

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: P588980

Luminaire Tested: **FMR-24-2-LD4-1STD-50-UNV-93-97-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P588980
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-LD4-1STD-50-UNV-93-97-EDD
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

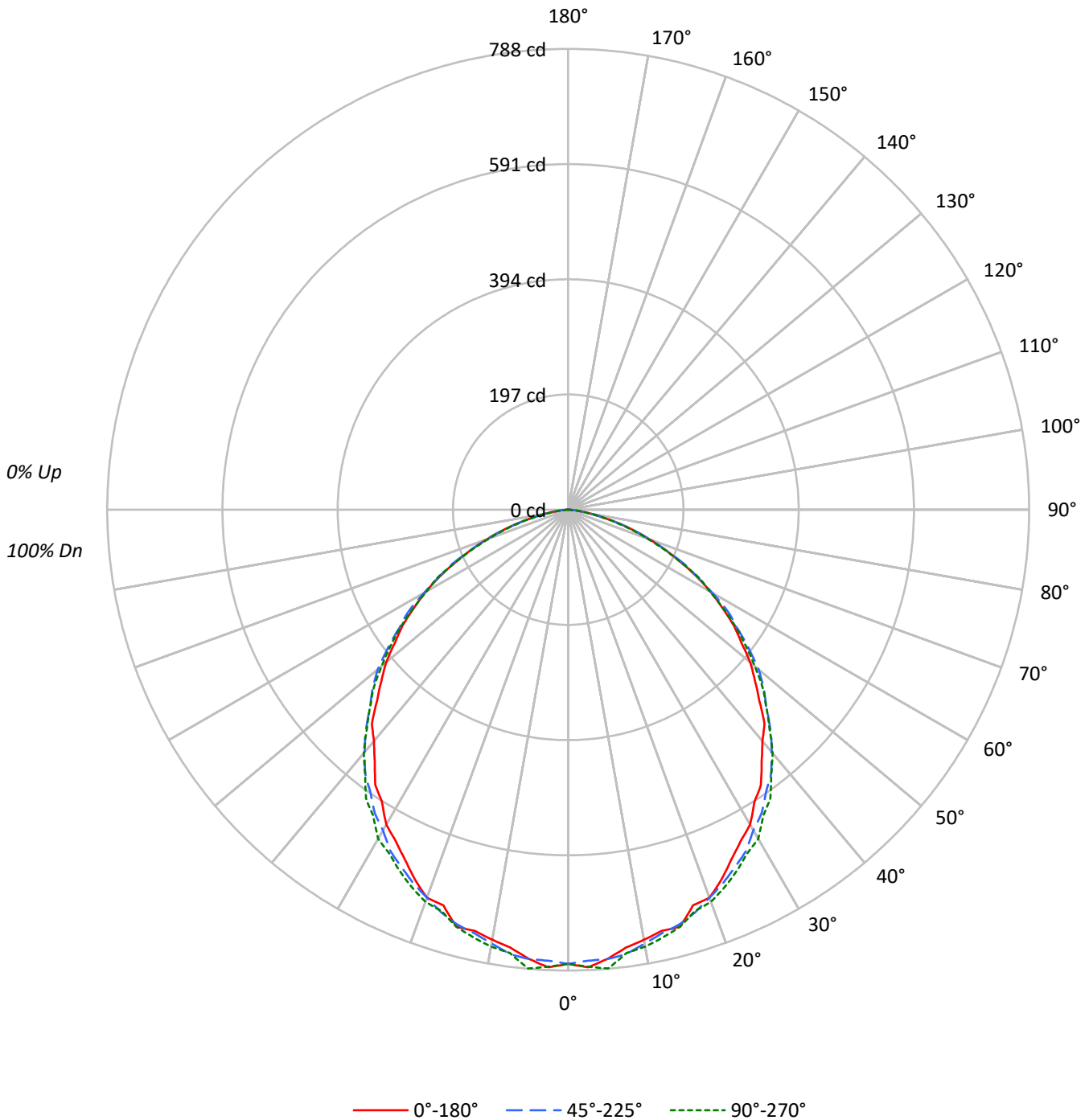
Lumens per Lamp: N/A
Luminaire Lumens: 1957.0 lumens
Efficiency: N/A
Efficacy: 117.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 16.6
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

TEST NUMBER: P588980

CATALOG NUMBER: FMR-24-2-LD4-1STD-50-UNV-93-97-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P588980

CATALOG NUMBER: FMR-24-2-LD4-1STD-50-UNV-93-97-EDD

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° | 2090 | 2090 | 2090 |
| 5° | 2083 | 2083 | 2127 |
| 10° | 2040 | 2058 | 2073 |
| 15° | 2057 | 2045 | 2057 |
| 20° | 2022 | 2022 | 2043 |
| 25° | 1960 | 2002 | 2024 |
| 30° | 1933 | 1967 | 2019 |
| 35° | 1887 | 1937 | 1980 |
| 40° | 1814 | 1901 | 1910 |
| 45° | 1759 | 1821 | 1824 |
| 50° | 1701 | 1778 | 1744 |
| 55° | 1621 | 1652 | 1641 |
| 60° | 1516 | 1531 | 1503 |
| 65° | 1351 | 1386 | 1342 |
| 70° | 1160 | 1164 | 1131 |
| 75° | 918 | 916 | 881 |
| 80° | 615 | 598 | 575 |
| 85° | 333 | 330 | 309 |



