

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: P233035

Luminaire Tested: **FCB-12-4-LD4-44-40-UNV-EDD1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P233035
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35573)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FCB-12-4-LD4-44-40-UNV-EDD1
Description: FAILSAFE 1X4 FCB LED TROFFER
OPAL DIFFUSER, NO LENS
Light Source: (84)4000K CCT, 80 CRI LEDs
Ballast/Driver: ELECTRONIC DRIVER

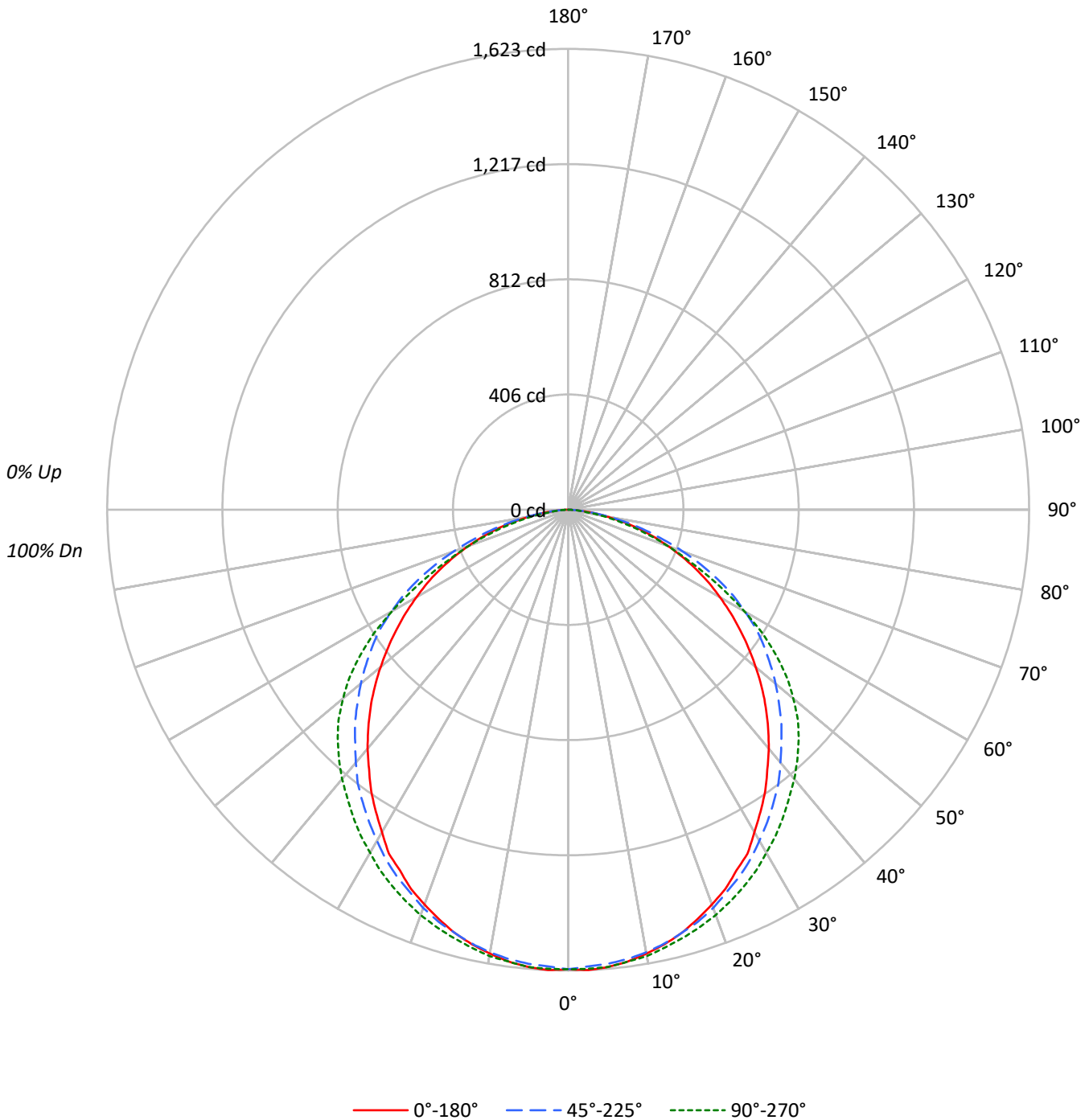
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4485.0 lumens
Efficiency: N/A
Efficacy: 109.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.28 / 1.37
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (Ain): 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: P233035

