

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: P558916

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

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P558916
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-LD4-1STD-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: 615.0 lumens
Efficiency: N/A
Efficacy: 74.1 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

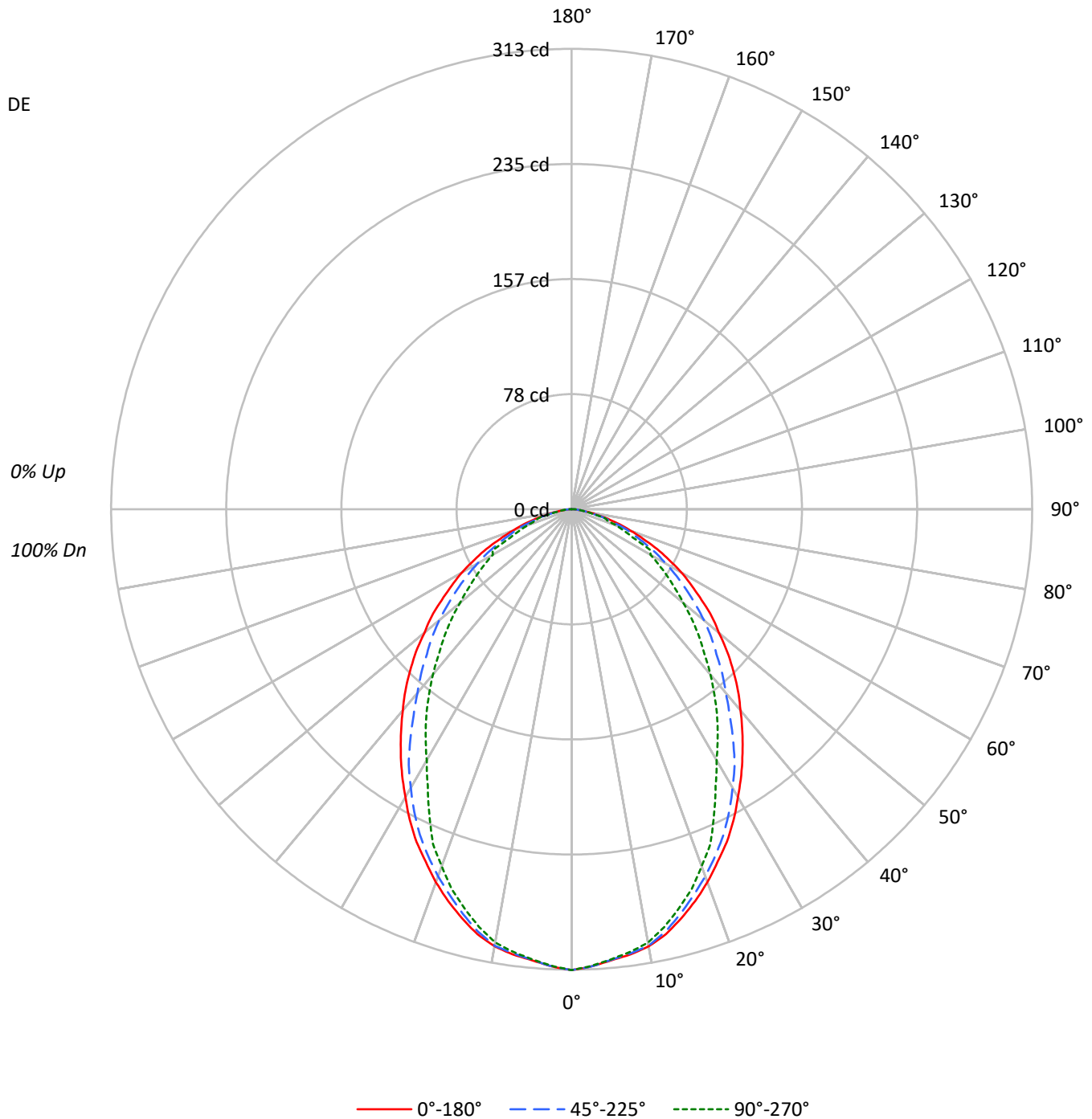
Input Watts (W): 8.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P558916

