

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: P589084

Luminaire Tested: **FMR-24-2-LD4-2LO-35-UNV-80-97-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P589084
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-35-UNV-80-97-EDD
Description: 2X2 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

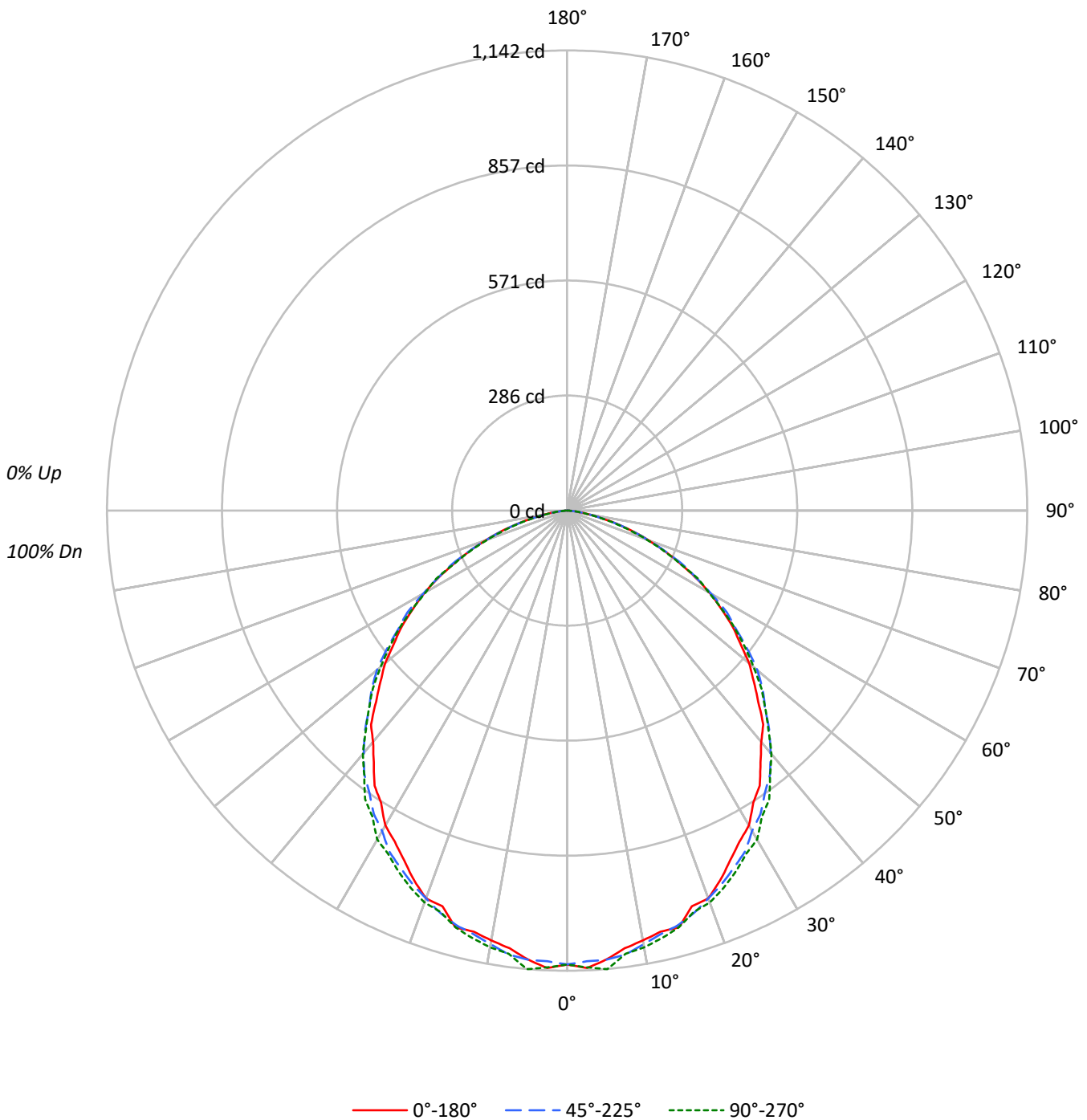
Lumens per Lamp: N/A
Luminaire Lumens: 2839.0 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3031 | 3031 | 3031 |
| 5° | 3021 | 3022 | 3086 |
| 10° | 2960 | 2986 | 3007 |
| 15° | 2983 | 2967 | 2984 |
| 20° | 2933 | 2933 | 2964 |
| 25° | 2843 | 2905 | 2937 |
| 30° | 2804 | 2853 | 2929 |
| 35° | 2738 | 2809 | 2872 |
| 40° | 2631 | 2758 | 2770 |
| 45° | 2552 | 2642 | 2646 |
| 50° | 2468 | 2579 | 2530 |
| 55° | 2351 | 2397 | 2380 |
| 60° | 2199 | 2221 | 2181 |
| 65° | 1961 | 2011 | 1947 |
| 70° | 1682 | 1688 | 1641 |
| 75° | 1332 | 1329 | 1278 |
| 80° | 893 | 868 | 834 |
| 85° | 485 | 482 | 448 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 106.0 | 3.7 |
| 10°-20° | 300.3 | 10.6 |
| 20°-30° | 449.9 | 15.8 |
| 30°-40° | 533.2 | 18.8 |
| 40°-50° | 534.2 | 18.8 |
| 50°-60° | 453.5 | 16.0 |
| 60°-70° | 305.7 | 10.8 |
| 70°-80° | 134.3 | 4.7 |
| 80°-90° | 21.8 | 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° | 856.2 | 30.2 |
| 0°-40° | 1389.4 | 48.9 |
| 0°-60° | 2377.1 | 83.7 |
| 0°-90° | 2839.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2839.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1126 | 1126 | 1126 | 1126 | 1126 | |
| 5° | 1118 | 1116 | 1119 | 1116 | 1142 | 105 |
| 15° | 1071 | 1058 | 1065 | 1071 | 1071 | 298 |
| 25° | 957 | 963 | 978 | 991 | 989 | 443 |
| 35° | 833 | 836 | 855 | 875 | 874 | 517 |
| 45° | 670 | 683 | 694 | 712 | 695 | 519 |
| 55° | 501 | 498 | 511 | 507 | 507 | 446 |
| 65° | 308 | 304 | 316 | 304 | 306 | 306 |
| 75° | 128 | 126 | 128 | 119 | 123 | 137 |
| 85° | 16 | 15 | 16 | 15 | 14 | 23 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589084

