

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: P561001

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561001  
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-12-4-LD4-1LO-35-UNV-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

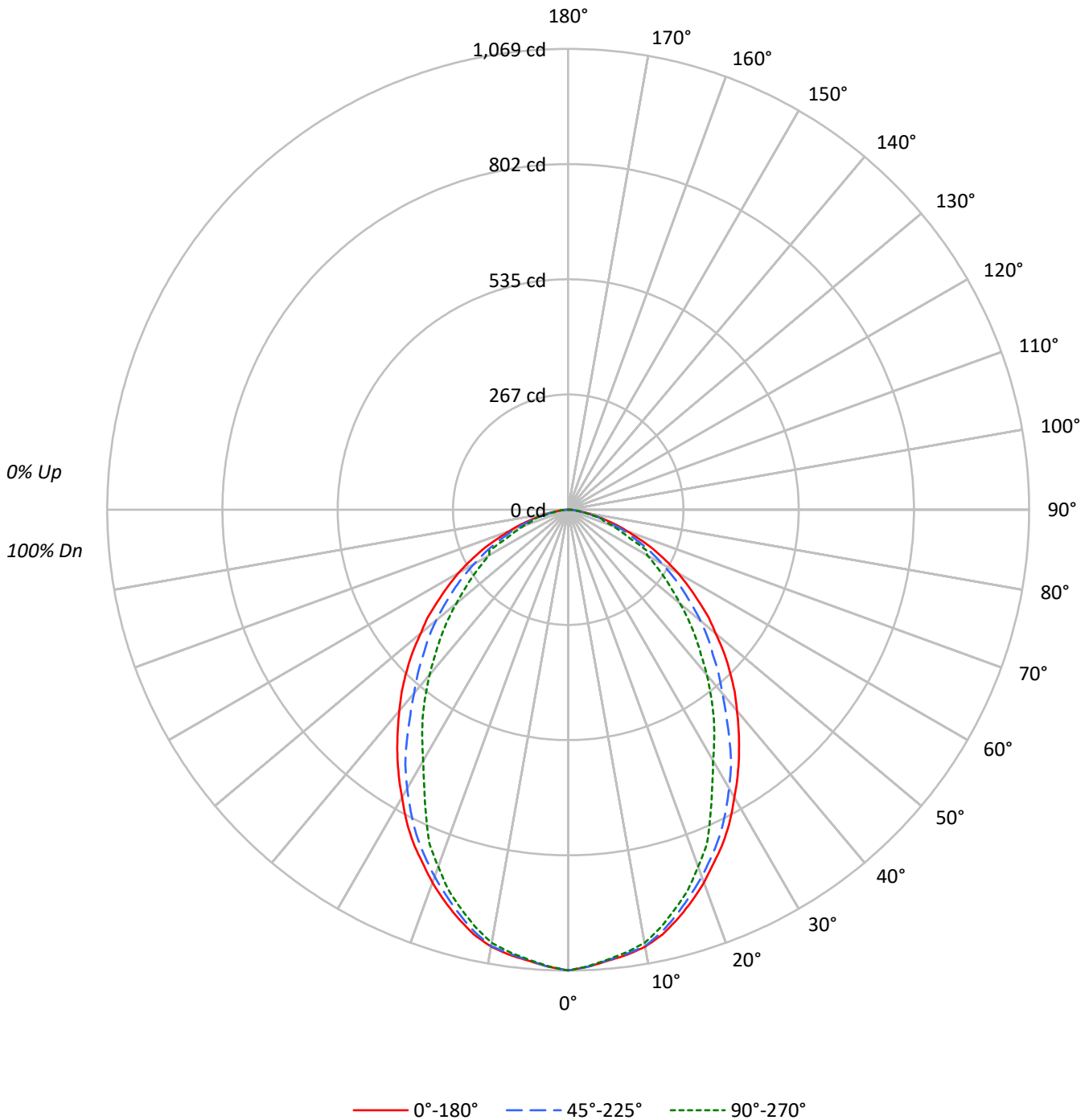
Lumens per Lamp: N/A  
Luminaire Lumens: 2098.0 lumens  
Efficiency: N/A  
Efficacy: 89.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2876	2876	2876
5°	2837	2833	2830
10°	2812	2809	2789
15°	2736	2709	2671
20°	2636	2593	2523
25°	2527	2472	2318
30°	2395	2319	2088
35°	2269	2143	1932
40°	2140	1953	1758
45°	2017	1805	1589
50°	1867	1676	1417
55°	1727	1519	1270
60°	1582	1356	1137
65°	1393	1188	1007
70°	1147	1040	855
75°	912	796	835
80°	612	575	536
85°	383	457	534

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2017 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.5	4.7
10°-20°	273.0	13.0
20°-30°	378.0	18.0
30°-40°	403.0	19.2
40°-50°	367.7	17.5
50°-60°	288.1	13.7
60°-70°	187.7	8.9
70°-80°	83.2	4.0
80°-90°	17.9	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°	750.5	35.8
0°-40°	1153.5	55.0
0°-60°	1809.2	86.2
0°-90°	2098.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2098.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1069	1069	1069	1069	1069	
5°	1050	1049	1049	1048	1048	100
15°	982	982	972	962	959	276
25°	851	846	833	803	781	391
35°	691	686	652	603	588	432
45°	530	519	474	435	418	408
55°	368	357	324	285	271	330
65°	219	206	187	190	158	215
75°	88	82	77	73	80	94
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1068.7	1068.7	1068.7	1068.7	1068.7
2.5°	1061.3	1061.3	1061.3	1060.0	1060.0
5°	1050.2	1048.9	1048.9	1047.7	1047.7
7.5°	1041.5	1040.3	1039.0	1037.8	1035.3
10°	1029.2	1029.2	1027.9	1021.7	1020.5
12.5°	1009.4	1008.2	1003.2	994.6	992.1
15°	982.2	982.2	972.3	962.4	958.7
17.5°	952.6	951.3	939.0	929.1	924.1
20°	920.4	918.0	905.6	889.5	880.9
22.5°	884.6	884.6	869.8	848.8	840.1
25°	851.2	846.3	832.7	803.1	780.8
27.5°	812.9	805.5	790.7	748.7	722.8
30°	770.9	767.2	746.2	691.9	672.1
32.5°	731.4	725.2	703.0	646.2	630.1
35°	690.6	685.7	652.3	602.9	588.1
37.5°	649.9	643.7	601.7	562.1	543.6
40°	609.1	601.7	556.0	520.1	500.4
42.5°	570.8	560.9	516.4	478.1	455.9
45°	530.0	518.9	474.4	434.9	417.6
47.5°	489.3	479.4	438.6	397.8	378.1
50°	446.0	437.4	400.3	359.5	338.5
52.5°	410.2	396.6	360.8	320.0	302.7
55°	368.2	357.1	323.7	285.4	270.6
57.5°	329.9	318.8	287.9	252.0	239.7
60°	294.0	278.0	252.0	221.2	211.3
62.5°	254.5	242.2	219.9	194.0	206.3
65°	218.7	206.3	186.6	190.3	158.1
67.5°	179.1	173.0	155.7	138.4	133.4
70°	145.8	138.4	132.2	113.7	108.7
72.5°	116.1	108.7	100.1	90.2	86.5
75°	87.7	81.5	76.6	72.9	80.3
77.5°	60.5	58.1	54.4	50.7	49.4
80°	39.5	38.3	37.1	35.8	34.6
82.5°	23.5	23.5	23.5	23.5	23.5
85°	12.4	13.6	14.8	16.1	17.3
87.5°	7.4	7.4	8.6	9.9	11.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)