

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: P559102

Luminaire Tested: FSR-12-1-LD4-2HI-40-UNV-80-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559102
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-LD4-2HI-40-UNV-80-97-EDD-90
Description: 1X1 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1566.0 lumens
Efficiency: N/A
Efficacy: 72.5 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

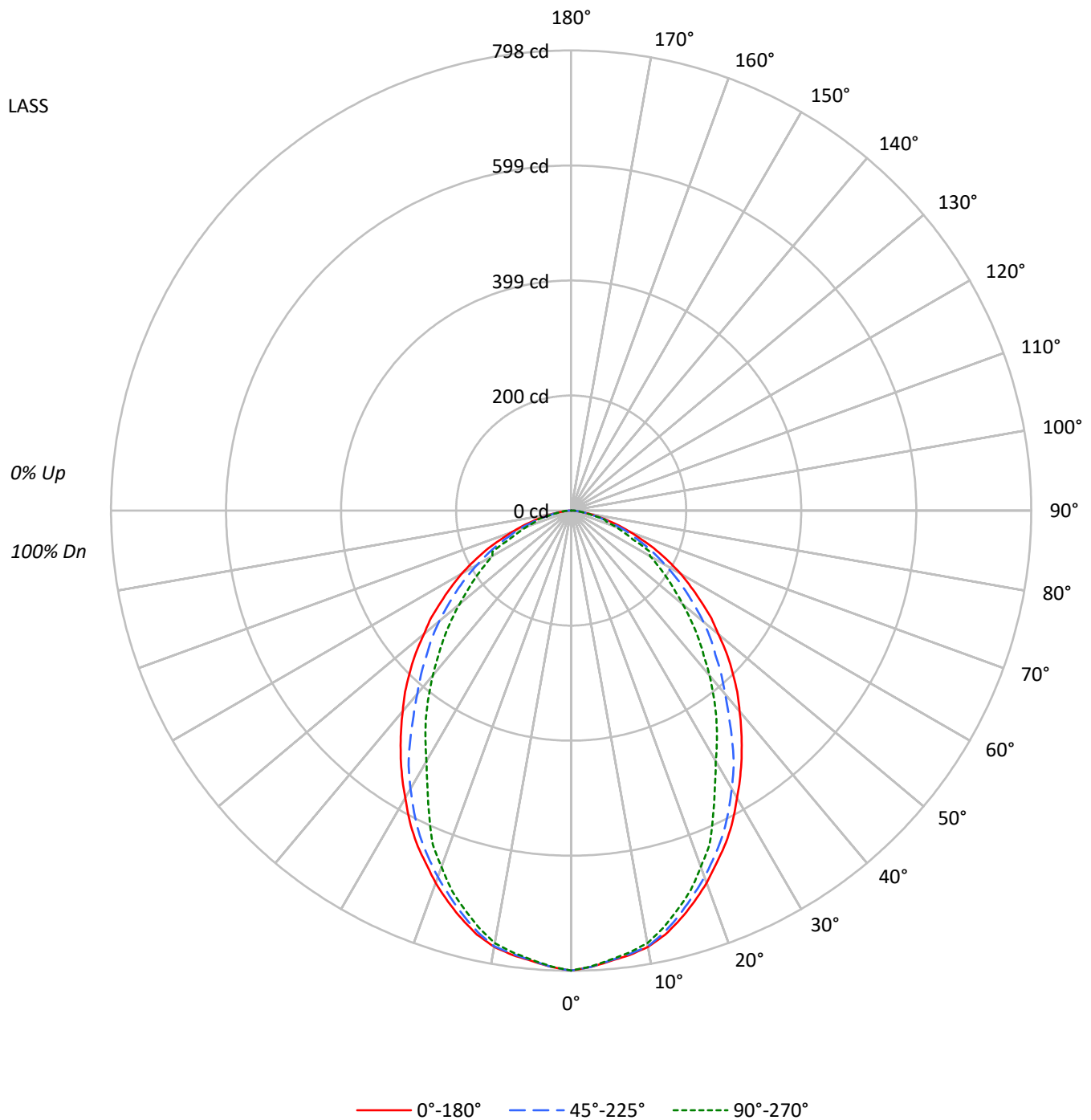
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559102

