

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: P589149

Luminaire Tested: **FMR-24-2-LD4-2LO-50-UNV-81-84-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P589149
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMR-24-2-LD4-2LO-50-UNV-81-84-EDD
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

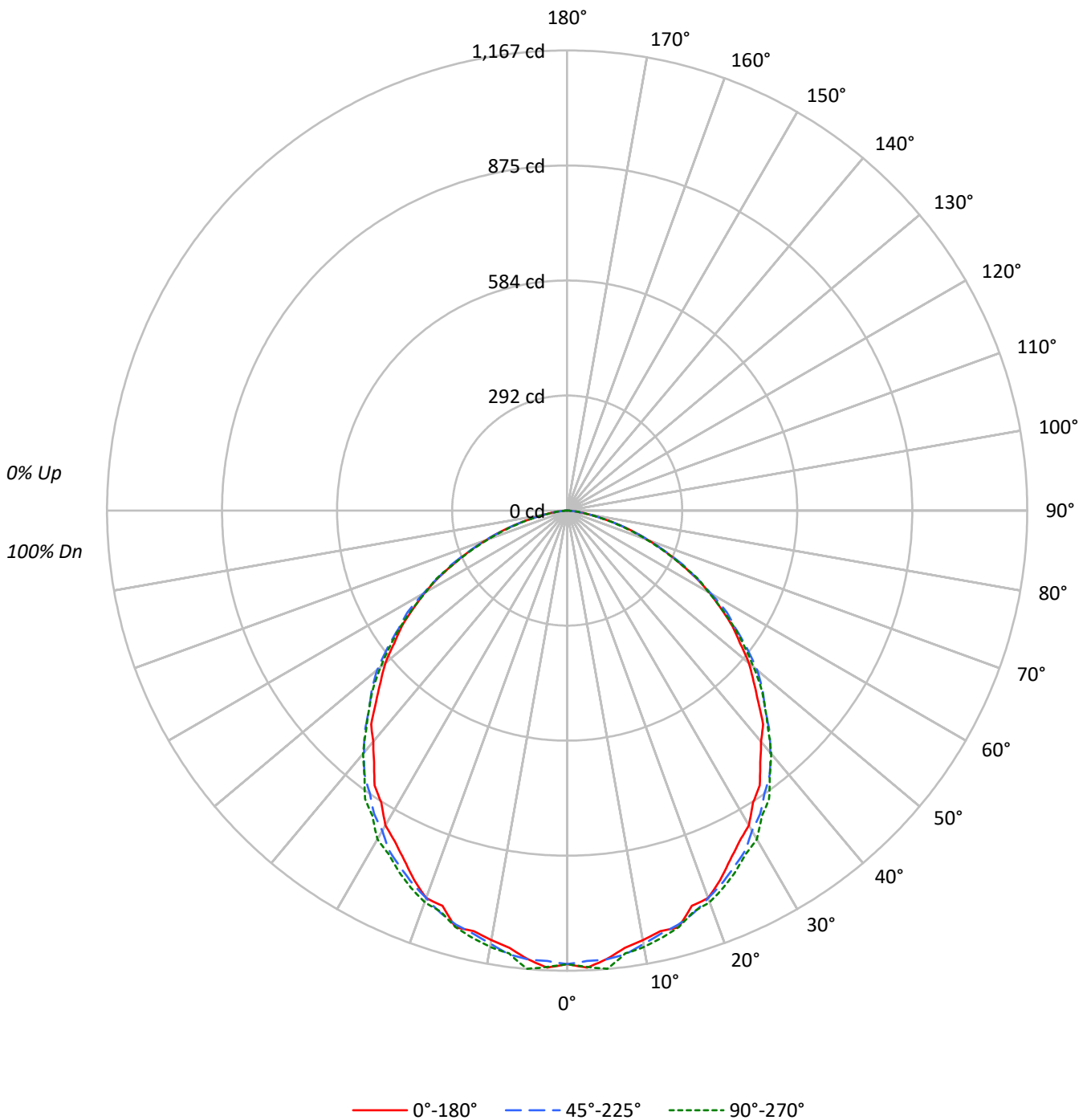
Lumens per Lamp: N/A
Luminaire Lumens: 2899.0 lumens
Efficiency: N/A
Efficacy: 123.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
Input Voltage (V): NR
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 | 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 | | | | | 100 | | | |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 | | | | | 86 | | | |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 | | | | | 73 | | | |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 | | | | | 62 | | | |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 | | | | | 53 | | | |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 | | | | | 46 | | | |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | | 41 | | | |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 | | | | | 36 | | | |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 | | | | | 32 | | | |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 | | | | | 29 | | | |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 | | | | | 26 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3095 | 3095 | 3095 |
| 5° | 3085 | 3086 | 3151 |
| 10° | 3022 | 3049 | 3071 |
| 15° | 3046 | 3030 | 3047 |
| 20° | 2995 | 2995 | 3027 |
| 25° | 2903 | 2966 | 2999 |
| 30° | 2863 | 2913 | 2991 |
| 35° | 2796 | 2869 | 2933 |
| 40° | 2687 | 2816 | 2829 |
| 45° | 2606 | 2698 | 2702 |
| 50° | 2520 | 2634 | 2583 |
| 55° | 2401 | 2448 | 2430 |
| 60° | 2245 | 2267 | 2227 |
| 65° | 2002 | 2053 | 1988 |
| 70° | 1718 | 1724 | 1676 |
| 75° | 1360 | 1357 | 1305 |
| 80° | 911 | 886 | 852 |
| 85° | 494 | 491 | 460 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 108.2 | 3.7 |
| 10°-20° | 306.6 | 10.6 |
| 20°-30° | 459.4 | 15.8 |
| 30°-40° | 544.5 | 18.8 |
| 40°-50° | 545.5 | 18.8 |
| 50°-60° | 463.1 | 16.0 |
| 60°-70° | 312.2 | 10.8 |
| 70°-80° | 137.2 | 4.7 |
| 80°-90° | 22.3 | 0.8 |
| 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° | 874.3 | 30.2 |
| 0°-40° | 1418.8 | 48.9 |
| 0°-60° | 2427.4 | 83.7 |
| 0°-90° | 2899.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2899.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1150 | 1150 | 1150 | 1150 | 1150 | |
| 5° | 1142 | 1139 | 1142 | 1139 | 1167 | 108 |
| 15° | 1094 | 1081 | 1088 | 1093 | 1094 | 305 |
| 25° | 978 | 983 | 999 | 1012 | 1010 | 452 |
| 35° | 851 | 854 | 873 | 894 | 893 | 528 |
| 45° | 685 | 697 | 709 | 727 | 710 | 530 |
| 55° | 512 | 508 | 522 | 518 | 518 | 455 |
| 65° | 314 | 310 | 322 | 310 | 312 | 313 |
| 75° | 131 | 128 | 130 | 121 | 126 | 140 |
| 85° | 16 | 16 | 16 | 15 | 15 | 23 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589149

