

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: P588801

Luminaire Tested: **FMR-24-2-LD4-1LO-35-UNV-81-88-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P588801
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-LD4-1LO-35-UNV-81-88-EDD
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

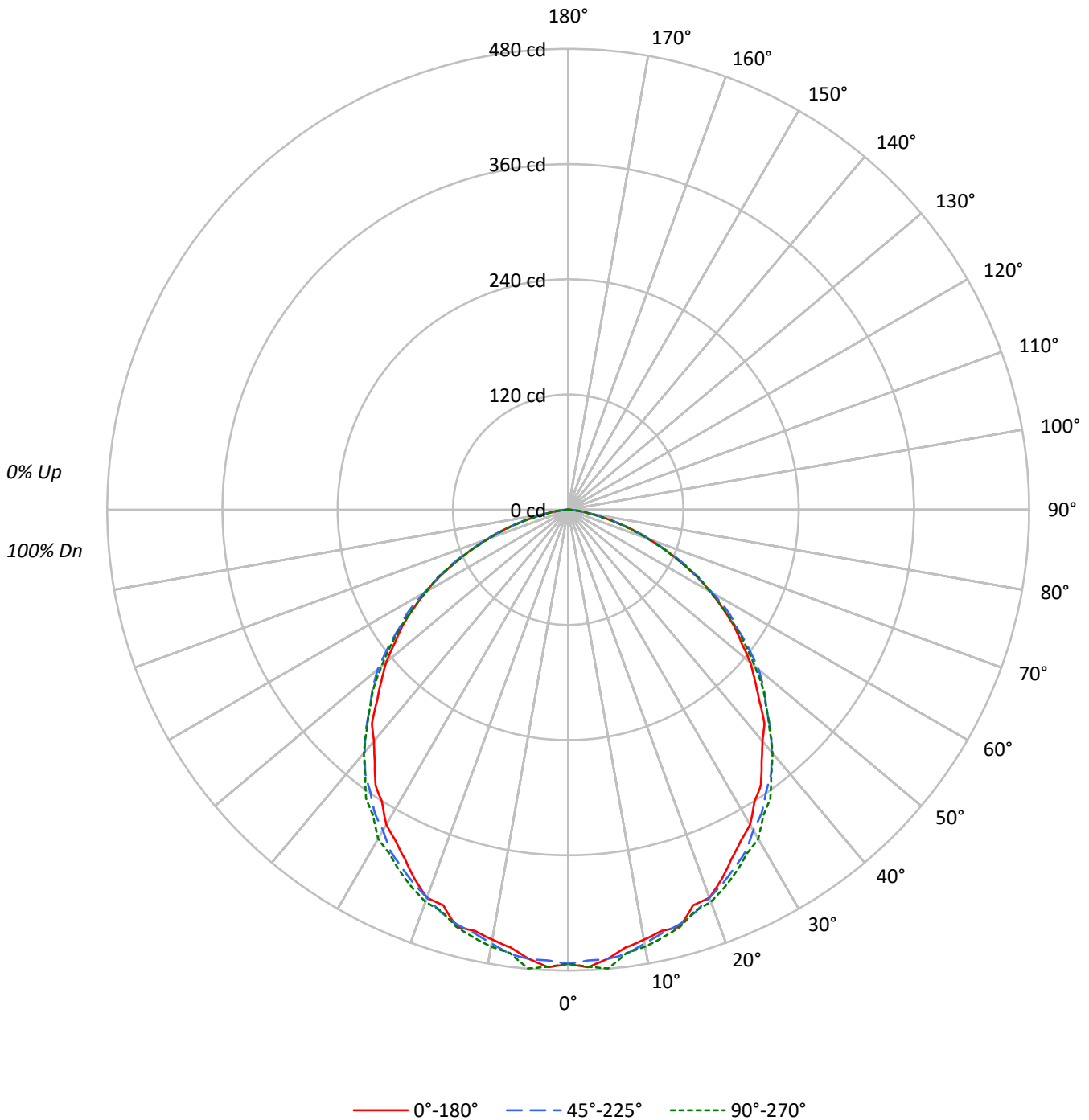
Lumens per Lamp: N/A
Luminaire Lumens: 1192.0 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 11.7
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





