

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: P184158

Luminaire Tested: **24FR-30-HP-UNV-L827-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P184158  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27148)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24FR-30-HP-UNV-L827-CD1-U  
Description: METALUX 2X4 FR TROFFER LED HIGH EFFICIENCY FIXTURE  
  
Light Source: EATON LED 2700K  
Ballast/Driver: OSRAM ELECTRONIC DRIVER

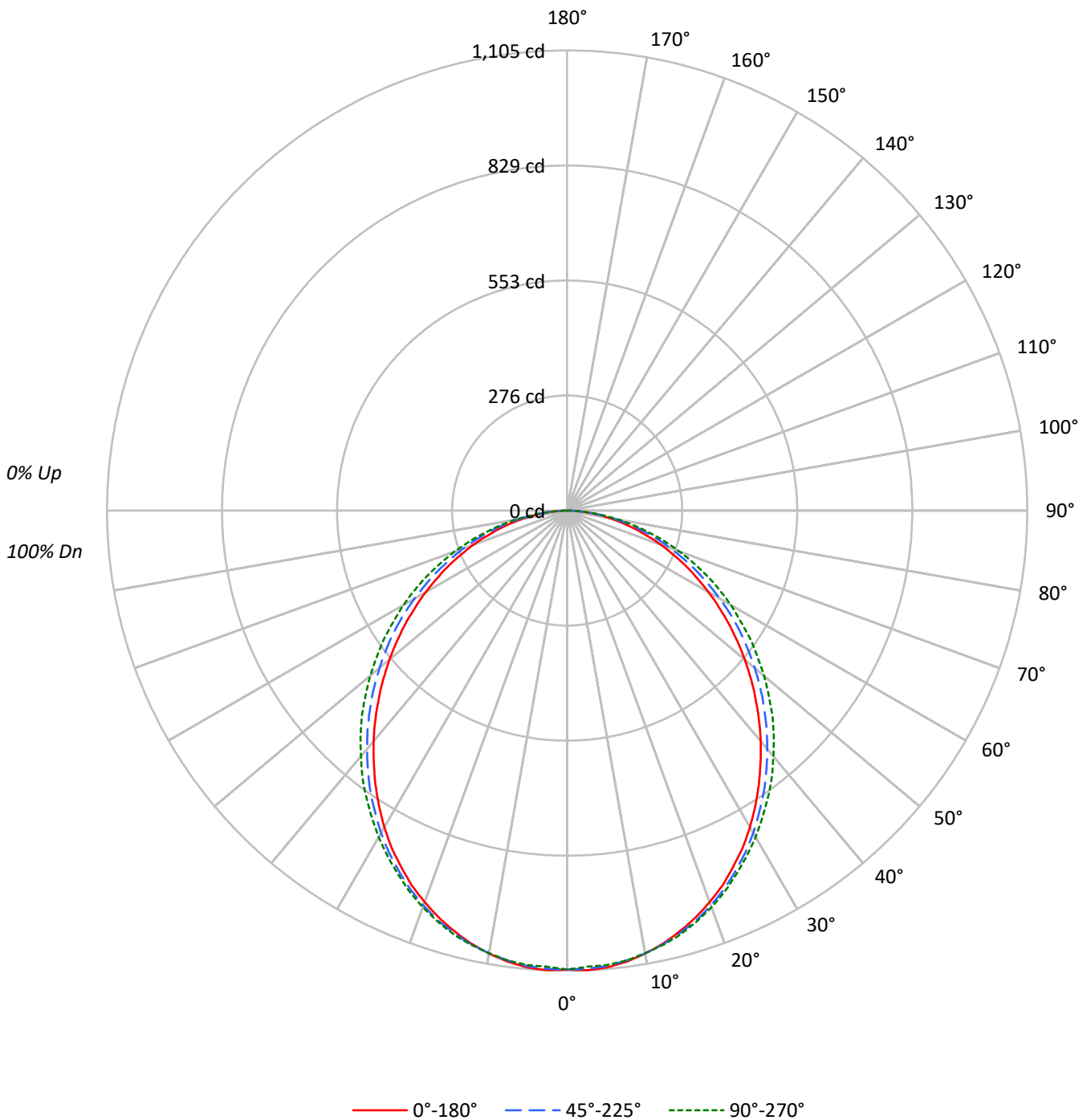
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2913.6 lumens  
Efficiency: N/A  
Efficacy: 127.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.22 / 1.32  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 22.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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 | 100 | 96  | 106 | 102 | 98  | 94  | 98  | 94  | 91  | 94  | 91  | 89  | 90  | 88  | 86  | 84  |
| 2   | 99  | 91  | 84  | 78  | 96  | 89  | 83  | 77  | 85  | 80  | 76  | 82  | 78  | 74  | 79  | 75  | 72  | 70  |
| 3   | 90  | 80  | 72  | 65  | 88  | 78  | 71  | 65  | 75  | 69  | 64  | 73  | 67  | 63  | 70  | 65  | 61  | 59  |
| 4   | 83  | 71  | 62  | 56  | 81  | 70  | 61  | 55  | 67  | 60  | 54  | 65  | 59  | 54  | 63  | 57  | 53  | 51  |
| 5   | 76  | 64  | 55  | 48  | 74  | 62  | 54  | 48  | 60  | 53  | 47  | 58  | 52  | 47  | 56  | 51  | 46  | 44  |
| 6   | 71  | 57  | 48  | 42  | 69  | 56  | 48  | 42  | 55  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 41  | 39  |
| 7   | 65  | 52  | 43  | 37  | 64  | 51  | 43  | 37  | 50  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 36  | 34  |
| 8   | 61  | 48  | 39  | 33  | 59  | 47  | 39  | 33  | 46  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 31  |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 35  | 30  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 29  | 28  |
