

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: P561108

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561108  
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-50-UNV-82-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

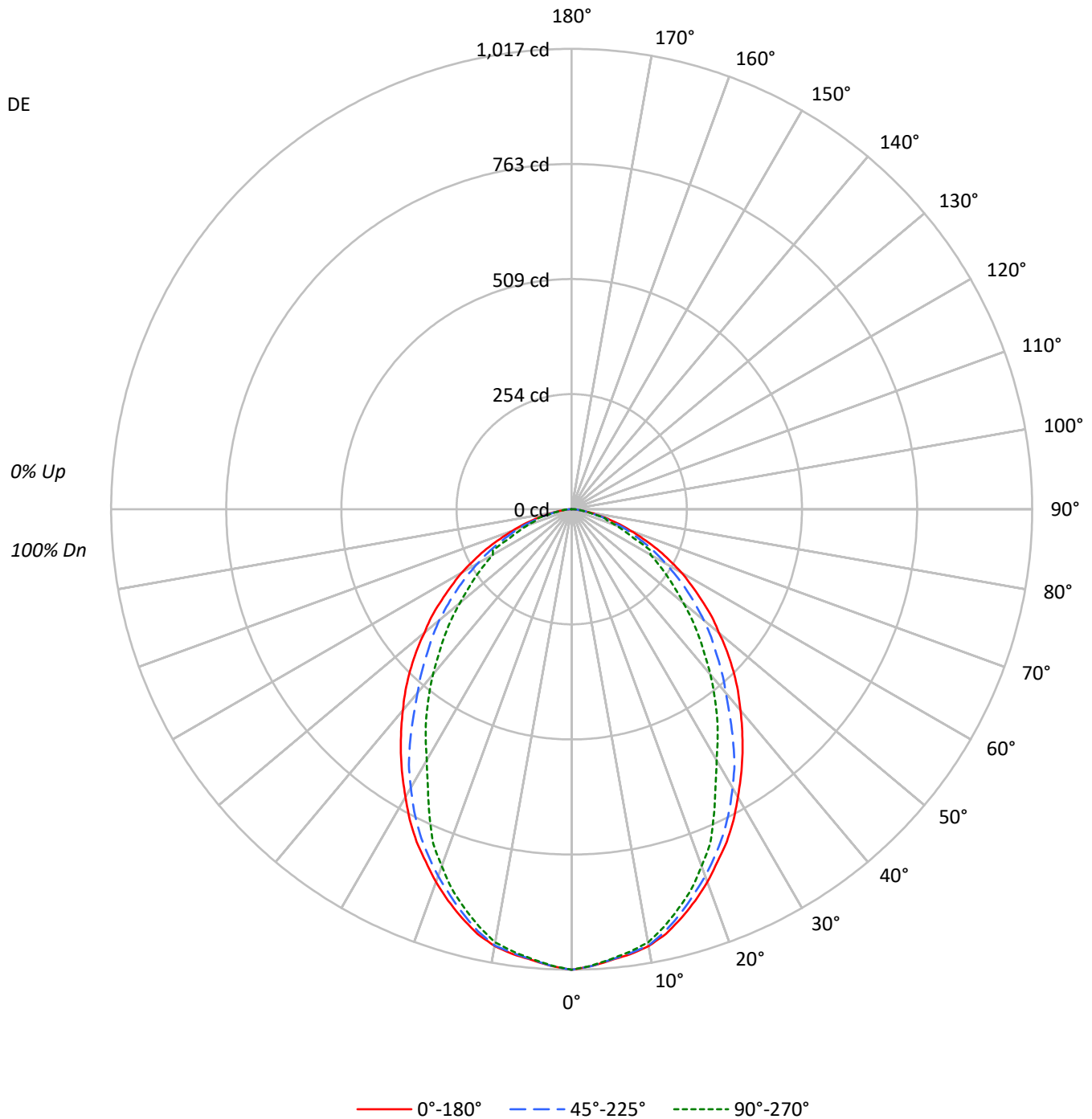
Lumens per Lamp: N/A  
Luminaire Lumens: 1997.0 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2737	2737	2737
5°	2700	2697	2694
10°	2677	2673	2654
15°	2605	2578	2542
20°	2509	2468	2401
25°	2406	2353	2207
30°	2280	2207	1988
35°	2160	2040	1839
40°	2037	1859	1673
45°	1920	1719	1513
50°	1777	1595	1349
55°	1644	1445	1208
60°	1506	1291	1082
65°	1326	1131	958
70°	1092	990	814
75°	868	758	794
80°	583	547	510
85°	364	435	509

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1920 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.7	4.7
10°-20°	259.9	13.0
20°-30°	359.8	18.0
30°-40°	383.6	19.2
40°-50°	350.0	17.5
50°-60°	274.2	13.7
60°-70°	178.7	8.9
70°-80°	79.2	4.0
80°-90°	17.0	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°	714.3	35.8
0°-40°	1098.0	55.0
0°-60°	1722.1	86.2
0°-90°	1997.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1997.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1017	1017	1017	1017	1017	
5°	1000	998	998	997	997	95
15°	935	935	926	916	913	263
25°	810	806	793	764	743	372
35°	657	653	621	574	560	411
45°	504	494	452	414	398	389
55°	350	340	308	272	258	314
65°	208	196	178	181	150	205
75°	84	78	73	69	76	89
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1017.2	1017.2	1017.2	1017.2	1017.2
2.5°	1010.2	1010.2	1010.2	1009.0	1009.0
5°	999.6	998.4	998.4	997.3	997.3
7.5°	991.4	990.2	989.0	987.8	985.5
10°	979.6	979.6	978.4	972.6	971.4
12.5°	960.8	959.6	954.9	946.7	944.3
15°	934.9	934.9	925.5	916.1	912.6
17.5°	906.7	905.5	893.8	884.4	879.7
20°	876.1	873.8	862.0	846.7	838.5
22.5°	842.0	842.0	827.9	807.9	799.7
25°	810.3	805.6	792.6	764.4	743.2
27.5°	773.8	766.8	752.6	712.7	688.0
30°	733.8	730.3	710.3	658.6	639.7
32.5°	696.2	690.3	669.1	615.1	599.8
35°	657.4	652.7	620.9	573.9	559.8
37.5°	618.6	612.7	572.7	535.1	517.4
40°	579.8	572.7	529.2	495.1	476.3
42.5°	543.3	533.9	491.6	455.1	433.9
45°	504.5	493.9	451.6	414.0	397.5
47.5°	465.7	456.3	417.5	378.7	359.9
50°	424.5	416.3	381.0	342.2	322.2
52.5°	390.4	377.5	343.4	304.6	288.1
55°	350.4	339.9	308.1	271.7	257.5
57.5°	314.0	303.4	274.0	239.9	228.1
60°	279.9	264.6	239.9	210.5	201.1
62.5°	242.3	230.5	209.3	184.6	196.4
65°	208.2	196.4	177.6	181.1	150.5
67.5°	170.5	164.6	148.2	131.7	127.0
70°	138.8	131.7	125.8	108.2	103.5
72.5°	110.5	103.5	95.3	85.8	82.3
75°	83.5	77.6	72.9	69.4	76.4
77.5°	57.6	55.3	51.7	48.2	47.0
80°	37.6	36.5	35.3	34.1	32.9
82.5°	22.3	22.3	22.3	22.3	22.3
85°	11.8	12.9	14.1	15.3	16.5
87.5°	7.1	7.1	8.2	9.4	10.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)