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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° | 1273 | 1273 | 1273 |
| 5° | 1269 | 1269 | 1296 |
| 10° | 1243 | 1254 | 1262 |
| 15° | 1253 | 1246 | 1253 |
| 20° | 1231 | 1231 | 1245 |
| 25° | 1194 | 1220 | 1233 |
| 30° | 1177 | 1198 | 1230 |
| 35° | 1149 | 1180 | 1206 |
| 40° | 1105 | 1158 | 1163 |
| 45° | 1071 | 1109 | 1111 |
| 50° | 1036 | 1083 | 1062 |
| 55° | 987 | 1006 | 999 |
| 60° | 923 | 932 | 915 |
| 65° | 823 | 844 | 818 |
| 70° | 707 | 709 | 689 |
| 75° | 559 | 558 | 536 |
| 80° | 375 | 364 | 350 |
| 85° | 204 | 201 | 188 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 44.5 | 3.7 |
| 10°-20° | 126.1 | 10.6 |
| 20°-30° | 188.9 | 15.8 |
| 30°-40° | 223.9 | 18.8 |
| 40°-50° | 224.3 | 18.8 |
| 50°-60° | 190.4 | 16.0 |
| 60°-70° | 128.4 | 10.8 |
| 70°-80° | 56.4 | 4.7 |
| 80°-90° | 9.2 | 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° | 359.5 | 30.2 |
| 0°-40° | 583.4 | 48.9 |
| 0°-60° | 998.1 | 83.7 |
| 0°-90° | 1192.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1192.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 473 | 473 | 473 | 473 | 473 | |
| 5° | 470 | 468 | 470 | 468 | 480 | 44 |
| 15° | 450 | 444 | 447 | 450 | 450 | 125 |
| 25° | 402 | 404 | 411 | 416 | 415 | 186 |
| 35° | 350 | 351 | 359 | 367 | 367 | 217 |
| 45° | 282 | 287 | 292 | 299 | 292 | 218 |
| 55° | 210 | 209 | 214 | 213 | 213 | 187 |
| 65° | 129 | 128 | 133 | 128 | 128 | 129 |
| 75° | 54 | 53 | 54 | 50 | 52 | 58 |
| 85° | 7 | 6 | 6 | 6 | 6 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P588801

CATALOG NUMBER: FMR-24-2-LD4-1LO-35-UNV-81-88-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 473.0 | 473.0 | 473.0 | 473.0 | 473.0 |
| 2.5° | 477.0 | 473.4 | 470.1 | 474.0 | 476.4 |
| 5° | 469.6 | 468.5 | 469.8 | 468.4 | 479.7 |
| 7.5° | 459.9 | 464.2 | 466.6 | 465.1 | 465.7 |
| 10° | 454.8 | 453.4 | 458.8 | 462.6 | 462.0 |
| 12.5° | 449.3 | 451.5 | 451.8 | 455.9 | 456.3 |
| 15° | 449.6 | 444.4 | 447.2 | 449.5 | 449.7 |
| 17.5° | 432.2 | 437.8 | 439.7 | 445.0 | 438.4 |
| 20° | 430.0 | 425.9 | 430.0 | 435.5 | 434.6 |
| 22.5° | 416.9 | 412.3 | 421.1 | 425.9 | 425.6 |
| 25° | 402.0 | 404.2 | 410.8 | 416.2 | 415.3 |
| 27.5° | 388.9 | 391.5 | 400.9 | 408.3 | 403.5 |
| 30° | 378.9 | 377.6 | 385.5 | 392.1 | 395.8 |
| 32.5° | 360.8 | 365.5 | 374.8 | 381.3 | 377.8 |
| 35° | 349.9 | 350.9 | 359.1 | 367.4 | 367.1 |
| 37.5° | 330.8 | 335.6 | 347.0 | 349.4 | 347.2 |
| 40° | 314.5 | 319.3 | 329.6 | 332.1 | 331.1 |
| 42.5° | 302.5 | 303.3 | 312.2 | 315.0 | 310.5 |
| 45° | 281.5 | 286.8 | 291.5 | 299.0 | 292.0 |
| 47.5° | 263.7 | 266.1 | 276.4 | 278.4 | 274.7 |
| 50° | 247.5 | 248.4 | 258.7 | 256.2 | 253.7 |
| 52.5° | 227.2 | 230.8 | 236.6 | 236.1 | 233.2 |
| 55° | 210.4 | 209.0 | 214.5 | 213.1 | 213.0 |
| 57.5° | 190.3 | 192.8 | 197.3 | 195.0 | 191.3 |
| 60° | 171.5 | 171.6 | 173.2 | 170.6 | 170.1 |
| 62.5° | 150.6 | 151.3 | 151.7 | 148.5 | 153.7 |
| 65° | 129.3 | 127.6 | 132.6 | 127.5 | 128.4 |
| 67.5° | 109.7 | 110.5 | 110.0 | 106.9 | 108.1 |
| 70° | 89.8 | 90.9 | 90.1 | 86.5 | 87.6 |
| 72.5° | 71.6 | 70.2 | 71.1 | 66.6 | 68.6 |
| 75° | 53.8 | 52.7 | 53.7 | 49.9 | 51.6 |
| 77.5° | 36.6 | 37.5 | 36.9 | 34.9 | 36.0 |
| 80° | 24.2 | 23.5 | 23.5 | 22.4 | 22.6 |
| 82.5° | 14.1 | 13.4 | 13.3 | 12.9 | 13.4 |
| 85° | 6.6 | 6.4 | 6.5 | 6.4 | 6.1 |
| 87.5° | 2.4 | 2.4 | 2.4 | 2.3 | 2.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)