

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: P561102

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561102  
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-81-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

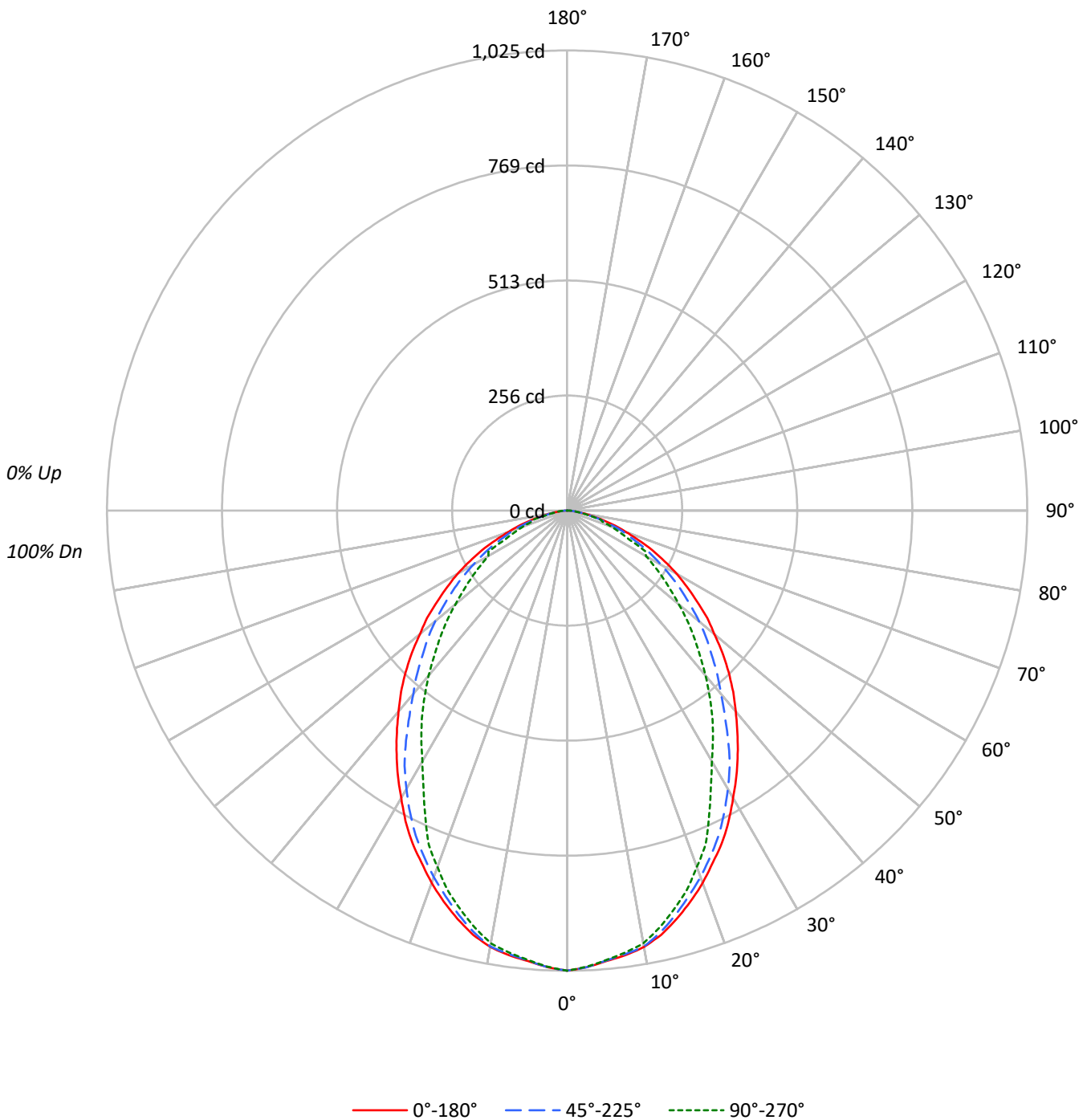
Lumens per Lamp: N/A  
Luminaire Lumens: 2012.0 lumens  
Efficiency: N/A  
Efficacy: 86.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2758	2758	2758
5°	2720	2717	2714
10°	2697	2694	2674
15°	2624	2598	2561
20°	2528	2487	2419
25°	2424	2371	2223
30°	2297	2224	2003
35°	2176	2055	1853
40°	2052	1873	1686
45°	1934	1732	1524
50°	1791	1607	1359
55°	1657	1456	1217
60°	1518	1301	1090
65°	1335	1139	966
70°	1100	998	821
75°	874	764	801
80°	587	550	514
85°	364	438	513

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1934 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	95.4	4.7
10°-20°	261.8	13.0
20°-30°	362.5	18.0
30°-40°	386.5	19.2
40°-50°	352.6	17.5
50°-60°	276.2	13.7
60°-70°	180.0	8.9
70°-80°	79.8	4.0
80°-90°	17.1	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°	719.7	35.8
0°-40°	1106.2	55.0
0°-60°	1735.1	86.2
0°-90°	2012.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2012.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1025	1025	1025	1025	1025	
5°	1007	1006	1006	1005	1005	96
15°	942	942	932	923	919	265
25°	816	812	799	770	749	375
35°	662	658	626	578	564	414
45°	508	498	455	417	400	392
55°	353	342	310	274	260	317
65°	210	198	179	182	152	207
75°	84	78	74	70	77	90
85°	12	13	14	15	17	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1024.9	1024.9	1024.9	1024.9	1024.9
2.5°	1017.8	1017.8	1017.8	1016.6	1016.6
5°	1007.1	1005.9	1005.9	1004.7	1004.7
7.5°	998.8	997.6	996.4	995.3	992.9
10°	987.0	987.0	985.8	979.9	978.7
12.5°	968.0	966.8	962.1	953.8	951.4
15°	941.9	941.9	932.5	923.0	919.4
17.5°	913.5	912.3	900.5	891.0	886.3
20°	882.7	880.3	868.5	853.1	844.8
22.5°	848.3	848.3	834.1	814.0	805.7
25°	816.4	811.6	798.6	770.1	748.8
27.5°	779.6	772.5	758.3	718.0	693.1
30°	739.3	735.8	715.6	663.5	644.6
32.5°	701.4	695.5	674.2	619.7	604.3
35°	662.3	657.6	625.6	578.2	564.0
37.5°	623.2	617.3	577.0	539.1	521.3
40°	584.1	577.0	533.2	498.8	479.9
42.5°	547.4	537.9	495.3	458.5	437.2
45°	508.3	497.6	455.0	417.1	400.5
47.5°	469.2	459.7	420.6	381.5	362.6
50°	427.7	419.4	383.9	344.8	324.6
52.5°	393.4	380.3	346.0	306.9	290.3
55°	353.1	342.4	310.4	273.7	259.5
57.5°	316.4	305.7	276.1	241.7	229.9
60°	282.0	266.6	241.7	212.1	202.6
62.5°	244.1	232.2	210.9	186.0	197.9
65°	209.7	197.9	178.9	182.5	151.7
67.5°	171.8	165.9	149.3	132.7	128.0
70°	139.8	132.7	126.8	109.0	104.3
72.5°	111.4	104.3	96.0	86.5	82.9
75°	84.1	78.2	73.5	69.9	77.0
77.5°	58.1	55.7	52.1	48.6	47.4
80°	37.9	36.7	35.5	34.4	33.2
82.5°	22.5	22.5	22.5	22.5	22.5
85°	11.8	13.0	14.2	15.4	16.6
87.5°	7.1	7.1	8.3	9.5	10.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)