

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: P589550

Luminaire Tested: **FMR-24-2-LD4-3STD-50-UNV-93-85-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P589550
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-LD4-3STD-50-UNV-93-85-EDD
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

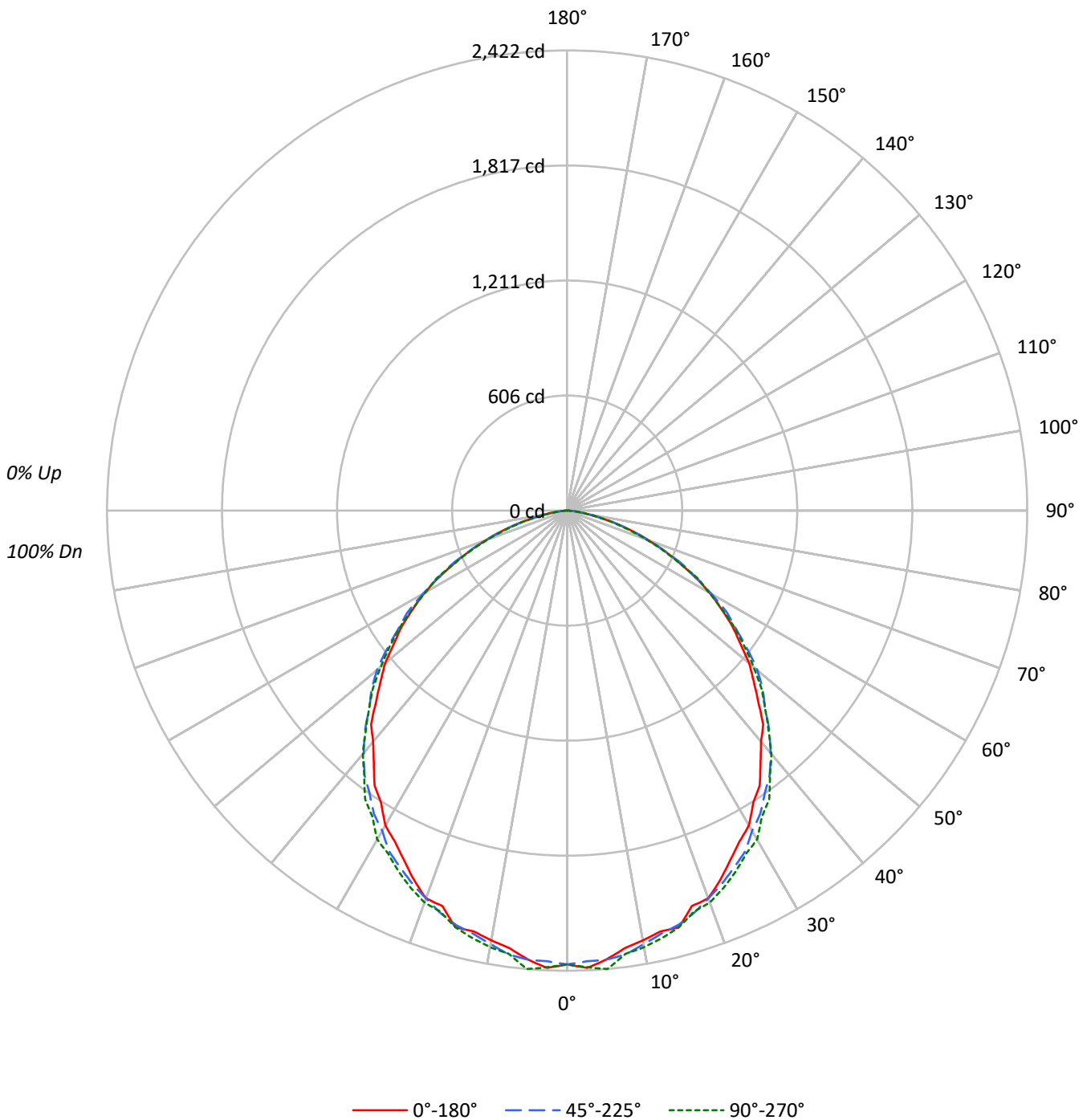
Lumens per Lamp: N/A
Luminaire Lumens: 6020.0 lumens
Efficiency: N/A
Efficacy: 120.4 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 50
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





