

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: P590103

Luminaire Tested: FSR-24-2-LD4-1STD-50-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590103  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1STD-50-UNV-80-86-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

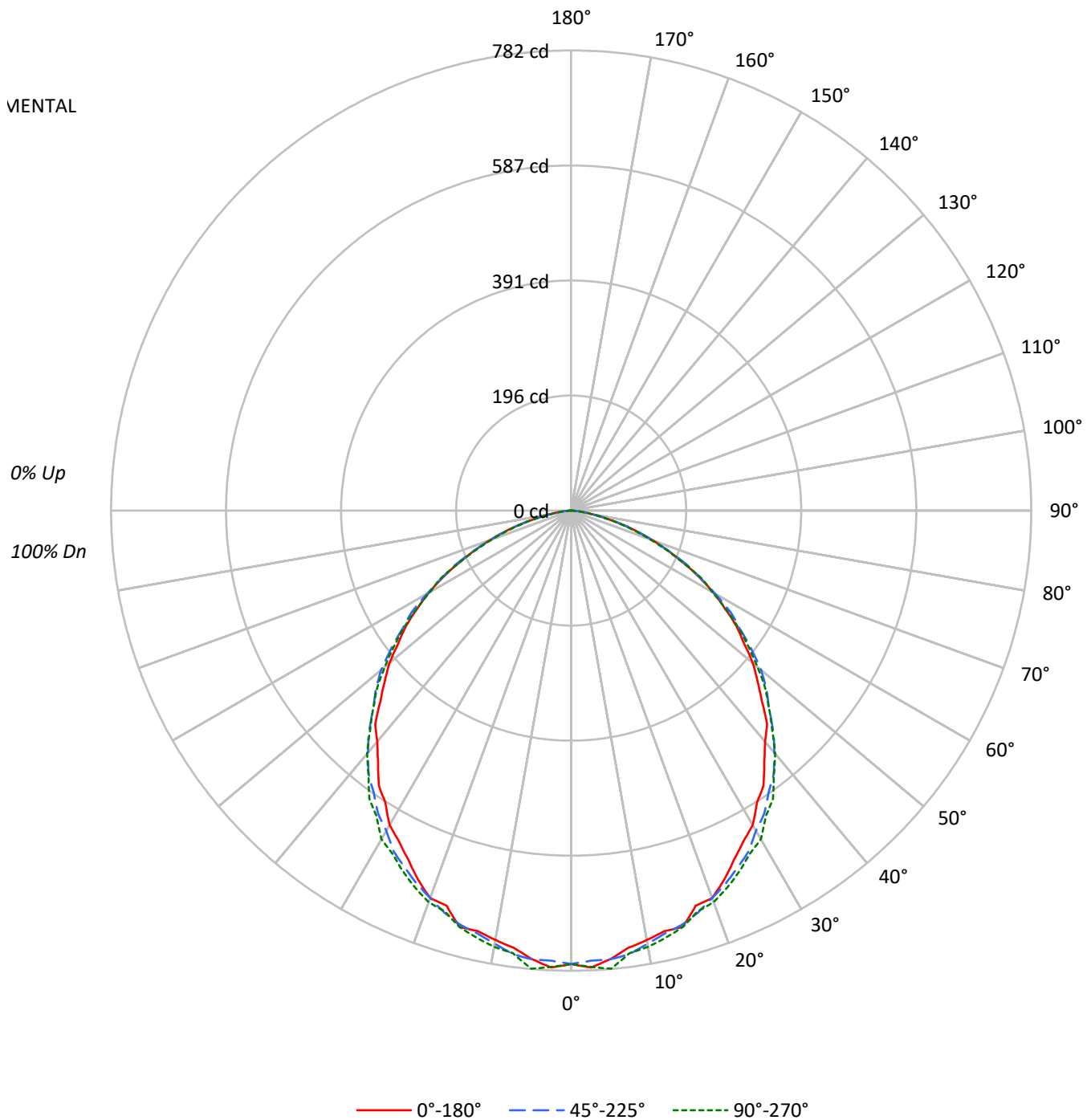
Lumens per Lamp: N/A  
Luminaire Lumens: 1942.0 lumens  
Efficiency: N/A  
Efficacy: 117.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590103