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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° | 3372 | 3372 | 3372 |
| 5° | 3326 | 3323 | 3318 |
| 10° | 3298 | 3293 | 3269 |
| 15° | 3208 | 3176 | 3131 |
| 20° | 3090 | 3041 | 2958 |
| 25° | 2963 | 2899 | 2719 |
| 30° | 2809 | 2718 | 2449 |
| 35° | 2661 | 2512 | 2265 |
| 40° | 2508 | 2290 | 2061 |
| 45° | 2366 | 2117 | 1863 |
| 50° | 2189 | 1964 | 1661 |
| 55° | 2025 | 1781 | 1488 |
| 60° | 1856 | 1591 | 1333 |
| 65° | 1633 | 1393 | 1182 |
| 70° | 1344 | 1221 | 1004 |
| 75° | 1069 | 936 | 977 |
| 80° | 719 | 676 | 626 |
| 85° | 445 | 531 | 630 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2366 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 29.2 | 4.7 |
| 10°-20° | 80.0 | 13.0 |
| 20°-30° | 110.8 | 18.0 |
| 30°-40° | 118.1 | 19.2 |
| 40°-50° | 107.8 | 17.5 |
| 50°-60° | 84.4 | 13.7 |
| 60°-70° | 55.0 | 8.9 |
| 70°-80° | 24.4 | 4.0 |
| 80°-90° | 5.2 | 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° | 220.0 | 35.8 |
| 0°-40° | 338.1 | 55.0 |
| 0°-60° | 530.4 | 86.2 |
| 0°-90° | 615.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 615.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 313 | 313 | 313 | 313 | 313 | |
| 5° | 308 | 308 | 308 | 307 | 307 | 29 |
| 15° | 288 | 288 | 285 | 282 | 281 | 81 |
| 25° | 250 | 248 | 244 | 235 | 229 | 115 |
| 35° | 202 | 201 | 191 | 177 | 172 | 127 |
| 45° | 155 | 152 | 139 | 128 | 122 | 120 |
| 55° | 108 | 105 | 95 | 84 | 79 | 97 |
| 65° | 64 | 60 | 55 | 56 | 46 | 63 |
| 75° | 26 | 24 | 22 | 21 | 24 | 28 |
| 85° | 4 | 4 | 4 | 5 | 5 | 5 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P558916

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 313.3 | 313.3 | 313.3 | 313.3 | 313.3 |
| 2.5° | 311.1 | 311.1 | 311.1 | 310.7 | 310.7 |
| 5° | 307.8 | 307.5 | 307.5 | 307.1 | 307.1 |
| 7.5° | 305.3 | 304.9 | 304.6 | 304.2 | 303.5 |
| 10° | 301.7 | 301.7 | 301.3 | 299.5 | 299.1 |
| 12.5° | 295.9 | 295.5 | 294.1 | 291.5 | 290.8 |
| 15° | 287.9 | 287.9 | 285.0 | 282.1 | 281.0 |
| 17.5° | 279.2 | 278.9 | 275.2 | 272.3 | 270.9 |
| 20° | 269.8 | 269.1 | 265.5 | 260.8 | 258.2 |
| 22.5° | 259.3 | 259.3 | 255.0 | 248.8 | 246.3 |
| 25° | 249.5 | 248.1 | 244.1 | 235.4 | 228.9 |
| 27.5° | 238.3 | 236.1 | 231.8 | 219.5 | 211.9 |
| 30° | 226.0 | 224.9 | 218.7 | 202.8 | 197.0 |
| 32.5° | 214.4 | 212.6 | 206.1 | 189.4 | 184.7 |
| 35° | 202.5 | 201.0 | 191.2 | 176.7 | 172.4 |
| 37.5° | 190.5 | 188.7 | 176.4 | 164.8 | 159.4 |
| 40° | 178.5 | 176.4 | 163.0 | 152.5 | 146.7 |
| 42.5° | 167.3 | 164.4 | 151.4 | 140.2 | 133.6 |
| 45° | 155.4 | 152.1 | 139.1 | 127.5 | 122.4 |
| 47.5° | 143.4 | 140.5 | 128.6 | 116.6 | 110.8 |
| 50° | 130.7 | 128.2 | 117.3 | 105.4 | 99.2 |
| 52.5° | 120.2 | 116.3 | 105.8 | 93.8 | 88.7 |
| 55° | 107.9 | 104.7 | 94.9 | 83.7 | 79.3 |
| 57.5° | 96.7 | 93.4 | 84.4 | 73.9 | 70.3 |
| 60° | 86.2 | 81.5 | 73.9 | 64.8 | 61.9 |
| 62.5° | 74.6 | 71.0 | 64.5 | 56.9 | 60.5 |
| 65° | 64.1 | 60.5 | 54.7 | 55.8 | 46.4 |
| 67.5° | 52.5 | 50.7 | 45.6 | 40.6 | 39.1 |
| 70° | 42.7 | 40.6 | 38.8 | 33.3 | 31.9 |
| 72.5° | 34.0 | 31.9 | 29.3 | 26.4 | 25.4 |
| 75° | 25.7 | 23.9 | 22.5 | 21.4 | 23.5 |
| 77.5° | 17.7 | 17.0 | 15.9 | 14.8 | 14.5 |
| 80° | 11.6 | 11.2 | 10.9 | 10.5 | 10.1 |
| 82.5° | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| 85° | 3.6 | 4.0 | 4.3 | 4.7 | 5.1 |
| 87.5° | 2.2 | 2.2 | 2.5 | 2.9 | 3.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)