

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: P474821

Luminaire Tested: **22CZ2-32-UNV-L840-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474821  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-32-UNV-L840-CD1-U  
Description: 2'X2' TROFFER LED MODULE, RIBBED LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

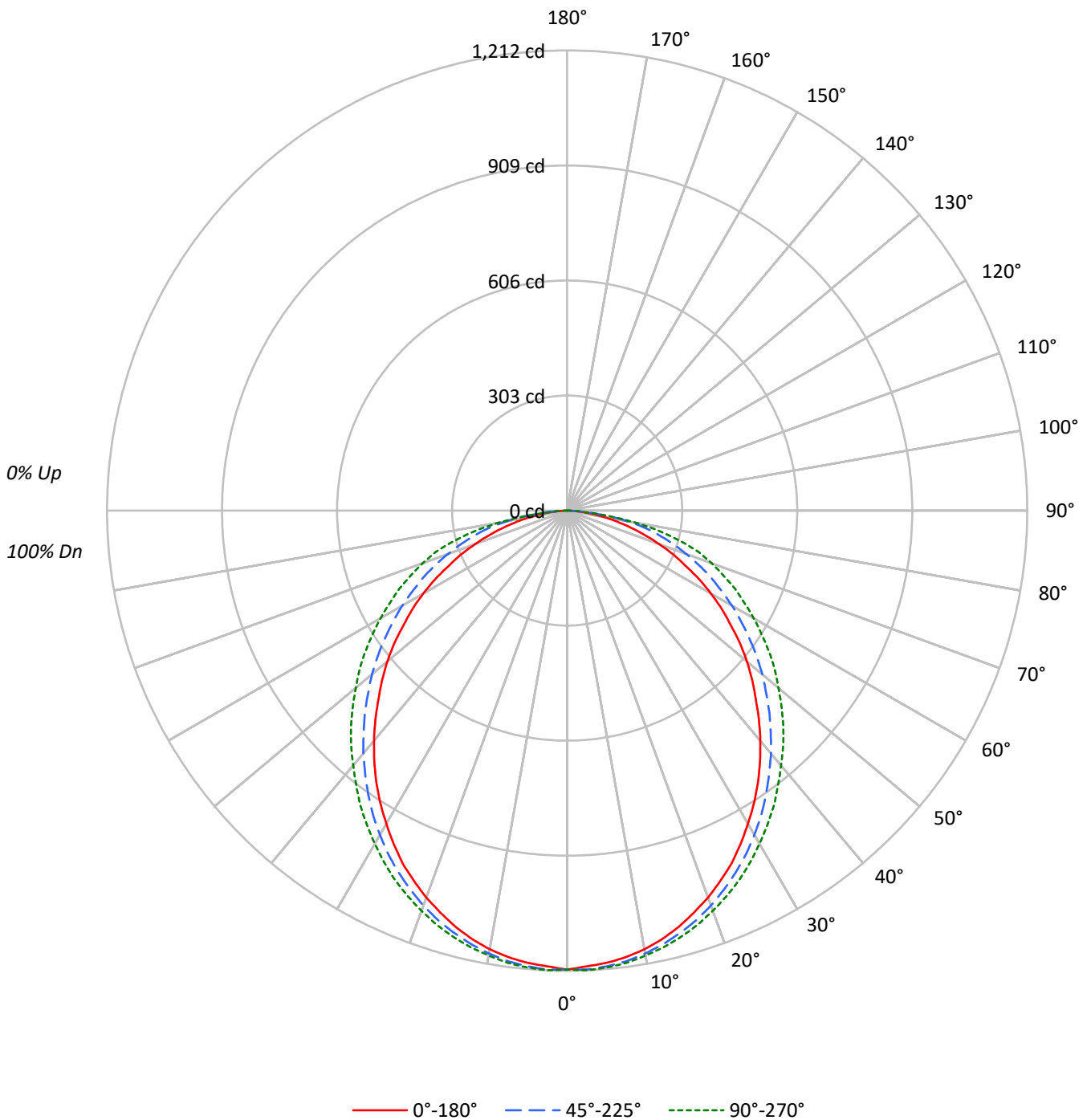
Lumens per Lamp: N/A  
Luminaire Lumens: 3334.0 lumens  
Efficiency: N/A  
Efficacy: 137.8 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.25 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 24.2  
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°  | 3254 | 3254 | 3254 |
| 5°  | 3230 | 3255 | 3262 |
| 10° | 3206 | 3236 | 3252 |
| 15° | 3162 | 3207 | 3237 |
| 20° | 3105 | 3170 | 3212 |
| 25° | 3044 | 3121 | 3186 |
| 30° | 2960 | 3065 | 3148 |
| 35° | 2877 | 3000 | 3118 |
| 40° | 2780 | 2933 | 3079 |
| 45° | 2673 | 2866 | 3065 |
| 50° | 2587 | 2808 | 3041 |
| 55° | 2466 | 2747 | 3048 |
| 60° | 2355 | 2700 | 3056 |
| 65° | 2189 | 2665 | 3105 |
| 70° | 2024 | 2628 | 3182 |
| 75° | 1809 | 2615 | 3201 |
| 80° | 1517 | 2478 | 2796 |
| 85° | 1173 | 1698 | 1587 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 114.2  | 3.4       |
| 10°-20°   | 324.3  | 9.7       |
| 20°-30°   | 483.5  | 14.5      |
| 30°-40°   | 570.8  | 17.1      |
| 40°-50°   | 581.7  | 17.4      |
| 50°-60°   | 524.6  | 15.7      |
| 60°-70°   | 412.3  | 12.4      |
| 70°-80°   | 258.2  | 7.7       |
| 80°-90°   | 64.4   | 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°    | 922.0  | 27.7      |
| 0°-40°    | 1492.8 | 44.8      |
| 0°-60°    | 2599.2 | 78.0      |
| 0°-90°    | 3334.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3334.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1209 | 1209  | 1209 | 1209  | 1209 |      |
| 5°  | 1196 | 1198  | 1205 | 1208  | 1208 | 113  |
| 15° | 1135 | 1140  | 1151 | 1160  | 1162 | 320  |
| 25° | 1025 | 1033  | 1051 | 1068  | 1073 | 471  |
| 35° | 876  | 887   | 913  | 938   | 949  | 547  |
| 45° | 702  | 718   | 753  | 790   | 805  | 543  |
| 55° | 526  | 542   | 586  | 631   | 650  | 472  |
| 65° | 344  | 365   | 418  | 465   | 488  | 343  |
