

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: P589426

Luminaire Tested: **FMR-24-2-LD4-3LO-40-UNV-93-94-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P589426
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-LD4-3LO-40-UNV-93-94-EDD
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

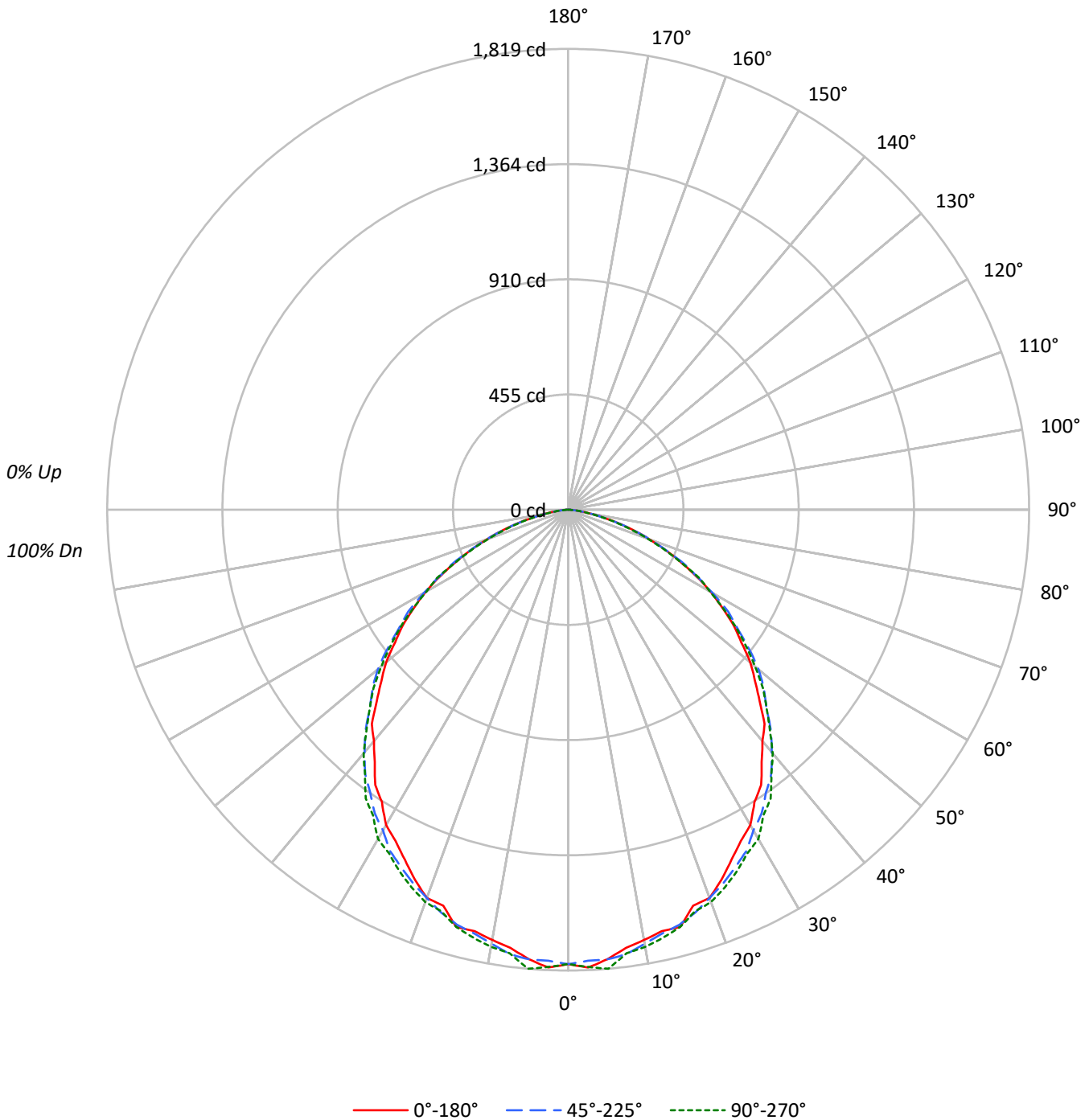
Lumens per Lamp: N/A
Luminaire Lumens: 4520.0 lumens
Efficiency: N/A
Efficacy: 128.8 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 35.1
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

TEST NUMBER: P589426

CATALOG NUMBER: FMR-24-2-LD4-3LO-40-UNV-93-94-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P589426

CATALOG NUMBER: FMR-24-2-LD4-3LO-40-UNV-93-94-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° | 4826 | 4826 | 4826 |
| 5° | 4810 | 4812 | 4913 |
| 10° | 4712 | 4754 | 4787 |
| 15° | 4750 | 4724 | 4751 |
| 20° | 4670 | 4670 | 4719 |
| 25° | 4526 | 4625 | 4676 |
| 30° | 4464 | 4542 | 4663 |
| 35° | 4359 | 4473 | 4573 |
| 40° | 4189 | 4391 | 4410 |
| 45° | 4062 | 4207 | 4213 |
| 50° | 3929 | 4106 | 4028 |
| 55° | 3744 | 3817 | 3789 |
| 60° | 3500 | 3535 | 3472 |
| 65° | 3121 | 3201 | 3099 |
| 70° | 2678 | 2687 | 2613 |
| 75° | 2121 | 2116 | 2035 |
| 80° | 1421 | 1382 | 1328 |
| 85° | 772 | 766 | 716 |



