

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: FAIL-SAFE

Report Number: P233118

Luminaire Tested: **FCB-24-2-LD4-44-35-UNV-EDD1-WDP6**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P233118
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25706)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FCB-24-2-LD4-44-35-UNV-EDD1-WDP6
Description: FAILSAFE 2X2 FCB LED TROFFER
.060 POLYCARBONATE LENS
Light Source: (84)3500K CCT, 80 CRI LEDs
Ballast/Driver: ELECTRONIC DRIVER

Summary

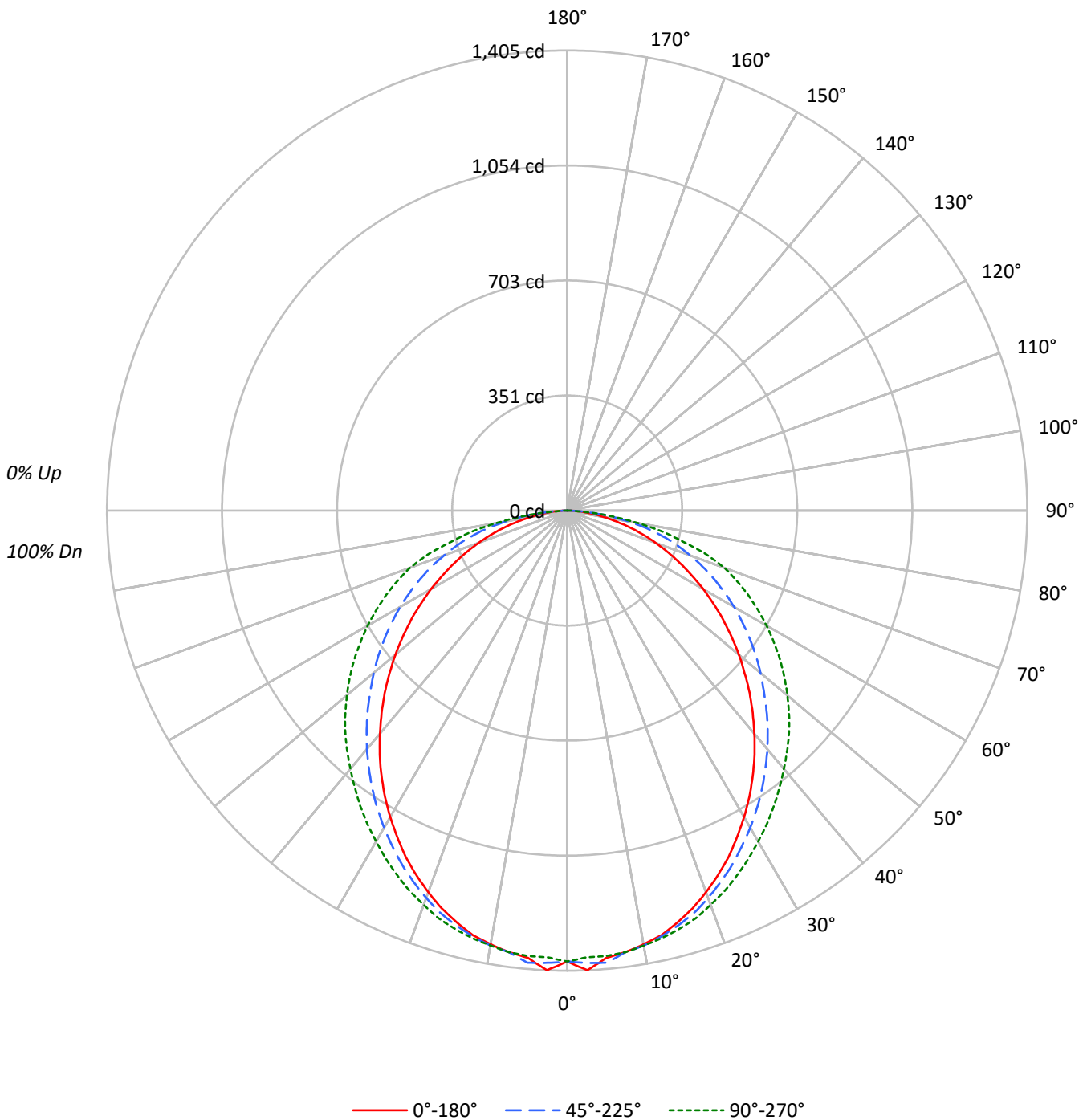
Lumens per Lamp: N/A
Luminaire Lumens: 3857.0 lumens
Efficiency: N/A
Efficacy: 92.3 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.26 / 1.34
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 41.8
Input Voltage (V): 120
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 | 108 | 104 | 99 | 95 | 106 | 101 | 97 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 96 | 88 | 82 | 76 | 84 | 79 | 74 | 81 | 77 | 73 | 78 | 74 | 71 | 69 |
| 3 | 90 | 79 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 68 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 68 | 60 | 54 | 66 | 59 | 53 | 64 | 57 | 52 | 61 | 56 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 53 | 46 | 59 | 51 | 46 | 57 | 50 | 45 | 55 | 49 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 40 | 53 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 39 | 37 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 48 | 41 | 35 | 47 | 40 | 35 | 46 | 40 | 35 | 33 |
| 8 | 60 | 46 | 38 | 32 | 58 | 46 | 38 | 32 | 44 | 37 | 32 | 43 | 36 | 31 | 42 | 36 | 31 | 29 |
| 9 | 56 | 43 | 34 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 28 | 39 | 33 | 28 | 26 |
| 10 | 53 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 30 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3705 | 3705 | 3705 |
| 5° | 3704 | 3744 | 3688 |
| 10° | 3675 | 3685 | 3685 |
| 15° | 3626 | 3652 | 3684 |
| 20° | 3550 | 3604 | 3668 |
| 25° | 3464 | 3542 | 3648 |
| 30° | 3357 | 3474 | 3625 |
| 35° | 3247 | 3407 | 3617 |
| 40° | 3123 | 3340 | 3617 |
| 45° | 2998 | 3276 | 3647 |
| 50° | 2866 | 3227 | 3675 |
| 55° | 2728 | 3194 | 3722 |
| 60° | 2584 | 3169 | 3786 |
| 65° | 2424 | 3153 | 3882 |
| 70° | 2258 | 3143 | 4014 |
| 75° | 2047 | 3140 | 3802 |
| 80° | 1773 | 2907 | 3372 |
| 85° | 1507 | 2201 | 2143 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 130.6 | 3.4 |
| 10°-20° | 369.9 | 9.6 |
| 20°-30° | 550.2 | 14.3 |
| 30°-40° | 650.7 | 16.9 |
| 40°-50° | 668.8 | 17.3 |
| 50°-60° | 611.2 | 15.8 |
| 60°-70° | 488.9 | 12.7 |
| 70°-80° | 306.8 | 8.0 |
| 80°-90° | 79.9 | 2.1 |
| 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° | 1050.6 | 27.2 |
| 0°-40° | 1701.4 | 44.1 |
| 0°-60° | 2981.4 | 77.3 |
| 0°-90° | 3857.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3857.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1377 | 1377 | 1377 | 1377 | 1377 | |
| 5° | 1371 | 1371 | 1386 | 1377 | 1365 | 130 |
| 15° | 1302 | 1304 | 1311 | 1318 | 1322 | 367 |
| 25° | 1167 | 1174 | 1193 | 1214 | 1228 | 536 |
| 35° | 988 | 1002 | 1037 | 1077 | 1101 | 618 |
| 45° | 788 | 808 | 861 | 925 | 958 | 607 |
| 55° | 581 | 610 | 681 | 756 | 793 | 520 |
| 65° | 381 | 414 | 495 | 570 | 610 | 378 |
| 75° | 197 | 234 | 302 | 347 | 366 | 209 |
| 85° | 49 | 62 | 71 | 69 | 69 | 56 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P233118

