

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: P558920

Luminaire Tested: FSR-12-1-LD4-1STD-40-UNV-81-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P558920
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-81-88-EDD-90
Description: 1X1 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 536.0 lumens
Efficiency: N/A
Efficacy: 64.6 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

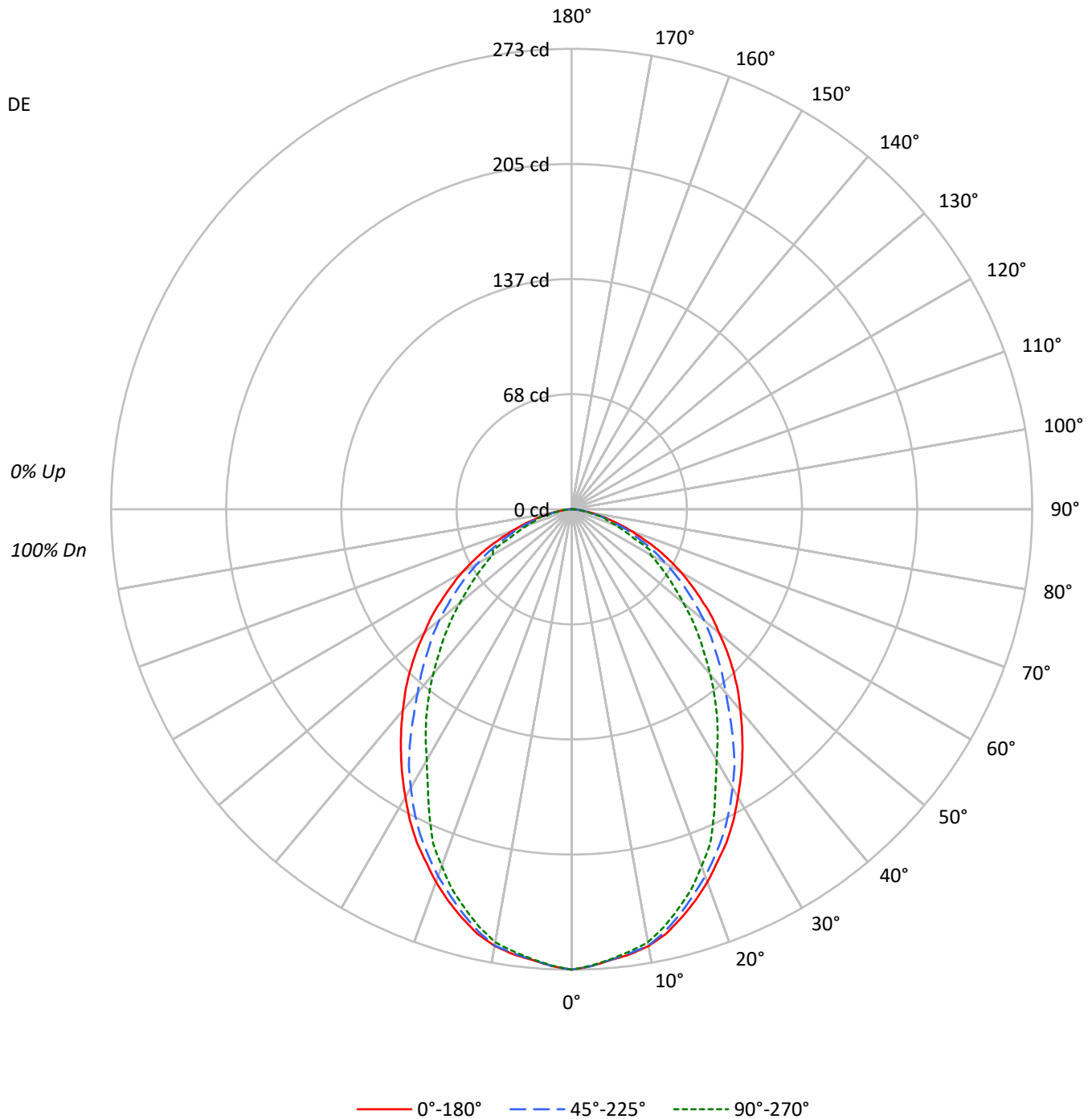
Input Watts (W): 8.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P558920

