

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: P590280

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590280  
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-LD4-2LO-40-UNV-82-87-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

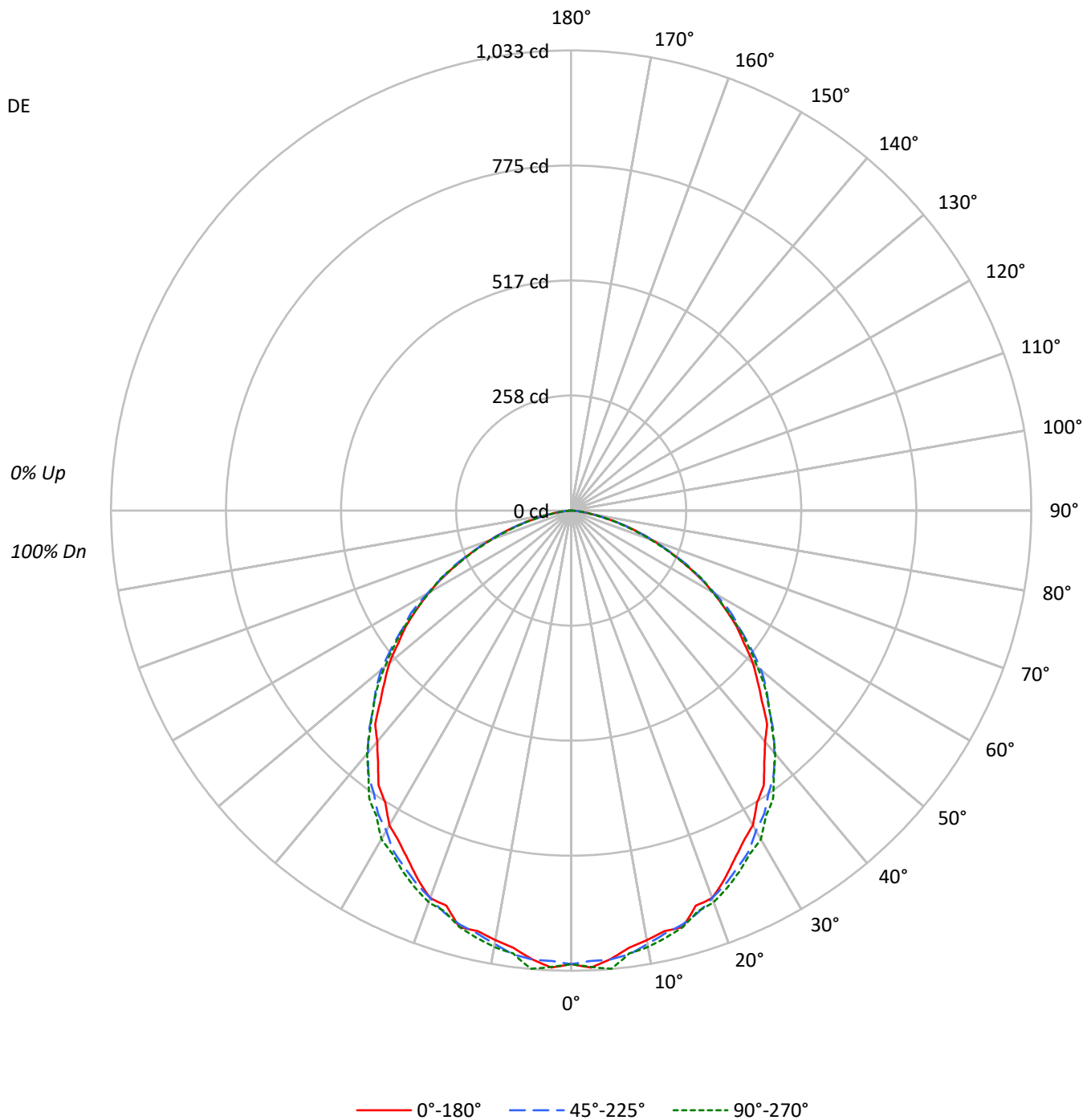
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2566.0 lumens  
Efficiency: N/A  
Efficacy: 109.7 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): 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	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°	2740	2740	2740
5°	2731	2732	2789
10°	2675	2699	2718
15°	2696	2682	2697
20°	2651	2651	2679
25°	2570	2626	2654
30°	2534	2579	2647
35°	2474	2539	2596
40°	2378	2493	2504
45°	2306	2388	2392
50°	2231	2331	2287
55°	2125	2167	2151
60°	1988	2007	1971
65°	1772	1817	1759
70°	1520	1526	1483
75°	1204	1201	1155
80°	807	784	753
85°	438	435	404

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2450 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	95.8	3.7
10°-20°	271.4	10.6
20°-30°	406.7	15.8
30°-40°	482.0	18.8
40°-50°	482.9	18.8
50°-60°	409.9	16.0
60°-70°	276.3	10.8
70°-80°	121.4	4.7
80°-90°	19.7	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°	773.8	30.2
0°-40°	1255.8	48.9
0°-60°	2148.5	83.7
0°-90°	2566.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2566.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1018	1018	1018	1018	1018	
5°	1011	1008	1011	1008	1033	95
15°	968	957	963	968	968	270
25°	865	870	884	896	894	400
35°	753	756	773	791	790	468
45°	606	617	628	644	628	469
55°	453	450	462	459	458	403
65°	278	275	285	274	276	277
75°	116	113	116	107	111	124
85°	14	14	14	14	13	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1018.1	1018.1	1018.1	1018.1	1018.1
2.5°	1026.9	1019.2	1011.9	1020.4	1025.5
5°	1010.9	1008.5	1011.3	1008.3	1032.6
7.5°	990.1	999.2	1004.5	1001.2	1002.6
10°	979.1	975.9	987.6	995.8	994.6
12.5°	967.3	972.0	972.6	981.4	982.2
15°	967.9	956.7	962.6	967.6	968.0
17.5°	930.3	942.4	946.5	957.9	943.7
20°	925.7	916.9	925.7	937.4	935.6
22.5°	897.4	887.6	906.5	916.9	916.2
25°	865.4	870.1	884.3	895.9	894.0
27.5°	837.2	842.8	863.0	878.9	868.7
30°	815.6	812.8	829.9	844.1	852.0
32.5°	776.8	786.8	806.7	820.8	813.3
35°	753.2	755.5	773.0	790.8	790.3
37.5°	712.1	722.5	747.1	752.1	747.5
40°	677.0	687.4	709.6	715.0	712.8
42.5°	651.1	652.9	672.0	678.2	668.3
45°	606.0	617.3	627.6	643.7	628.5
47.5°	567.6	572.9	595.0	599.3	591.3
50°	532.8	534.6	556.8	551.5	546.2
52.5°	489.0	496.8	509.3	508.2	502.0
55°	453.0	450.0	461.8	458.6	458.5
57.5°	409.7	415.0	424.7	419.7	411.7
60°	369.3	369.4	372.9	367.3	366.2
62.5°	324.2	325.7	326.5	319.6	330.9
65°	278.3	274.6	285.4	274.5	276.3
67.5°	236.1	237.9	236.9	230.0	232.7
70°	193.2	195.6	193.9	186.1	188.5
72.5°	154.1	151.2	153.0	143.3	147.8
75°	115.8	113.4	115.5	107.4	111.1
77.5°	78.9	80.7	79.4	75.1	77.6
80°	52.1	50.6	50.6	48.1	48.6
82.5°	30.4	28.9	28.5	27.7	28.9
85°	14.2	13.8	14.1	13.7	13.1
87.5°	5.1	5.3	5.3	5.0	4.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)