

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: P182387

Luminaire Tested: **24FR-50-UNV-L840-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P182387
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26767)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24FR-50-UNV-L840-CD1-U
Description: METALUX 2X4 FR TROFFER LED FIXTURE

Light Source: EATON LED 4000K
Ballast/Driver: OSRAM ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5379.0 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.32
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

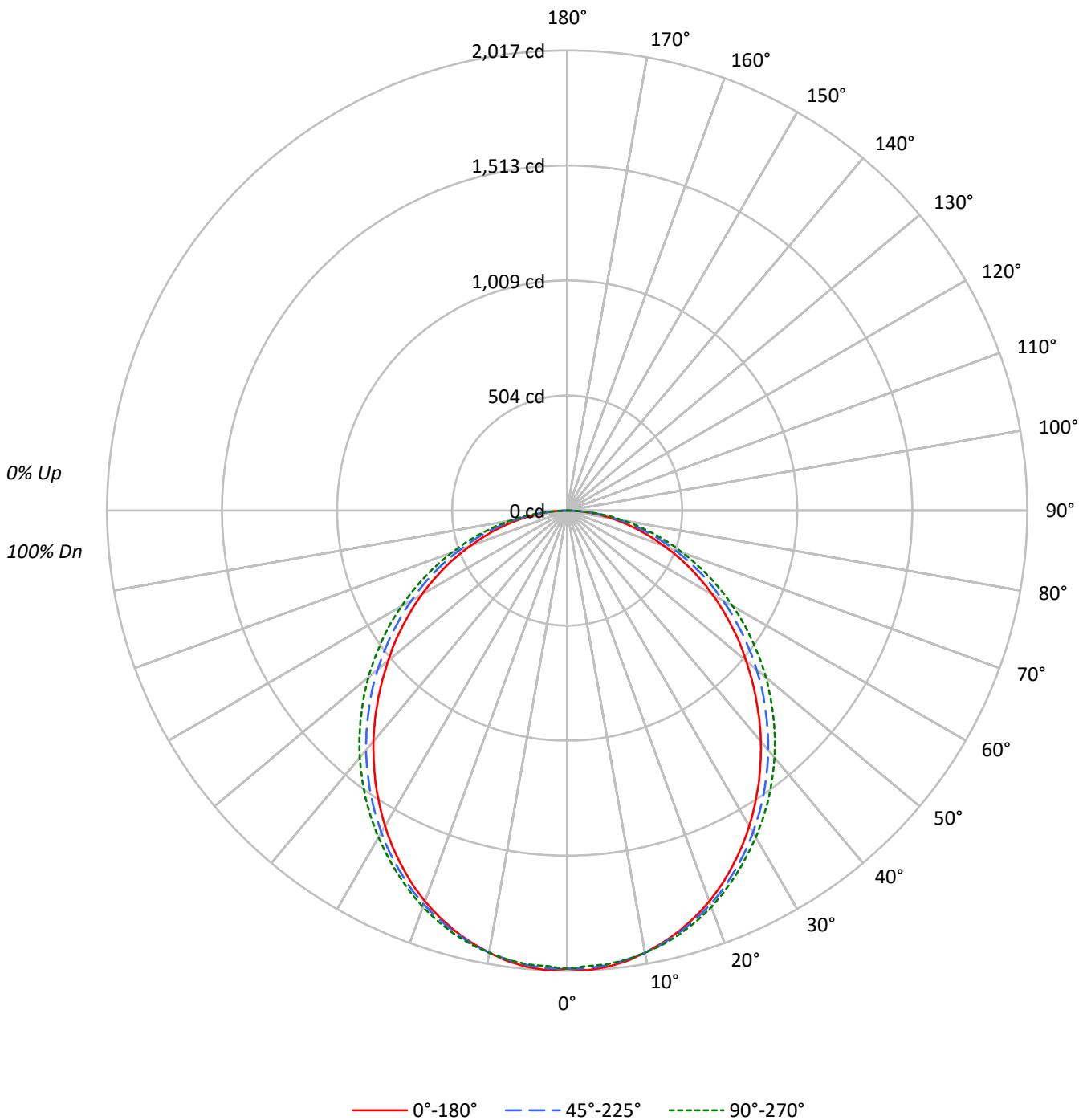
Input Watts (W): 45.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 78 | 96 | 89 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 74 | 79 | 75 | 72 | 70 |
| 3 | 90 | 80 | 71 | 65 | 88 | 78 | 70 | 64 | 75 | 69 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 59 |
| 4 | 83 | 71 | 62 | 55 | 80 | 69 | 61 | 55 | 67 | 60 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 50 |
| 5 | 76 | 63 | 54 | 48 | 74 | 62 | 54 | 47 | 60 | 52 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 68 | 56 | 48 | 41 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 40 | 38 |
| 7 | 65 | 52 | 43 | 37 | 63 | 51 | 43 | 37 | 49 | 42 | 36 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 38 | 33 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 30 |
| 9 | 57 | 43 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 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° | 2702 | 2702 | 2702 |
| 5° | 2712 | 2702 | 2696 |
| 10° | 2689 | 2689 | 2689 |
| 15° | 2655 | 2664 | 2674 |
| 20° | 2610 | 2631 | 2647 |
| 25° | 2549 | 2583 | 2608 |
| 30° | 2480 | 2531 | 2569 |
| 35° | 2404 | 2472 | 2529 |
| 40° | 2320 | 2409 | 2484 |
| 45° | 2230 | 2339 | 2432 |
| 50° | 2142 | 2269 | 2380 |
| 55° | 2061 | 2194 | 2319 |
| 60° | 1978 | 2120 | 2256 |
| 65° | 1887 | 2047 | 2191 |
| 70° | 1776 | 1965 | 2112 |
| 75° | 1668 | 1877 | 2038 |
| 80° | 1543 | 1764 | 1945 |
| 85° | 1379 | 1638 | 1777 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 189.7 | 3.5 |
| 10°-20° | 538.3 | 10.0 |
| 20°-30° | 799.3 | 14.9 |
| 30°-40° | 937.9 | 17.4 |
| 40°-50° | 946.3 | 17.6 |
| 50°-60° | 836.0 | 15.5 |
| 60°-70° | 635.1 | 11.8 |
| 70°-80° | 380.0 | 7.1 |
| 80°-90° | 116.5 | 2.2 |
| 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° | 1527.3 | 28.4 |
| 0°-40° | 2465.2 | 45.8 |
| 0°-60° | 4247.4 | 79.0 |
| 0°-90° | 5379.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5379.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2008 | 2008 | 2008 | 2008 | 2008 | |
| 5° | 2008 | 1992 | 2000 | 1998 | 1996 | 190 |
| 15° | 1906 | 1897 | 1912 | 1917 | 1920 | 537 |
| 25° | 1717 | 1714 | 1740 | 1749 | 1757 | 791 |
| 35° | 1463 | 1468 | 1505 | 1525 | 1540 | 915 |
| 45° | 1172 | 1185 | 1229 | 1265 | 1278 | 905 |
| 55° | 878 | 893 | 935 | 976 | 988 | 787 |
| 65° | 593 | 607 | 643 | 675 | 688 | 587 |
| 75° | 321 | 336 | 361 | 382 | 392 | 340 |
| 85° | 89 | 97 | 106 | 113 | 115 | 101 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P182387

