

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: P561124

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561124  
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-93-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

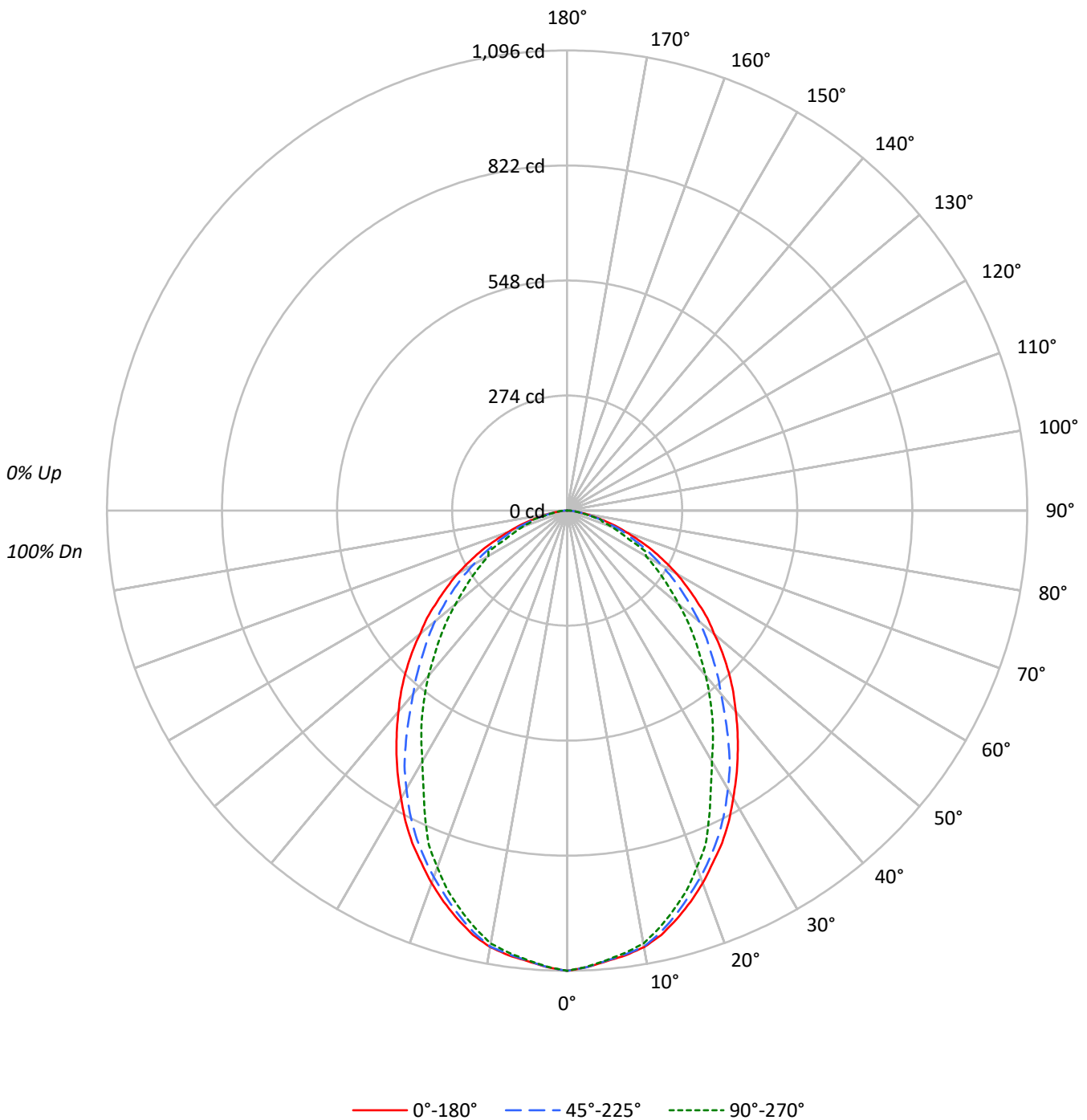
Lumens per Lamp: N/A  
Luminaire Lumens: 2152.0 lumens  
Efficiency: N/A  
Efficacy: 92.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2950	2950	2950
5°	2910	2906	2903
10°	2884	2881	2860
15°	2807	2779	2740
20°	2704	2660	2588
25°	2593	2536	2378
30°	2457	2378	2142
35°	2327	2198	1982
40°	2195	2003	1803
45°	2069	1852	1630
50°	1915	1719	1454
55°	1772	1558	1302
60°	1623	1391	1166
65°	1428	1219	1033
70°	1176	1067	877
75°	936	817	857
80°	629	589	550
85°	392	469	546

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2069 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.0	4.7
10°-20°	280.0	13.0
20°-30°	387.7	18.0
30°-40°	413.4	19.2
40°-50°	377.1	17.5
50°-60°	295.5	13.7
60°-70°	192.6	8.9
70°-80°	85.3	4.0
80°-90°	18.3	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°	769.8	35.8
0°-40°	1183.2	55.0
0°-60°	1855.8	86.2
0°-90°	2152.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2152.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1096	1096	1096	1096	1096	
5°	1077	1076	1076	1075	1075	102
15°	1008	1008	997	987	983	283
25°	873	868	854	824	801	401
35°	708	703	669	618	603	443
45°	544	532	487	446	428	419
55°	378	366	332	293	278	339
65°	224	212	191	195	162	221
75°	90	84	79	75	82	96
85°	13	14	15	16	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1096.2	1096.2	1096.2	1096.2	1096.2
2.5°	1088.6	1088.6	1088.6	1087.3	1087.3
5°	1077.2	1075.9	1075.9	1074.7	1074.7
7.5°	1068.3	1067.1	1065.8	1064.5	1062.0
10°	1055.6	1055.6	1054.4	1048.0	1046.8
12.5°	1035.4	1034.1	1029.0	1020.2	1017.6
15°	1007.5	1007.5	997.4	987.2	983.4
17.5°	977.1	975.8	963.1	953.0	947.9
20°	944.1	941.6	928.9	912.4	903.6
22.5°	907.4	907.4	892.2	870.6	861.8
25°	873.2	868.1	854.1	823.7	800.9
27.5°	833.9	826.3	811.1	768.0	741.4
30°	790.8	787.0	765.4	709.7	689.4
32.5°	750.2	743.9	721.1	662.8	646.3
35°	708.4	703.3	669.1	618.4	603.2
37.5°	666.6	660.3	617.2	576.6	557.6
40°	624.8	617.2	570.3	533.5	513.2
42.5°	585.5	575.3	529.7	490.4	467.6
45°	543.7	532.3	486.6	446.1	428.3
47.5°	501.8	491.7	449.9	408.1	387.8
50°	457.5	448.6	410.6	368.8	347.2
52.5°	420.7	406.8	370.0	328.2	310.5
55°	377.7	366.2	332.0	292.7	277.5
57.5°	338.4	327.0	295.3	258.5	245.9
60°	301.6	285.1	258.5	226.8	216.7
62.5°	261.1	248.4	225.6	199.0	211.6
65°	224.3	211.6	191.4	195.2	162.2
67.5°	183.8	177.4	159.7	141.9	136.9
70°	149.5	141.9	135.6	116.6	111.5
72.5°	119.1	111.5	102.6	92.5	88.7
75°	90.0	83.6	78.6	74.8	82.4
77.5°	62.1	59.6	55.8	52.0	50.7
80°	40.6	39.3	38.0	36.8	35.5
82.5°	24.1	24.1	24.1	24.1	24.1
85°	12.7	13.9	15.2	16.5	17.7
87.5°	7.6	7.6	8.9	10.1	11.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)