

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: P184190

Luminaire Tested: **22FR-24-HP-UNV-L835-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P184190  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27146)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22FR-24-HP-UNV-L835-CD1-U  
Description: METALUX 2X2 FR TROFFER LED HIGH EFFICIENCY FIXTURE  
  
Light Source: EATON LED 3500K  
Ballast/Driver: OSRAM ELECTRONIC DRIVER

**Summary**

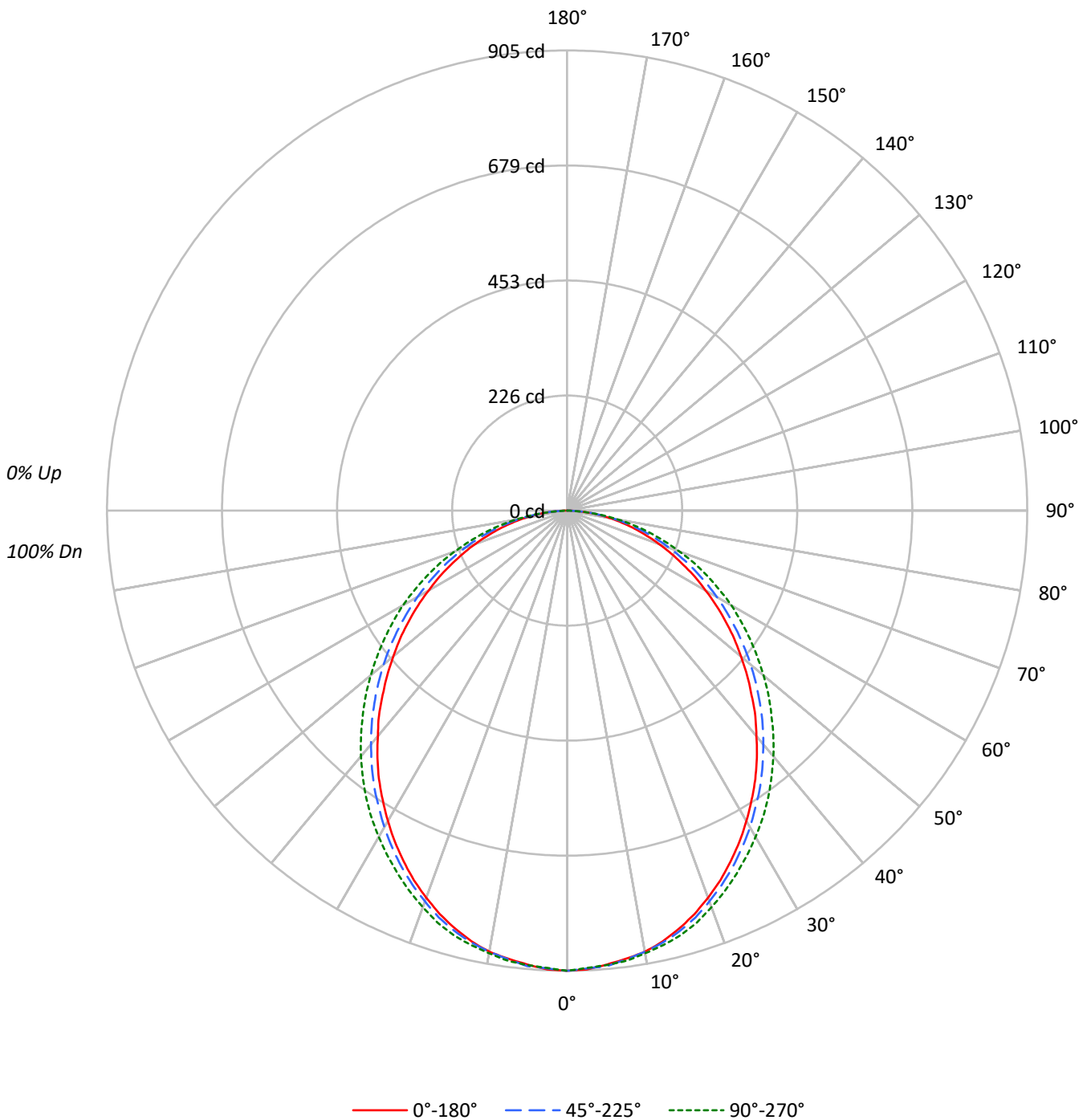
Lumens per Lamp: N/A  
Luminaire Lumens: 2356.0 lumens  
Efficiency: N/A  
Efficacy: 118.4 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.22 / 1.3  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 19.9  
Input Voltage (V): NR  
Input Current (A<sub>in</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  | 78  | 85  | 80  | 76  | 82  | 78  | 74  | 79  | 76  | 72  | 70  |
| 3   | 90  | 80  | 72  | 65  | 88  | 78  | 71  | 65  | 75  | 69  | 64  | 73  | 67  | 63  | 70  | 65  | 62  | 59  |
| 4   | 83  | 71  | 62  | 56  | 81  | 70  | 62  | 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  | 57  | 51  | 46  | 44  |
| 6   | 71  | 57  | 48  | 42  | 69  | 56  | 48  | 42  | 55  | 47  | 42  | 53  | 46  | 41  | 51  | 45  | 41  | 39  |
| 7   | 66  | 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  | 30  | 28  |
| 10  | 54  | 40  | 33  | 27  | 52  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 32  | 27  | 37  | 31  | 27  | 25  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2436 | 2436 | 2436 |
| 5°  | 2421 | 2429 | 2423 |
| 10° | 2408 | 2408 | 2416 |
| 15° | 2371 | 2385 | 2407 |
| 20° | 2320 | 2343 | 2377 |
| 25° | 2260 | 2292 | 2340 |
| 30° | 2191 | 2234 | 2303 |
| 35° | 2119 | 2175 | 2264 |
| 40° | 2034 | 2108 | 2217 |
| 45° | 1953 | 2040 | 2162 |
| 50° | 1868 | 1972 | 2110 |
| 55° | 1788 | 1901 | 2055 |
| 60° | 1695 | 1830 | 2008 |
| 65° | 1605 | 1757 | 1936 |
| 70° | 1519 | 1676 | 1849 |
| 75° | 1424 | 1591 | 1747 |
| 80° | 1317 | 1472 | 1581 |
| 85° | 1112 | 1204 | 1204 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 85.2   | 3.6       |
| 10°-20°   | 241.2  | 10.2      |
| 20°-30°   | 355.9  | 15.1      |
| 30°-40°   | 414.8  | 17.6      |
| 40°-50°   | 415.2  | 17.6      |
| 50°-60°   | 363.6  | 15.4      |
| 60°-70°   | 274.0  | 11.6      |
| 70°-80°   | 161.5  | 6.9       |
| 80°-90°   | 44.7   | 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°    | 682.2  | 29.0      |
| 0°-40°    | 1097.0 | 46.6      |
| 0°-60°    | 1875.8 | 79.6      |
