

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: P182380

Luminaire Tested: **24FR-40-UNV-L830-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P182380
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-40-UNV-L830-CD1-U
Description: METALUX 2X4 FR TROFFER LED FIXTURE

Light Source: EATON LED 3000K
Ballast/Driver: OSRAM ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4038.0 lumens
Efficiency: N/A
Efficacy: 120.2 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

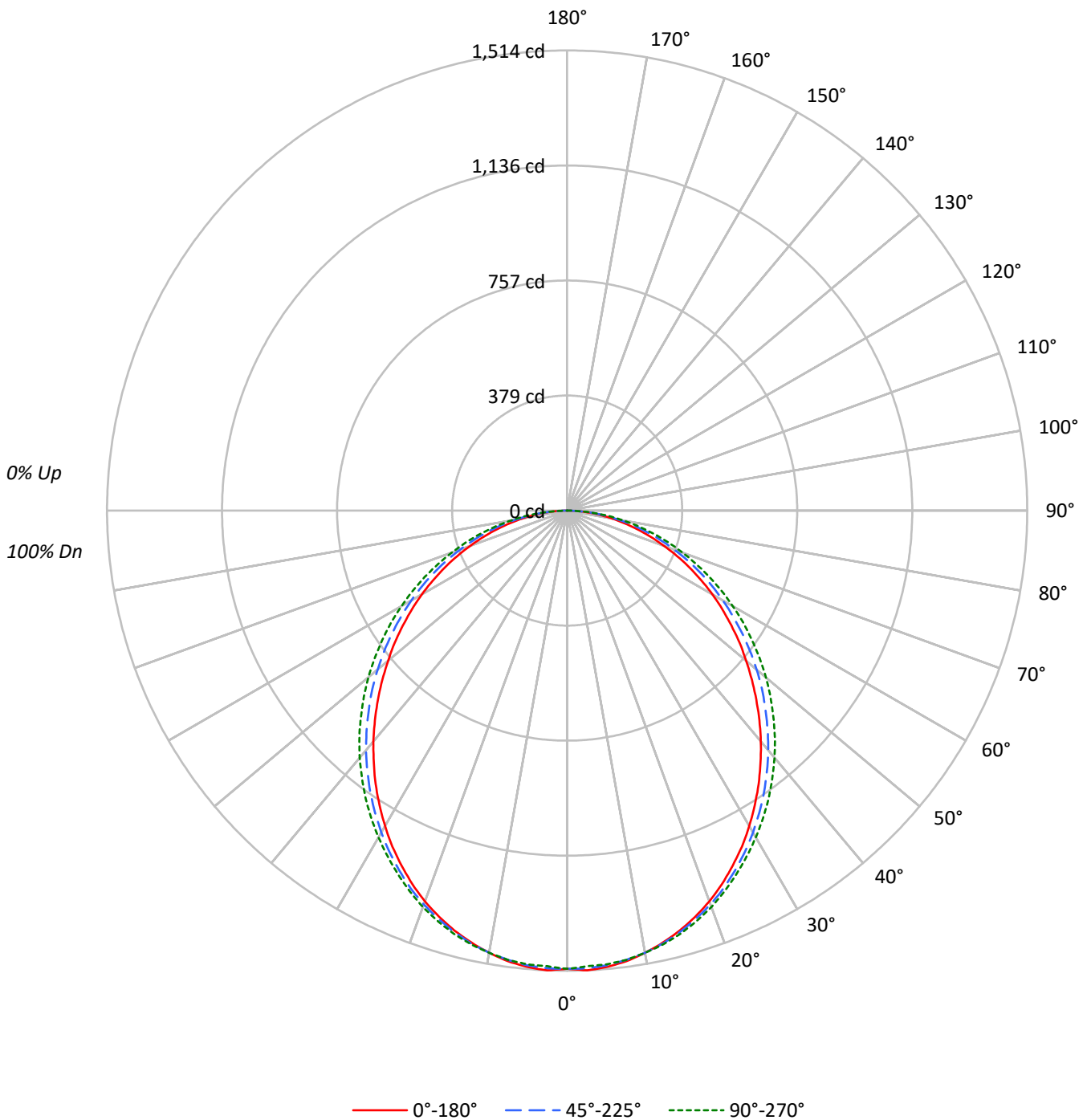
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P182380

