

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: P233046

Luminaire Tested: **FCB-12-4-LD4-44-35-UNV-EDD1-WDA6**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P233046  
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-LD4-44-35-UNV-EDD1-WDA6  
Description: FAILSAFE 1X4 FCB LED TROFFER  
.060 ACRYLIC LENS  
Light Source: (84)3500K CCT, 80 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

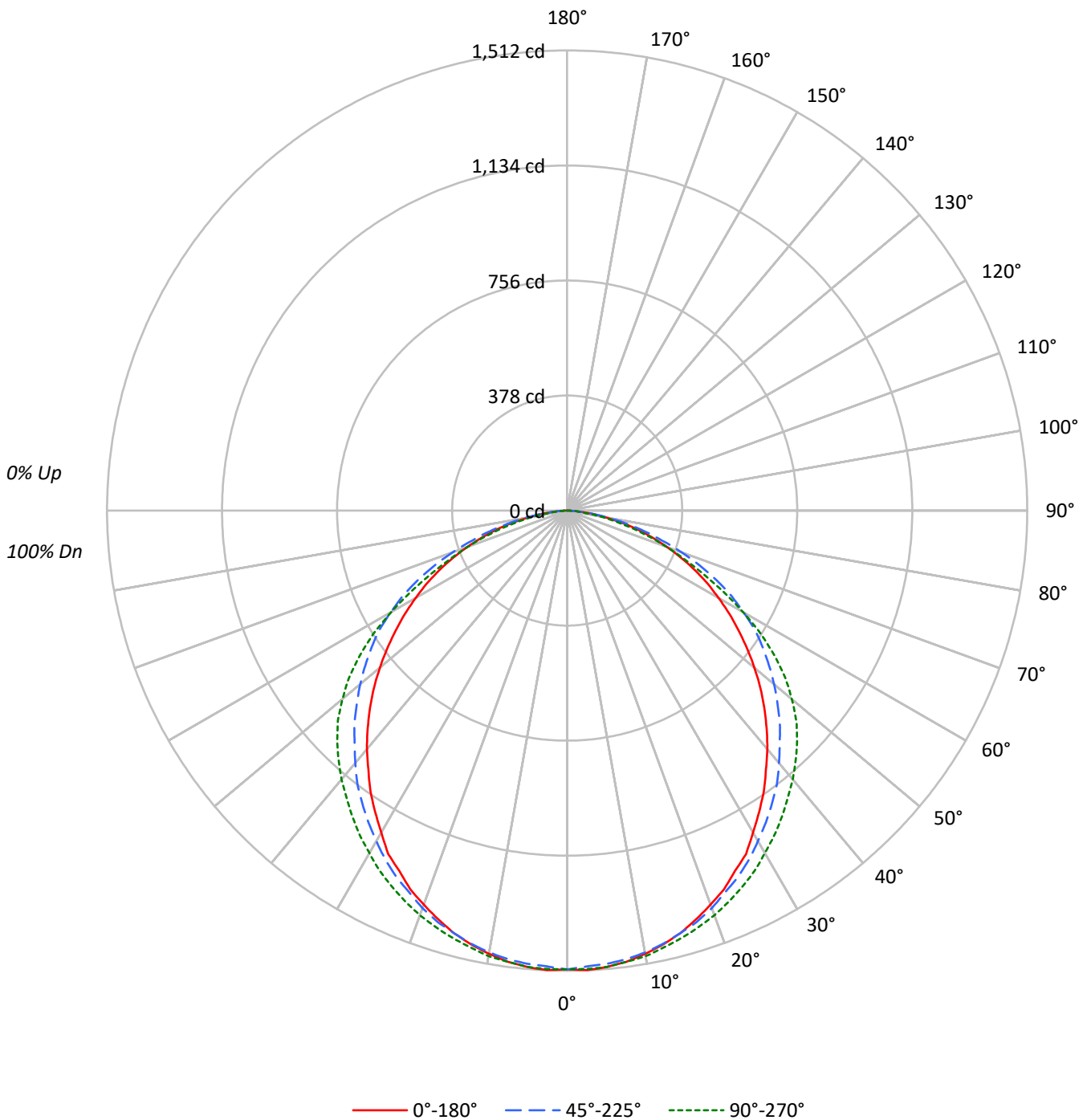
Lumens per Lamp: N/A  
Luminaire Lumens: 4177.0 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.28 / 1.37  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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





