

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: P561066

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561066  
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-40-UNV-93-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

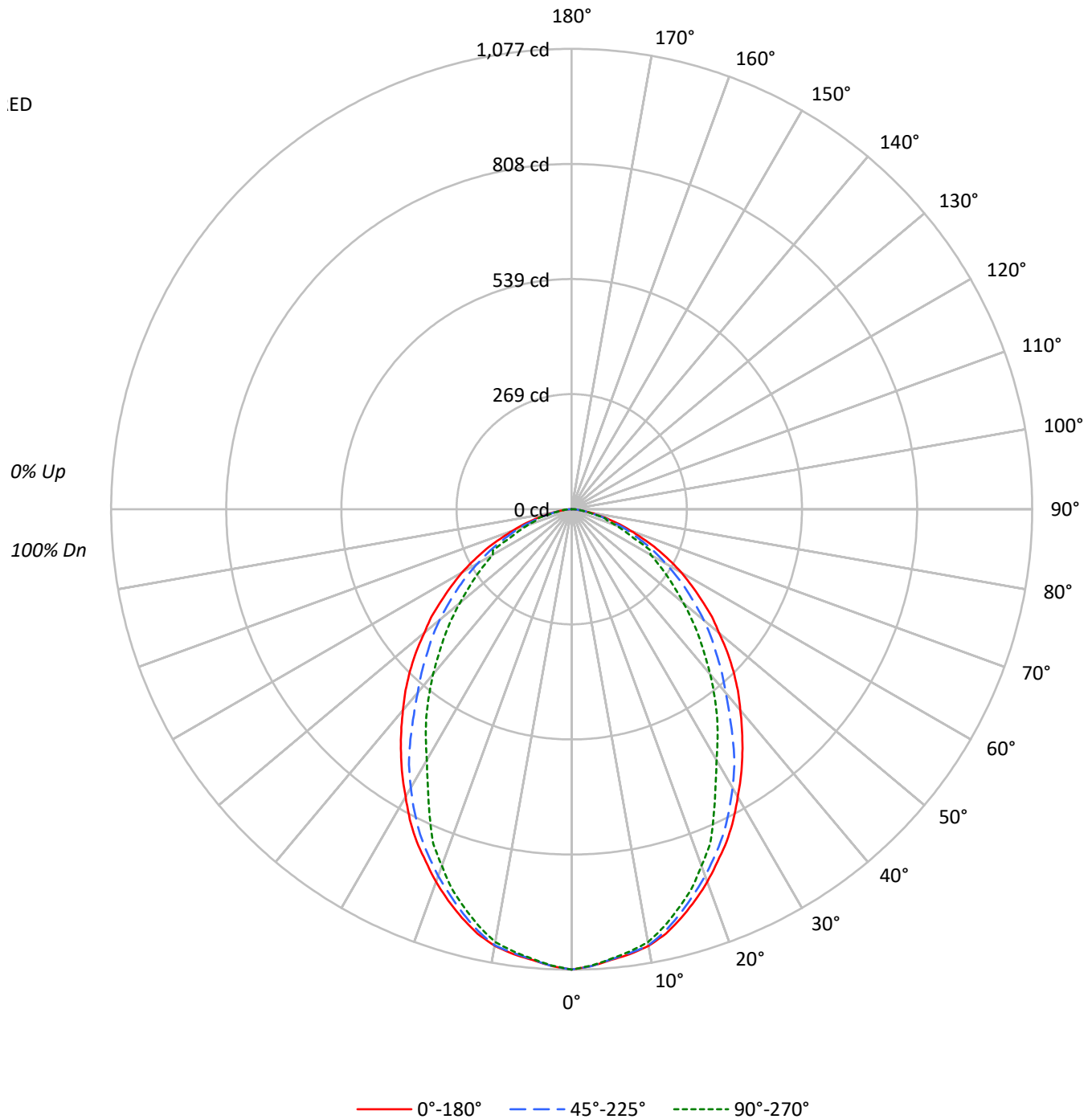
Lumens per Lamp: N/A  
Luminaire Lumens: 2114.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2898	2898	2898
5°	2858	2855	2852
10°	2834	2830	2810
15°	2757	2729	2691
20°	2656	2613	2542
25°	2547	2491	2336
30°	2414	2336	2104
35°	2286	2159	1947
40°	2156	1968	1771
45°	2033	1819	1601
50°	1881	1688	1428
55°	1741	1530	1279
60°	1595	1367	1146
65°	1403	1197	1014
70°	1156	1048	862
75°	919	803	841
80°	617	578	541
85°	383	460	537

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2033 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.2	4.7
10°-20°	275.1	13.0
20°-30°	380.9	18.0
30°-40°	406.1	19.2
40°-50°	370.5	17.5
50°-60°	290.3	13.7
60°-70°	189.2	8.9
70°-80°	83.8	4.0
80°-90°	18.0	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°	756.2	35.8
0°-40°	1162.3	55.0
0°-60°	1823.0	86.2
0°-90°	2114.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2114.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1077	1077	1077	1077	1077	
5°	1058	1057	1057	1056	1056	100
15°	990	990	980	970	966	278
25°	858	853	839	809	787	394
35°	696	691	657	608	593	435
45°	534	523	478	438	421	411
55°	371	360	326	288	273	333
65°	220	208	188	192	159	217
75°	88	82	77	73	81	95
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°	1076.8	1076.8	1076.8	1076.8	1076.8
2.5°	1069.4	1069.4	1069.4	1068.1	1068.1
5°	1058.2	1056.9	1056.9	1055.7	1055.7
7.5°	1049.5	1048.2	1047.0	1045.7	1043.2
10°	1037.0	1037.0	1035.8	1029.5	1028.3
12.5°	1017.1	1015.8	1010.9	1002.1	999.7
15°	989.7	989.7	979.7	969.8	966.0
17.5°	959.8	958.6	946.1	936.2	931.2
20°	927.5	925.0	912.5	896.3	887.6
22.5°	891.4	891.4	876.4	855.3	846.5
25°	857.7	852.8	839.1	809.2	786.8
27.5°	819.1	811.7	796.7	754.4	728.3
30°	776.8	773.1	751.9	697.1	677.2
32.5°	737.0	730.8	708.4	651.1	634.9
35°	695.9	690.9	657.3	607.5	592.6
37.5°	654.8	648.6	606.3	566.4	547.8
40°	613.7	606.3	560.2	524.1	504.2
42.5°	575.1	565.2	520.4	481.8	459.4
45°	534.1	522.9	478.0	438.2	420.8
47.5°	493.0	483.0	441.9	400.9	380.9
50°	449.4	440.7	403.3	362.3	341.1
52.5°	413.3	399.6	363.5	322.4	305.0
55°	371.0	359.8	326.2	287.6	272.6
57.5°	332.4	321.2	290.1	254.0	241.5
60°	296.3	280.1	254.0	222.8	212.9
62.5°	256.5	244.0	221.6	195.5	207.9
65°	220.3	207.9	188.0	191.7	159.3
67.5°	180.5	174.3	156.9	139.4	134.4
70°	146.9	139.4	133.2	114.5	109.6
72.5°	117.0	109.6	100.8	90.9	87.1
75°	88.4	82.2	77.2	73.4	80.9
77.5°	61.0	58.5	54.8	51.0	49.8
80°	39.8	38.6	37.3	36.1	34.9
82.5°	23.7	23.7	23.7	23.7	23.7
85°	12.4	13.7	14.9	16.2	17.4
87.5°	7.5	7.5	8.7	10.0	11.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)