

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: P475042

Luminaire Tested: **22CZ2-70VHE-RDP-UNV-L835-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P475042  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-70VHE-RDP-UNV-L835-CD1-U  
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ RDP  
INSERT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4672.1 lumens  
Efficiency: N/A  
Efficacy: 94.8 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

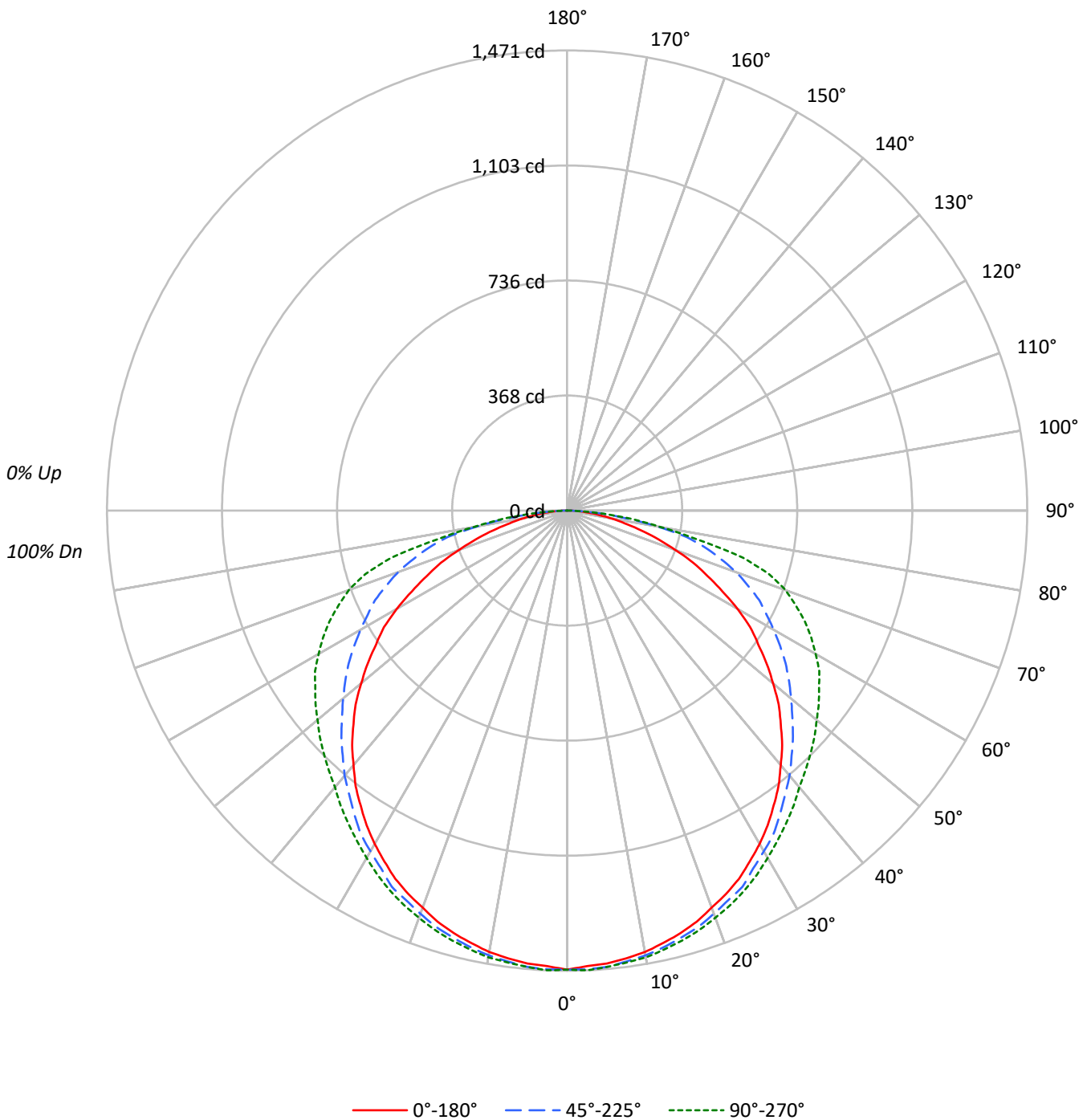
Input Watts (W): 49.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 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 |    |    |    |    | 100 |   |  |   |
| 1   | 108 | 103 | 98  | 94  | 105 | 100 | 96  | 92  | 96  | 92  | 89  | 92  | 89  | 86  | 88  | 86  | 84  | 82  |    |    |    |    | 82  |   |  |   |
| 2   | 97  | 88  | 81  | 75  | 95  | 86  | 80  | 74  | 83  | 77  | 72  | 80  | 75  | 71  | 76  | 72  | 69  | 67  |    |    |    |    | 67  |   |  |   |
| 3   | 88  | 77  | 68  | 61  | 86  | 75  | 67  | 61  | 72  | 65  | 60  | 70  | 64  | 59  | 67  | 62  | 58  | 55  |    |    |    |    | 55  |   |  |   |
| 4   | 80  | 68  | 59  | 51  | 78  | 66  | 58  | 51  | 64  | 56  | 50  | 61  | 55  | 50  | 59  | 54  | 49  | 47  |    |    |    |    | 47  |   |  |   |
| 5   | 74  | 60  | 51  | 44  | 72  | 59  | 50  | 44  | 57  | 49  | 43  | 55  | 48  | 43  | 53  | 47  | 42  | 40  |    |    |    |    | 40  |   |  |   |
| 6   | 68  | 54  | 45  | 38  | 66  | 53  | 44  | 38  | 51  | 43  | 38  | 50  | 43  | 37  | 48  | 42  | 37  | 35  |    |    |    |    | 35  |   |  |   |
| 7   | 63  | 49  | 40  | 33  | 61  | 48  | 39  | 33  | 47  | 39  | 33  | 45  | 38  | 33  | 44  | 37  | 33  | 31  |    |    |    |    | 31  |   |  |   |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 35  | 30  | 43  | 35  | 29  | 41  | 34  | 29  | 40  | 34  | 29  | 27  |    |    |    |    | 27  |   |  |   |
| 9   | 55  | 41  | 32  | 27  | 53  | 40  | 32  | 27  | 39  | 32  | 26  | 38  | 31  | 26  | 37  | 31  | 26  | 24  |    |    |    |    | 24  |   |  |   |
