

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: P558722

Luminaire Tested: FSR-12-1-LD4-1LO-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P558722
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-LD4-1LO-40-UNV-81-85-EDD-90
Description: 1X1 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 464.0 lumens
Efficiency: N/A
Efficacy: 80.0 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

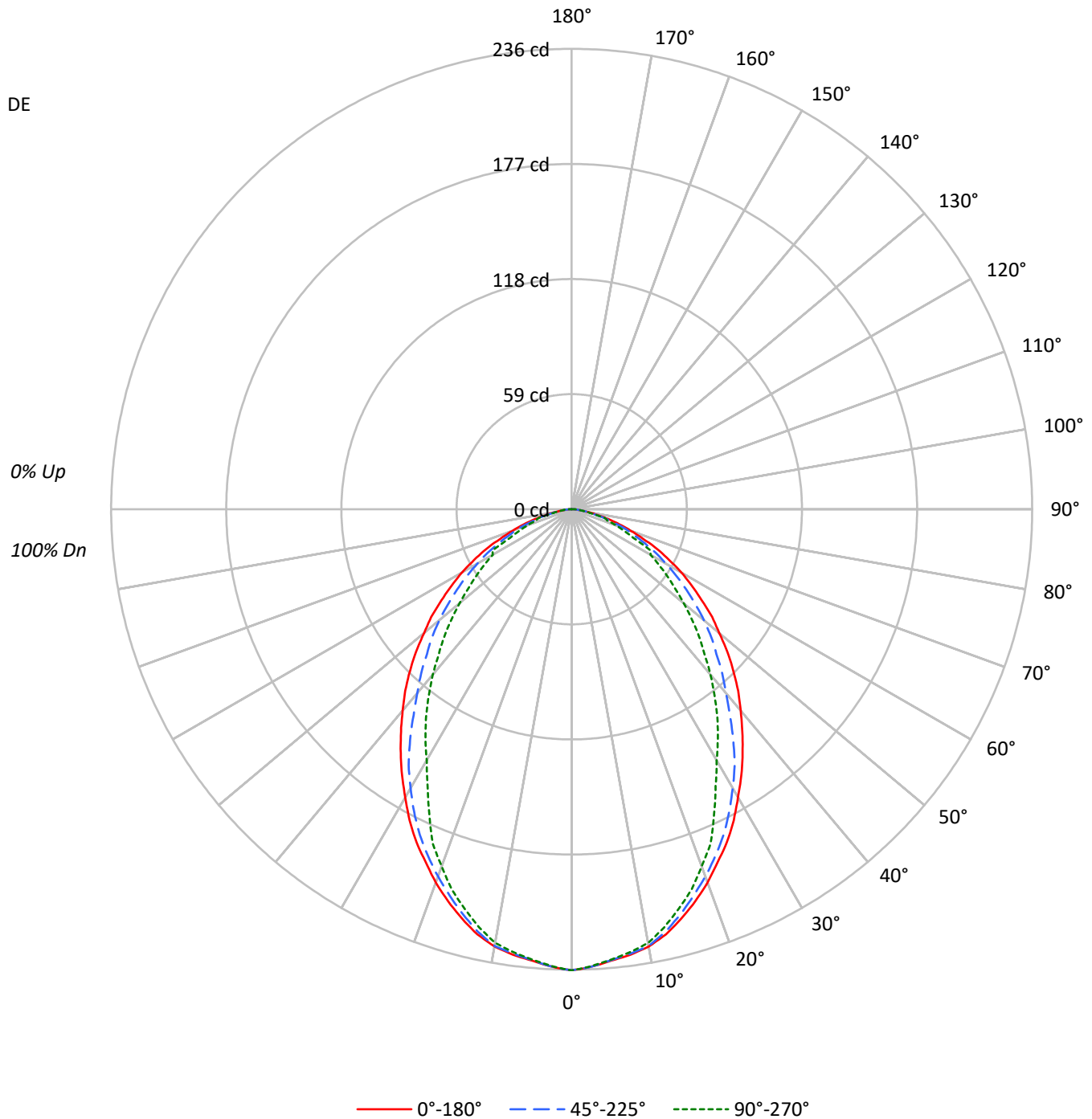
Input Watts (W): 5.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P558722

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Luminous Intensity Polar Plot