CATALOG NUMBER: FMR-24-2-LD4-2LO-35-UNV-80-97-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1126.4 | 1126.4 | 1126.4 | 1126.4 | 1126.4 |
| 2.5° | 1136.2 | 1127.6 | 1119.6 | 1128.9 | 1134.6 |
| 5° | 1118.4 | 1115.8 | 1118.9 | 1115.5 | 1142.4 |
| 7.5° | 1095.5 | 1105.5 | 1111.3 | 1107.7 | 1109.3 |
| 10° | 1083.2 | 1079.8 | 1092.7 | 1101.7 | 1100.4 |
| 12.5° | 1070.2 | 1075.4 | 1076.1 | 1085.9 | 1086.7 |
| 15° | 1070.9 | 1058.5 | 1065.1 | 1070.6 | 1071.0 |
| 17.5° | 1029.3 | 1042.7 | 1047.2 | 1059.8 | 1044.1 |
| 20° | 1024.2 | 1014.5 | 1024.2 | 1037.1 | 1035.1 |
| 22.5° | 992.9 | 982.0 | 1003.0 | 1014.5 | 1013.7 |
| 25° | 957.4 | 962.7 | 978.4 | 991.2 | 989.1 |
| 27.5° | 926.3 | 932.4 | 954.8 | 972.4 | 961.1 |
| 30° | 902.3 | 899.3 | 918.2 | 933.9 | 942.6 |
| 32.5° | 859.4 | 870.5 | 892.6 | 908.1 | 899.8 |
| 35° | 833.4 | 835.9 | 855.2 | 875.0 | 874.4 |
| 37.5° | 787.9 | 799.3 | 826.5 | 832.1 | 827.0 |
| 40° | 749.0 | 760.5 | 785.1 | 791.1 | 788.6 |
| 42.5° | 720.4 | 722.4 | 743.5 | 750.3 | 739.4 |
| 45° | 670.5 | 683.0 | 694.3 | 712.2 | 695.4 |
| 47.5° | 628.0 | 633.8 | 658.3 | 663.1 | 654.2 |
| 50° | 589.5 | 591.5 | 616.1 | 610.1 | 604.3 |
| 52.5° | 541.0 | 549.6 | 563.4 | 562.3 | 555.4 |
| 55° | 501.2 | 497.8 | 510.9 | 507.4 | 507.3 |
| 57.5° | 453.3 | 459.2 | 469.9 | 464.4 | 455.5 |
| 60° | 408.5 | 408.7 | 412.6 | 406.4 | 405.2 |
| 62.5° | 358.7 | 360.4 | 361.3 | 353.6 | 366.1 |
| 65° | 307.9 | 303.8 | 315.8 | 303.7 | 305.7 |
| 67.5° | 261.2 | 263.2 | 262.1 | 254.5 | 257.4 |
| 70° | 213.8 | 216.4 | 214.5 | 205.9 | 208.6 |
| 72.5° | 170.5 | 167.3 | 169.3 | 158.5 | 163.5 |
| 75° | 128.1 | 125.5 | 127.8 | 118.8 | 122.9 |
| 77.5° | 87.3 | 89.3 | 87.8 | 83.0 | 85.8 |
| 80° | 57.6 | 56.0 | 56.0 | 53.2 | 53.8 |
| 82.5° | 33.6 | 32.0 | 31.6 | 30.7 | 32.0 |
| 85° | 15.7 | 15.3 | 15.6 | 15.1 | 14.5 |
| 87.5° | 5.7 | 5.8 | 5.8 | 5.5 | 5.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)