| 10  | 51  | 38  | 30  | 24  | 50  | 37  | 29  | 24  | 36  | 29  | 24  | 35  | 29  | 24  | 34  | 28  | 24  | 22  |    |    |    |    | 22  |   |  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3949 | 3949 | 3949 |
| 5°  | 3927 | 3955 | 3955 |
| 10° | 3916 | 3945 | 3963 |
| 15° | 3897 | 3935 | 3964 |
| 20° | 3868 | 3927 | 3967 |
| 25° | 3857 | 3939 | 3980 |
| 30° | 3824 | 3908 | 3984 |
| 35° | 3782 | 3895 | 4008 |
| 40° | 3731 | 3887 | 4056 |
| 45° | 3675 | 3885 | 4185 |
| 50° | 3597 | 3913 | 4359 |
| 55° | 3499 | 3999 | 4611 |
| 60° | 3386 | 4106 | 4938 |
| 65° | 3151 | 4312 | 5341 |
| 70° | 2894 | 4517 | 5842 |
| 75° | 2539 | 4750 | 6040 |
| 80° | 2185 | 4525 | 4742 |
| 85° | 1908 | 3291 | 3606 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 138.8  | 3.0       |
| 10°-20°   | 398.6  | 8.5       |
| 20°-30°   | 608.1  | 13.0      |
| 30°-40°   | 742.5  | 15.9      |
| 40°-50°   | 793.9  | 17.0      |
| 50°-60°   | 766.3  | 16.4      |
| 60°-70°   | 659.7  | 14.1      |
| 70°-80°   | 446.3  | 9.6       |
| 80°-90°   | 117.8  | 2.5       |
| 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°    | 1145.5 | 24.5      |
| 0°-40°    | 1888.0 | 40.4      |
| 0°-60°    | 3448.2 | 73.8      |
| 0°-90°    | 4672.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4672.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1468 | 1468  | 1468 | 1468  | 1468 |      |
| 5°  | 1454 | 1457  | 1464 | 1464  | 1464 | 138  |
| 15° | 1399 | 1402  | 1412 | 1419  | 1423 | 395  |
| 25° | 1299 | 1306  | 1327 | 1334  | 1340 | 598  |
| 35° | 1151 | 1162  | 1186 | 1210  | 1220 | 720  |
| 45° | 966  | 983   | 1021 | 1072  | 1100 | 745  |
| 55° | 746  | 770   | 852  | 938   | 983  | 668  |
| 65° | 495  | 543   | 677  | 783   | 839  | 492  |
| 75° | 244  | 323   | 457  | 550   | 581  | 262  |
| 85° | 62   | 86    | 107  | 110   | 117  | 70   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1467.5 | 1467.5 | 1467.5 | 1467.5 | 1467.5 |
