

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: P474172

Luminaire Tested: **24CZ2-45HE-RDP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474172  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-45HE-RDP-UNV-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY,SMOOTH LENS W/ RDP INSERT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3046.6 lumens  
Efficiency: N/A  
Efficacy: 86.3 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

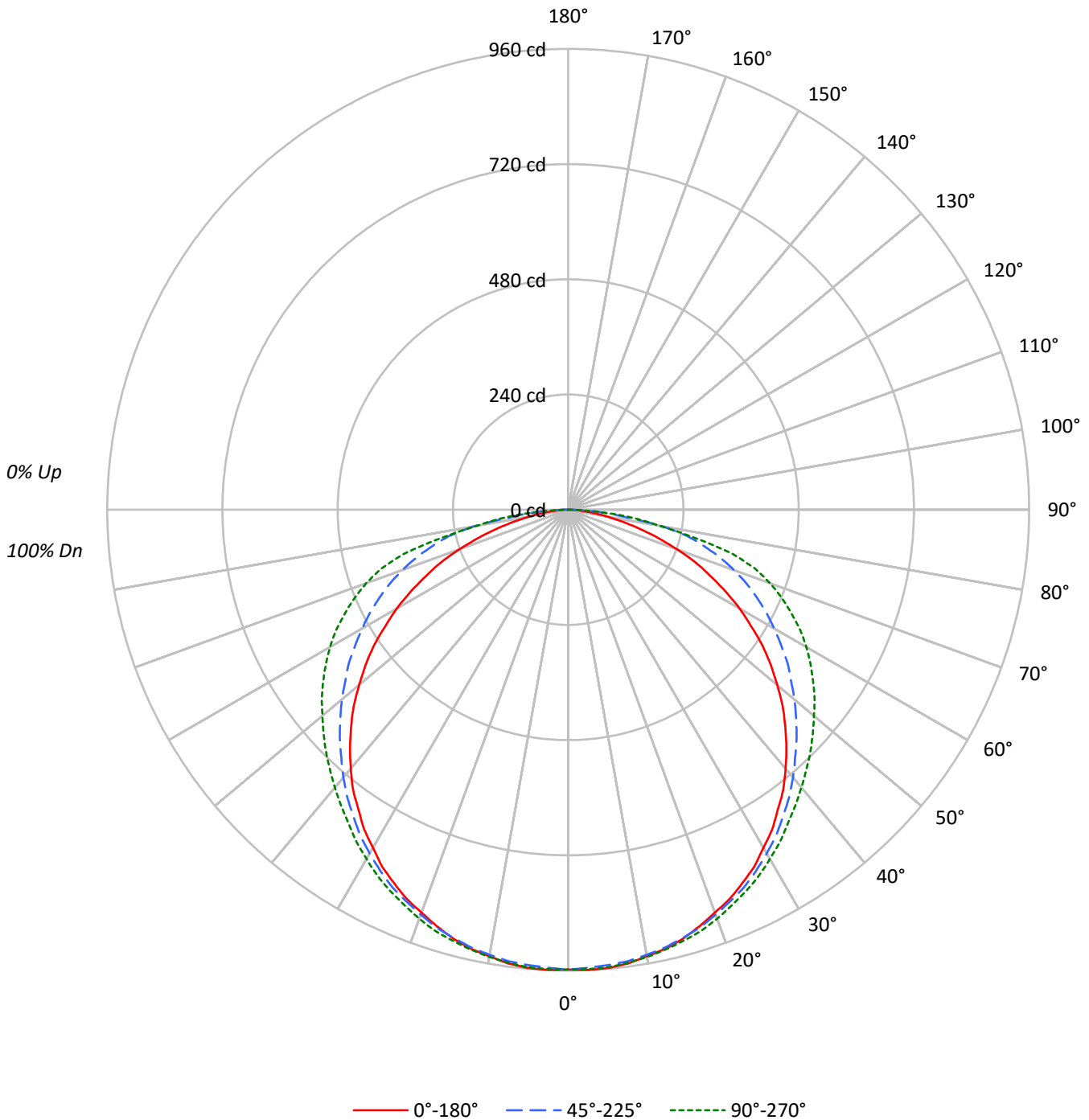
Input Watts (W): 35.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 108 | 103 | 98  | 94  | 105 | 100 | 96  | 92  | 96  | 93  | 89  | 92  | 89  | 87  | 88  | 86  | 84  | 82  |
| 2   | 97  | 89  | 81  | 75  | 95  | 87  | 80  | 74  | 83  | 77  | 72  | 80  | 75  | 71  | 77  | 73  | 69  | 67  |
| 3   | 88  | 77  | 68  | 62  | 86  | 76  | 67  | 61  | 72  | 66  | 60  | 70  | 64  | 59  | 67  | 62  | 58  | 56  |
| 4   | 81  | 68  | 59  | 52  | 78  | 67  | 58  | 51  | 64  | 57  | 51  | 62  | 55  | 50  | 59  | 54  | 49  | 47  |
| 5   | 74  | 60  | 51  | 44  | 72  | 59  | 51  | 44  | 57  | 49  | 43  | 55  | 48  | 43  | 53  | 47  | 42  | 40  |
| 6   | 68  | 54  | 45  | 38  | 66  | 53  | 45  | 38  | 51  | 44  | 38  | 50  | 43  | 37  | 48  | 42  | 37  | 35  |
| 7   | 63  | 49  | 40  | 34  | 61  | 48  | 40  | 34  | 47  | 39  | 33  | 45  | 38  | 33  | 44  | 38  | 33  | 31  |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 35  | 30  | 41  | 34  | 29  | 40  | 34  | 29  | 27  |
| 9   | 55  | 41  | 33  | 27  | 53  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 26  | 37  | 31  | 26  | 24  |
| 10  | 51  | 38  | 30  | 24  | 50  | 37  | 29  | 24  | 36  | 29  | 24  | 35  | 29  | 24  | 34  | 28  | 24  | 22  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1289 | 1289 | 1289 |