CATALOG NUMBER: 24FR-50-UNV-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2008.0 | 2008.0 | 2008.0 | 2008.0 | 2008.0 |
| 2.5° | 2017.0 | 2001.5 | 2008.0 | 2005.4 | 1998.9 |
| 5° | 2008.0 | 1992.4 | 2000.2 | 1997.6 | 1996.3 |
| 7.5° | 1992.4 | 1978.2 | 1986.0 | 1986.0 | 1986.0 |
| 10° | 1967.9 | 1956.2 | 1967.9 | 1967.9 | 1967.9 |
| 12.5° | 1939.4 | 1929.0 | 1943.3 | 1944.6 | 1947.2 |
| 15° | 1905.8 | 1896.7 | 1912.2 | 1917.4 | 1920.0 |
| 17.5° | 1866.9 | 1859.2 | 1876.0 | 1883.8 | 1886.4 |
| 20° | 1823.0 | 1815.2 | 1837.2 | 1842.4 | 1848.8 |
| 22.5° | 1772.5 | 1768.6 | 1791.9 | 1797.1 | 1804.8 |
| 25° | 1716.9 | 1714.3 | 1740.2 | 1749.2 | 1757.0 |
| 27.5° | 1659.9 | 1658.6 | 1687.1 | 1698.8 | 1706.5 |
| 30° | 1596.5 | 1597.8 | 1628.9 | 1643.1 | 1653.5 |
| 32.5° | 1530.6 | 1534.4 | 1568.1 | 1584.9 | 1597.8 |
| 35° | 1463.3 | 1468.5 | 1504.7 | 1525.4 | 1539.6 |
| 37.5° | 1392.1 | 1399.9 | 1438.7 | 1463.3 | 1477.5 |
| 40° | 1321.0 | 1330.0 | 1371.4 | 1397.3 | 1414.1 |
| 42.5° | 1247.2 | 1258.9 | 1300.3 | 1333.9 | 1348.1 |
| 45° | 1172.2 | 1185.1 | 1229.1 | 1265.3 | 1278.3 |
| 47.5° | 1098.4 | 1115.3 | 1157.9 | 1194.2 | 1208.4 |
| 50° | 1023.4 | 1038.9 | 1084.2 | 1121.7 | 1137.2 |
| 52.5° | 953.5 | 967.8 | 1010.5 | 1049.3 | 1063.5 |
| 55° | 878.5 | 892.7 | 935.4 | 975.5 | 988.5 |
| 57.5° | 807.3 | 820.3 | 861.7 | 901.8 | 914.7 |
| 60° | 734.9 | 747.8 | 787.9 | 824.1 | 838.4 |
| 62.5° | 663.7 | 676.7 | 716.8 | 750.4 | 763.3 |
| 65° | 592.6 | 606.8 | 643.0 | 675.4 | 688.3 |
| 67.5° | 522.7 | 536.9 | 570.6 | 601.6 | 612.0 |
| 70° | 451.5 | 467.1 | 499.4 | 527.9 | 536.9 |
| 72.5° | 385.6 | 401.1 | 429.5 | 454.1 | 465.8 |
| 75° | 320.9 | 336.4 | 361.0 | 381.7 | 392.0 |
| 77.5° | 258.8 | 274.3 | 293.7 | 310.5 | 319.6 |
| 80° | 199.2 | 213.5 | 227.7 | 244.5 | 251.0 |
| 82.5° | 142.3 | 154.0 | 165.6 | 178.5 | 183.7 |
| 85° | 89.3 | 97.0 | 106.1 | 112.6 | 115.1 |
| 87.5° | 38.8 | 44.0 | 45.3 | 46.6 | 45.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)