

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: P560377

Luminaire Tested: FSR-12-2-LD4-2LO-35-UNV-80-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560377
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-LD4-2LO-35-UNV-80-88-EDD
Description: 1X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1924.0 lumens
Efficiency: N/A
Efficacy: 82.2 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

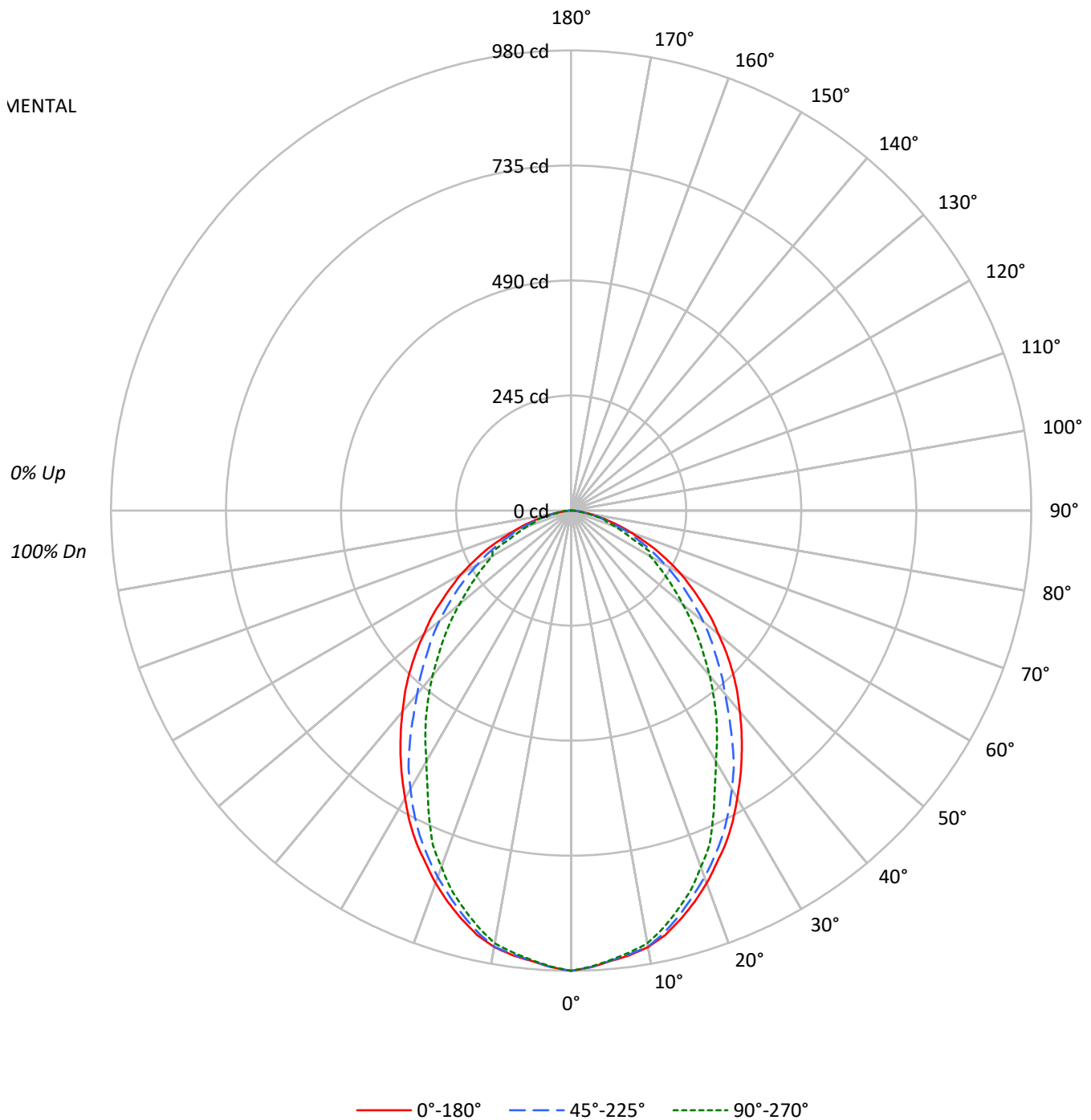
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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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 | 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° | 5275 | 5275 | 5275 |
| 5° | 5203 | 5197 | 5191 |
| 10° | 5158 | 5152 | 5115 |
| 15° | 5019 | 4968 | 4899 |
| 20° | 4834 | 4757 | 4627 |
| 25° | 4635 | 4535 | 4252 |
| 30° | 4394 | 4253 | 3831 |
| 35° | 4162 | 3930 | 3543 |
| 40° | 3925 | 3582 | 3224 |
| 45° | 3700 | 3312 | 2915 |
| 50° | 3424 | 3074 | 2599 |
| 55° | 3168 | 2786 | 2328 |
| 60° | 2903 | 2488 | 2085 |
| 65° | 2553 | 2179 | 1847 |
| 70° | 2104 | 1907 | 1569 |
| 75° | 1672 | 1460 | 1530 |
| 80° | 1125 | 1054 | 982 |
| 85° | 698 | 840 | 982 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3700 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 91.2 | 4.7 |
| 10°-20° | 250.4 | 13.0 |
| 20°-30° | 346.6 | 18.0 |
| 30°-40° | 369.6 | 19.2 |
| 40°-50° | 337.2 | 17.5 |
| 50°-60° | 264.2 | 13.7 |
| 60°-70° | 172.2 | 8.9 |
| 70°-80° | 76.3 | 4.0 |
| 80°-90° | 16.4 | 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° | 688.2 | 35.8 |
| 0°-40° | 1057.8 | 55.0 |
| 0°-60° | 1659.2 | 86.2 |
| 0°-90° | 1924.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1924.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 980 | 980 | 980 | 980 | 980 | |
| 5° | 963 | 962 | 962 | 961 | 961 | 91 |
| 15° | 901 | 901 | 892 | 883 | 879 | 253 |
| 25° | 781 | 776 | 764 | 736 | 716 | 358 |
| 35° | 633 | 629 | 598 | 553 | 539 | 396 |
| 45° | 486 | 476 | 435 | 399 | 383 | 374 |
| 55° | 338 | 327 | 297 | 262 | 248 | 303 |
| 65° | 200 | 189 | 171 | 174 | 145 | 198 |
| 75° | 80 | 75 | 70 | 67 | 74 | 86 |
| 85° | 11 | 12 | 14 | 15 | 16 | 16 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560377

