

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: P559697

Luminaire Tested: FSR-12-2-LD4-1HI-40-UNV-82-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559697
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-12-2-LD4-1HI-40-UNV-82-84-EDD
Description: 1X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1757.0 lumens
Efficiency: N/A
Efficacy: 81.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

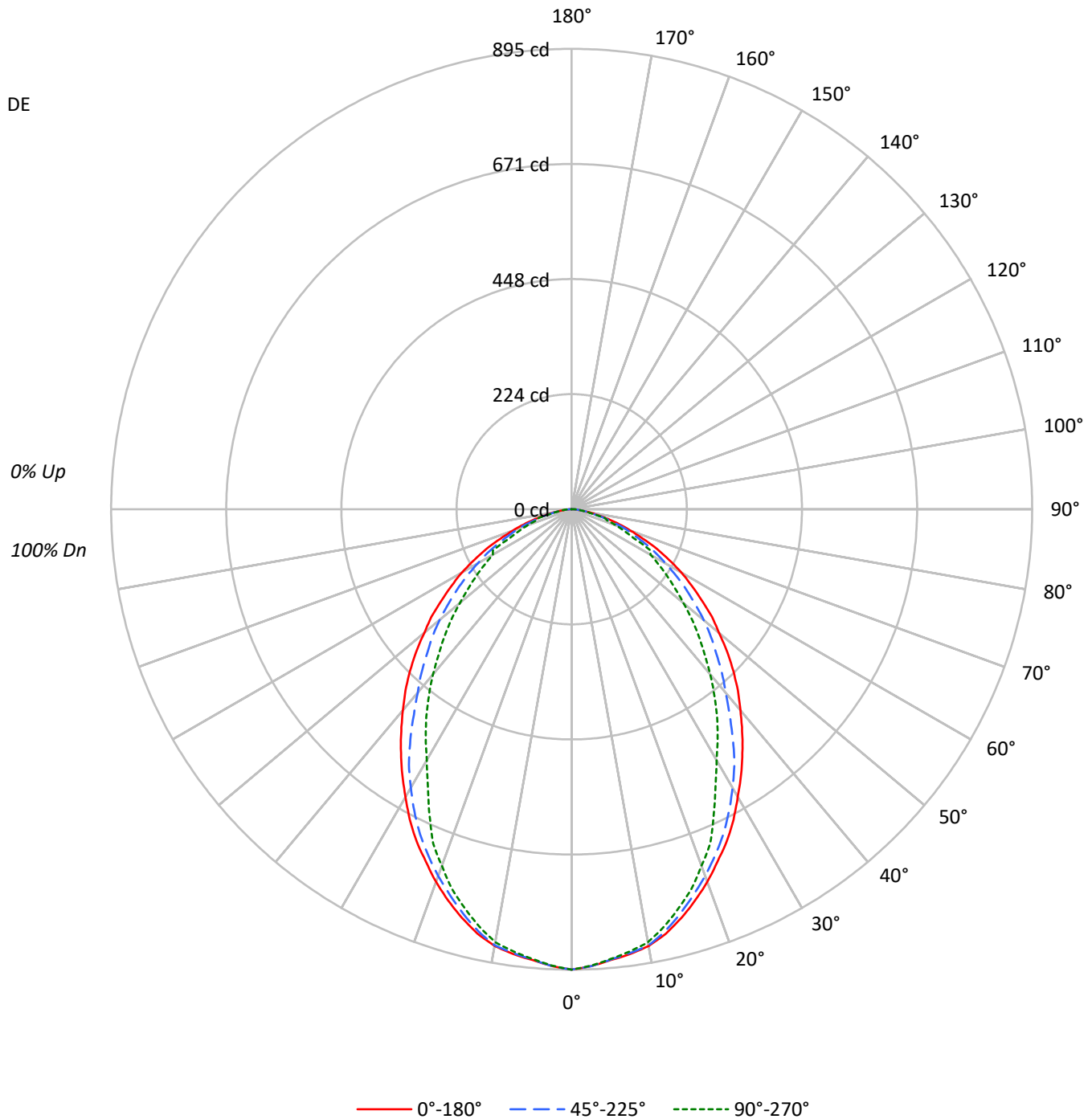
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P559697

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-82-84-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P559697

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-82-84-EDD

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° | 4817 | 4817 | 4817 |
| 5° | 4752 | 4746 | 4740 |
| 10° | 4710 | 4704 | 4670 |
| 15° | 4583 | 4537 | 4474 |
| 20° | 4415 | 4344 | 4225 |
| 25° | 4233 | 4141 | 3883 |
| 30° | 4012 | 3883 | 3498 |
| 35° | 3800 | 3589 | 3236 |
| 40° | 3584 | 3271 | 2944 |
| 45° | 3379 | 3024 | 2662 |
| 50° | 3127 | 2807 | 2374 |
| 55° | 2893 | 2544 | 2126 |
| 60° | 2651 | 2272 | 1904 |
| 65° | 2332 | 1989 | 1686 |
| 70° | 1921 | 1742 | 1434 |
| 75° | 1528 | 1333 | 1399 |
| 80° | 1026 | 961 | 899 |
| 85° | 636 | 766 | 895 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3379 cd/sqm

