

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: P559300

Luminaire Tested: FSR-12-1-LD4-2LO-40-UNV-81-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559300
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-40-UNV-81-86-EDD-90
Description: 1X1 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 918.0 lumens
Efficiency: N/A
Efficacy: 78.5 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

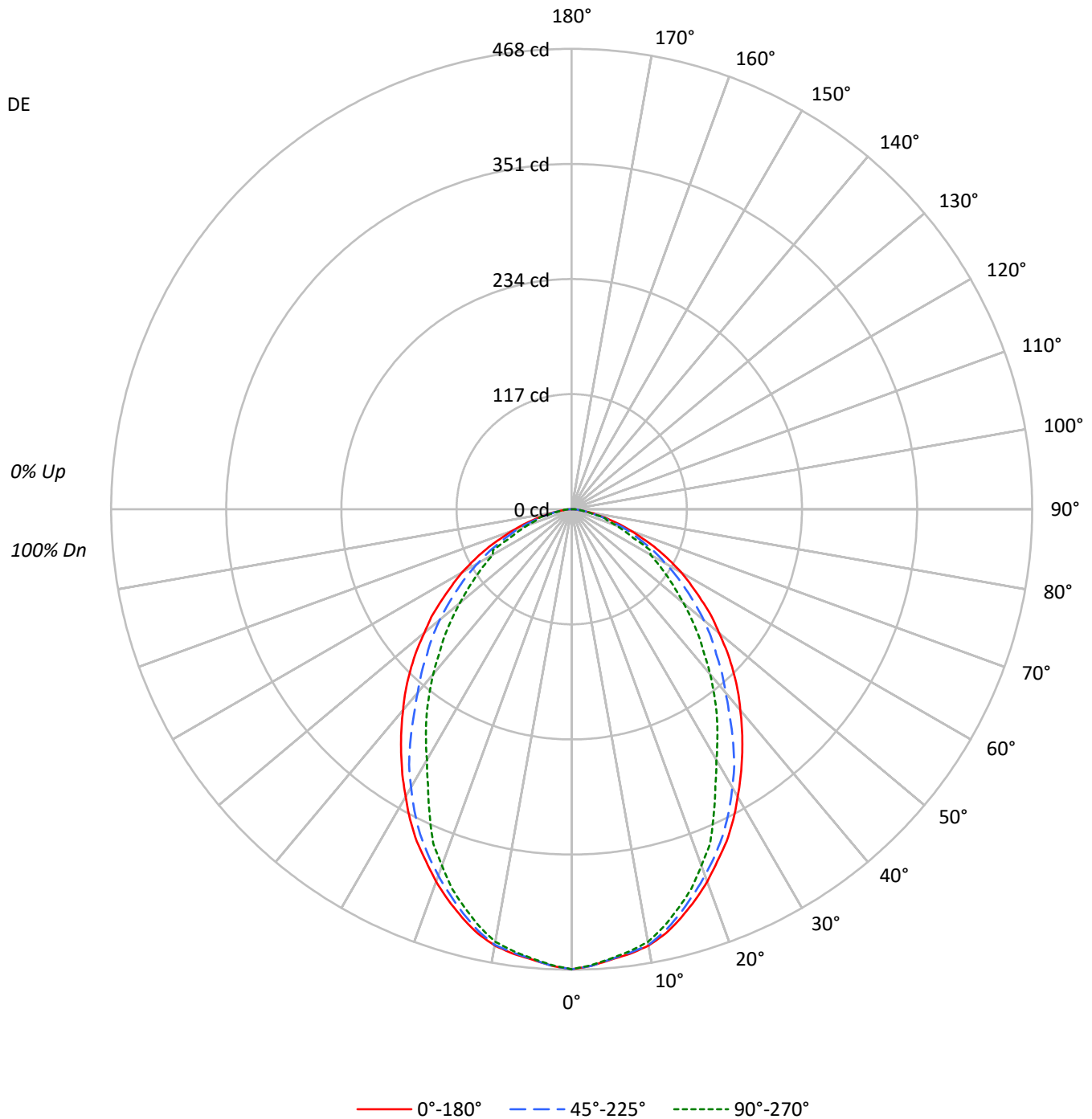
Input Watts (W): 11.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559300

