

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: P589995

Luminaire Tested: FSR-24-2-LD4-1LO-40-UNV-82-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589995  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1LO-40-UNV-82-96-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

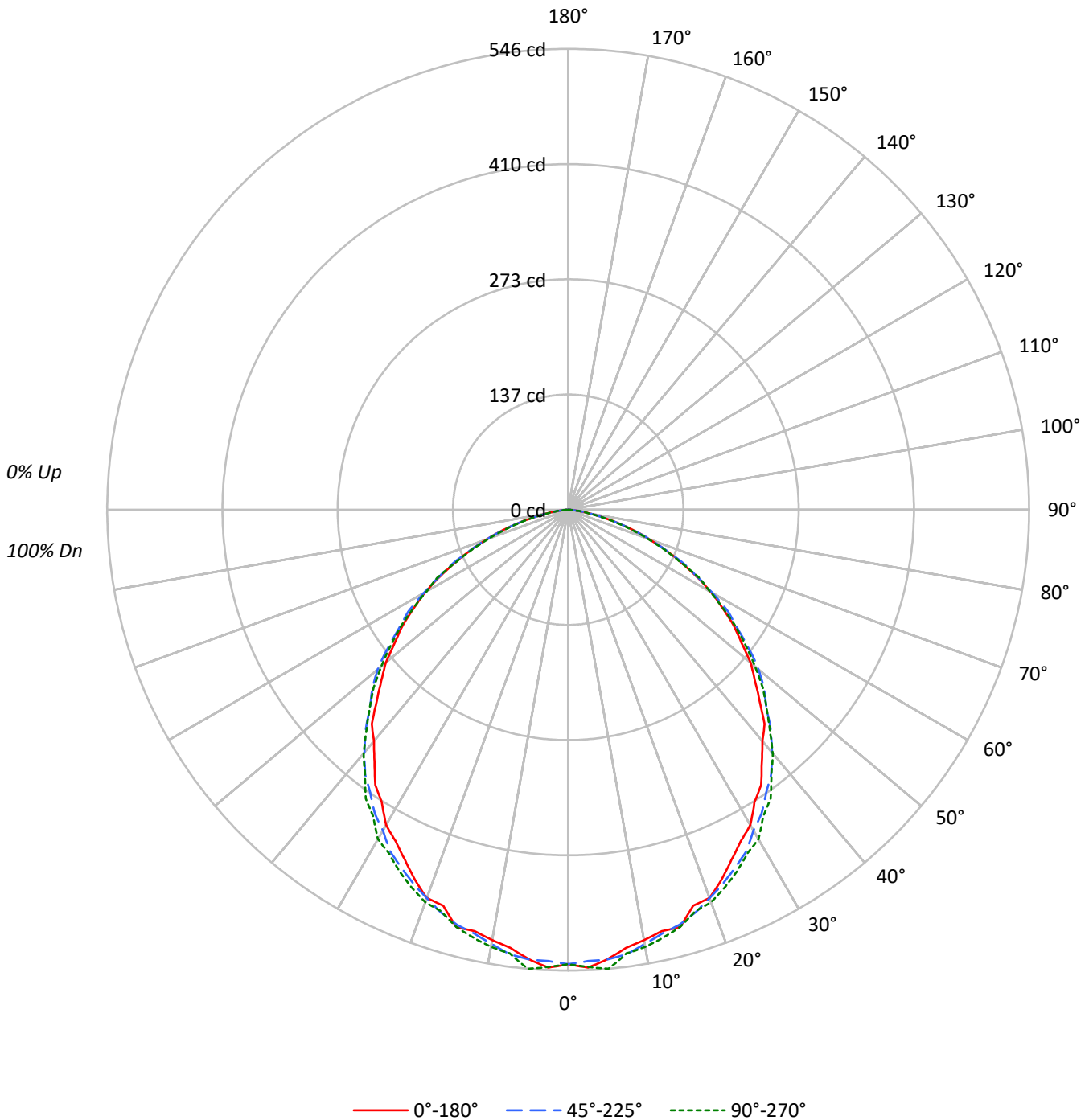
Lumens per Lamp: N/A  
Luminaire Lumens: 1357.0 lumens  
Efficiency: N/A  
Efficacy: 116.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86									86																			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73									73																			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62									62																			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53									53																			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46									46																			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41									41																			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36									36																			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32									32																			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29									29																			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26									26																			

