

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: P561378

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561378  
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-LD4-2HI-35-UNV-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

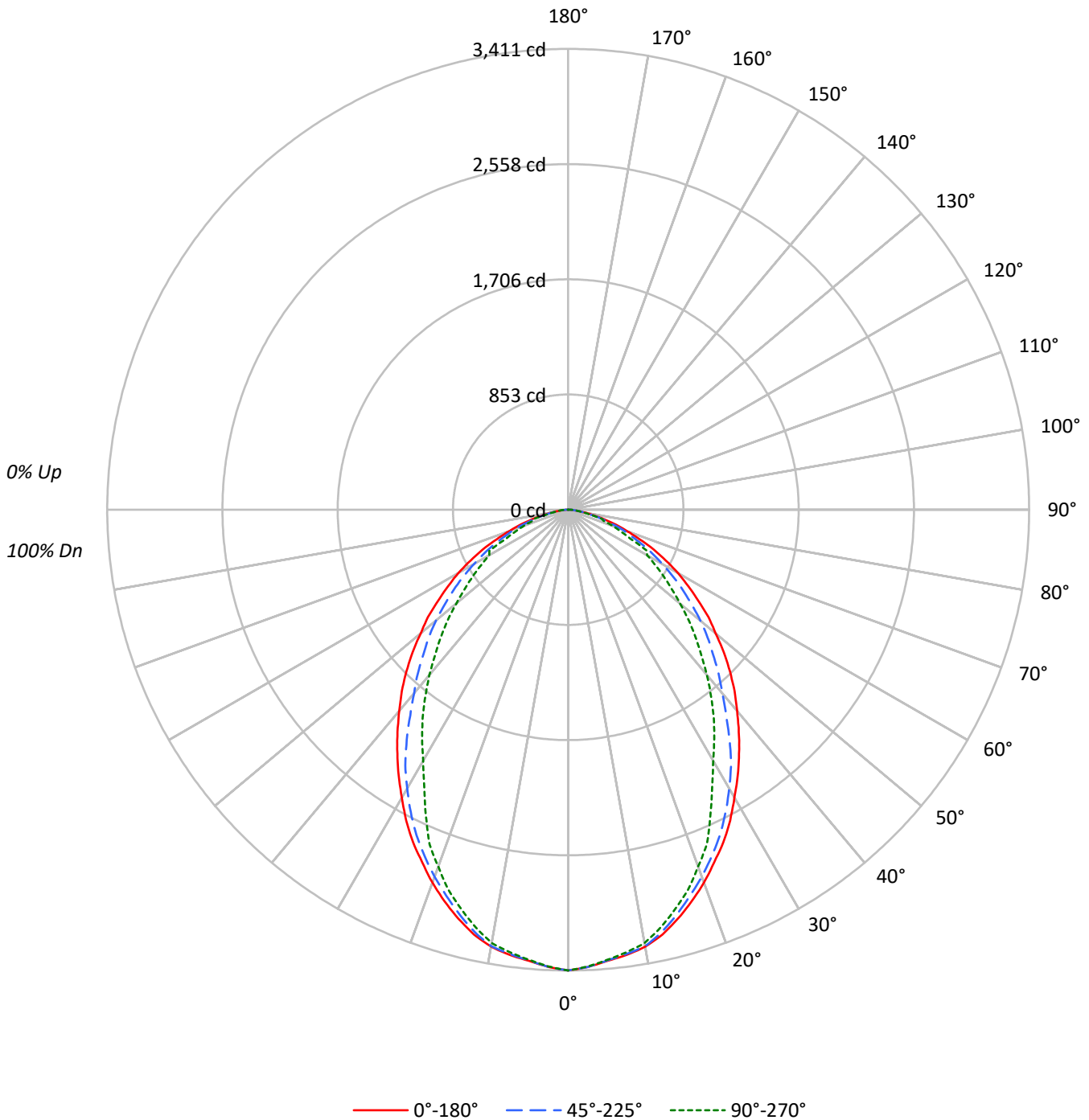
Lumens per Lamp: N/A  
Luminaire Lumens: 6696.0 lumens  
Efficiency: N/A  
Efficacy: 77.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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												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°	9179	9179	9179
5°	9054	9043	9032
10°	8975	8964	8900
15°	8733	8646	8525
20°	8413	8277	8051
25°	8067	7891	7399
30°	7645	7401	6665
35°	7241	6840	6166
40°	6829	6233	5610
45°	6438	5762	5072
50°	5959	5349	4523
55°	5513	4847	4052
60°	5051	4329	3629
65°	4444	3791	3214
70°	3661	3319	2730
75°	2911	2542	2665
80°	1956	1833	1711
85°	1216	1460	1704