| 75° | 174  | 200   | 252  | 297   | 308  | 185  |
| 85° | 38   | 49    | 55   | 55    | 51   | 46   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1209.1 | 1209.1 | 1209.1 | 1209.1 | 1209.1 |
| 2.5°  | 1201.3 | 1204.2 | 1209.8 | 1211.9 | 1211.9 |
| 5°    | 1195.7 | 1198.5 | 1204.9 | 1207.7 | 1207.7 |
| 7.5°  | 1186.5 | 1189.4 | 1197.1 | 1200.6 | 1201.3 |
| 10°   | 1173.2 | 1176.7 | 1184.4 | 1190.1 | 1190.1 |
| 12.5° | 1156.2 | 1159.8 | 1169.6 | 1176.7 | 1177.4 |
| 15°   | 1135.1 | 1140.0 | 1151.3 | 1159.8 | 1161.9 |
| 17.5° | 1110.4 | 1118.2 | 1130.9 | 1141.5 | 1143.6 |
| 20°   | 1084.4 | 1092.1 | 1106.9 | 1118.9 | 1121.7 |
| 22.5° | 1055.5 | 1062.5 | 1080.2 | 1094.9 | 1098.5 |
| 25°   | 1025.2 | 1032.9 | 1051.3 | 1067.5 | 1073.1 |
| 27.5° | 989.3  | 998.4  | 1020.3 | 1038.6 | 1044.2 |
| 30°   | 952.6  | 963.9  | 986.4  | 1006.9 | 1013.2 |
| 32.5° | 915.3  | 925.8  | 951.2  | 973.1  | 981.5  |
| 35°   | 875.8  | 887.1  | 913.2  | 938.5  | 949.1  |
| 37.5° | 834.2  | 845.5  | 873.7  | 902.6  | 912.5  |
| 40°   | 791.3  | 804.7  | 835.0  | 866.0  | 876.5  |
| 42.5° | 747.6  | 761.7  | 793.4  | 827.9  | 842.0  |
| 45°   | 702.5  | 718.0  | 753.2  | 789.9  | 805.4  |
| 47.5° | 661.6  | 674.3  | 710.9  | 751.1  | 765.9  |
| 50°   | 617.9  | 629.9  | 670.8  | 710.9  | 726.4  |
| 52.5° | 573.5  | 584.8  | 628.5  | 670.8  | 689.8  |
| 55°   | 525.6  | 541.8  | 585.5  | 630.6  | 649.6  |
| 57.5° | 483.4  | 498.2  | 543.2  | 589.0  | 607.4  |
| 60°   | 437.6  | 453.1  | 501.7  | 548.2  | 567.9  |
| 62.5° | 391.8  | 408.7  | 458.0  | 508.0  | 526.3  |
| 65°   | 343.8  | 365.0  | 418.5  | 465.0  | 487.6  |
| 67.5° | 303.0  | 323.4  | 376.3  | 424.9  | 444.6  |
| 70°   | 257.2  | 281.1  | 334.0  | 383.3  | 404.4  |
| 72.5° | 214.2  | 238.2  | 292.4  | 341.7  | 362.9  |
| 75°   | 174.0  | 200.1  | 251.5  | 296.6  | 307.9  |
| 77.5° | 135.3  | 159.9  | 211.4  | 237.5  | 249.4  |
| 80°   | 97.9   | 121.9  | 159.9  | 177.6  | 180.4  |
| 82.5° | 66.2   | 86.7   | 108.5  | 113.4  | 110.6  |
| 85°   | 38.0   | 48.6   | 55.0   | 55.0   | 51.4   |
| 87.5° | 15.5   | 15.5   | 13.4   | 8.5    | 4.9    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)