

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P559267

Luminaire Tested: FSR-12-1-LD4-2LO-35-UNV-93-85-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559267
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/20/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-12-1-LD4-2LO-35-UNV-93-85-EDD
Description: 1X1 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1154.0 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
CIE Type: Direct

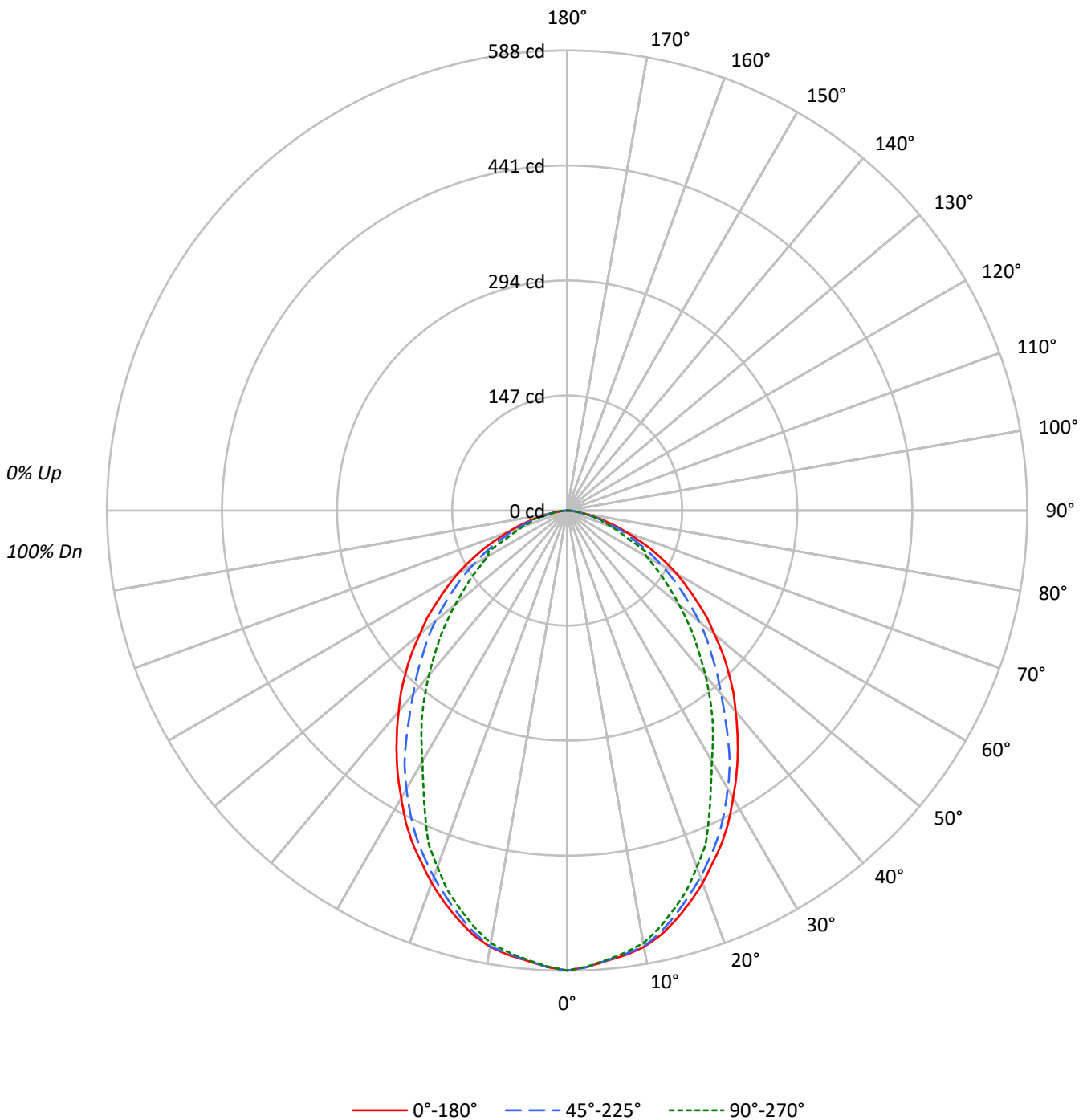
Input Watts (W): 11.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 94 | 91 | 92 | 90 | 89 | 87 |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | 75 |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | 65 |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 56 |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 53 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | 50 |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | 44 |
| 7 | 69 | 56 | 48 | 43 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 42 | 40 |
| 8 | 65 | 52 | 44 | 38 | 63 | 51 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 36 |
| 9 | 61 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 33 |
| 10 | 57 | 44 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 6327 | 6327 | 6327 |
| 5° | 6241 | 6235 | 6227 |
| 10° | 6187 | 6180 | 6135 |
| 15° | 6021 | 5960 | 5877 |
| 20° | 5800 | 5706 | 5550 |
| 25° | 5561 | 5440 | 5101 |
| 30° | 5271 | 5102 | 4595 |
| 35° | 4992 | 4715 | 4251 |
| 40° | 4707 | 4297 | 3867 |
| 45° | 4437 | 3973 | 3497 |
| 50° | 4108 | 3687 | 3118 |
| 55° | 3800 | 3340 | 2792 |
| 60° | 3481 | 2984 | 2502 |
| 65° | 3064 | 2613 | 2216 |
| 70° | 2524 | 2288 | 1882 |
| 75° | 2005 | 1751 | 1838 |
| 80° | 1345 | 1265 | 1178 |
| 85° | 840 | 1013 | 1173 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4437 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 54.7 | 4.7 |
| 10°-20° | 150.2 | 13.0 |
| 20°-30° | 207.9 | 18.0 |
| 30°-40° | 221.7 | 19.2 |
| 40°-50° | 202.2 | 17.5 |
| 50°-60° | 158.4 | 13.7 |
| 60°-70° | 103.3 | 8.9 |
| 70°-80° | 45.7 | 4.0 |
| 80°-90° | 9.8 | 0.9 |
| 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° | 412.8 | 35.8 |
| 0°-40° | 634.5 | 55.0 |
| 0°-60° | 995.2 | 86.2 |
| 0°-90° | 1154.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1154.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 588 | 588 | 588 | 588 | 588 | |
| 5° | 578 | 577 | 577 | 576 | 576 | 55 |
| 15° | 540 | 540 | 535 | 529 | 527 | 152 |
| 25° | 468 | 466 | 458 | 442 | 430 | 215 |
| 35° | 380 | 377 | 359 | 332 | 324 | 238 |
| 45° | 292 | 285 | 261 | 239 | 230 | 225 |
| 55° | 202 | 196 | 178 | 157 | 149 | 182 |
| 65° | 120 | 114 | 103 | 105 | 87 | 119 |
| 75° | 48 | 45 | 42 | 40 | 44 | 52 |
| 85° | 7 | 8 | 8 | 9 | 10 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559267

