

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: P564156

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564156  
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-24-4-LD4-4STD-50-UNV-80-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

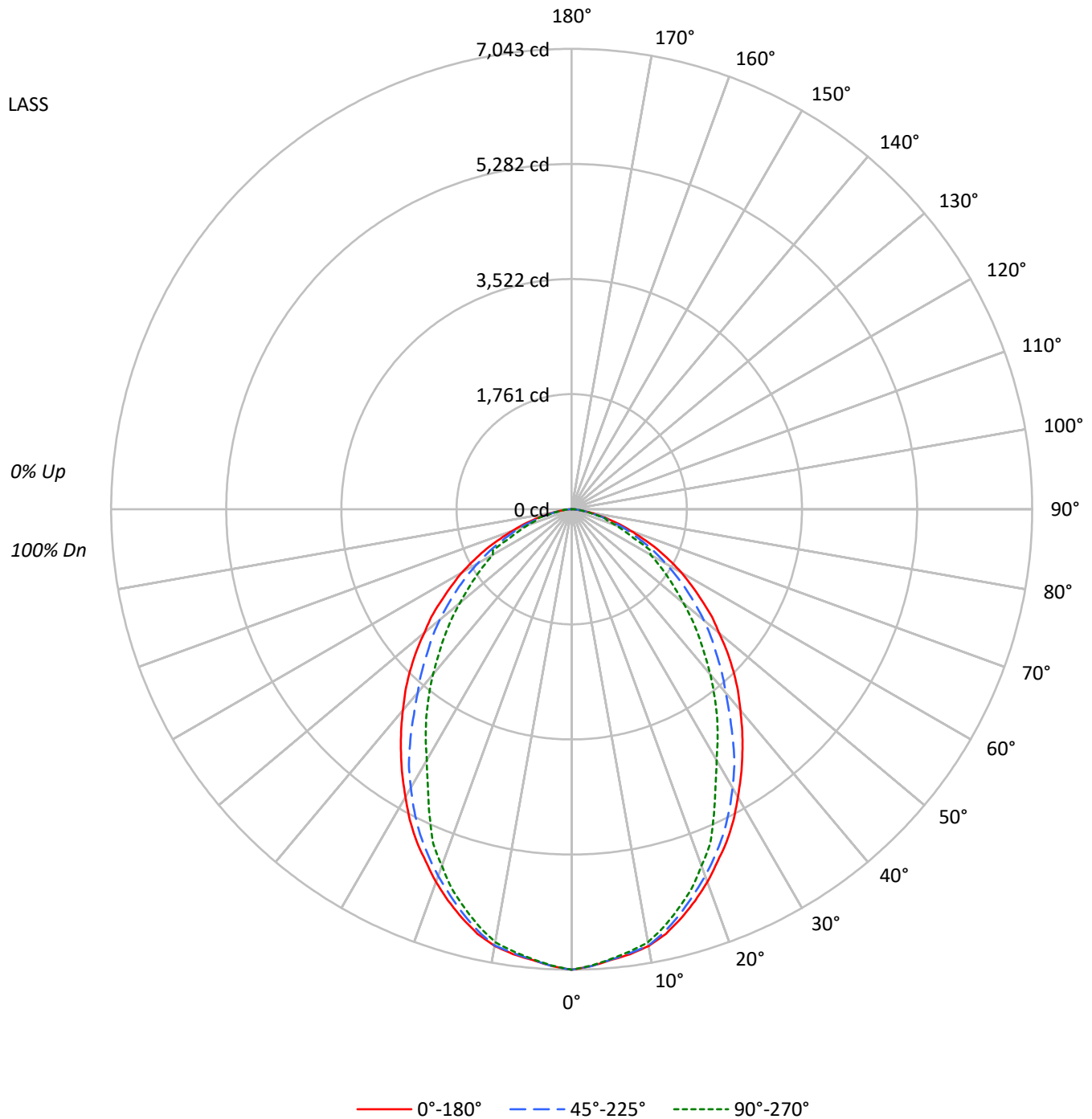
Lumens per Lamp: N/A  
Luminaire Lumens: 13827.0 lumens  
Efficiency: N/A  
Efficacy: 103.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P564156

