

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: P590247

Luminaire Tested: FSR-24-2-LD4-2LO-35-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590247  
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-35-UNV-82-86-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

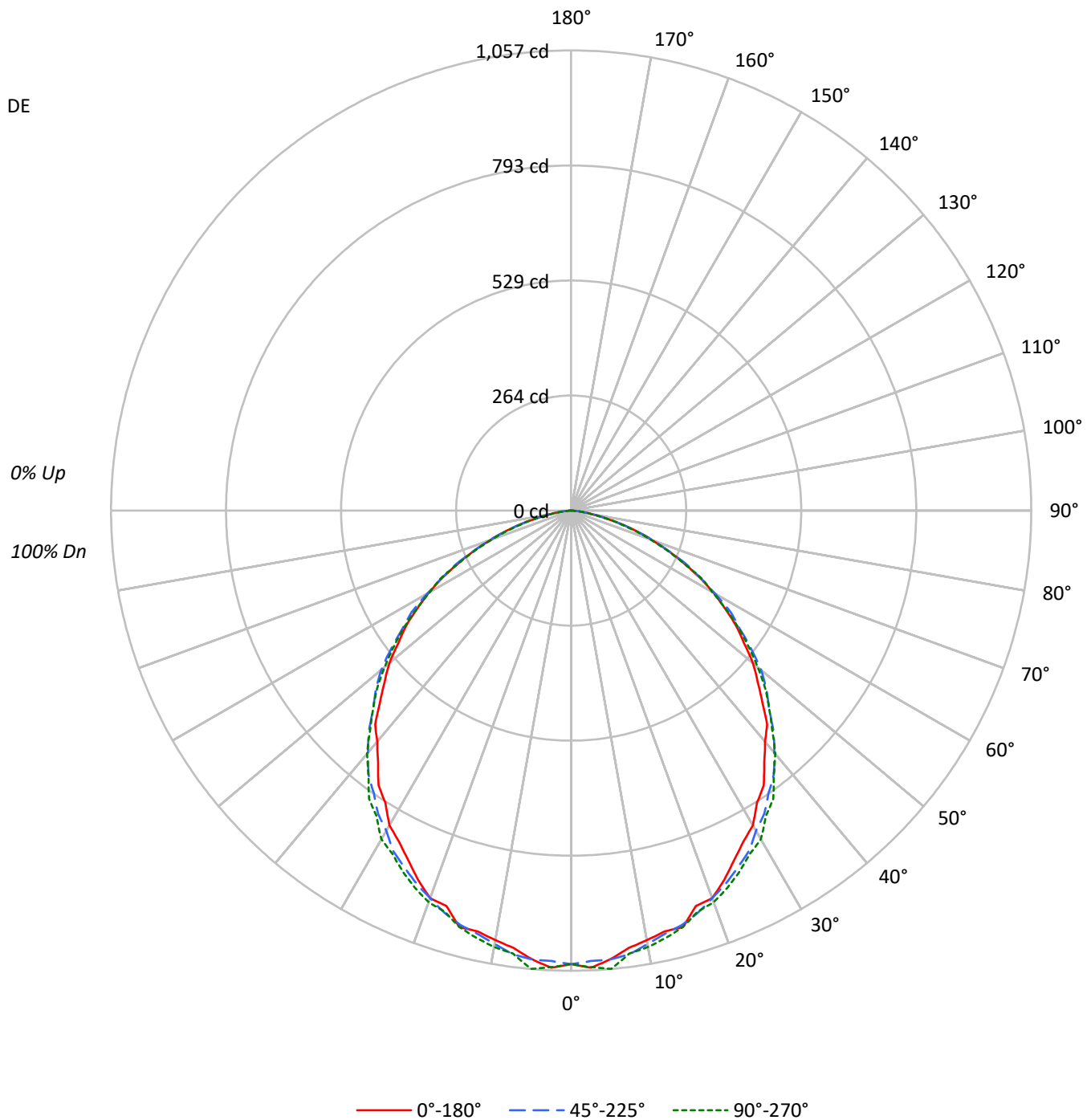
Lumens per Lamp: N/A  
Luminaire Lumens: 2626.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	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																												
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