TEST NUMBER: P558722

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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 | 35 | 44 | 39 | 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° | 2545 | 2545 | 2545 |
| 5° | 2510 | 2507 | 2504 |
| 10° | 2488 | 2484 | 2467 |
| 15° | 2420 | 2396 | 2362 |
| 20° | 2332 | 2294 | 2231 |
| 25° | 2236 | 2188 | 2051 |
| 30° | 2119 | 2051 | 1847 |
| 35° | 2007 | 1896 | 1710 |
| 40° | 1893 | 1728 | 1555 |
| 45° | 1784 | 1597 | 1407 |
| 50° | 1651 | 1482 | 1254 |
| 55° | 1528 | 1344 | 1122 |
| 60° | 1399 | 1199 | 1005 |
| 65° | 1233 | 1052 | 891 |
| 70° | 1013 | 919 | 755 |
| 75° | 807 | 703 | 740 |
| 80° | 539 | 508 | 477 |
| 85° | 333 | 408 | 469 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1784 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 22.0 | 4.7 |
| 10°-20° | 60.4 | 13.0 |
| 20°-30° | 83.6 | 18.0 |
| 30°-40° | 89.1 | 19.2 |
| 40°-50° | 81.3 | 17.5 |
| 50°-60° | 63.7 | 13.7 |
| 60°-70° | 41.5 | 8.9 |
| 70°-80° | 18.4 | 4.0 |
| 80°-90° | 4.0 | 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° | 166.0 | 35.8 |
| 0°-40° | 255.1 | 55.0 |
| 0°-60° | 400.1 | 86.2 |
| 0°-90° | 464.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 464.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 236 | 236 | 236 | 236 | 236 | |
| 5° | 232 | 232 | 232 | 232 | 232 | 22 |
| 15° | 217 | 217 | 215 | 213 | 212 | 61 |
| 25° | 188 | 187 | 184 | 178 | 173 | 86 |
| 35° | 153 | 152 | 144 | 133 | 130 | 95 |
| 45° | 117 | 115 | 105 | 96 | 92 | 90 |
| 55° | 81 | 79 | 72 | 63 | 60 | 73 |
| 65° | 48 | 46 | 41 | 42 | 35 | 48 |
| 75° | 19 | 18 | 17 | 16 | 18 | 21 |
| 85° | 3 | 3 | 3 | 4 | 4 | 4 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P558722

CATALOG NUMBER: FSR-12-1-LD4-1LO-40-UNV-81-85-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 236.4 | 236.4 | 236.4 | 236.4 | 236.4 |
| 2.5° | 234.7 | 234.7 | 234.7 | 234.4 | 234.4 |
| 5° | 232.3 | 232.0 | 232.0 | 231.7 | 231.7 |
| 7.5° | 230.3 | 230.1 | 229.8 | 229.5 | 229.0 |
| 10° | 227.6 | 227.6 | 227.3 | 226.0 | 225.7 |
| 12.5° | 223.2 | 223.0 | 221.9 | 220.0 | 219.4 |
| 15° | 217.2 | 217.2 | 215.0 | 212.9 | 212.0 |
| 17.5° | 210.7 | 210.4 | 207.7 | 205.5 | 204.4 |
| 20° | 203.6 | 203.0 | 200.3 | 196.7 | 194.8 |
| 22.5° | 195.6 | 195.6 | 192.4 | 187.7 | 185.8 |
| 25° | 188.3 | 187.2 | 184.2 | 177.6 | 172.7 |
| 27.5° | 179.8 | 178.2 | 174.9 | 165.6 | 159.8 |
| 30° | 170.5 | 169.7 | 165.0 | 153.0 | 148.6 |
| 32.5° | 161.8 | 160.4 | 155.5 | 142.9 | 139.4 |
| 35° | 152.7 | 151.6 | 144.3 | 133.3 | 130.1 |
| 37.5° | 143.7 | 142.4 | 133.1 | 124.3 | 120.2 |
| 40° | 134.7 | 133.1 | 123.0 | 115.0 | 110.7 |
| 42.5° | 126.2 | 124.1 | 114.2 | 105.7 | 100.8 |
| 45° | 117.2 | 114.8 | 104.9 | 96.2 | 92.4 |
| 47.5° | 108.2 | 106.0 | 97.0 | 88.0 | 83.6 |
| 50° | 98.6 | 96.7 | 88.5 | 79.5 | 74.9 |
| 52.5° | 90.7 | 87.7 | 79.8 | 70.8 | 66.9 |
| 55° | 81.4 | 79.0 | 71.6 | 63.1 | 59.8 |
| 57.5° | 73.0 | 70.5 | 63.7 | 55.7 | 53.0 |
| 60° | 65.0 | 61.5 | 55.7 | 48.9 | 46.7 |
| 62.5° | 56.3 | 53.6 | 48.6 | 42.9 | 45.6 |
| 65° | 48.4 | 45.6 | 41.3 | 42.1 | 35.0 |
| 67.5° | 39.6 | 38.3 | 34.4 | 30.6 | 29.5 |
| 70° | 32.2 | 30.6 | 29.2 | 25.1 | 24.0 |
| 72.5° | 25.7 | 24.0 | 22.1 | 19.9 | 19.1 |
| 75° | 19.4 | 18.0 | 16.9 | 16.1 | 17.8 |
| 77.5° | 13.4 | 12.8 | 12.0 | 11.2 | 10.9 |
| 80° | 8.7 | 8.5 | 8.2 | 7.9 | 7.7 |
| 82.5° | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| 85° | 2.7 | 3.0 | 3.3 | 3.6 | 3.8 |
| 87.5° | 1.6 | 1.6 | 1.9 | 2.2 | 2.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)