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

	0°	45°	90°
0°	1449	1449	1449
5°	1444	1445	1475
10°	1415	1427	1437
15°	1426	1418	1426
20°	1402	1402	1417
25°	1359	1389	1404
30°	1340	1364	1400
35°	1308	1343	1373
40°	1258	1318	1324
45°	1220	1263	1265
50°	1180	1233	1209
55°	1124	1146	1138
60°	1051	1061	1042
65°	937	961	930
70°	804	806	784
75°	636	635	610
80°	426	415	398
85°	232	228	216

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1295 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	50.6	3.7
10°-20°	143.5	10.6
20°-30°	215.1	15.8
30°-40°	254.9	18.8
40°-50°	255.3	18.8
50°-60°	216.8	16.0
60°-70°	146.1	10.8
70°-80°	64.2	4.7
80°-90°	10.4	0.8
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°	409.2	30.2
0°-40°	664.1	48.9
0°-60°	1136.2	83.7
0°-90°	1357.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1357.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	538	538	538	538	538	
5°	535	533	535	533	546	50
15°	512	506	509	512	512	143
25°	458	460	468	474	473	212
35°	398	400	409	418	418	247
45°	320	326	332	340	332	248
55°	240	238	244	243	242	213
65°	147	145	151	145	146	146
75°	61	60	61	57	59	66
85°	8	7	7	7	7	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	538.4	538.4	538.4	538.4	538.4
2.5°	543.1	539.0	535.2	539.6	542.3
5°	534.6	533.3	534.8	533.2	546.1
7.5°	523.6	528.4	531.2	529.5	530.2
10°	517.8	516.1	522.3	526.6	526.0
12.5°	511.5	514.0	514.4	519.0	519.4
15°	511.9	506.0	509.1	511.7	511.9
17.5°	492.0	498.4	500.5	506.6	499.1
20°	489.6	484.9	489.6	495.7	494.8
22.5°	474.6	469.4	479.4	484.9	484.5
25°	457.6	460.1	467.7	473.8	472.8
27.5°	442.8	445.7	456.4	464.8	459.4
30°	431.3	429.8	438.9	446.4	450.6
32.5°	410.8	416.1	426.6	434.1	430.1
35°	398.3	399.5	408.8	418.2	417.9
37.5°	376.6	382.1	395.1	397.7	395.3
40°	358.0	363.5	375.3	378.1	376.9
42.5°	344.3	345.3	355.4	358.6	353.4
45°	320.5	326.5	331.9	340.4	332.4
47.5°	300.2	303.0	314.6	316.9	312.7
50°	281.8	282.7	294.5	291.6	288.9
52.5°	258.6	262.7	269.3	268.8	265.5
55°	239.6	238.0	244.2	242.6	242.5
57.5°	216.7	219.5	224.6	222.0	217.7
60°	195.3	195.3	197.2	194.2	193.7
62.5°	171.4	172.3	172.7	169.0	175.0
65°	147.2	145.2	150.9	145.2	146.1
67.5°	124.9	125.8	125.3	121.7	123.0
70°	102.2	103.4	102.5	98.4	99.7
72.5°	81.5	79.9	80.9	75.8	78.1
75°	61.2	60.0	61.1	56.8	58.7
77.5°	41.7	42.7	42.0	39.7	41.0
80°	27.5	26.8	26.8	25.4	25.7
82.5°	16.1	15.3	15.1	14.7	15.3
85°	7.5	7.3	7.4	7.2	7.0
87.5°	2.7	2.8	2.8	2.6	2.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)