

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: P561134

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561134  
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-93-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

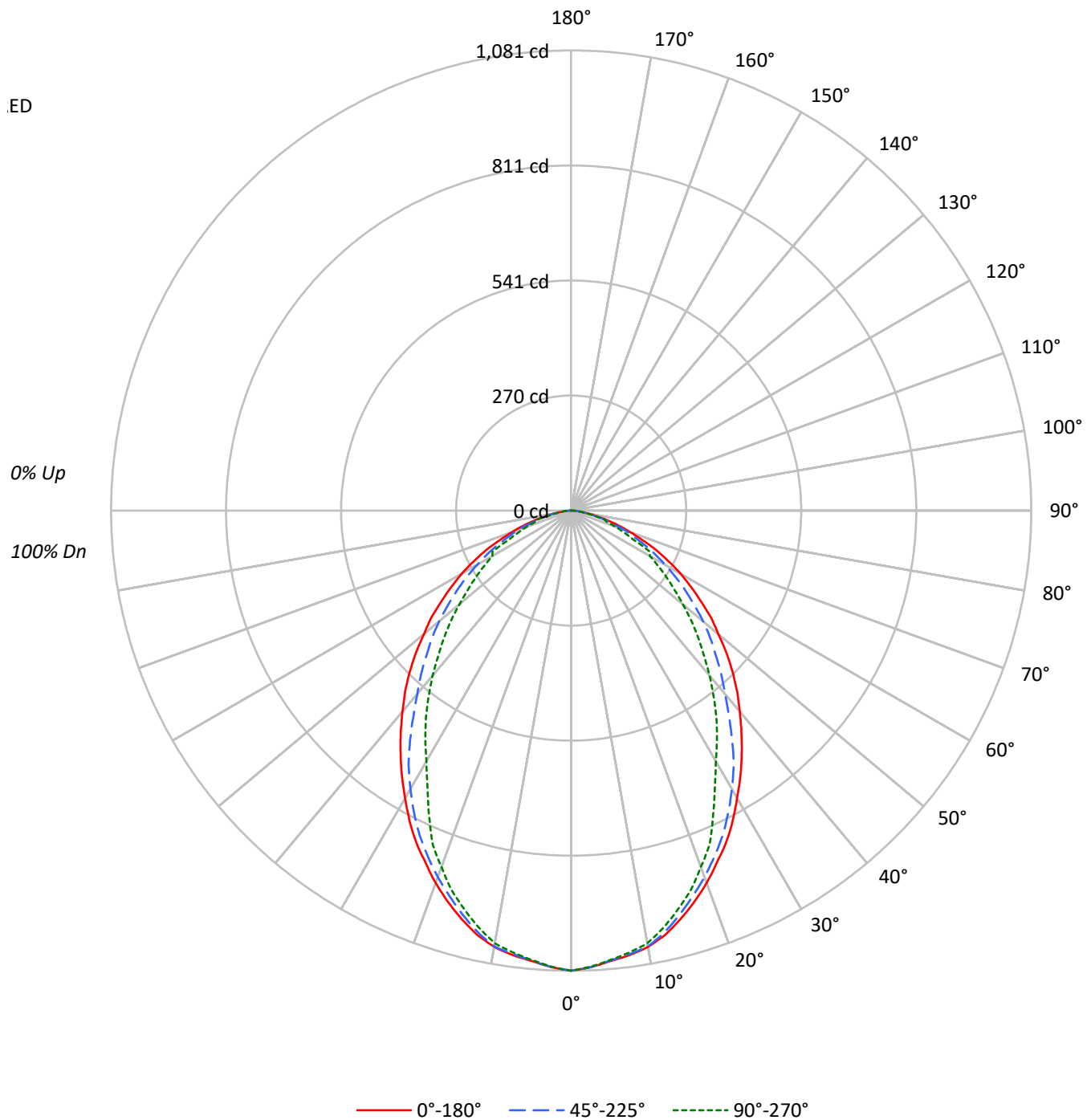
Lumens per Lamp: N/A  
Luminaire Lumens: 2122.0 lumens  
Efficiency: N/A  
Efficacy: 90.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2909	2909	2909
5°	2869	2866	2863
10°	2844	2841	2820
15°	2768	2740	2701
20°	2666	2623	2552
25°	2556	2501	2345
30°	2423	2345	2112
35°	2295	2167	1954
40°	2164	1975	1778
45°	2040	1826	1607
50°	1888	1695	1433
55°	1747	1536	1284
60°	1601	1372	1150
65°	1408	1202	1019
70°	1161	1052	865
75°	922	806	844
80°	620	581	542
85°	386	463	540

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2040 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.6	4.7
10°-20°	276.1	13.0
20°-30°	382.3	18.0
30°-40°	407.6	19.2
40°-50°	371.9	17.5
50°-60°	291.3	13.7
60°-70°	189.9	8.9
70°-80°	84.1	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°	759.1	35.8
0°-40°	1166.7	55.0
0°-60°	1829.9	86.2
0°-90°	2122.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2122.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1081	1081	1081	1081	1081	
5°	1062	1061	1061	1060	1060	101
15°	993	993	983	974	970	279
25°	861	856	842	812	790	395
35°	698	694	660	610	595	437
45°	536	525	480	440	422	413
55°	372	361	327	289	274	334
65°	221	209	189	192	160	218
75°	89	82	78	74	81	95
85°	12	14	15	16	18	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1080.9	1080.9	1080.9	1080.9	1080.9
2.5°	1073.4	1073.4	1073.4	1072.2	1072.2
5°	1062.2	1060.9	1060.9	1059.7	1059.7
7.5°	1053.4	1052.2	1050.9	1049.7	1047.2
10°	1040.9	1040.9	1039.7	1033.4	1032.2
12.5°	1020.9	1019.7	1014.7	1005.9	1003.4
15°	993.4	993.4	983.4	973.5	969.7
17.5°	963.5	962.2	949.7	939.7	934.7
20°	931.0	928.5	916.0	899.7	891.0
22.5°	894.7	894.7	879.7	858.5	849.7
25°	861.0	856.0	842.2	812.3	789.8
27.5°	822.2	814.8	799.8	757.3	731.0
30°	779.8	776.0	754.8	699.8	679.8
32.5°	739.8	733.5	711.0	653.5	637.3
35°	698.5	693.5	659.8	609.8	594.8
37.5°	657.3	651.1	608.6	568.6	549.8
40°	616.1	608.6	562.3	526.1	506.1
42.5°	577.3	567.3	522.3	483.6	461.1
45°	536.1	524.8	479.9	439.9	422.4
47.5°	494.8	484.9	443.6	402.4	382.4
50°	451.1	442.4	404.9	363.6	342.4
52.5°	414.9	401.1	364.9	323.7	306.2
55°	372.4	361.1	327.4	288.7	273.7
57.5°	333.6	322.4	291.2	254.9	242.4
60°	297.4	281.2	254.9	223.7	213.7
62.5°	257.4	244.9	222.4	196.2	208.7
65°	221.2	208.7	188.7	192.4	160.0
67.5°	181.2	174.9	157.5	140.0	135.0
70°	147.5	140.0	133.7	115.0	110.0
72.5°	117.5	110.0	101.2	91.2	87.5
75°	88.7	82.5	77.5	73.7	81.2
77.5°	61.2	58.7	55.0	51.2	50.0
80°	40.0	38.7	37.5	36.2	35.0
82.5°	23.7	23.7	23.7	23.7	23.7
85°	12.5	13.7	15.0	16.2	17.5
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)