CATALOG NUMBER: FSR-12-2-LD4-2LO-35-UNV-80-88-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 980.1 | 980.1 | 980.1 | 980.1 | 980.1 |
| 2.5° | 973.3 | 973.3 | 973.3 | 972.1 | 972.1 |
| 5° | 963.1 | 961.9 | 961.9 | 960.8 | 960.8 |
| 7.5° | 955.1 | 954.0 | 952.9 | 951.7 | 949.5 |
| 10° | 943.8 | 943.8 | 942.7 | 937.0 | 935.9 |
| 12.5° | 925.7 | 924.5 | 920.0 | 912.1 | 909.8 |
| 15° | 900.7 | 900.7 | 891.7 | 882.6 | 879.2 |
| 17.5° | 873.6 | 872.4 | 861.1 | 852.0 | 847.5 |
| 20° | 844.1 | 841.8 | 830.5 | 815.8 | 807.8 |
| 22.5° | 811.2 | 811.2 | 797.6 | 778.4 | 770.5 |
| 25° | 780.6 | 776.1 | 763.7 | 736.5 | 716.1 |
| 27.5° | 745.5 | 738.7 | 725.1 | 686.6 | 662.8 |
| 30° | 707.0 | 703.6 | 684.3 | 634.5 | 616.4 |
| 32.5° | 670.7 | 665.1 | 644.7 | 592.6 | 577.8 |
| 35° | 633.4 | 628.8 | 598.2 | 552.9 | 539.3 |
| 37.5° | 596.0 | 590.3 | 551.8 | 515.5 | 498.5 |
| 40° | 558.6 | 551.8 | 509.9 | 477.0 | 458.9 |
| 42.5° | 523.5 | 514.4 | 473.6 | 438.5 | 418.1 |
| 45° | 486.1 | 475.9 | 435.1 | 398.8 | 383.0 |
| 47.5° | 448.7 | 439.6 | 402.2 | 364.8 | 346.7 |
| 50° | 409.0 | 401.1 | 367.1 | 329.7 | 310.4 |
| 52.5° | 376.2 | 363.7 | 330.8 | 293.5 | 277.6 |
| 55° | 337.6 | 327.4 | 296.9 | 261.7 | 248.1 |
| 57.5° | 302.5 | 292.3 | 264.0 | 231.1 | 219.8 |
| 60° | 269.7 | 254.9 | 231.1 | 202.8 | 193.7 |
| 62.5° | 233.4 | 222.1 | 201.7 | 177.9 | 189.2 |
| 65° | 200.5 | 189.2 | 171.1 | 174.5 | 145.0 |
| 67.5° | 164.3 | 158.6 | 142.8 | 126.9 | 122.4 |
| 70° | 133.7 | 126.9 | 121.2 | 104.2 | 99.7 |
| 72.5° | 106.5 | 99.7 | 91.8 | 82.7 | 79.3 |
| 75° | 80.4 | 74.8 | 70.2 | 66.8 | 73.6 |
| 77.5° | 55.5 | 53.3 | 49.9 | 46.5 | 45.3 |
| 80° | 36.3 | 35.1 | 34.0 | 32.9 | 31.7 |
| 82.5° | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 |
| 85° | 11.3 | 12.5 | 13.6 | 14.7 | 15.9 |
| 87.5° | 6.8 | 6.8 | 7.9 | 9.1 | 10.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)