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1376.7 | 1376.7 | 1376.7 | 1376.7 | 1376.7 |
| 2.5° | 1404.8 | 1399.2 | 1382.3 | 1371.1 | 1365.4 |
| 5° | 1371.1 | 1371.1 | 1386.1 | 1376.7 | 1365.4 |
| 7.5° | 1359.8 | 1359.8 | 1359.8 | 1387.9 | 1359.8 |
| 10° | 1344.8 | 1346.7 | 1348.6 | 1359.8 | 1348.6 |
| 12.5° | 1327.9 | 1327.9 | 1331.7 | 1335.4 | 1337.3 |
| 15° | 1301.7 | 1303.5 | 1311.0 | 1318.5 | 1322.3 |
| 17.5° | 1273.5 | 1279.2 | 1288.5 | 1297.9 | 1305.4 |
| 20° | 1239.8 | 1247.3 | 1258.5 | 1273.5 | 1281.0 |
| 22.5° | 1204.1 | 1211.6 | 1226.6 | 1243.5 | 1256.7 |
| 25° | 1166.6 | 1174.1 | 1192.9 | 1213.5 | 1228.5 |
| 27.5° | 1123.5 | 1132.9 | 1155.4 | 1183.5 | 1198.5 |
| 30° | 1080.3 | 1091.6 | 1117.9 | 1149.7 | 1166.6 |
| 32.5° | 1035.3 | 1048.5 | 1078.5 | 1114.1 | 1134.7 |
| 35° | 988.4 | 1001.6 | 1037.2 | 1076.6 | 1101.0 |
| 37.5° | 939.7 | 954.7 | 994.1 | 1039.1 | 1065.3 |
| 40° | 889.0 | 905.9 | 950.9 | 999.7 | 1029.7 |
| 42.5° | 838.4 | 857.2 | 905.9 | 964.1 | 994.1 |
| 45° | 787.8 | 808.4 | 860.9 | 924.7 | 958.4 |
| 47.5° | 735.2 | 759.6 | 814.0 | 885.3 | 919.0 |
| 50° | 684.6 | 709.0 | 770.9 | 844.0 | 877.8 |
| 52.5° | 632.1 | 660.2 | 725.9 | 800.9 | 836.5 |
| 55° | 581.4 | 609.6 | 680.8 | 755.9 | 793.4 |
| 57.5° | 530.8 | 558.9 | 634.0 | 710.9 | 748.4 |
| 60° | 480.2 | 510.2 | 588.9 | 664.0 | 703.4 |
| 62.5° | 429.5 | 461.4 | 542.0 | 618.9 | 656.5 |
| 65° | 380.7 | 414.5 | 495.2 | 570.2 | 609.6 |
| 67.5° | 333.9 | 369.5 | 448.3 | 521.4 | 560.8 |
| 70° | 287.0 | 322.6 | 399.5 | 470.8 | 510.2 |
| 72.5° | 242.0 | 277.6 | 352.6 | 416.4 | 446.4 |
| 75° | 196.9 | 234.5 | 302.0 | 347.0 | 365.7 |
| 77.5° | 153.8 | 191.3 | 249.5 | 279.5 | 300.1 |
| 80° | 114.4 | 146.3 | 187.6 | 210.1 | 217.6 |
| 82.5° | 78.8 | 105.0 | 131.3 | 136.9 | 140.7 |
| 85° | 48.8 | 61.9 | 71.3 | 69.4 | 69.4 |
| 87.5° | 22.5 | 24.4 | 20.6 | 15.0 | 9.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)