| 10  | 53  | 40  | 32  | 27  | 52  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 27  | 25  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1483 | 1483 | 1483 |
| 5°  | 1487 | 1483 | 1479 |
| 10° | 1476 | 1474 | 1474 |
| 15° | 1457 | 1462 | 1467 |
| 20° | 1432 | 1445 | 1451 |
| 25° | 1400 | 1419 | 1429 |
| 30° | 1364 | 1389 | 1407 |
| 35° | 1318 | 1353 | 1381 |
| 40° | 1270 | 1313 | 1353 |
| 45° | 1218 | 1273 | 1327 |
| 50° | 1165 | 1231 | 1293 |
| 55° | 1112 | 1190 | 1259 |
| 60° | 1056 | 1140 | 1222 |
| 65° | 1001 | 1089 | 1180 |
| 70° | 938  | 1039 | 1129 |
| 75° | 869  | 983  | 1062 |
| 80° | 795  | 913  | 972  |
| 85° | 718  | 777  | 777  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 104.1  | 3.6       |
| 10°-20°   | 295.6  | 10.1      |
| 20°-30°   | 438.8  | 15.1      |
| 30°-40°   | 513.5  | 17.6      |
| 40°-50°   | 515.4  | 17.7      |
| 50°-60°   | 451.5  | 15.5      |
| 60°-70°   | 338.9  | 11.6      |
| 70°-80°   | 199.1  | 6.8       |
| 80°-90°   | 56.8   | 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°    | 838.5  | 28.8      |
| 0°-40°    | 1352.0 | 46.4      |
| 0°-60°    | 2318.9 | 79.6      |
| 0°-90°    | 2913.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2913.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1102 | 1102  | 1102 | 1102  | 1102 |      |
| 5°  | 1101 | 1093  | 1098 | 1096  | 1095 | 104  |
| 15° | 1046 | 1042  | 1050 | 1053  | 1054 | 295  |
| 25° | 943  | 943   | 956  | 958   | 962  | 435  |
| 35° | 803  | 806   | 824  | 834   | 841  | 502  |
| 45° | 640  | 648   | 669  | 687   | 697  | 494  |
| 55° | 474  | 483   | 507  | 525   | 537  | 424  |
| 65° | 314  | 323   | 342  | 360   | 370  | 311  |
| 75° | 167  | 177   | 189  | 198   | 204  | 178  |
| 85° | 46   | 49    | 50   | 50    | 50   | 52   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1102.0 | 1102.0 | 1102.0 | 1102.0 | 1102.0 |
| 2.5°  | 1104.8 | 1098.2 | 1101.0 | 1100.1 | 1096.3 |