| 5°  | 1294 | 1286 | 1292 |
| 10° | 1290 | 1286 | 1292 |
| 15° | 1288 | 1286 | 1295 |
| 20° | 1279 | 1285 | 1298 |
| 25° | 1274 | 1288 | 1301 |
| 30° | 1263 | 1284 | 1305 |
| 35° | 1251 | 1281 | 1310 |
| 40° | 1237 | 1279 | 1327 |
| 45° | 1216 | 1280 | 1357 |
| 50° | 1189 | 1288 | 1398 |
| 55° | 1159 | 1308 | 1460 |
| 60° | 1110 | 1334 | 1541 |
| 65° | 1039 | 1380 | 1636 |
| 70° | 945  | 1445 | 1759 |
| 75° | 801  | 1524 | 1838 |
| 80° | 632  | 1533 | 1487 |
| 85° | 466  | 1167 | 1308 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 90.9   | 3.0       |
| 10°-20°   | 261.6  | 8.6       |
| 20°-30°   | 400.0  | 13.1      |
| 30°-40°   | 488.9  | 16.0      |
| 40°-50°   | 521.1  | 17.1      |
| 50°-60°   | 498.3  | 16.4      |
| 60°-70°   | 422.1  | 13.9      |
| 70°-80°   | 283.7  | 9.3       |
| 80°-90°   | 80.0   | 2.6       |
| 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°    | 752.4  | 24.7      |
| 0°-40°    | 1241.4 | 40.7      |
| 0°-60°    | 2260.8 | 74.2      |
| 0°-90°    | 3046.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3046.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 958 | 958   | 958 | 958   | 958 |      |
| 5°  | 958 | 957   | 952 | 957   | 957 | 91   |
| 15° | 925 | 925   | 923 | 931   | 929 | 261  |
| 25° | 858 | 861   | 867 | 875   | 876 | 396  |
| 35° | 762 | 768   | 780 | 795   | 798 | 477  |
| 45° | 639 | 650   | 672 | 701   | 713 | 493  |
| 55° | 494 | 512   | 558 | 601   | 623 | 440  |
| 65° | 326 | 360   | 434 | 491   | 514 | 324  |
| 75° | 154 | 210   | 293 | 343   | 354 | 165  |
| 85° | 30  | 62    | 76  | 82    | 85  | 37   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