| 2.5°  | 1457.2 | 1460.7 | 1467.5 | 1467.5 | 1470.9 |
| 5°    | 1453.8 | 1457.2 | 1464.1 | 1464.1 | 1464.1 |
| 7.5°  | 1443.6 | 1447.0 | 1453.8 | 1457.2 | 1457.2 |
| 10°   | 1433.0 | 1436.7 | 1443.6 | 1447.0 | 1450.4 |
| 12.5° | 1415.9 | 1419.3 | 1429.6 | 1436.7 | 1436.7 |
| 15°   | 1398.8 | 1402.3 | 1412.5 | 1419.3 | 1422.7 |
| 17.5° | 1378.0 | 1385.2 | 1395.4 | 1402.3 | 1405.7 |
| 20°   | 1350.7 | 1357.5 | 1371.2 | 1381.8 | 1385.2 |
| 22.5° | 1326.8 | 1333.6 | 1347.3 | 1357.5 | 1364.3 |
| 25°   | 1299.1 | 1305.9 | 1326.8 | 1333.6 | 1340.4 |
| 27.5° | 1264.6 | 1271.8 | 1288.9 | 1302.5 | 1312.8 |
| 30°   | 1230.5 | 1237.3 | 1257.8 | 1275.2 | 1282.0 |
| 32.5° | 1192.6 | 1202.8 | 1227.1 | 1240.7 | 1251.0 |
| 35°   | 1151.2 | 1161.5 | 1185.7 | 1209.6 | 1220.2 |
| 37.5° | 1110.3 | 1120.5 | 1144.4 | 1175.5 | 1189.2 |
| 40°   | 1062.1 | 1075.8 | 1106.5 | 1147.8 | 1154.7 |
| 42.5° | 1017.4 | 1034.4 | 1062.1 | 1110.3 | 1127.3 |
| 45°   | 965.8  | 982.9  | 1020.8 | 1072.4 | 1099.7 |
| 47.5° | 917.6  | 934.7  | 976.0  | 1037.9 | 1072.4 |
| 50°   | 859.2  | 883.2  | 934.7  | 1007.1 | 1041.3 |
| 52.5° | 804.3  | 824.8  | 893.7  | 972.6  | 1014.0 |
| 55°   | 745.9  | 769.8  | 852.4  | 938.1  | 982.9  |
| 57.5° | 694.3  | 714.8  | 807.7  | 904.0  | 955.6  |
| 60°   | 629.1  | 656.4  | 762.9  | 866.1  | 917.6  |
| 62.5° | 560.1  | 601.4  | 718.2  | 824.8  | 879.7  |
| 65°   | 494.9  | 543.0  | 677.2  | 783.4  | 838.8  |
| 67.5° | 436.5  | 488.0  | 625.7  | 739.0  | 790.6  |
| 70°   | 367.8  | 433.0  | 574.1  | 684.1  | 742.5  |
| 72.5° | 306.0  | 378.1  | 515.7  | 625.7  | 677.2  |
| 75°   | 244.2  | 323.1  | 456.9  | 549.8  | 580.9  |
| 77.5° | 188.9  | 264.7  | 391.7  | 419.4  | 422.8  |
| 80°   | 141.0  | 209.7  | 292.0  | 295.4  | 306.0  |
| 82.5° | 96.3   | 147.9  | 188.9  | 206.3  | 209.7  |
| 85°   | 61.8   | 86.1   | 106.6  | 110.0  | 116.8  |
| 87.5° | 27.7   | 31.1   | 37.9   | 34.5   | 34.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)