

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: P589692

Luminaire Tested: **FMR-24-2-LD4-4LO-40-UNV-80-97-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P589692
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-LD4-4LO-40-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 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

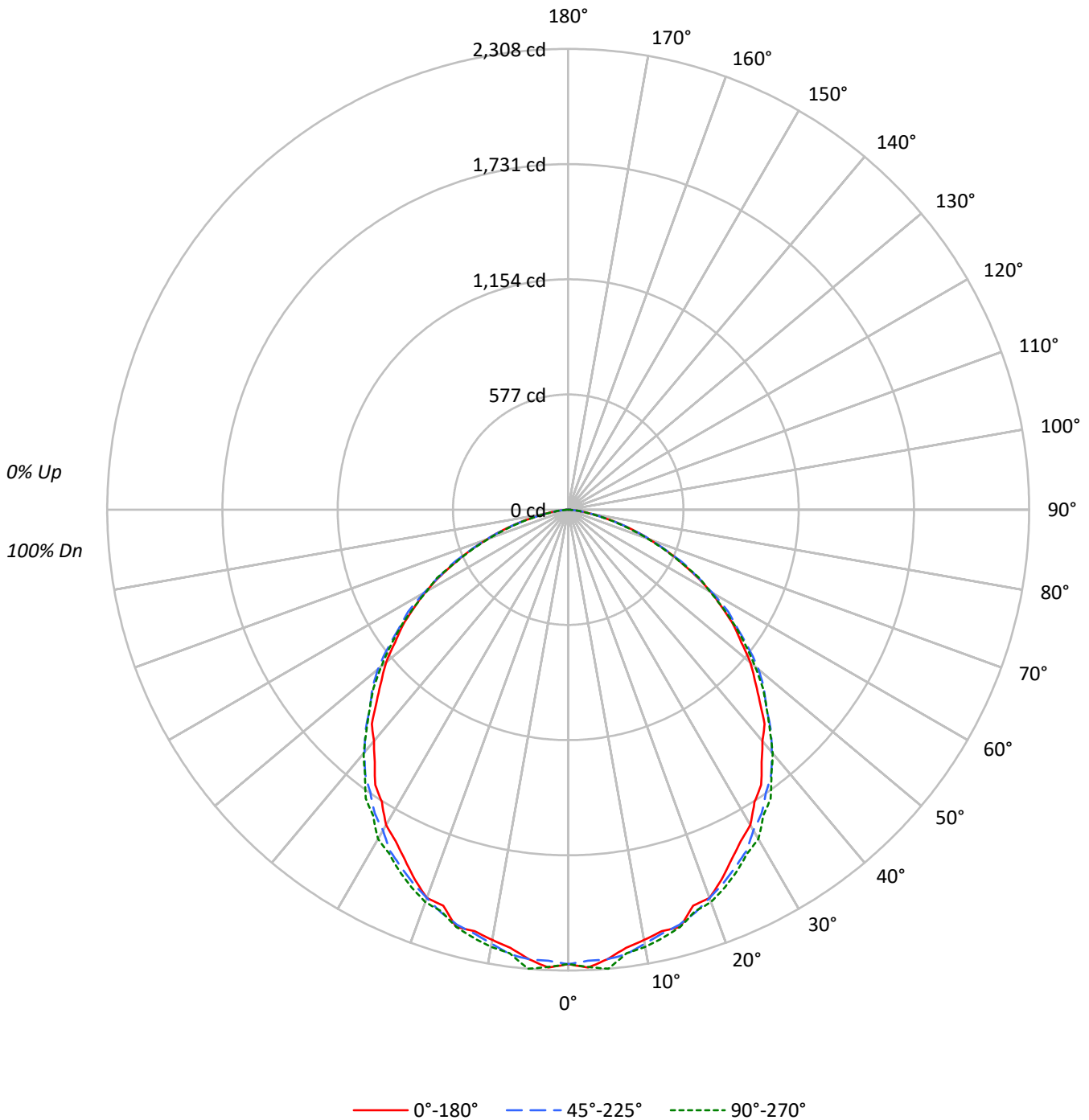
Lumens per Lamp: N/A
Luminaire Lumens: 5735.0 lumens
Efficiency: N/A
Efficacy: 122.5 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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: P589692

CATALOG NUMBER: FMR-24-2-LD4-4LO-40-UNV-80-97-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P589692

CATALOG NUMBER: FMR-24-2-LD4-4LO-40-UNV-80-97-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° | 6123 | 6123 | 6123 |
| 5° | 6103 | 6105 | 6234 |
| 10° | 5979 | 6031 | 6074 |
| 15° | 6027 | 5994 | 6028 |
| 20° | 5925 | 5925 | 5988 |
| 25° | 5743 | 5868 | 5933 |
| 30° | 5664 | 5763 | 5917 |
| 35° | 5530 | 5675 | 5802 |
| 40° | 5315 | 5571 | 5596 |
| 45° | 5154 | 5338 | 5346 |
| 50° | 4985 | 5210 | 5111 |
| 55° | 4750 | 4842 | 4808 |
| 60° | 4442 | 4486 | 4405 |
| 65° | 3961 | 4061 | 3933 |
| 70° | 3398 | 3410 | 3315 |
| 75° | 2691 | 2686 | 2582 |
| 80° | 1802 | 1753 | 1684 |
| 85° | 979 | 969 | 908 |