TEST NUMBER: P589426

CATALOG NUMBER: FMR-24-2-LD4-3LO-40-UNV-93-94-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 168.7 | 3.7 |
| 10°-20° | 478.1 | 10.6 |
| 20°-30° | 716.3 | 15.8 |
| 30°-40° | 849.0 | 18.8 |
| 40°-50° | 850.5 | 18.8 |
| 50°-60° | 722.0 | 16.0 |
| 60°-70° | 486.7 | 10.8 |
| 70°-80° | 213.9 | 4.7 |
| 80°-90° | 34.8 | 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° | 1363.1 | 30.2 |
| 0°-40° | 2212.1 | 48.9 |
| 0°-60° | 3784.6 | 83.7 |
| 0°-90° | 4520.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4520.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1793 | 1793 | 1793 | 1793 | 1793 | |
| 5° | 1781 | 1776 | 1781 | 1776 | 1819 | 168 |
| 15° | 1705 | 1685 | 1696 | 1704 | 1705 | 475 |
| 25° | 1524 | 1533 | 1558 | 1578 | 1575 | 705 |
| 35° | 1327 | 1331 | 1362 | 1393 | 1392 | 824 |
| 45° | 1068 | 1087 | 1106 | 1134 | 1107 | 826 |
| 55° | 798 | 793 | 814 | 808 | 808 | 710 |
| 65° | 490 | 484 | 503 | 484 | 487 | 488 |
| 75° | 204 | 200 | 204 | 189 | 196 | 219 |
| 85° | 25 | 24 | 25 | 24 | 23 | 36 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589426

CATALOG NUMBER: FMR-24-2-LD4-3LO-40-UNV-93-94-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1793.4 | 1793.4 | 1793.4 | 1793.4 | 1793.4 |
| 2.5° | 1808.9 | 1795.3 | 1782.5 | 1797.4 | 1806.4 |
| 5° | 1780.7 | 1776.5 | 1781.4 | 1776.1 | 1818.9 |
| 7.5° | 1744.1 | 1760.1 | 1769.3 | 1763.6 | 1766.1 |
| 10° | 1724.6 | 1719.1 | 1739.7 | 1754.1 | 1752.0 |
| 12.5° | 1703.8 | 1712.1 | 1713.3 | 1728.8 | 1730.2 |
| 15° | 1705.0 | 1685.3 | 1695.7 | 1704.5 | 1705.2 |
| 17.5° | 1638.7 | 1660.0 | 1667.2 | 1687.4 | 1662.4 |
| 20° | 1630.6 | 1615.1 | 1630.6 | 1651.2 | 1648.0 |
| 22.5° | 1580.9 | 1563.5 | 1596.8 | 1615.1 | 1614.0 |
| 25° | 1524.4 | 1532.7 | 1557.7 | 1578.1 | 1574.8 |
| 27.5° | 1474.8 | 1484.5 | 1520.2 | 1548.2 | 1530.1 |
| 30° | 1436.6 | 1431.7 | 1461.8 | 1486.8 | 1500.7 |
| 32.5° | 1368.3 | 1385.9 | 1421.1 | 1445.9 | 1432.7 |
| 35° | 1326.8 | 1330.8 | 1361.6 | 1393.1 | 1392.1 |
| 37.5° | 1254.4 | 1272.6 | 1315.9 | 1324.7 | 1316.6 |
| 40° | 1192.5 | 1210.8 | 1250.0 | 1259.4 | 1255.5 |
| 42.5° | 1146.9 | 1150.2 | 1183.7 | 1194.6 | 1177.2 |
| 45° | 1067.5 | 1087.4 | 1105.5 | 1133.9 | 1107.1 |
| 47.5° | 999.9 | 1009.1 | 1048.0 | 1055.7 | 1041.6 |
| 50° | 938.5 | 941.7 | 980.9 | 971.4 | 962.1 |
| 52.5° | 861.4 | 875.1 | 897.1 | 895.2 | 884.3 |
| 55° | 798.0 | 792.6 | 813.5 | 807.9 | 807.7 |
| 57.5° | 721.8 | 731.0 | 748.2 | 739.4 | 725.2 |
| 60° | 650.4 | 650.7 | 656.9 | 647.0 | 645.1 |
| 62.5° | 571.0 | 573.8 | 575.2 | 562.9 | 582.8 |
| 65° | 490.2 | 483.7 | 502.7 | 483.5 | 486.7 |
| 67.5° | 415.9 | 419.1 | 417.3 | 405.2 | 409.9 |
| 70° | 340.4 | 344.6 | 341.5 | 327.9 | 332.1 |
| 72.5° | 271.4 | 266.3 | 269.5 | 252.4 | 260.3 |
| 75° | 204.0 | 199.8 | 203.5 | 189.2 | 195.7 |
| 77.5° | 138.9 | 142.2 | 139.9 | 132.2 | 136.6 |
| 80° | 91.7 | 89.2 | 89.2 | 84.8 | 85.7 |
| 82.5° | 53.5 | 50.9 | 50.2 | 48.9 | 50.9 |
| 85° | 25.0 | 24.3 | 24.8 | 24.1 | 23.2 |
| 87.5° | 9.0 | 9.3 | 9.3 | 8.8 | 8.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)