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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 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 79 | 97 | 89 | 83 | 78 | 86 | 80 | 76 | 82 | 78 | 74 | 79 | 76 | 73 | 70 |
| 3 | 90 | 80 | 72 | 66 | 88 | 78 | 71 | 65 | 75 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 59 |
| 4 | 83 | 71 | 62 | 56 | 81 | 70 | 61 | 55 | 67 | 60 | 54 | 65 | 59 | 54 | 63 | 57 | 53 | 51 |
| 5 | 76 | 63 | 54 | 48 | 74 | 62 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 46 | 56 | 51 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 68 | 56 | 48 | 42 | 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 | 40 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 46 | 38 | 33 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 30 |
| 9 | 57 | 43 | 35 | 30 | 55 | 43 | 35 | 29 | 42 | 34 | 29 | 40 | 34 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 26 | 37 | 31 | 26 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4355 | 4355 | 4355 |
| 5° | 4366 | 4336 | 4366 |
| 10° | 4338 | 4326 | 4362 |
| 15° | 4299 | 4299 | 4349 |
| 20° | 4236 | 4274 | 4350 |
| 25° | 4162 | 4234 | 4346 |
| 30° | 4074 | 4184 | 4335 |
| 35° | 3973 | 4140 | 4336 |
| 40° | 3860 | 4085 | 4350 |
| 45° | 3744 | 4039 | 4367 |
| 50° | 3610 | 3990 | 4332 |
| 55° | 3465 | 3952 | 4191 |
| 60° | 3320 | 3867 | 3856 |
| 65° | 3168 | 3703 | 3379 |
| 70° | 2940 | 3375 | 2923 |
| 75° | 2667 | 2942 | 2414 |
| 80° | 2125 | 2331 | 1782 |
| 85° | 1501 | 1297 | 1025 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 153.1 | 3.4 |
| 10°-20° | 437.5 | 9.8 |
| 20°-30° | 659.6 | 14.7 |
| 30°-40° | 790.6 | 17.6 |
| 40°-50° | 820.5 | 18.3 |
| 50°-60° | 740.1 | 16.5 |
| 60°-70° | 539.8 | 12.0 |
| 70°-80° | 283.3 | 6.3 |
| 80°-90° | 60.4 | 1.3 |
| 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° | 1250.2 | 27.9 |
| 0°-40° | 2040.9 | 45.5 |
| 0°-60° | 3601.5 | 80.3 |
| 0°-90° | 4485.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4485.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1618 | 1618 | 1618 | 1618 | 1618 | |
| 5° | 1616 | 1612 | 1605 | 1616 | 1616 | 153 |
| 15° | 1543 | 1543 | 1543 | 1561 | 1561 | 435 |
| 25° | 1402 | 1408 | 1426 | 1457 | 1464 | 647 |
| 35° | 1210 | 1223 | 1260 | 1307 | 1320 | 755 |
| 45° | 984 | 1004 | 1061 | 1125 | 1148 | 758 |
| 55° | 738 | 765 | 842 | 898 | 893 | 661 |
| 65° | 498 | 526 | 582 | 559 | 531 | 492 |
| 75° | 256 | 292 | 283 | 245 | 232 | 269 |
| 85° | 49 | 60 | 42 | 35 | 33 | 62 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P233035

CATALOG NUMBER: FCB-12-4-LD4-44-40-UNV-EDD1

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1618.5 | 1618.5 | 1618.5 | 1618.5 | 1618.5 |
| 2.5° | 1622.9 | 1618.5 | 1609.7 | 1618.5 | 1618.5 |
| 5° | 1616.3 | 1611.9 | 1605.2 | 1616.3 | 1616.3 |
| 7.5° | 1605.2 | 1600.8 | 1596.4 | 1607.5 | 1605.2 |
| 10° | 1587.6 | 1585.3 | 1583.1 | 1596.4 | 1596.4 |
| 12.5° | 1567.7 | 1567.7 | 1565.4 | 1580.9 | 1578.7 |
| 15° | 1543.3 | 1543.3 | 1543.3 | 1561.0 | 1561.0 |
| 17.5° | 1512.4 | 1516.8 | 1521.2 | 1541.1 | 1541.1 |
| 20° | 1479.2 | 1483.6 | 1492.5 | 1516.8 | 1519.0 |
| 22.5° | 1446.0 | 1448.3 | 1457.1 | 1485.8 | 1492.5 |
| 25° | 1401.8 | 1408.5 | 1426.1 | 1457.1 | 1463.7 |
| 27.5° | 1366.4 | 1368.7 | 1388.6 | 1423.9 | 1432.8 |
| 30° | 1311.2 | 1326.6 | 1346.5 | 1386.3 | 1395.2 |
| 32.5° | 1260.3 | 1273.6 | 1304.5 | 1346.5 | 1359.8 |
| 35° | 1209.5 | 1222.7 | 1260.3 | 1306.7 | 1320.0 |
| 37.5° | 1152.0 | 1171.9 | 1216.1 | 1262.5 | 1278.0 |
| 40° | 1098.9 | 1116.6 | 1163.0 | 1220.5 | 1238.2 |
| 42.5° | 1041.4 | 1059.1 | 1110.0 | 1174.1 | 1194.0 |
| 45° | 983.9 | 1003.8 | 1061.3 | 1125.4 | 1147.5 |
| 47.5° | 924.2 | 946.3 | 1006.0 | 1076.8 | 1096.7 |
| 50° | 862.3 | 886.6 | 953.0 | 1025.9 | 1034.8 |
| 52.5° | 800.4 | 826.9 | 897.7 | 961.8 | 970.7 |
| 55° | 738.5 | 765.0 | 842.4 | 897.7 | 893.3 |
| 57.5° | 678.8 | 707.5 | 787.1 | 815.9 | 811.5 |
| 60° | 616.9 | 647.8 | 718.6 | 731.9 | 716.4 |
| 62.5° | 559.4 | 588.1 | 654.5 | 643.4 | 623.5 |
| 65° | 497.5 | 526.2 | 581.5 | 559.4 | 530.7 |
| 67.5° | 435.6 | 471.0 | 506.3 | 468.7 | 446.6 |
| 70° | 373.7 | 413.5 | 428.9 | 391.4 | 371.5 |
| 72.5° | 314.0 | 356.0 | 351.6 | 314.0 | 300.7 |
| 75° | 256.5 | 291.9 | 283.0 | 245.4 | 232.2 |
| 77.5° | 194.6 | 234.4 | 214.5 | 183.5 | 172.5 |
| 80° | 137.1 | 172.5 | 150.4 | 123.8 | 115.0 |
| 82.5° | 90.7 | 115.0 | 92.9 | 73.0 | 66.3 |
| 85° | 48.6 | 59.7 | 42.0 | 35.4 | 33.2 |
| 87.5° | 19.9 | 17.7 | 15.5 | 15.5 | 13.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)