TEST NUMBER: P589550

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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° | 6428 | 6428 | 6428 |
| 5° | 6406 | 6409 | 6544 |
| 10° | 6277 | 6331 | 6376 |
| 15° | 6326 | 6292 | 6327 |
| 20° | 6219 | 6219 | 6285 |
| 25° | 6028 | 6160 | 6228 |
| 30° | 5945 | 6050 | 6211 |
| 35° | 5805 | 5957 | 6091 |
| 40° | 5579 | 5848 | 5874 |
| 45° | 5410 | 5603 | 5611 |
| 50° | 5233 | 5469 | 5364 |
| 55° | 4986 | 5083 | 5047 |
| 60° | 4662 | 4709 | 4624 |
| 65° | 4157 | 4263 | 4128 |
| 70° | 3567 | 3579 | 3480 |
| 75° | 2825 | 2819 | 2709 |
| 80° | 1892 | 1839 | 1768 |
| 85° | 1028 | 1019 | 951 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 224.7 | 3.7 |
| 10°-20° | 636.8 | 10.6 |
| 20°-30° | 954.0 | 15.8 |
| 30°-40° | 1130.7 | 18.8 |
| 40°-50° | 1132.8 | 18.8 |
| 50°-60° | 961.6 | 16.0 |
| 60°-70° | 648.3 | 10.8 |
| 70°-80° | 284.9 | 4.7 |
| 80°-90° | 46.3 | 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° | 1815.5 | 30.2 |
| 0°-40° | 2946.2 | 48.9 |
| 0°-60° | 5040.6 | 83.7 |
| 0°-90° | 6020.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6020.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2389 | 2389 | 2389 | 2389 | 2389 | |
| 5° | 2372 | 2366 | 2372 | 2366 | 2422 | 224 |
| 15° | 2271 | 2245 | 2258 | 2270 | 2271 | 633 |
| 25° | 2030 | 2041 | 2075 | 2102 | 2098 | 939 |
| 35° | 1767 | 1772 | 1813 | 1855 | 1854 | 1097 |
| 45° | 1422 | 1448 | 1472 | 1510 | 1474 | 1100 |
| 55° | 1063 | 1056 | 1083 | 1076 | 1076 | 945 |
| 65° | 653 | 644 | 670 | 644 | 648 | 649 |
| 75° | 272 | 266 | 271 | 252 | 261 | 291 |
| 85° | 33 | 32 | 33 | 32 | 31 | 48 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589550

CATALOG NUMBER: FMR-24-2-LD4-3STD-50-UNV-93-85-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2388.6 | 2388.6 | 2388.6 | 2388.6 | 2388.6 |
| 2.5° | 2409.2 | 2391.1 | 2374.1 | 2393.8 | 2405.9 |
| 5° | 2371.6 | 2366.1 | 2372.5 | 2365.5 | 2422.5 |
| 7.5° | 2322.9 | 2344.2 | 2356.5 | 2348.8 | 2352.2 |
| 10° | 2297.0 | 2289.6 | 2317.0 | 2336.2 | 2333.4 |
| 12.5° | 2269.2 | 2280.3 | 2281.9 | 2302.5 | 2304.4 |
| 15° | 2270.8 | 2244.6 | 2258.4 | 2270.2 | 2271.1 |
| 17.5° | 2182.6 | 2210.9 | 2220.5 | 2247.3 | 2214.0 |
| 20° | 2171.8 | 2151.1 | 2171.8 | 2199.2 | 2194.9 |
| 22.5° | 2105.5 | 2082.3 | 2126.7 | 2151.1 | 2149.6 |
| 25° | 2030.2 | 2041.3 | 2074.6 | 2101.8 | 2097.5 |
| 27.5° | 1964.2 | 1977.2 | 2024.7 | 2062.0 | 2037.9 |
| 30° | 1913.3 | 1906.9 | 1947.0 | 1980.3 | 1998.8 |
| 32.5° | 1822.4 | 1845.8 | 1892.7 | 1925.7 | 1908.1 |
| 35° | 1767.2 | 1772.4 | 1813.4 | 1855.4 | 1854.1 |
| 37.5° | 1670.6 | 1695.0 | 1752.7 | 1764.4 | 1753.6 |
| 40° | 1588.3 | 1612.6 | 1664.8 | 1677.4 | 1672.2 |
| 42.5° | 1527.5 | 1531.8 | 1576.6 | 1591.1 | 1567.9 |
| 45° | 1421.7 | 1448.3 | 1472.3 | 1510.3 | 1474.5 |
| 47.5° | 1331.7 | 1344.0 | 1395.8 | 1406.0 | 1387.2 |
| 50° | 1250.0 | 1254.3 | 1306.4 | 1293.8 | 1281.4 |
| 52.5° | 1147.3 | 1165.5 | 1194.8 | 1192.3 | 1177.8 |
| 55° | 1062.8 | 1055.7 | 1083.4 | 1076.0 | 1075.7 |
| 57.5° | 961.3 | 973.6 | 996.5 | 984.7 | 965.9 |
| 60° | 866.3 | 866.6 | 874.9 | 861.7 | 859.2 |
| 62.5° | 760.5 | 764.2 | 766.1 | 749.7 | 776.3 |
| 65° | 652.9 | 644.3 | 669.5 | 643.9 | 648.3 |
| 67.5° | 553.9 | 558.2 | 555.7 | 539.7 | 545.9 |
| 70° | 453.4 | 458.9 | 454.9 | 436.7 | 442.3 |
| 72.5° | 361.4 | 354.7 | 359.0 | 336.2 | 346.6 |
| 75° | 271.7 | 266.2 | 271.1 | 252.0 | 260.6 |
| 77.5° | 185.0 | 189.4 | 186.3 | 176.1 | 182.0 |
| 80° | 122.1 | 118.7 | 118.7 | 112.9 | 114.1 |
| 82.5° | 71.2 | 67.8 | 66.9 | 65.1 | 67.8 |
| 85° | 33.3 | 32.4 | 33.0 | 32.1 | 30.8 |
| 87.5° | 12.0 | 12.3 | 12.3 | 11.7 | 11.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)