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

	0°	45°	90°
0°	2804	2804	2804
5°	2794	2796	2854
10°	2738	2762	2781
15°	2759	2745	2760
20°	2713	2713	2742
25°	2629	2687	2716
30°	2593	2639	2709
35°	2532	2598	2657
40°	2434	2551	2562
45°	2360	2444	2448
50°	2282	2386	2340
55°	2175	2217	2201
60°	2034	2054	2017
65°	1813	1860	1801
70°	1556	1561	1518
75°	1232	1230	1182
80°	826	803	772
85°	448	445	417

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2507 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.0	3.7
10°-20°	277.8	10.6
20°-30°	416.2	15.8
30°-40°	493.2	18.8
40°-50°	494.1	18.8
50°-60°	419.5	16.0
60°-70°	282.8	10.8
70°-80°	124.3	4.7
80°-90°	20.2	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°	791.9	30.2
0°-40°	1285.2	48.9
0°-60°	2198.8	83.7
0°-90°	2626.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2626.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1042	1042	1042	1042	1042	
5°	1034	1032	1035	1032	1057	98
15°	990	979	985	990	991	276
25°	886	890	905	917	915	409
35°	771	773	791	809	809	479
45°	620	632	642	659	643	480
55°	464	460	473	469	469	412
65°	285	281	292	281	283	283
75°	118	116	118	110	114	127
85°	14	14	14	14	14	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1041.9	1041.9	1041.9	1041.9	1041.9
2.5°	1050.9	1043.0	1035.6	1044.2	1049.5
5°	1034.5	1032.1	1034.9	1031.8	1056.7
7.5°	1013.3	1022.6	1027.9	1024.6	1026.1
10°	1002.0	998.7	1010.7	1019.1	1017.8
12.5°	989.9	994.7	995.4	1004.4	1005.2
15°	990.5	979.1	985.2	990.3	990.7
17.5°	952.1	964.4	968.6	980.3	965.8
20°	947.4	938.3	947.4	959.3	957.4
22.5°	918.4	908.3	927.7	938.3	937.7
25°	885.6	890.5	905.0	916.8	914.9
27.5°	856.8	862.5	883.2	899.5	889.0
30°	834.6	831.8	849.3	863.8	871.9
32.5°	794.9	805.2	825.6	840.0	832.3
35°	770.9	773.1	791.0	809.3	808.8
37.5°	728.7	739.4	764.5	769.6	764.9
40°	692.8	703.5	726.2	731.7	729.4
42.5°	666.3	668.2	687.7	694.0	683.9
45°	620.2	631.8	642.2	658.8	643.2
47.5°	580.9	586.3	608.9	613.3	605.1
50°	545.2	547.1	569.9	564.4	559.0
52.5°	500.4	508.4	521.2	520.1	513.8
55°	463.6	460.5	472.6	469.4	469.2
57.5°	419.3	424.7	434.7	429.6	421.3
60°	377.9	378.0	381.7	375.9	374.8
62.5°	331.7	333.4	334.2	327.0	338.6
65°	284.8	281.0	292.1	280.9	282.8
67.5°	241.6	243.5	242.4	235.4	238.1
70°	197.8	200.2	198.4	190.5	192.9
72.5°	157.7	154.7	156.6	146.6	151.2
75°	118.5	116.1	118.3	109.9	113.7
77.5°	80.7	82.6	81.3	76.8	79.4
80°	53.3	51.8	51.8	49.2	49.8
82.5°	31.1	29.6	29.2	28.4	29.6
85°	14.5	14.1	14.4	14.0	13.5
87.5°	5.2	5.4	5.4	5.1	4.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)