TEST NUMBER: P588980

CATALOG NUMBER: FMR-24-2-LD4-1STD-50-UNV-93-97-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 73.0 | 3.7 |
| 10°-20° | 207.0 | 10.6 |
| 20°-30° | 310.1 | 15.8 |
| 30°-40° | 367.6 | 18.8 |
| 40°-50° | 368.3 | 18.8 |
| 50°-60° | 312.6 | 16.0 |
| 60°-70° | 210.7 | 10.8 |
| 70°-80° | 92.6 | 4.7 |
| 80°-90° | 15.1 | 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° | 590.2 | 30.2 |
| 0°-40° | 957.8 | 48.9 |
| 0°-60° | 1638.6 | 83.7 |
| 0°-90° | 1957.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1957.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 776 | 776 | 776 | 776 | 776 | |
| 5° | 771 | 769 | 771 | 769 | 788 | 73 |
| 15° | 738 | 730 | 734 | 738 | 738 | 206 |
| 25° | 660 | 664 | 674 | 683 | 682 | 305 |
| 35° | 574 | 576 | 590 | 603 | 603 | 357 |
| 45° | 462 | 471 | 479 | 491 | 479 | 358 |
| 55° | 346 | 343 | 352 | 350 | 350 | 307 |
| 65° | 212 | 209 | 218 | 209 | 211 | 211 |
| 75° | 88 | 86 | 88 | 82 | 85 | 95 |
| 85° | 11 | 10 | 11 | 10 | 10 | 16 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P588980

CATALOG NUMBER: FMR-24-2-LD4-1STD-50-UNV-93-97-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 776.5 | 776.5 | 776.5 | 776.5 | 776.5 |
| 2.5° | 783.2 | 777.3 | 771.8 | 778.2 | 782.1 |
| 5° | 771.0 | 769.2 | 771.3 | 769.0 | 787.5 |
| 7.5° | 755.1 | 762.1 | 766.1 | 763.6 | 764.7 |
| 10° | 746.7 | 744.3 | 753.2 | 759.4 | 758.5 |
| 12.5° | 737.7 | 741.3 | 741.8 | 748.5 | 749.1 |
| 15° | 738.2 | 729.7 | 734.2 | 738.0 | 738.3 |
| 17.5° | 709.5 | 718.7 | 721.8 | 730.6 | 719.7 |
| 20° | 706.0 | 699.3 | 706.0 | 714.9 | 713.5 |
| 22.5° | 684.5 | 676.9 | 691.4 | 699.3 | 698.8 |
| 25° | 660.0 | 663.6 | 674.4 | 683.2 | 681.8 |
| 27.5° | 638.5 | 642.7 | 658.2 | 670.3 | 662.5 |
| 30° | 622.0 | 619.9 | 632.9 | 643.7 | 649.8 |
| 32.5° | 592.4 | 600.0 | 615.3 | 626.0 | 620.3 |
| 35° | 574.5 | 576.2 | 589.5 | 603.1 | 602.7 |
| 37.5° | 543.1 | 551.0 | 569.8 | 573.6 | 570.1 |
| 40° | 516.3 | 524.2 | 541.2 | 545.3 | 543.6 |
| 42.5° | 496.6 | 498.0 | 512.5 | 517.2 | 509.7 |
| 45° | 462.2 | 470.8 | 478.6 | 491.0 | 479.3 |
| 47.5° | 432.9 | 436.9 | 453.8 | 457.1 | 451.0 |
| 50° | 406.3 | 407.7 | 424.7 | 420.6 | 416.6 |
| 52.5° | 373.0 | 378.9 | 388.4 | 387.6 | 382.9 |
| 55° | 345.5 | 343.2 | 352.2 | 349.8 | 349.7 |
| 57.5° | 312.5 | 316.5 | 323.9 | 320.1 | 314.0 |
| 60° | 281.6 | 281.7 | 284.4 | 280.1 | 279.3 |
| 62.5° | 247.2 | 248.4 | 249.0 | 243.7 | 252.3 |
| 65° | 212.2 | 209.4 | 217.7 | 209.3 | 210.7 |
| 67.5° | 180.1 | 181.5 | 180.7 | 175.4 | 177.5 |
| 70° | 147.4 | 149.2 | 147.9 | 142.0 | 143.8 |
| 72.5° | 117.5 | 115.3 | 116.7 | 109.3 | 112.7 |
| 75° | 88.3 | 86.5 | 88.1 | 81.9 | 84.7 |
| 77.5° | 60.2 | 61.6 | 60.6 | 57.2 | 59.2 |
| 80° | 39.7 | 38.6 | 38.6 | 36.7 | 37.1 |
| 82.5° | 23.2 | 22.1 | 21.8 | 21.2 | 22.1 |
| 85° | 10.8 | 10.5 | 10.7 | 10.4 | 10.0 |
| 87.5° | 3.9 | 4.0 | 4.0 | 3.8 | 3.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)