

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: P563107

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563107  
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-24-4-LD4-3HI-35-UNV-93-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

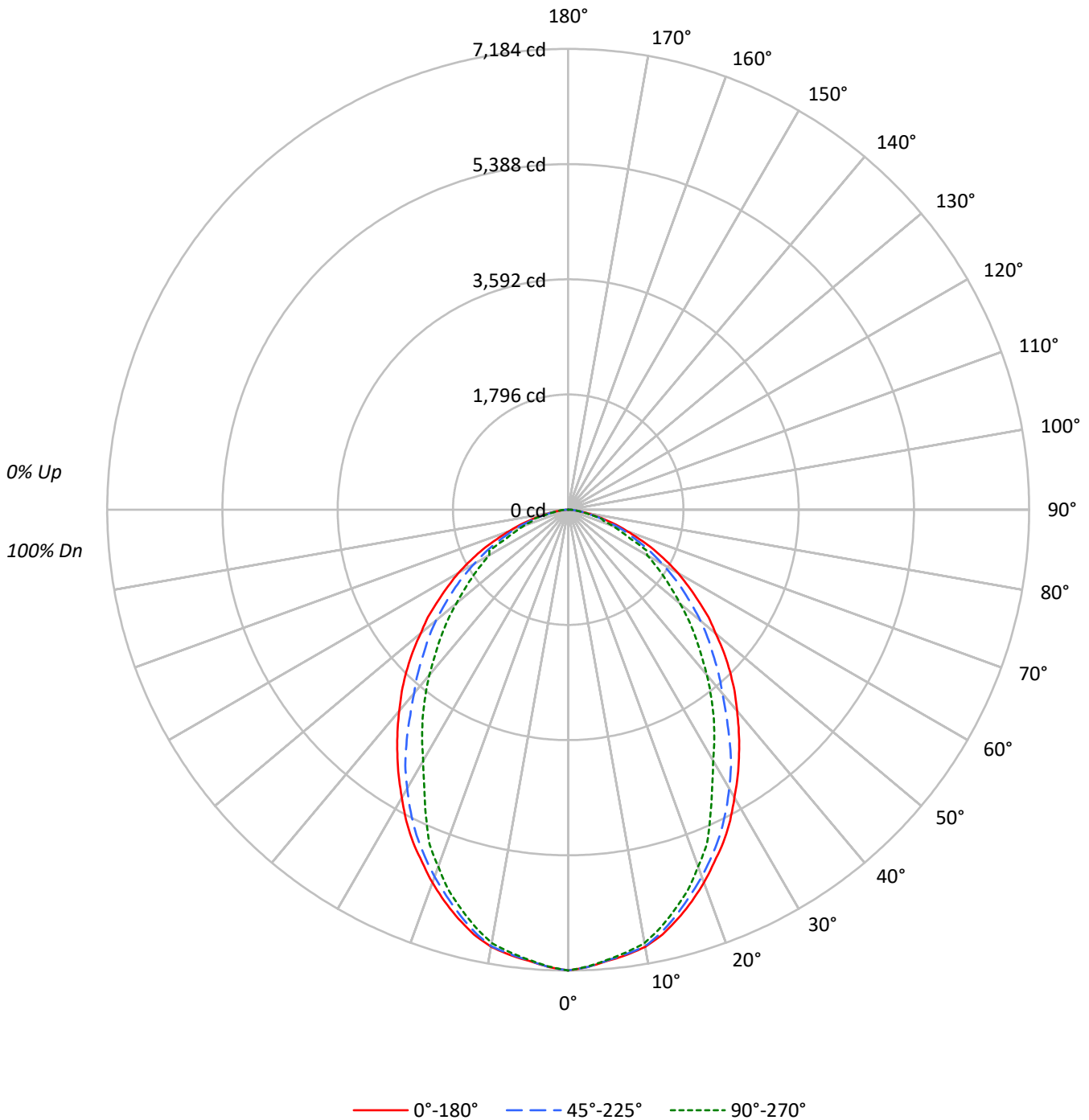
Lumens per Lamp: N/A  
Luminaire Lumens: 14103.0 lumens  
Efficiency: N/A  
Efficacy: 108.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

