

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: P561089

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561089  
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-81-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

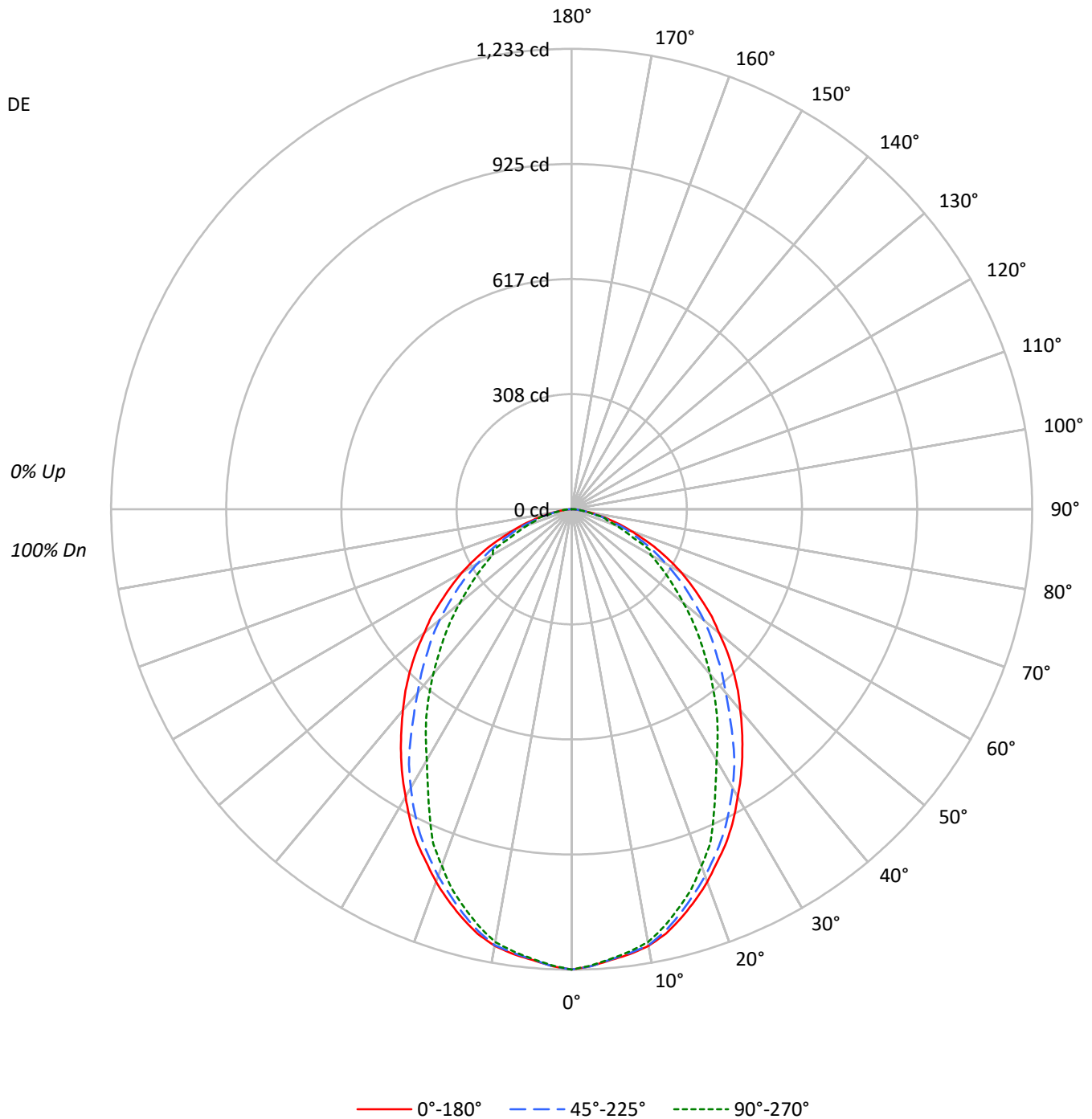
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2420.0 lumens  
Efficiency: N/A  
Efficacy: 103.4 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	3317	3317	3317
5°	3272	3268	3264
10°	3244	3240	3216
15°	3156	3125	3081
20°	3040	2991	2910
25°	2915	2852	2674
30°	2763	2675	2409
35°	2617	2472	2228
40°	2468	2253	2028
45°	2327	2082	1833
50°	2154	1933	1635
55°	1993	1752	1464
60°	1826	1565	1312
65°	1606	1370	1161
70°	1323	1200	987
75°	1052	919	963
80°	707	663	618
85°	442	528	618

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2327 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	114.7	4.7
10°-20°	314.9	13.0
20°-30°	436.0	18.0
30°-40°	464.9	19.2
40°-50°	424.1	17.5
50°-60°	332.3	13.7
60°-70°	216.5	8.9
70°-80°	95.9	4.0
80°-90°	20.6	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°	865.7	35.8
0°-40°	1330.6	55.0
0°-60°	2086.9	86.2
0°-90°	2420.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2420.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1211	1210	1210	1208	1208	115
15°	1133	1133	1122	1110	1106	319
25°	982	976	960	926	901	451
35°	797	791	752	696	678	498
45°	611	598	547	502	482	471
55°	425	412	373	329	312	381
65°	252	238	215	220	182	249
75°	101	94	88	84	93	108
85°	14	16	17	18	20	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1232.7	1232.7	1232.7	1232.7	1232.7
2.5°	1224.2	1224.2	1224.2	1222.7	1222.7
5°	1211.3	1209.9	1209.9	1208.5	1208.5
7.5°	1201.4	1199.9	1198.5	1197.1	1194.2
10°	1187.1	1187.1	1185.7	1178.6	1177.1
12.5°	1164.3	1162.9	1157.2	1147.2	1144.4
15°	1133.0	1133.0	1121.6	1110.2	1105.9
17.5°	1098.8	1097.3	1083.1	1071.7	1066.0
20°	1061.7	1058.9	1044.6	1026.1	1016.1
22.5°	1020.4	1020.4	1003.3	979.0	969.1
25°	981.9	976.2	960.5	926.3	900.7
27.5°	937.7	929.2	912.1	863.6	833.7
30°	889.3	885.0	860.8	798.1	775.3
32.5°	843.7	836.5	810.9	745.3	726.8
35°	796.6	790.9	752.5	695.5	678.3
37.5°	749.6	742.5	694.0	648.4	627.0
40°	702.6	694.0	641.3	600.0	577.2
42.5°	658.4	647.0	595.7	551.5	525.9
45°	611.4	598.5	547.2	501.6	481.7
47.5°	564.3	552.9	505.9	458.9	436.1
50°	514.5	504.5	461.7	414.7	390.5
52.5°	473.1	457.5	416.1	369.1	349.2
55°	424.7	411.9	373.4	329.2	312.1
57.5°	380.5	367.7	332.0	290.7	276.5
60°	339.2	320.6	290.7	255.1	243.7
62.5°	293.6	279.3	253.7	223.7	238.0
65°	252.2	238.0	215.2	219.5	182.4
67.5°	206.6	199.5	179.6	159.6	153.9
70°	168.2	159.6	152.5	131.1	125.4
72.5°	134.0	125.4	115.4	104.0	99.8
75°	101.2	94.1	88.4	84.1	92.6
77.5°	69.8	67.0	62.7	58.4	57.0
80°	45.6	44.2	42.8	41.3	39.9
82.5°	27.1	27.1	27.1	27.1	27.1
85°	14.3	15.7	17.1	18.5	20.0
87.5°	8.6	8.6	10.0	11.4	12.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)