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P564156

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD-90

**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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	9477	9477	9477
5°	9348	9337	9326
10°	9267	9256	9189
15°	9017	8926	8802
20°	8686	8546	8313
25°	8329	8148	7640
30°	7894	7641	6882
35°	7476	7062	6366
40°	7051	6436	5792
45°	6647	5950	5237
50°	6153	5522	4670
55°	5692	5004	4183
60°	5215	4470	3747
65°	4588	3914	3318
70°	3780	3428	2819
75°	3005	2624	2752
80°	2019	1893	1767
85°	1257	1508	1760

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6647 cd/sqm



TEST NUMBER: P564156

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	655.6	4.7
10°-20°	1799.3	13.0
20°-30°	2491.1	18.0
30°-40°	2656.2	19.2
40°-50°	2423.2	17.5
50°-60°	1898.4	13.7
60°-70°	1237.3	8.9
70°-80°	548.2	4.0
80°-90°	117.7	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°	4946.0	35.8
0°-40°	7602.2	55.0
0°-60°	11923.9	86.2
0°-90°	13827.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13827.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7043	7043	7043	7043	7043	
5°	6921	6913	6913	6905	6905	657
15°	6473	6473	6408	6343	6319	1820
25°	5610	5578	5488	5293	5146	2576
35°	4552	4519	4299	3974	3876	2846
45°	3493	3420	3127	2866	2752	2691
55°	2426	2353	2133	1881	1783	2176
65°	1441	1360	1230	1254	1042	1420
75°	578	537	505	480	529	620
85°	81	90	98	106	114	113
90°	0	0	0	0	0	



TEST NUMBER: P564156

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-96-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7043.3	7043.3	7043.3	7043.3	7043.3
2.5°	6994.4	6994.4	6994.4	6986.3	6986.3
5°	6921.2	6913.0	6913.0	6904.9	6904.9
7.5°	6864.2	6856.0	6847.9	6839.7	6823.4
10°	6782.7	6782.7	6774.6	6733.9	6725.7
12.5°	6652.4	6644.3	6611.7	6554.7	6538.5
15°	6473.3	6473.3	6408.2	6343.0	6318.6
17.5°	6277.9	6269.7	6188.3	6123.2	6090.6
20°	6066.2	6049.9	5968.5	5862.6	5805.6
22.5°	5830.1	5830.1	5732.3	5593.9	5536.9
25°	5610.2	5577.6	5488.1	5292.6	5146.1
27.5°	5357.8	5308.9	5211.2	4934.4	4763.4
30°	5080.9	5056.5	4918.1	4559.8	4429.5
32.5°	4820.4	4779.7	4633.1	4258.5	4152.7
35°	4551.7	4519.1	4299.3	3973.6	3875.8
37.5°	4283.0	4242.3	3965.4	3704.9	3582.7
40°	4014.3	3965.4	3664.1	3428.0	3297.7
42.5°	3761.8	3696.7	3403.6	3151.2	3004.6
45°	3493.1	3419.9	3126.7	2866.2	2752.2
47.5°	3224.4	3159.3	2890.6	2621.9	2491.6
50°	2939.5	2882.5	2638.2	2369.5	2231.1
52.5°	2703.3	2613.8	2377.6	2108.9	1994.9
55°	2426.5	2353.2	2133.3	1880.9	1783.2
57.5°	2174.1	2100.8	1897.2	1661.1	1579.7
60°	1937.9	1832.1	1661.1	1457.5	1392.4
62.5°	1677.4	1595.9	1449.4	1278.4	1359.8
65°	1441.2	1359.8	1229.5	1253.9	1042.2
67.5°	1180.7	1140.0	1026.0	912.0	879.4
70°	960.8	912.0	871.3	749.1	716.5
72.5°	765.4	716.5	659.5	594.4	570.0
75°	578.1	537.4	504.8	480.4	529.3
77.5°	399.0	382.7	358.3	333.8	325.7
80°	260.6	252.4	244.3	236.1	228.0
82.5°	154.7	154.7	154.7	154.7	154.7
85°	81.4	89.6	97.7	105.9	114.0
87.5°	48.9	48.9	57.0	65.1	73.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)