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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° | 2939 | 2939 | 2939 |
| 5° | 2899 | 2896 | 2893 |
| 10° | 2873 | 2870 | 2849 |
| 15° | 2796 | 2768 | 2729 |
| 20° | 2694 | 2651 | 2578 |
| 25° | 2583 | 2526 | 2369 |
| 30° | 2449 | 2369 | 2134 |
| 35° | 2318 | 2190 | 1974 |
| 40° | 2186 | 1995 | 1796 |
| 45° | 2061 | 1845 | 1624 |
| 50° | 1907 | 1713 | 1449 |
| 55° | 1766 | 1552 | 1297 |
| 60° | 1617 | 1386 | 1163 |
| 65° | 1424 | 1215 | 1029 |
| 70° | 1171 | 1064 | 875 |
| 75° | 932 | 815 | 853 |
| 80° | 626 | 589 | 545 |
| 85° | 395 | 469 | 543 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2061 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 25.4 | 4.7 |
| 10°-20° | 69.8 | 13.0 |
| 20°-30° | 96.6 | 18.0 |
| 30°-40° | 103.0 | 19.2 |
| 40°-50° | 93.9 | 17.5 |
| 50°-60° | 73.6 | 13.7 |
| 60°-70° | 48.0 | 9.0 |
| 70°-80° | 21.2 | 4.0 |
| 80°-90° | 4.6 | 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° | 191.7 | 35.8 |
| 0°-40° | 294.7 | 55.0 |
| 0°-60° | 462.2 | 86.2 |
| 0°-90° | 536.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 536.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 273 | 273 | 273 | 273 | 273 | |
| 5° | 268 | 268 | 268 | 268 | 268 | 25 |
| 15° | 251 | 251 | 248 | 246 | 245 | 71 |
| 25° | 218 | 216 | 213 | 205 | 200 | 100 |
| 35° | 176 | 175 | 167 | 154 | 150 | 110 |
| 45° | 135 | 133 | 121 | 111 | 107 | 104 |
| 55° | 94 | 91 | 83 | 73 | 69 | 84 |
| 65° | 56 | 53 | 48 | 49 | 40 | 55 |
| 75° | 22 | 21 | 20 | 19 | 20 | 24 |
| 85° | 3 | 4 | 4 | 4 | 4 | 4 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 |
| 2.5° | 271.1 | 271.1 | 271.1 | 270.8 | 270.8 |
| 5° | 268.3 | 268.0 | 268.0 | 267.7 | 267.7 |
| 7.5° | 266.1 | 265.8 | 265.5 | 265.1 | 264.5 |
| 10° | 262.9 | 262.9 | 262.6 | 261.0 | 260.7 |
| 12.5° | 257.9 | 257.6 | 256.3 | 254.1 | 253.5 |
| 15° | 250.9 | 250.9 | 248.4 | 245.9 | 244.9 |
| 17.5° | 243.4 | 243.0 | 239.9 | 237.4 | 236.1 |
| 20° | 235.2 | 234.5 | 231.4 | 227.3 | 225.1 |
| 22.5° | 226.0 | 226.0 | 222.2 | 216.8 | 214.6 |
| 25° | 217.5 | 216.2 | 212.7 | 205.2 | 199.5 |
| 27.5° | 207.7 | 205.8 | 202.0 | 191.3 | 184.7 |
| 30° | 197.0 | 196.0 | 190.6 | 176.8 | 171.7 |
| 32.5° | 186.9 | 185.3 | 179.6 | 165.1 | 161.0 |
| 35° | 176.4 | 175.2 | 166.7 | 154.0 | 150.2 |
| 37.5° | 166.0 | 164.5 | 153.7 | 143.6 | 138.9 |
| 40° | 155.6 | 153.7 | 142.0 | 132.9 | 127.8 |
| 42.5° | 145.8 | 143.3 | 131.9 | 122.2 | 116.5 |
| 45° | 135.4 | 132.6 | 121.2 | 111.1 | 106.7 |
| 47.5° | 125.0 | 122.5 | 112.1 | 101.6 | 96.6 |
| 50° | 113.9 | 111.7 | 102.3 | 91.9 | 86.5 |
| 52.5° | 104.8 | 101.3 | 92.2 | 81.8 | 77.3 |
| 55° | 94.1 | 91.2 | 82.7 | 72.9 | 69.1 |
| 57.5° | 84.3 | 81.4 | 73.5 | 64.4 | 61.2 |
| 60° | 75.1 | 71.0 | 64.4 | 56.5 | 54.0 |
| 62.5° | 65.0 | 61.9 | 56.2 | 49.6 | 52.7 |
| 65° | 55.9 | 52.7 | 47.7 | 48.6 | 40.4 |
| 67.5° | 45.8 | 44.2 | 39.8 | 35.4 | 34.1 |
| 70° | 37.2 | 35.4 | 33.8 | 29.0 | 27.8 |
| 72.5° | 29.7 | 27.8 | 25.6 | 23.0 | 22.1 |
| 75° | 22.4 | 20.8 | 19.6 | 18.6 | 20.5 |
| 77.5° | 15.5 | 14.8 | 13.9 | 12.9 | 12.6 |
| 80° | 10.1 | 9.8 | 9.5 | 9.2 | 8.8 |
| 82.5° | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 85° | 3.2 | 3.5 | 3.8 | 4.1 | 4.4 |
| 87.5° | 1.9 | 1.9 | 2.2 | 2.5 | 2.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)