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6438 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	317.5	4.7
10°-20°	871.4	13.0
20°-30°	1206.4	18.0
30°-40°	1286.3	19.2
40°-50°	1173.5	17.5
50°-60°	919.3	13.7
60°-70°	599.2	8.9
70°-80°	265.5	4.0
80°-90°	57.0	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°	2395.2	35.8
0°-40°	3681.5	55.0
0°-60°	5774.4	86.2
0°-90°	6696.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6696.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3411	3411	3411	3411	3411	
5°	3352	3348	3348	3344	3344	318
15°	3135	3135	3103	3072	3060	881
25°	2717	2701	2658	2563	2492	1247
35°	2204	2188	2082	1924	1877	1378
45°	1692	1656	1514	1388	1333	1303
55°	1175	1140	1033	911	864	1054
65°	698	658	595	607	505	688
75°	280	260	244	233	256	300
85°	39	43	47	51	55	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3410.9	3410.9	3410.9	3410.9	3410.9
2.5°	3387.2	3387.2	3387.2	3383.3	3383.3
5°	3351.7	3347.8	3347.8	3343.8	3343.8
7.5°	3324.1	3320.2	3316.2	3312.3	3304.4
10°	3284.7	3284.7	3280.7	3261.0	3257.1
12.5°	3221.6	3217.6	3201.9	3174.3	3166.4
15°	3134.8	3134.8	3103.3	3071.7	3059.9
17.5°	3040.2	3036.3	2996.8	2965.3	2949.5
20°	2937.7	2929.8	2890.4	2839.1	2811.5
22.5°	2823.3	2823.3	2776.0	2709.0	2681.4
25°	2716.9	2701.1	2657.7	2563.1	2492.1
27.5°	2594.6	2571.0	2523.6	2389.6	2306.8
30°	2460.5	2448.7	2381.7	2208.2	2145.1
32.5°	2334.4	2314.6	2243.7	2062.3	2011.0
35°	2204.2	2188.5	2082.0	1924.3	1877.0
37.5°	2074.1	2054.4	1920.3	1794.1	1735.0
40°	1944.0	1920.3	1774.4	1660.1	1597.0
42.5°	1821.8	1790.2	1648.3	1526.0	1455.0
45°	1691.6	1656.1	1514.2	1388.0	1332.8
47.5°	1561.5	1530.0	1399.8	1269.7	1206.6
50°	1423.5	1395.9	1277.6	1147.5	1080.4
52.5°	1309.1	1265.8	1151.4	1021.3	966.1
55°	1175.1	1139.6	1033.1	910.9	863.6
57.5°	1052.8	1017.3	918.8	804.4	765.0
60°	938.5	887.2	804.4	705.8	674.3
62.5°	812.3	772.9	701.9	619.1	658.5
65°	697.9	658.5	595.4	607.3	504.7
67.5°	571.8	552.0	496.8	441.6	425.9
70°	465.3	441.6	421.9	362.8	347.0
72.5°	370.7	347.0	319.4	287.9	276.0
75°	280.0	260.3	244.5	232.6	256.3
77.5°	193.2	185.3	173.5	161.7	157.7
80°	126.2	122.2	118.3	114.4	110.4
82.5°	74.9	74.9	74.9	74.9	74.9
85°	39.4	43.4	47.3	51.3	55.2
87.5°	23.7	23.7	27.6	31.5	35.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)