TEST NUMBER: P559697

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-82-84-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 83.3 | 4.7 |
| 10°-20° | 228.6 | 13.0 |
| 20°-30° | 316.5 | 18.0 |
| 30°-40° | 337.5 | 19.2 |
| 40°-50° | 307.9 | 17.5 |
| 50°-60° | 241.2 | 13.7 |
| 60°-70° | 157.2 | 8.9 |
| 70°-80° | 69.7 | 4.0 |
| 80°-90° | 15.0 | 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° | 628.5 | 35.8 |
| 0°-40° | 966.0 | 55.0 |
| 0°-60° | 1515.2 | 86.2 |
| 0°-90° | 1757.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1757.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 895 | 895 | 895 | 895 | 895 | |
| 5° | 880 | 878 | 878 | 877 | 877 | 83 |
| 15° | 823 | 823 | 814 | 806 | 803 | 231 |
| 25° | 713 | 709 | 697 | 672 | 654 | 327 |
| 35° | 578 | 574 | 546 | 505 | 492 | 362 |
| 45° | 444 | 435 | 397 | 364 | 350 | 342 |
| 55° | 308 | 299 | 271 | 239 | 227 | 277 |
| 65° | 183 | 173 | 156 | 159 | 132 | 180 |
| 75° | 74 | 68 | 64 | 61 | 67 | 79 |
| 85° | 10 | 11 | 12 | 14 | 14 | 14 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559697

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-82-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 895.0 | 895.0 | 895.0 | 895.0 | 895.0 |
| 2.5° | 888.8 | 888.8 | 888.8 | 887.7 | 887.7 |
| 5° | 879.5 | 878.4 | 878.4 | 877.4 | 877.4 |
| 7.5° | 872.2 | 871.2 | 870.2 | 869.1 | 867.1 |
| 10° | 861.9 | 861.9 | 860.8 | 855.7 | 854.6 |
| 12.5° | 845.3 | 844.3 | 840.2 | 832.9 | 830.8 |
| 15° | 822.6 | 822.6 | 814.3 | 806.0 | 802.9 |
| 17.5° | 797.7 | 796.7 | 786.4 | 778.1 | 773.9 |
| 20° | 770.8 | 768.8 | 758.4 | 745.0 | 737.7 |
| 22.5° | 740.8 | 740.8 | 728.4 | 710.8 | 703.6 |
| 25° | 712.9 | 708.8 | 697.4 | 672.5 | 653.9 |
| 27.5° | 680.8 | 674.6 | 662.2 | 627.0 | 605.3 |
| 30° | 645.6 | 642.5 | 624.9 | 579.4 | 562.9 |
| 32.5° | 612.5 | 607.4 | 588.7 | 541.1 | 527.7 |
| 35° | 578.4 | 574.2 | 546.3 | 504.9 | 492.5 |
| 37.5° | 544.2 | 539.1 | 503.9 | 470.8 | 455.3 |
| 40° | 510.1 | 503.9 | 465.6 | 435.6 | 419.0 |
| 42.5° | 478.0 | 469.7 | 432.5 | 400.4 | 381.8 |
| 45° | 443.9 | 434.6 | 397.3 | 364.2 | 349.7 |
| 47.5° | 409.7 | 401.5 | 367.3 | 333.2 | 316.6 |
| 50° | 373.5 | 366.3 | 335.2 | 301.1 | 283.5 |
| 52.5° | 343.5 | 332.1 | 302.1 | 268.0 | 253.5 |
| 55° | 308.3 | 299.0 | 271.1 | 239.0 | 226.6 |
| 57.5° | 276.3 | 266.9 | 241.1 | 211.1 | 200.7 |
| 60° | 246.3 | 232.8 | 211.1 | 185.2 | 176.9 |
| 62.5° | 213.1 | 202.8 | 184.2 | 162.4 | 172.8 |
| 65° | 183.1 | 172.8 | 156.2 | 159.3 | 132.4 |
| 67.5° | 150.0 | 144.9 | 130.4 | 115.9 | 111.7 |
| 70° | 122.1 | 115.9 | 110.7 | 95.2 | 91.1 |
| 72.5° | 97.3 | 91.1 | 83.8 | 75.5 | 72.4 |
| 75° | 73.5 | 68.3 | 64.1 | 61.0 | 67.3 |
| 77.5° | 50.7 | 48.6 | 45.5 | 42.4 | 41.4 |
| 80° | 33.1 | 32.1 | 31.0 | 30.0 | 29.0 |
| 82.5° | 19.7 | 19.7 | 19.7 | 19.7 | 19.7 |
| 85° | 10.3 | 11.4 | 12.4 | 13.5 | 14.5 |
| 87.5° | 6.2 | 6.2 | 7.2 | 8.3 | 9.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)