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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 | 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 | | | | | | | | | | | 100 | | | | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 94 | 91 | 92 | 90 | 89 | 87 | | | | | | | | | | | 87 | | | | | | | | | | | | | | | | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | 75 | | | | | | | | | | | 75 | | | | | | | | | | | | | | | | | |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | 65 | | | | | | | | | | | 65 | | | | | | | | | | | | | | | | | |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 56 | | | | | | | | | | | 56 | | | | | | | | | | | | | | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 53 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | 50 | | | | | | | | | | | 50 | | | | | | | | | | | | | | | | | |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | 44 | | | | | | | | | | | 44 | | | | | | | | | | | | | | | | | |
| 7 | 69 | 56 | 48 | 43 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 42 | 40 | | | | | | | | | | | 40 | | | | | | | | | | | | | | | | | |
| 8 | 65 | 52 | 44 | 38 | 63 | 51 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 36 | | | | | | | | | | | 36 | | | | | | | | | | | | | | | | | |
| 9 | 61 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 33 | | | | | | | | | | | 33 | | | | | | | | | | | | | | | | | |
| 10 | 57 | 44 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 | | | | | | | | | | | 30 | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5033 | 5033 | 5033 |
| 5° | 4965 | 4960 | 4953 |
| 10° | 4922 | 4916 | 4880 |
| 15° | 4790 | 4742 | 4675 |
| 20° | 4613 | 4540 | 4415 |
| 25° | 4424 | 4328 | 4058 |
| 30° | 4192 | 4058 | 3655 |
| 35° | 3971 | 3750 | 3381 |
| 40° | 3745 | 3419 | 3076 |
| 45° | 3530 | 3160 | 2781 |
| 50° | 3269 | 2934 | 2480 |
| 55° | 3023 | 2657 | 2222 |
| 60° | 2771 | 2375 | 1989 |
| 65° | 2437 | 2078 | 1762 |
| 70° | 2008 | 1819 | 1498 |
| 75° | 1597 | 1393 | 1460 |
| 80° | 1072 | 1004 | 936 |
| 85° | 667 | 803 | 939 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3530 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 43.5 | 4.7 |
| 10°-20° | 119.5 | 13.0 |
| 20°-30° | 165.4 | 18.0 |
| 30°-40° | 176.3 | 19.2 |
| 40°-50° | 160.9 | 17.5 |
| 50°-60° | 126.0 | 13.7 |
| 60°-70° | 82.1 | 8.9 |
| 70°-80° | 36.4 | 4.0 |
| 80°-90° | 7.8 | 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° | 328.4 | 35.8 |
| 0°-40° | 504.7 | 55.0 |
| 0°-60° | 791.7 | 86.2 |
| 0°-90° | 918.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 918.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 468 | 468 | 468 | 468 | 468 | |
| 5° | 460 | 459 | 459 | 458 | 458 | 44 |
| 15° | 430 | 430 | 426 | 421 | 420 | 121 |
| 25° | 372 | 370 | 364 | 351 | 342 | 171 |
| 35° | 302 | 300 | 285 | 264 | 257 | 189 |
| 45° | 232 | 227 | 208 | 190 | 183 | 179 |
| 55° | 161 | 156 | 142 | 125 | 118 | 144 |
| 65° | 96 | 90 | 82 | 83 | 69 | 94 |
| 75° | 38 | 36 | 34 | 32 | 35 | 41 |
| 85° | 5 | 6 | 6 | 7 | 8 | 7 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559300

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 467.6 | 467.6 | 467.6 | 467.6 | 467.6 |
| 2.5° | 464.4 | 464.4 | 464.4 | 463.8 | 463.8 |
| 5° | 459.5 | 459.0 | 459.0 | 458.4 | 458.4 |
| 7.5° | 455.7 | 455.2 | 454.6 | 454.1 | 453.0 |
| 10° | 450.3 | 450.3 | 449.8 | 447.1 | 446.5 |
| 12.5° | 441.7 | 441.1 | 439.0 | 435.2 | 434.1 |
| 15° | 429.8 | 429.8 | 425.5 | 421.1 | 419.5 |
| 17.5° | 416.8 | 416.3 | 410.9 | 406.5 | 404.4 |
| 20° | 402.7 | 401.7 | 396.3 | 389.2 | 385.4 |
| 22.5° | 387.1 | 387.1 | 380.6 | 371.4 | 367.6 |
| 25° | 372.5 | 370.3 | 364.4 | 351.4 | 341.7 |
| 27.5° | 355.7 | 352.5 | 346.0 | 327.6 | 316.2 |
| 30° | 337.3 | 335.7 | 326.5 | 302.7 | 294.1 |
| 32.5° | 320.0 | 317.3 | 307.6 | 282.7 | 275.7 |
| 35° | 302.2 | 300.0 | 285.4 | 263.8 | 257.3 |
| 37.5° | 284.4 | 281.7 | 263.3 | 246.0 | 237.9 |
| 40° | 266.5 | 263.3 | 243.3 | 227.6 | 218.9 |
| 42.5° | 249.8 | 245.4 | 226.0 | 209.2 | 199.5 |
| 45° | 231.9 | 227.1 | 207.6 | 190.3 | 182.7 |
| 47.5° | 214.1 | 209.8 | 191.9 | 174.1 | 165.4 |
| 50° | 195.2 | 191.4 | 175.2 | 157.3 | 148.1 |
| 52.5° | 179.5 | 173.5 | 157.9 | 140.0 | 132.4 |
| 55° | 161.1 | 156.2 | 141.6 | 124.9 | 118.4 |
| 57.5° | 144.3 | 139.5 | 126.0 | 110.3 | 104.9 |
| 60° | 128.7 | 121.6 | 110.3 | 96.8 | 92.4 |
| 62.5° | 111.4 | 106.0 | 96.2 | 84.9 | 90.3 |
| 65° | 95.7 | 90.3 | 81.6 | 83.3 | 69.2 |
| 67.5° | 78.4 | 75.7 | 68.1 | 60.5 | 58.4 |
| 70° | 63.8 | 60.5 | 57.8 | 49.7 | 47.6 |
| 72.5° | 50.8 | 47.6 | 43.8 | 39.5 | 37.8 |
| 75° | 38.4 | 35.7 | 33.5 | 31.9 | 35.1 |
| 77.5° | 26.5 | 25.4 | 23.8 | 22.2 | 21.6 |
| 80° | 17.3 | 16.8 | 16.2 | 15.7 | 15.1 |
| 82.5° | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 |
| 85° | 5.4 | 5.9 | 6.5 | 7.0 | 7.6 |
| 87.5° | 3.2 | 3.2 | 3.8 | 4.3 | 4.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)