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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 | 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° | 8586 | 8586 | 8586 |
| 5° | 8470 | 8459 | 8450 |
| 10° | 8396 | 8387 | 8325 |
| 15° | 8169 | 8088 | 7974 |
| 20° | 7869 | 7743 | 7531 |
| 25° | 7546 | 7383 | 6922 |
| 30° | 7153 | 6923 | 6236 |
| 35° | 6774 | 6398 | 5769 |
| 40° | 6388 | 5831 | 5248 |
| 45° | 6022 | 5390 | 4745 |
| 50° | 5575 | 5004 | 4232 |
| 55° | 5157 | 4534 | 3791 |
| 60° | 4725 | 4049 | 3395 |
| 65° | 4157 | 3548 | 3005 |
| 70° | 3424 | 3106 | 2555 |
| 75° | 2724 | 2379 | 2491 |
| 80° | 1829 | 1717 | 1599 |
| 85° | 1136 | 1371 | 1593 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6022 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 74.3 | 4.7 |
| 10°-20° | 203.8 | 13.0 |
| 20°-30° | 282.1 | 18.0 |
| 30°-40° | 300.8 | 19.2 |
| 40°-50° | 274.4 | 17.5 |
| 50°-60° | 215.0 | 13.7 |
| 60°-70° | 140.1 | 8.9 |
| 70°-80° | 62.1 | 4.0 |
| 80°-90° | 13.3 | 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° | 560.2 | 35.8 |
| 0°-40° | 861.0 | 55.0 |
| 0°-60° | 1350.4 | 86.2 |
| 0°-90° | 1566.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1566.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 798 | 798 | 798 | 798 | 798 | |
| 5° | 784 | 783 | 783 | 782 | 782 | 74 |
| 15° | 733 | 733 | 726 | 718 | 716 | 206 |
| 25° | 635 | 632 | 622 | 599 | 583 | 292 |
| 35° | 516 | 512 | 487 | 450 | 439 | 322 |
| 45° | 396 | 387 | 354 | 325 | 312 | 305 |
| 55° | 275 | 266 | 242 | 213 | 202 | 246 |
| 65° | 163 | 154 | 139 | 142 | 118 | 161 |
| 75° | 66 | 61 | 57 | 54 | 60 | 70 |
| 85° | 9 | 10 | 11 | 12 | 13 | 13 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559102

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 797.7 | 797.7 | 797.7 | 797.7 | 797.7 |
| 2.5° | 792.2 | 792.2 | 792.2 | 791.2 | 791.2 |
| 5° | 783.9 | 782.9 | 782.9 | 782.0 | 782.0 |
| 7.5° | 777.4 | 776.5 | 775.6 | 774.6 | 772.8 |
| 10° | 768.2 | 768.2 | 767.3 | 762.7 | 761.7 |
| 12.5° | 753.4 | 752.5 | 748.8 | 742.4 | 740.5 |
| 15° | 733.1 | 733.1 | 725.8 | 718.4 | 715.6 |
| 17.5° | 711.0 | 710.1 | 700.9 | 693.5 | 689.8 |
| 20° | 687.0 | 685.2 | 676.0 | 664.0 | 657.5 |
| 22.5° | 660.3 | 660.3 | 649.2 | 633.5 | 627.1 |
| 25° | 635.4 | 631.7 | 621.6 | 599.4 | 582.8 |
| 27.5° | 606.8 | 601.3 | 590.2 | 558.9 | 539.5 |
| 30° | 575.5 | 572.7 | 557.0 | 516.4 | 501.7 |
| 32.5° | 545.9 | 541.3 | 524.7 | 482.3 | 470.3 |
| 35° | 515.5 | 511.8 | 486.9 | 450.0 | 439.0 |
| 37.5° | 485.1 | 480.5 | 449.1 | 419.6 | 405.8 |
| 40° | 454.6 | 449.1 | 415.0 | 388.2 | 373.5 |
| 42.5° | 426.1 | 418.7 | 385.5 | 356.9 | 340.3 |
| 45° | 395.6 | 387.3 | 354.1 | 324.6 | 311.7 |
| 47.5° | 365.2 | 357.8 | 327.4 | 296.9 | 282.2 |
| 50° | 332.9 | 326.5 | 298.8 | 268.4 | 252.7 |
| 52.5° | 306.2 | 296.0 | 269.3 | 238.8 | 225.9 |
| 55° | 274.8 | 266.5 | 241.6 | 213.0 | 202.0 |
| 57.5° | 246.2 | 237.9 | 214.9 | 188.1 | 178.9 |
| 60° | 219.5 | 207.5 | 188.1 | 165.1 | 157.7 |
| 62.5° | 190.0 | 180.8 | 164.2 | 144.8 | 154.0 |
| 65° | 163.2 | 154.0 | 139.3 | 142.0 | 118.0 |
| 67.5° | 133.7 | 129.1 | 116.2 | 103.3 | 99.6 |
| 70° | 108.8 | 103.3 | 98.7 | 84.8 | 81.2 |
| 72.5° | 86.7 | 81.2 | 74.7 | 67.3 | 64.6 |
| 75° | 65.5 | 60.9 | 57.2 | 54.4 | 59.9 |
| 77.5° | 45.2 | 43.3 | 40.6 | 37.8 | 36.9 |
| 80° | 29.5 | 28.6 | 27.7 | 26.7 | 25.8 |
| 82.5° | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| 85° | 9.2 | 10.1 | 11.1 | 12.0 | 12.9 |
| 87.5° | 5.5 | 5.5 | 6.5 | 7.4 | 8.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)