| 0°-90°    | 2356.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2356.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 905 | 905   | 905 | 905   | 905 |      |
| 5°  | 896 | 897   | 899 | 895   | 897 | 85   |
| 15° | 851 | 852   | 856 | 859   | 864 | 240  |
| 25° | 761 | 764   | 772 | 781   | 788 | 350  |
| 35° | 645 | 649   | 662 | 676   | 689 | 403  |
| 45° | 513 | 520   | 536 | 555   | 568 | 396  |
| 55° | 381 | 387   | 405 | 424   | 438 | 341  |
| 65° | 252 | 259   | 276 | 292   | 304 | 250  |
| 75° | 137 | 142   | 153 | 163   | 168 | 145  |
| 85° | 36  | 38    | 39  | 39    | 39  | 42   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 905.1 | 905.1 | 905.1 | 905.1 | 905.1 |
| 2.5°  | 903.1 | 903.1 | 901.1 | 900.1 | 900.1 |
| 5°    | 896.1 | 897.1 | 899.1 | 895.1 | 897.1 |
| 7.5°  | 889.1 | 889.1 | 890.1 | 891.1 | 893.1 |
| 10°   | 881.1 | 881.1 | 881.1 | 884.1 | 884.1 |
| 12.5° | 868.1 | 868.1 | 870.1 | 871.1 | 875.1 |
| 15°   | 851.1 | 852.1 | 856.1 | 859.1 | 864.1 |
| 17.5° | 832.1 | 834.1 | 839.1 | 843.1 | 849.1 |
| 20°   | 810.1 | 814.1 | 818.1 | 824.1 | 830.1 |
| 22.5° | 787.1 | 790.1 | 796.1 | 803.1 | 810.1 |
| 25°   | 761.1 | 764.1 | 772.1 | 781.1 | 788.1 |
| 27.5° | 734.1 | 737.1 | 746.1 | 756.1 | 765.1 |
| 30°   | 705.1 | 709.1 | 719.1 | 731.1 | 741.1 |
| 32.5° | 675.1 | 679.1 | 690.1 | 704.1 | 716.1 |
| 35°   | 645.1 | 649.1 | 662.1 | 676.1 | 689.1 |
| 37.5° | 613.1 | 617.1 | 631.1 | 647.1 | 660.1 |
| 40°   | 579.1 | 585.1 | 600.1 | 618.1 | 631.1 |
| 42.5° | 548.1 | 553.1 | 569.1 | 587.1 | 600.1 |
| 45°   | 513.1 | 520.1 | 536.1 | 555.1 | 568.1 |
| 47.5° | 480.1 | 487.1 | 504.1 | 523.1 | 537.1 |
| 50°   | 446.1 | 453.1 | 471.1 | 490.1 | 504.1 |
| 52.5° | 414.1 | 420.1 | 438.1 | 457.1 | 471.1 |
| 55°   | 381.1 | 387.1 | 405.1 | 424.1 | 438.1 |
| 57.5° | 348.0 | 354.0 | 372.1 | 391.1 | 405.1 |
| 60°   | 315.0 | 322.0 | 340.0 | 358.0 | 373.1 |
| 62.5° | 284.0 | 290.0 | 308.0 | 325.0 | 338.0 |
| 65°   | 252.0 | 259.0 | 276.0 | 292.0 | 304.0 |
| 67.5° | 222.0 | 229.0 | 245.0 | 261.0 | 271.0 |
| 70°   | 193.0 | 199.0 | 213.0 | 228.0 | 235.0 |
| 72.5° | 164.0 | 170.0 | 183.0 | 195.0 | 201.0 |
| 75°   | 137.0 | 142.0 | 153.0 | 163.0 | 168.0 |
| 77.5° | 111.0 | 116.0 | 124.0 | 131.0 | 135.0 |
| 80°   | 85.0  | 88.0  | 95.0  | 99.0  | 102.0 |
| 82.5° | 60.0  | 63.0  | 66.0  | 70.0  | 70.0  |
| 85°   | 36.0  | 38.0  | 39.0  | 39.0  | 39.0  |
| 87.5° | 15.0  | 15.0  | 13.0  | 11.0  | 10.0  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)