| 5°    | 1101.0 | 1093.4 | 1098.2 | 1096.3 | 1095.3 |
| 7.5°  | 1092.5 | 1084.9 | 1089.6 | 1089.6 | 1089.6 |
| 10°   | 1080.1 | 1074.4 | 1079.2 | 1079.2 | 1079.2 |
| 12.5° | 1064.9 | 1060.2 | 1066.8 | 1067.8 | 1067.8 |
| 15°   | 1045.9 | 1042.1 | 1049.7 | 1052.6 | 1053.5 |
| 17.5° | 1025.0 | 1022.2 | 1031.7 | 1034.5 | 1034.5 |
| 20°   | 1000.3 | 998.4  | 1008.9 | 1011.7 | 1013.6 |
| 22.5° | 974.7  | 971.8  | 984.2  | 986.1  | 989.9  |
| 25°   | 943.3  | 943.3  | 955.7  | 958.5  | 962.3  |
| 27.5° | 912.9  | 912.0  | 926.2  | 931.0  | 934.8  |
| 30°   | 877.8  | 877.8  | 893.9  | 900.6  | 905.3  |
| 32.5° | 840.7  | 843.6  | 858.8  | 867.3  | 873.0  |
| 35°   | 802.7  | 805.6  | 823.6  | 834.1  | 840.7  |
| 37.5° | 762.8  | 767.6  | 785.6  | 798.9  | 807.5  |
| 40°   | 722.9  | 729.6  | 747.6  | 762.8  | 770.4  |
| 42.5° | 682.1  | 687.8  | 708.7  | 725.8  | 734.3  |
| 45°   | 640.3  | 647.9  | 668.8  | 686.8  | 697.3  |
| 47.5° | 598.5  | 608.0  | 628.9  | 648.8  | 656.4  |
| 50°   | 556.7  | 565.2  | 588.0  | 608.0  | 617.5  |
| 52.5° | 514.9  | 523.4  | 547.2  | 566.2  | 575.7  |
| 55°   | 474.0  | 482.6  | 507.3  | 525.3  | 536.7  |
| 57.5° | 432.2  | 441.7  | 465.5  | 484.5  | 493.0  |
| 60°   | 392.3  | 400.9  | 423.7  | 442.7  | 454.1  |
| 62.5° | 352.4  | 361.9  | 381.9  | 401.8  | 412.3  |
| 65°   | 314.4  | 323.0  | 342.0  | 360.0  | 370.5  |
| 67.5° | 275.5  | 285.9  | 302.1  | 320.1  | 327.7  |
| 70°   | 238.4  | 249.8  | 264.1  | 279.3  | 286.9  |
| 72.5° | 202.3  | 212.8  | 226.1  | 238.4  | 245.1  |
| 75°   | 167.2  | 176.7  | 189.0  | 198.5  | 204.2  |
| 77.5° | 133.9  | 144.4  | 152.9  | 161.5  | 164.3  |
| 80°   | 102.6  | 111.1  | 117.8  | 123.5  | 125.4  |
| 82.5° | 74.1   | 79.8   | 82.6   | 87.4   | 88.3   |
| 85°   | 46.5   | 49.4   | 50.3   | 50.3   | 50.3   |
| 87.5° | 19.9   | 20.9   | 19.0   | 15.2   | 14.2   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)