TEST NUMBER: P474172

CATALOG NUMBER: 24CZ2-45HE-RDP-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 958.1 | 958.1 | 958.1 | 958.1 | 958.1 |
| 2.5°  | 959.6 | 959.6 | 955.1 | 958.1 | 958.1 |
| 5°    | 958.1 | 956.6 | 952.1 | 956.6 | 956.6 |
| 7.5°  | 953.6 | 952.1 | 949.0 | 953.6 | 952.1 |
| 10°   | 944.5 | 944.5 | 941.5 | 946.0 | 946.0 |
| 12.5° | 936.9 | 935.4 | 933.9 | 940.0 | 938.5 |
| 15°   | 924.8 | 924.8 | 923.3 | 930.9 | 929.4 |
| 17.5° | 909.7 | 911.2 | 912.8 | 918.8 | 920.3 |
| 20°   | 893.1 | 896.1 | 897.6 | 906.7 | 906.7 |
| 22.5° | 878.0 | 879.5 | 882.5 | 891.6 | 891.6 |
| 25°   | 858.3 | 861.3 | 867.4 | 875.0 | 876.5 |
| 27.5° | 838.7 | 840.2 | 847.7 | 858.3 | 859.8 |
| 30°   | 813.0 | 817.5 | 826.6 | 838.7 | 840.2 |
| 32.5° | 790.3 | 794.8 | 805.4 | 817.5 | 820.5 |
| 35°   | 761.6 | 767.6 | 779.7 | 794.8 | 797.8 |
| 37.5° | 735.9 | 740.4 | 755.5 | 772.1 | 776.7 |
| 40°   | 704.3 | 713.2 | 728.3 | 748.0 | 755.5 |
| 42.5° | 672.5 | 681.6 | 699.7 | 725.3 | 734.3 |
| 45°   | 639.2 | 649.8 | 672.5 | 701.2 | 713.2 |
| 47.5° | 606.0 | 618.1 | 643.8 | 677.0 | 690.7 |
| 50°   | 568.2 | 583.3 | 615.1 | 652.9 | 668.0 |
| 52.5° | 531.9 | 550.0 | 584.8 | 627.1 | 646.8 |
| 55°   | 494.1 | 512.2 | 557.6 | 601.4 | 622.6 |
| 57.5° | 451.8 | 476.0 | 525.9 | 575.7 | 598.4 |
| 60°   | 412.6 | 435.1 | 495.6 | 550.0 | 572.7 |
| 62.5° | 370.3 | 400.5 | 465.4 | 522.8 | 545.5 |
| 65°   | 326.4 | 359.7 | 433.6 | 491.1 | 513.8 |
| 67.5° | 287.1 | 323.4 | 402.0 | 459.3 | 482.0 |
| 70°   | 240.2 | 285.6 | 367.2 | 424.6 | 447.2 |
| 72.5° | 196.4 | 246.3 | 331.0 | 386.9 | 408.1 |
| 75°   | 154.1 | 210.0 | 293.2 | 343.1 | 353.6 |
| 77.5° | 114.9 | 173.7 | 253.9 | 275.0 | 267.5 |
| 80°   | 81.6  | 139.1 | 197.9 | 187.3 | 191.9 |
| 82.5° | 52.9  | 105.8 | 122.5 | 139.1 | 143.5 |
| 85°   | 30.2  | 62.0  | 75.6  | 81.6  | 84.7  |
| 87.5° | 13.6  | 22.7  | 30.2  | 30.2  | 28.7  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)