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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° | 2028 | 2028 | 2028 |
| 5° | 2036 | 2028 | 2024 |
| 10° | 2018 | 2018 | 2018 |
| 15° | 1993 | 2000 | 2008 |
| 20° | 1959 | 1975 | 1987 |
| 25° | 1913 | 1939 | 1958 |
| 30° | 1862 | 1900 | 1929 |
| 35° | 1804 | 1855 | 1898 |
| 40° | 1742 | 1808 | 1865 |
| 45° | 1674 | 1756 | 1826 |
| 50° | 1608 | 1704 | 1787 |
| 55° | 1547 | 1647 | 1741 |
| 60° | 1485 | 1592 | 1694 |
| 65° | 1416 | 1537 | 1645 |
| 70° | 1334 | 1475 | 1586 |
| 75° | 1252 | 1409 | 1530 |
| 80° | 1159 | 1324 | 1460 |
| 85° | 1034 | 1229 | 1334 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 142.4 | 3.5 |
| 10°-20° | 404.1 | 10.0 |
| 20°-30° | 600.0 | 14.9 |
| 30°-40° | 704.1 | 17.4 |
| 40°-50° | 710.4 | 17.6 |
| 50°-60° | 627.6 | 15.5 |
| 60°-70° | 476.8 | 11.8 |
| 70°-80° | 285.3 | 7.1 |
| 80°-90° | 87.4 | 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° | 1146.5 | 28.4 |
| 0°-40° | 1850.6 | 45.8 |
| 0°-60° | 3188.5 | 79.0 |
| 0°-90° | 4038.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4038.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1507 | 1507 | 1507 | 1507 | 1507 | |
| 5° | 1507 | 1496 | 1502 | 1500 | 1499 | 143 |
| 15° | 1431 | 1424 | 1436 | 1439 | 1441 | 403 |
| 25° | 1289 | 1287 | 1306 | 1313 | 1319 | 594 |
| 35° | 1098 | 1102 | 1130 | 1145 | 1156 | 687 |
| 45° | 880 | 890 | 923 | 950 | 960 | 679 |
| 55° | 660 | 670 | 702 | 732 | 742 | 591 |
| 65° | 445 | 456 | 483 | 507 | 517 | 441 |
| 75° | 241 | 252 | 271 | 286 | 294 | 255 |
| 85° | 67 | 73 | 80 | 84 | 86 | 76 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P182380

CATALOG NUMBER: 24FR-40-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1507.4 | 1507.4 | 1507.4 | 1507.4 | 1507.4 |
| 2.5° | 1514.2 | 1502.5 | 1507.4 | 1505.4 | 1500.6 |
| 5° | 1507.4 | 1495.7 | 1501.6 | 1499.6 | 1498.6 |
| 7.5° | 1495.7 | 1485.0 | 1490.9 | 1490.9 | 1490.9 |
| 10° | 1477.3 | 1468.5 | 1477.3 | 1477.3 | 1477.3 |
| 12.5° | 1455.9 | 1448.1 | 1458.8 | 1459.8 | 1461.7 |
| 15° | 1430.6 | 1423.9 | 1435.5 | 1439.4 | 1441.3 |
| 17.5° | 1401.5 | 1395.7 | 1408.3 | 1414.1 | 1416.1 |
| 20° | 1368.5 | 1362.7 | 1379.2 | 1383.1 | 1387.9 |
| 22.5° | 1330.6 | 1327.7 | 1345.2 | 1349.1 | 1354.9 |
| 25° | 1288.8 | 1286.9 | 1306.3 | 1313.1 | 1319.0 |
| 27.5° | 1246.1 | 1245.1 | 1266.5 | 1275.2 | 1281.1 |
| 30° | 1198.5 | 1199.5 | 1222.8 | 1233.5 | 1241.3 |
| 32.5° | 1149.0 | 1151.9 | 1177.2 | 1189.8 | 1199.5 |
| 35° | 1098.5 | 1102.4 | 1129.6 | 1145.1 | 1155.8 |
| 37.5° | 1045.1 | 1050.9 | 1080.0 | 1098.5 | 1109.2 |
| 40° | 991.6 | 998.4 | 1029.5 | 1048.9 | 1061.6 |
| 42.5° | 936.3 | 945.0 | 976.1 | 1001.4 | 1012.0 |
| 45° | 880.0 | 889.7 | 922.7 | 949.9 | 959.6 |
| 47.5° | 824.6 | 837.2 | 869.3 | 896.5 | 907.1 |
| 50° | 768.3 | 779.9 | 813.9 | 842.1 | 853.7 |
| 52.5° | 715.8 | 726.5 | 758.5 | 787.7 | 798.4 |
| 55° | 659.5 | 670.2 | 702.2 | 732.3 | 742.0 |
| 57.5° | 606.1 | 615.8 | 646.9 | 677.0 | 686.7 |
| 60° | 551.7 | 561.4 | 591.5 | 618.7 | 629.4 |
| 62.5° | 498.3 | 508.0 | 538.1 | 563.3 | 573.0 |
| 65° | 444.8 | 455.5 | 482.7 | 507.0 | 516.7 |
| 67.5° | 392.4 | 403.1 | 428.3 | 451.6 | 459.4 |
| 70° | 339.0 | 350.6 | 374.9 | 396.3 | 403.1 |
| 72.5° | 289.4 | 301.1 | 322.5 | 340.9 | 349.6 |
| 75° | 240.9 | 252.5 | 271.0 | 286.5 | 294.3 |
| 77.5° | 194.2 | 205.9 | 220.5 | 233.1 | 239.9 |
| 80° | 149.6 | 160.3 | 170.9 | 183.6 | 188.4 |
| 82.5° | 106.8 | 115.6 | 124.3 | 134.0 | 137.9 |
| 85° | 67.0 | 72.8 | 79.6 | 84.5 | 86.4 |
| 87.5° | 29.1 | 33.0 | 34.0 | 35.0 | 34.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)