CATALOG NUMBER: FSR-12-1-LD4-2LO-35-UNV-93-85-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 587.8 | 587.8 | 587.8 | 587.8 | 587.8 |
| 2.5° | 583.8 | 583.8 | 583.8 | 583.1 | 583.1 |
| 5° | 577.6 | 577.0 | 577.0 | 576.3 | 576.3 |
| 7.5° | 572.9 | 572.2 | 571.5 | 570.8 | 569.5 |
| 10° | 566.1 | 566.1 | 565.4 | 562.0 | 561.3 |
| 12.5° | 555.2 | 554.5 | 551.8 | 547.1 | 545.7 |
| 15° | 540.3 | 540.3 | 534.8 | 529.4 | 527.4 |
| 17.5° | 524.0 | 523.3 | 516.5 | 511.0 | 508.3 |
| 20° | 506.3 | 504.9 | 498.1 | 489.3 | 484.5 |
| 22.5° | 486.6 | 486.6 | 478.4 | 466.9 | 462.1 |
| 25° | 468.2 | 465.5 | 458.0 | 441.7 | 429.5 |
| 27.5° | 447.2 | 443.1 | 434.9 | 411.8 | 397.6 |
| 30° | 424.1 | 422.0 | 410.5 | 380.6 | 369.7 |
| 32.5° | 402.3 | 398.9 | 386.7 | 355.4 | 346.6 |
| 35° | 379.9 | 377.2 | 358.8 | 331.6 | 323.5 |
| 37.5° | 357.5 | 354.1 | 331.0 | 309.2 | 299.0 |
| 40° | 335.0 | 331.0 | 305.8 | 286.1 | 275.2 |
| 42.5° | 314.0 | 308.5 | 284.1 | 263.0 | 250.8 |
| 45° | 291.5 | 285.4 | 261.0 | 239.2 | 229.7 |
| 47.5° | 269.1 | 263.7 | 241.2 | 218.8 | 207.9 |
| 50° | 245.3 | 240.6 | 220.2 | 197.8 | 186.2 |
| 52.5° | 225.6 | 218.1 | 198.4 | 176.0 | 166.5 |
| 55° | 202.5 | 196.4 | 178.0 | 157.0 | 148.8 |
| 57.5° | 181.4 | 175.3 | 158.3 | 138.6 | 131.8 |
| 60° | 161.7 | 152.9 | 138.6 | 121.6 | 116.2 |
| 62.5° | 140.0 | 133.2 | 121.0 | 106.7 | 113.5 |
| 65° | 120.3 | 113.5 | 102.6 | 104.7 | 87.0 |
| 67.5° | 98.5 | 95.1 | 85.6 | 76.1 | 73.4 |
| 70° | 80.2 | 76.1 | 72.7 | 62.5 | 59.8 |
| 72.5° | 63.9 | 59.8 | 55.0 | 49.6 | 47.6 |
| 75° | 48.2 | 44.9 | 42.1 | 40.1 | 44.2 |
| 77.5° | 33.3 | 31.9 | 29.9 | 27.9 | 27.2 |
| 80° | 21.7 | 21.1 | 20.4 | 19.7 | 19.0 |
| 82.5° | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |
| 85° | 6.8 | 7.5 | 8.2 | 8.8 | 9.5 |
| 87.5° | 4.1 | 4.1 | 4.8 | 5.4 | 6.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)