 11019.5 | 100.0     |
| 90°-120°  | 0.0     | 0.0       |
| 90°-150°  | 0.0     | 0.0       |
| 90°-180°  | 0.0     | 0.0       |
| 0°-180°   | 11019.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3996 | 3996  | 3996 | 3996  | 3996 |      |
| 5°  | 3952 | 3961  | 3982 | 3992  | 3992 | 375  |
| 15° | 3752 | 3768  | 3805 | 3833  | 3840 | 1057 |
| 25° | 3388 | 3414  | 3475 | 3528  | 3547 | 1558 |
| 35° | 2895 | 2932  | 3018 | 3102  | 3137 | 1809 |
| 45° | 2322 | 2373  | 2490 | 2611  | 2662 | 1796 |
| 55° | 1737 | 1791  | 1935 | 2084  | 2147 | 1559 |
| 65° | 1136 | 1206  | 1383 | 1537  | 1612 | 1133 |
| 75° | 575  | 661   | 831  | 980   | 1018 | 611  |
| 85° | 126  | 161   | 182  | 182   | 170  | 152  |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



TEST NUMBER: P474818

CATALOG NUMBER: 22CZ2-110VHE-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 3996.3 | 3996.3 | 3996.3 | 3996.3 | 3996.3 |
| 2.5°  | 3970.6 | 3980.0 | 3998.6 | 4005.6 | 4005.6 |
| 5°    | 3952.0 | 3961.3 | 3982.3 | 3991.6 | 3991.6 |
| 7.5°  | 3921.7 | 3931.1 | 3956.7 | 3968.3 | 3970.6 |
| 10°   | 3877.5 | 3889.1 | 3914.8 | 3933.4 | 3933.4 |
| 12.5° | 3821.6 | 3833.2 | 3865.8 | 3889.1 | 3891.5 |
| 15°   | 3751.7 | 3768.0 | 3805.3 | 3833.2 | 3840.2 |
| 17.5° | 3670.2 | 3695.8 | 3737.8 | 3772.7 | 3779.7 |
| 20°   | 3584.1 | 3609.7 | 3658.6 | 3698.2 | 3707.5 |
| 22.5° | 3488.6 | 3511.9 | 3570.1 | 3619.0 | 3630.6 |
| 25°   | 3388.4 | 3414.1 | 3474.6 | 3528.2 | 3546.8 |
| 27.5° | 3269.7 | 3299.9 | 3372.1 | 3432.7 | 3451.3 |
| 30°   | 3148.6 | 3185.8 | 3260.4 | 3327.9 | 3348.9 |
| 32.5° | 3025.1 | 3060.1 | 3143.9 | 3216.1 | 3244.1 |
| 35°   | 2894.7 | 2932.0 | 3018.2 | 3102.0 | 3136.9 |
| 37.5° | 2757.3 | 2794.6 | 2887.7 | 2983.2 | 3015.8 |
| 40°   | 2615.3 | 2659.5 | 2759.7 | 2862.1 | 2897.1 |
| 42.5° | 2470.9 | 2517.5 | 2622.3 | 2736.4 | 2782.9 |
| 45°   | 2321.8 | 2373.1 | 2489.5 | 2610.6 | 2661.8 |
| 47.5° | 2186.8 | 2228.7 | 2349.8 | 2482.5 | 2531.4 |
| 50°   | 2042.4 | 2082.0 | 2217.0 | 2349.8 | 2401.0 |
| 52.5° | 1895.7 | 1932.9 | 2077.3 | 2217.0 | 2279.9 |
| 55°   | 1737.3 | 1790.9 | 1935.3 | 2084.3 | 2147.2 |
| 57.5° | 1597.6 | 1646.5 | 1795.5 | 1946.9 | 2007.4 |
| 60°   | 1446.2 | 1497.4 | 1658.1 | 1811.8 | 1877.0 |
| 62.5° | 1294.8 | 1350.7 | 1513.7 | 1679.1 | 1739.6 |
| 65°   | 1136.5 | 1206.3 | 1383.3 | 1537.0 | 1611.5 |
| 67.5° | 1001.4 | 1068.9 | 1243.6 | 1404.3 | 1469.5 |
| 70°   | 850.0  | 929.2  | 1103.9 | 1266.9 | 1336.7 |
| 72.5° | 708.0  | 787.1  | 966.5  | 1129.5 | 1199.3 |
| 75°   | 575.2  | 661.4  | 831.4  | 980.4  | 1017.7 |
| 77.5° | 447.1  | 528.6  | 698.6  | 784.8  | 824.4  |
| 80°   | 323.7  | 402.9  | 528.6  | 586.9  | 596.2  |
| 82.5° | 218.9  | 286.4  | 358.6  | 374.9  | 365.6  |
| 85°   | 125.8  | 160.7  | 181.6  | 181.6  | 170.0  |
| 87.5° | 51.2   | 51.2   | 44.2   | 27.9   | 16.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)