CATALOG NUMBER: FMR-24-2-LD4-2LO-50-UNV-81-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1150.2 | 1150.2 | 1150.2 | 1150.2 | 1150.2 |
| 2.5° | 1160.2 | 1151.4 | 1143.3 | 1152.8 | 1158.6 |
| 5° | 1142.1 | 1139.4 | 1142.5 | 1139.1 | 1166.6 |
| 7.5° | 1118.6 | 1128.9 | 1134.8 | 1131.1 | 1132.7 |
| 10° | 1106.1 | 1102.6 | 1115.8 | 1125.0 | 1123.7 |
| 12.5° | 1092.8 | 1098.1 | 1098.9 | 1108.8 | 1109.7 |
| 15° | 1093.5 | 1080.9 | 1087.6 | 1093.2 | 1093.7 |
| 17.5° | 1051.0 | 1064.7 | 1069.3 | 1082.2 | 1066.2 |
| 20° | 1045.8 | 1035.9 | 1045.8 | 1059.1 | 1057.0 |
| 22.5° | 1013.9 | 1002.8 | 1024.2 | 1035.9 | 1035.2 |
| 25° | 977.7 | 983.0 | 999.1 | 1012.1 | 1010.1 |
| 27.5° | 945.9 | 952.1 | 975.0 | 993.0 | 981.4 |
| 30° | 921.4 | 918.3 | 937.6 | 953.6 | 962.5 |
| 32.5° | 877.6 | 888.9 | 911.4 | 927.3 | 918.9 |
| 35° | 851.0 | 853.5 | 873.3 | 893.5 | 892.9 |
| 37.5° | 804.5 | 816.2 | 844.0 | 849.7 | 844.5 |
| 40° | 764.9 | 776.6 | 801.7 | 807.8 | 805.2 |
| 42.5° | 735.6 | 737.7 | 759.2 | 766.2 | 755.1 |
| 45° | 684.7 | 697.4 | 709.0 | 727.3 | 710.1 |
| 47.5° | 641.3 | 647.2 | 672.2 | 677.1 | 668.0 |
| 50° | 601.9 | 604.0 | 629.1 | 623.0 | 617.1 |
| 52.5° | 552.5 | 561.2 | 575.3 | 574.2 | 567.2 |
| 55° | 511.8 | 508.4 | 521.7 | 518.2 | 518.0 |
| 57.5° | 462.9 | 468.9 | 479.9 | 474.2 | 465.1 |
| 60° | 417.2 | 417.3 | 421.3 | 415.0 | 413.8 |
| 62.5° | 366.2 | 368.0 | 368.9 | 361.0 | 373.8 |
| 65° | 314.4 | 310.2 | 322.4 | 310.1 | 312.2 |
| 67.5° | 266.7 | 268.8 | 267.6 | 259.9 | 262.9 |
| 70° | 218.3 | 221.0 | 219.1 | 210.3 | 213.0 |
| 72.5° | 174.1 | 170.8 | 172.9 | 161.9 | 166.9 |
| 75° | 130.8 | 128.2 | 130.5 | 121.3 | 125.5 |
| 77.5° | 89.1 | 91.2 | 89.7 | 84.8 | 87.6 |
| 80° | 58.8 | 57.2 | 57.2 | 54.4 | 55.0 |
| 82.5° | 34.3 | 32.7 | 32.2 | 31.3 | 32.7 |
| 85° | 16.0 | 15.6 | 15.9 | 15.4 | 14.9 |
| 87.5° | 5.8 | 5.9 | 5.9 | 5.6 | 5.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)