TEST NUMBER: P589692

CATALOG NUMBER: FMR-24-2-LD4-4LO-40-UNV-80-97-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 214.0 | 3.7 |
| 10°-20° | 606.6 | 10.6 |
| 20°-30° | 908.9 | 15.8 |
| 30°-40° | 1077.2 | 18.8 |
| 40°-50° | 1079.2 | 18.8 |
| 50°-60° | 916.0 | 16.0 |
| 60°-70° | 617.6 | 10.8 |
| 70°-80° | 271.4 | 4.7 |
| 80°-90° | 44.1 | 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° | 1729.5 | 30.2 |
| 0°-40° | 2806.7 | 48.9 |
| 0°-60° | 4801.9 | 83.7 |
| 0°-90° | 5735.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5735.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2276 | 2276 | 2276 | 2276 | 2276 | |
| 5° | 2259 | 2254 | 2260 | 2254 | 2308 | 213 |
| 15° | 2163 | 2138 | 2152 | 2163 | 2164 | 603 |
| 25° | 1934 | 1945 | 1976 | 2002 | 1998 | 894 |
| 35° | 1684 | 1688 | 1728 | 1768 | 1766 | 1045 |
| 45° | 1354 | 1380 | 1403 | 1439 | 1405 | 1048 |
| 55° | 1012 | 1006 | 1032 | 1025 | 1025 | 901 |
| 65° | 622 | 614 | 638 | 614 | 618 | 619 |
| 75° | 259 | 254 | 258 | 240 | 248 | 277 |
| 85° | 32 | 31 | 31 | 31 | 29 | 46 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589692

CATALOG NUMBER: FMR-24-2-LD4-4LO-40-UNV-80-97-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2275.5 | 2275.5 | 2275.5 | 2275.5 | 2275.5 |
| 2.5° | 2295.2 | 2277.9 | 2261.7 | 2280.5 | 2292.0 |
| 5° | 2259.3 | 2254.1 | 2260.2 | 2253.5 | 2307.8 |
| 7.5° | 2212.9 | 2233.2 | 2244.9 | 2237.6 | 2240.8 |
| 10° | 2188.2 | 2181.2 | 2207.3 | 2225.6 | 2222.9 |
| 12.5° | 2161.8 | 2172.4 | 2173.8 | 2193.5 | 2195.3 |
| 15° | 2163.3 | 2138.3 | 2151.5 | 2162.7 | 2163.6 |
| 17.5° | 2079.2 | 2106.3 | 2115.4 | 2140.9 | 2109.2 |
| 20° | 2069.0 | 2049.3 | 2069.0 | 2095.1 | 2091.0 |
| 22.5° | 2005.8 | 1983.8 | 2026.1 | 2049.3 | 2047.8 |
| 25° | 1934.1 | 1944.7 | 1976.4 | 2002.3 | 1998.2 |
| 27.5° | 1871.2 | 1883.6 | 1928.8 | 1964.4 | 1941.4 |
| 30° | 1822.8 | 1816.6 | 1854.8 | 1886.5 | 1904.1 |
| 32.5° | 1736.1 | 1758.4 | 1803.1 | 1834.5 | 1817.8 |
| 35° | 1683.5 | 1688.5 | 1727.6 | 1767.5 | 1766.3 |
| 37.5° | 1591.5 | 1614.7 | 1669.7 | 1680.8 | 1670.6 |
| 40° | 1513.1 | 1536.3 | 1585.9 | 1598.0 | 1593.0 |
| 42.5° | 1455.2 | 1459.3 | 1501.9 | 1515.7 | 1493.7 |
| 45° | 1354.4 | 1379.7 | 1402.6 | 1438.8 | 1404.7 |
| 47.5° | 1268.6 | 1280.4 | 1329.8 | 1339.4 | 1321.5 |
| 50° | 1190.8 | 1194.9 | 1244.5 | 1232.5 | 1220.8 |
| 52.5° | 1092.9 | 1110.3 | 1138.2 | 1135.8 | 1122.0 |
| 55° | 1012.4 | 1005.7 | 1032.1 | 1025.1 | 1024.8 |
| 57.5° | 915.8 | 927.5 | 949.3 | 938.1 | 920.2 |
| 60° | 825.3 | 825.6 | 833.5 | 820.9 | 818.5 |
| 62.5° | 724.5 | 728.0 | 729.8 | 714.2 | 739.5 |
| 65° | 622.0 | 613.8 | 637.8 | 613.5 | 617.6 |
| 67.5° | 527.7 | 531.8 | 529.4 | 514.2 | 520.0 |
| 70° | 431.9 | 437.2 | 433.4 | 416.0 | 421.3 |
| 72.5° | 344.3 | 337.9 | 342.0 | 320.2 | 330.2 |
| 75° | 258.8 | 253.6 | 258.3 | 240.0 | 248.3 |
| 77.5° | 176.3 | 180.4 | 177.5 | 167.8 | 173.3 |
| 80° | 116.3 | 113.1 | 113.1 | 107.5 | 108.7 |
| 82.5° | 67.9 | 64.6 | 63.8 | 62.0 | 64.6 |
| 85° | 31.7 | 30.8 | 31.4 | 30.6 | 29.4 |
| 87.5° | 11.5 | 11.8 | 11.8 | 11.2 | 10.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)