

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: P590288

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590288  
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-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

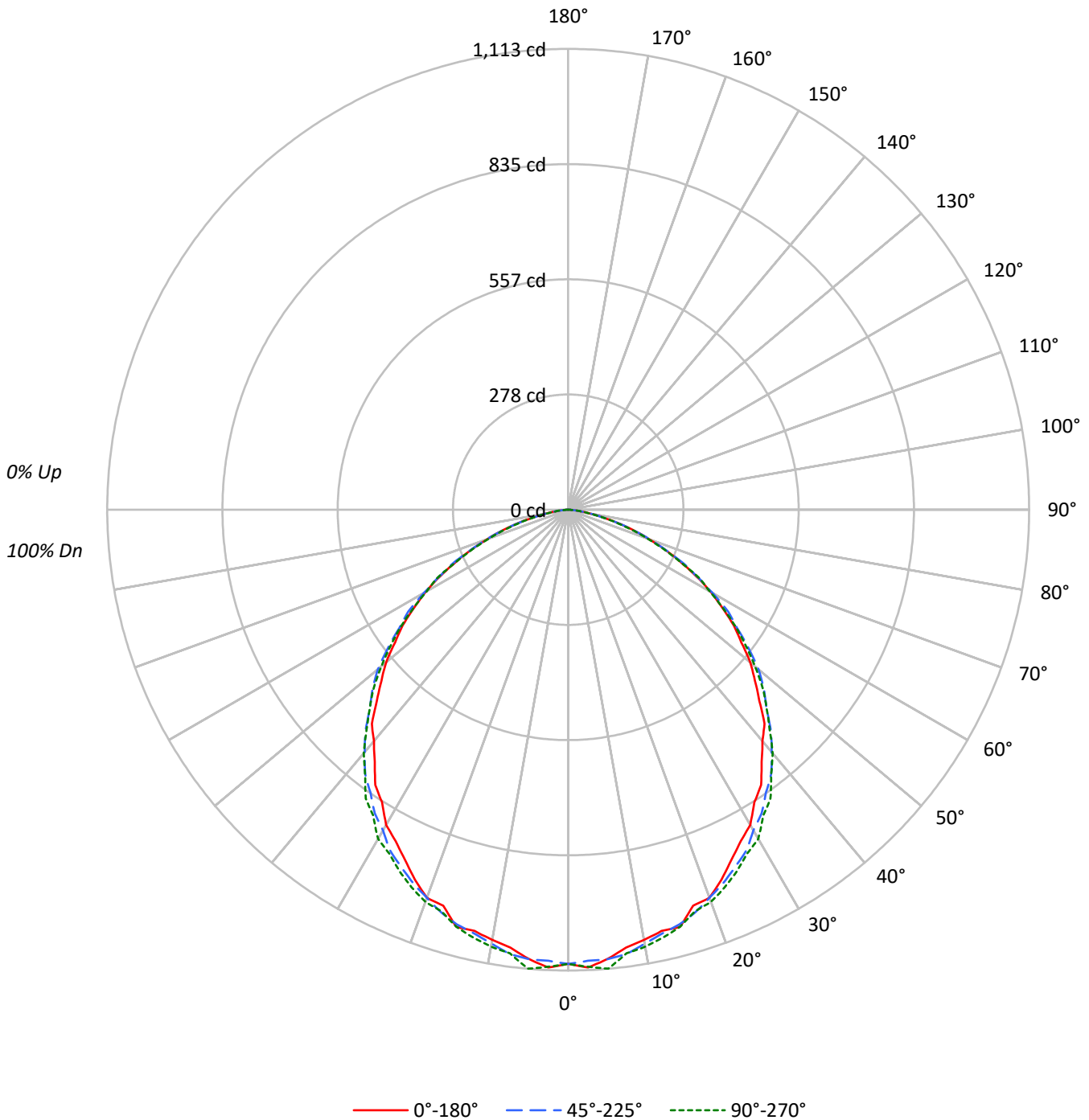
Lumens per Lamp: N/A  
Luminaire Lumens: 2765.0 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2952	2952	2952
5°	2942	2944	3006
10°	2883	2908	2928
15°	2906	2890	2906
20°	2857	2857	2887
25°	2769	2829	2860
30°	2731	2779	2852
35°	2666	2736	2798
40°	2563	2686	2698
45°	2485	2573	2577
50°	2403	2512	2464
55°	2290	2335	2318
60°	2141	2163	2124
65°	1910	1958	1896
70°	1638	1644	1598
75°	1298	1294	1245
80°	869	845	812
85°	472	469	438

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2640 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.2	3.7
10°-20°	292.5	10.6
20°-30°	438.2	15.8
30°-40°	519.3	18.8
40°-50°	520.3	18.8
50°-60°	441.6	16.0
60°-70°	297.8	10.8
70°-80°	130.8	4.7
80°-90°	21.3	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°	833.9	30.2
0°-40°	1353.2	48.9
0°-60°	2315.1	83.7
0°-90°	2765.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2765.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1097	1097	1097	1097	1097	
5°	1089	1087	1090	1086	1113	103
15°	1043	1031	1037	1043	1043	291
25°	932	938	953	965	963	431
35°	812	814	833	852	852	504
45°	653	665	676	694	677	505
55°	488	485	498	494	494	434
65°	300	296	308	296	298	298
75°	125	122	124	116	120	134
85°	15	15	15	15	14	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1097.1	1097.1	1097.1	1097.1	1097.1
2.5°	1106.6	1098.2	1090.4	1099.5	1105.0
5°	1089.3	1086.7	1089.7	1086.5	1112.7
7.5°	1066.9	1076.7	1082.4	1078.8	1080.4
10°	1055.0	1051.6	1064.2	1073.0	1071.7
12.5°	1042.3	1047.4	1048.1	1057.6	1058.4
15°	1043.0	1030.9	1037.3	1042.7	1043.1
17.5°	1002.5	1015.5	1019.9	1032.2	1016.9
20°	997.5	988.0	997.5	1010.1	1008.1
22.5°	967.0	956.4	976.8	988.0	987.3
25°	932.5	937.6	952.9	965.3	963.4
27.5°	902.2	908.1	929.9	947.1	936.0
30°	878.8	875.8	894.2	909.5	918.0
32.5°	837.0	847.8	869.3	884.5	876.4
35°	811.7	814.1	832.9	852.2	851.6
37.5°	767.3	778.5	805.0	810.4	805.4
40°	729.5	740.7	764.6	770.4	768.0
42.5°	701.6	703.6	724.1	730.8	720.2
45°	653.0	665.2	676.2	693.7	677.2
47.5°	611.6	617.3	641.1	645.8	637.1
50°	574.1	576.1	600.0	594.2	588.6
52.5°	526.9	535.3	548.8	547.6	541.0
55°	488.1	484.9	497.6	494.2	494.1
57.5°	441.5	447.2	457.7	452.3	443.6
60°	397.9	398.0	401.9	395.8	394.6
62.5°	349.3	351.0	351.9	344.4	356.5
65°	299.9	295.9	307.5	295.8	297.7
67.5°	254.4	256.4	255.3	247.9	250.7
70°	208.2	210.8	208.9	200.6	203.1
72.5°	166.0	162.9	164.9	154.4	159.2
75°	124.8	122.2	124.5	115.7	119.7
77.5°	85.0	87.0	85.6	80.9	83.6
80°	56.1	54.5	54.5	51.8	52.4
82.5°	32.7	31.2	30.7	29.9	31.2
85°	15.3	14.9	15.2	14.7	14.2
87.5°	5.5	5.7	5.7	5.4	5.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)