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590103

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-86-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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2073	2073	2073
5°	2067	2068	2111
10°	2025	2043	2057
15°	2041	2030	2041
20°	2006	2006	2028
25°	1945	1987	2009
30°	1918	1952	2004
35°	1873	1922	1965
40°	1800	1886	1895
45°	1745	1808	1810
50°	1688	1764	1731
55°	1608	1640	1628
60°	1504	1519	1492
65°	1341	1375	1331
70°	1150	1154	1123
75°	911	910	874
80°	611	594	570
85°	330	327	306

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1854 cd/sqm



TEST NUMBER: P590103

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.5	3.7
10°-20°	205.4	10.6
20°-30°	307.8	15.8
30°-40°	364.8	18.8
40°-50°	365.4	18.8
50°-60°	310.2	16.0
60°-70°	209.1	10.8
70°-80°	91.9	4.7
80°-90°	14.9	0.8
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°	585.7	30.2
0°-40°	950.4	48.9
0°-60°	1626.0	83.7
0°-90°	1942.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1942.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	770	770	770	770	770	
5°	765	763	765	763	782	72
15°	732	724	729	732	733	204
25°	655	658	669	678	677	303
35°	570	572	585	598	598	354
45°	459	467	475	487	476	355
55°	343	340	350	347	347	305
65°	211	208	216	208	209	209
75°	88	86	88	81	84	94
85°	11	10	11	10	10	16
90°	0	0	0	0	0	



TEST NUMBER: P590103

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	770.5	770.5	770.5	770.5	770.5
2.5°	777.2	771.3	765.9	772.2	776.1
5°	765.1	763.3	765.4	763.1	781.5
7.5°	749.3	756.2	760.2	757.7	758.8
10°	741.0	738.6	747.5	753.6	752.7
12.5°	732.0	735.6	736.1	742.8	743.4
15°	732.5	724.1	728.6	732.3	732.6
17.5°	704.1	713.2	716.3	725.0	714.2
20°	700.6	693.9	700.6	709.5	708.1
22.5°	679.2	671.7	686.1	693.9	693.4
25°	654.9	658.5	669.3	678.0	676.6
27.5°	633.6	637.8	653.1	665.2	657.4
30°	617.2	615.1	628.1	638.8	644.8
32.5°	587.9	595.4	610.6	621.2	615.5
35°	570.1	571.8	585.0	598.5	598.1
37.5°	538.9	546.8	565.4	569.2	565.7
40°	512.4	520.2	537.0	541.1	539.4
42.5°	492.8	494.2	508.6	513.3	505.8
45°	458.6	467.2	475.0	487.2	475.7
47.5°	429.6	433.6	450.3	453.6	447.5
50°	403.2	404.6	421.4	417.4	413.4
52.5°	370.1	376.0	385.4	384.6	379.9
55°	342.8	340.5	349.5	347.1	347.0
57.5°	310.1	314.1	321.4	317.7	311.6
60°	279.5	279.6	282.2	278.0	277.2
62.5°	245.3	246.5	247.1	241.9	250.4
65°	210.6	207.8	216.0	207.7	209.1
67.5°	178.7	180.1	179.3	174.1	176.1
70°	146.2	148.0	146.7	140.9	142.7
72.5°	116.6	114.4	115.8	108.4	111.8
75°	87.6	85.9	87.5	81.3	84.1
77.5°	59.7	61.1	60.1	56.8	58.7
80°	39.4	38.3	38.3	36.4	36.8
82.5°	23.0	21.9	21.6	21.0	21.9
85°	10.7	10.4	10.6	10.3	9.9
87.5°	3.9	4.0	4.0	3.8	3.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)