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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°  | 4056 | 4056 | 4056 |
| 5°  | 4066 | 4038 | 4066 |
| 10° | 4040 | 4029 | 4063 |
| 15° | 4004 | 4004 | 4050 |
| 20° | 3945 | 3981 | 4051 |
| 25° | 3877 | 3944 | 4048 |
| 30° | 3794 | 3897 | 4038 |
| 35° | 3700 | 3856 | 4039 |
| 40° | 3595 | 3805 | 4051 |
| 45° | 3487 | 3761 | 4067 |
| 50° | 3362 | 3715 | 4034 |
| 55° | 3227 | 3681 | 3903 |
| 60° | 3092 | 3602 | 3591 |
| 65° | 2950 | 3449 | 3147 |
| 70° | 2738 | 3143 | 2722 |
| 75° | 2484 | 2741 | 2248 |
| 80° | 1979 | 2170 | 1660 |
| 85° | 1399 | 1207 | 954  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 142.6  | 3.4       |
| 10°-20°   | 407.4  | 9.8       |
| 20°-30°   | 614.3  | 14.7      |
| 30°-40°   | 736.4  | 17.6      |
| 40°-50°   | 764.2  | 18.3      |
| 50°-60°   | 689.3  | 16.5      |
| 60°-70°   | 502.8  | 12.0      |
| 70°-80°   | 263.8  | 6.3       |
| 80°-90°   | 56.3   | 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°    | 1164.4 | 27.9      |
| 0°-40°    | 1900.7 | 45.5      |
| 0°-60°    | 3354.2 | 80.3      |
| 0°-90°    | 4177.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4177.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1507 | 1507  | 1507 | 1507  | 1507 |      |
| 5°  | 1505 | 1501  | 1495 | 1505  | 1505 | 143  |
| 15° | 1437 | 1437  | 1437 | 1454  | 1454 | 405  |
| 25° | 1306 | 1312  | 1328 | 1357  | 1363 | 602  |
| 35° | 1126 | 1139  | 1174 | 1217  | 1229 | 704  |
| 45° | 916  | 935   | 988  | 1048  | 1069 | 706  |
| 55° | 688  | 712   | 785  | 836   | 832  | 616  |
| 65° | 463  | 490   | 542  | 521   | 494  | 458  |
| 75° | 239  | 272   | 264  | 229   | 216  | 250  |
| 85° | 45   | 56    | 39   | 33    | 31   | 58   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1507.4 | 1507.4 | 1507.4 | 1507.4 | 1507.4 |
| 2.5°  | 1511.5 | 1507.4 | 1499.1 | 1507.4 | 1507.4 |
| 5°    | 1505.3 | 1501.2 | 1495.0 | 1505.3 | 1505.3 |
| 7.5°  | 1495.0 | 1490.9 | 1486.8 | 1497.1 | 1495.0 |
| 10°   | 1478.5 | 1476.5 | 1474.4 | 1486.8 | 1486.8 |
| 12.5° | 1460.0 | 1460.0 | 1457.9 | 1472.4 | 1470.3 |
| 15°   | 1437.3 | 1437.3 | 1437.3 | 1453.8 | 1453.8 |
| 17.5° | 1408.5 | 1412.6 | 1416.8 | 1435.3 | 1435.3 |
| 20°   | 1377.6 | 1381.7 | 1390.0 | 1412.6 | 1414.7 |
| 22.5° | 1346.7 | 1348.8 | 1357.0 | 1383.8 | 1390.0 |
| 25°   | 1305.6 | 1311.7 | 1328.2 | 1357.0 | 1363.2 |
| 27.5° | 1272.6 | 1274.7 | 1293.2 | 1326.1 | 1334.4 |
| 30°   | 1221.1 | 1235.5 | 1254.1 | 1291.1 | 1299.4 |
| 32.5° | 1173.8 | 1186.1 | 1214.9 | 1254.1 | 1266.4 |
| 35°   | 1126.4 | 1138.8 | 1173.8 | 1217.0 | 1229.4 |
| 37.5° | 1072.9 | 1091.4 | 1132.6 | 1175.8 | 1190.2 |
| 40°   | 1023.4 | 1039.9 | 1083.2 | 1136.7 | 1153.2 |
| 42.5° | 969.9  | 986.4  | 1033.7 | 1093.5 | 1112.0 |
| 45°   | 916.4  | 934.9  | 988.4  | 1048.2 | 1068.7 |
| 47.5° | 860.8  | 881.4  | 937.0  | 1002.8 | 1021.4 |
| 50°   | 803.1  | 825.8  | 887.5  | 955.5  | 963.7  |
| 52.5° | 745.4  | 770.2  | 836.1  | 895.8  | 904.0  |
| 55°   | 687.8  | 712.5  | 784.6  | 836.1  | 831.9  |
| 57.5° | 632.2  | 659.0  | 733.1  | 759.9  | 755.7  |
| 60°   | 574.5  | 603.4  | 669.3  | 681.6  | 667.2  |
| 62.5° | 521.0  | 547.8  | 609.5  | 599.2  | 580.7  |
| 65°   | 463.3  | 490.1  | 541.6  | 521.0  | 494.2  |
| 67.5° | 405.7  | 438.6  | 471.6  | 436.6  | 416.0  |
| 70°   | 348.0  | 385.1  | 399.5  | 364.5  | 346.0  |
| 72.5° | 292.4  | 331.5  | 327.4  | 292.4  | 280.1  |
| 75°   | 238.9  | 271.8  | 263.6  | 228.6  | 216.2  |
| 77.5° | 181.2  | 218.3  | 199.7  | 170.9  | 160.6  |
| 80°   | 127.7  | 160.6  | 140.0  | 115.3  | 107.1  |
| 82.5° | 84.4   | 107.1  | 86.5   | 68.0   | 61.8   |
| 85°   | 45.3   | 55.6   | 39.1   | 32.9   | 30.9   |
| 87.5° | 18.5   | 16.5   | 14.4   | 14.4   | 12.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)