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

	0°	45°	90°
0°	9666	9666	9666
5°	9534	9523	9512
10°	9452	9440	9372
15°	9197	9104	8977
20°	8859	8716	8479
25°	8495	8310	7792
30°	8052	7794	7019
35°	7625	7203	6493
40°	7191	6564	5908
45°	6780	6068	5341
50°	6276	5632	4763
55°	5806	5104	4267
60°	5319	4559	3822
65°	4680	3993	3384
70°	3855	3496	2875
75°	3066	2677	2806
80°	2060	1931	1801
85°	1283	1539	1795

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6780 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	668.7	4.7
10°-20°	1835.2	13.0
20°-30°	2540.8	18.0
30°-40°	2709.2	19.2
40°-50°	2471.6	17.5
50°-60°	1936.3	13.7
60°-70°	1262.0	8.9
70°-80°	559.1	4.0
80°-90°	120.0	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°	5044.8	35.8
0°-40°	7754.0	55.0
0°-60°	12161.9	86.2
0°-90°	14103.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14103.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7184	7184	7184	7184	7184	
5°	7059	7051	7051	7043	7043	670
15°	6602	6602	6536	6470	6445	1856
25°	5722	5689	5598	5398	5249	2627
35°	4642	4609	4385	4053	3953	2902
45°	3563	3488	3189	2923	2807	2744
55°	2475	2400	2176	1918	1819	2220
65°	1470	1387	1254	1279	1063	1449
75°	590	548	515	490	540	632
85°	83	91	100	108	116	115
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7183.9	7183.9	7183.9	7183.9	7183.9
2.5°	7134.0	7134.0	7134.0	7125.7	7125.7
5°	7059.3	7051.0	7051.0	7042.7	7042.7
7.5°	7001.2	6992.9	6984.6	6976.3	6959.6
10°	6918.1	6918.1	6909.8	6868.3	6860.0
12.5°	6785.2	6776.9	6743.7	6685.6	6669.0
15°	6602.5	6602.5	6536.1	6469.6	6444.7
17.5°	6403.2	6394.9	6311.8	6245.4	6212.2
20°	6187.3	6170.7	6087.6	5979.6	5921.5
22.5°	5946.4	5946.4	5846.8	5705.6	5647.4
25°	5722.2	5689.0	5597.6	5398.3	5248.8
27.5°	5464.7	5414.9	5315.2	5032.9	4858.5
30°	5182.4	5157.4	5016.3	4650.8	4518.0
32.5°	4916.6	4875.1	4725.6	4343.5	4235.6
35°	4642.5	4609.3	4385.1	4052.9	3953.2
37.5°	4368.5	4326.9	4044.6	3778.8	3654.2
40°	4094.4	4044.6	3737.3	3496.4	3363.6
42.5°	3836.9	3770.5	3471.5	3214.1	3064.6
45°	3562.9	3488.1	3189.1	2923.4	2807.1
47.5°	3288.8	3222.4	2948.3	2674.2	2541.3
50°	2998.1	2940.0	2690.8	2416.8	2275.6
52.5°	2757.3	2665.9	2425.1	2151.0	2034.7
55°	2474.9	2400.2	2175.9	1918.5	1818.8
57.5°	2217.5	2142.7	1935.1	1694.2	1611.2
60°	1976.6	1868.6	1694.2	1486.6	1420.2
62.5°	1710.8	1627.8	1478.3	1303.9	1386.9
65°	1470.0	1386.9	1254.1	1279.0	1063.0
67.5°	1204.2	1162.7	1046.4	930.2	896.9
70°	980.0	930.2	888.6	764.1	730.8
72.5°	780.7	730.8	672.7	606.3	581.4
75°	589.7	548.1	514.9	490.0	539.8
77.5°	406.9	390.3	365.4	340.5	332.2
80°	265.8	257.5	249.2	240.8	232.5
82.5°	157.8	157.8	157.8	157.8	157.8
85°	83.1	91.4	99.7	108.0	116.3
87.5°	49.8	49.8	58.1	66.4	74.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)