

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: P564079

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-93-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564079  
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-LD4-4STD-35-UNV-93-97-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

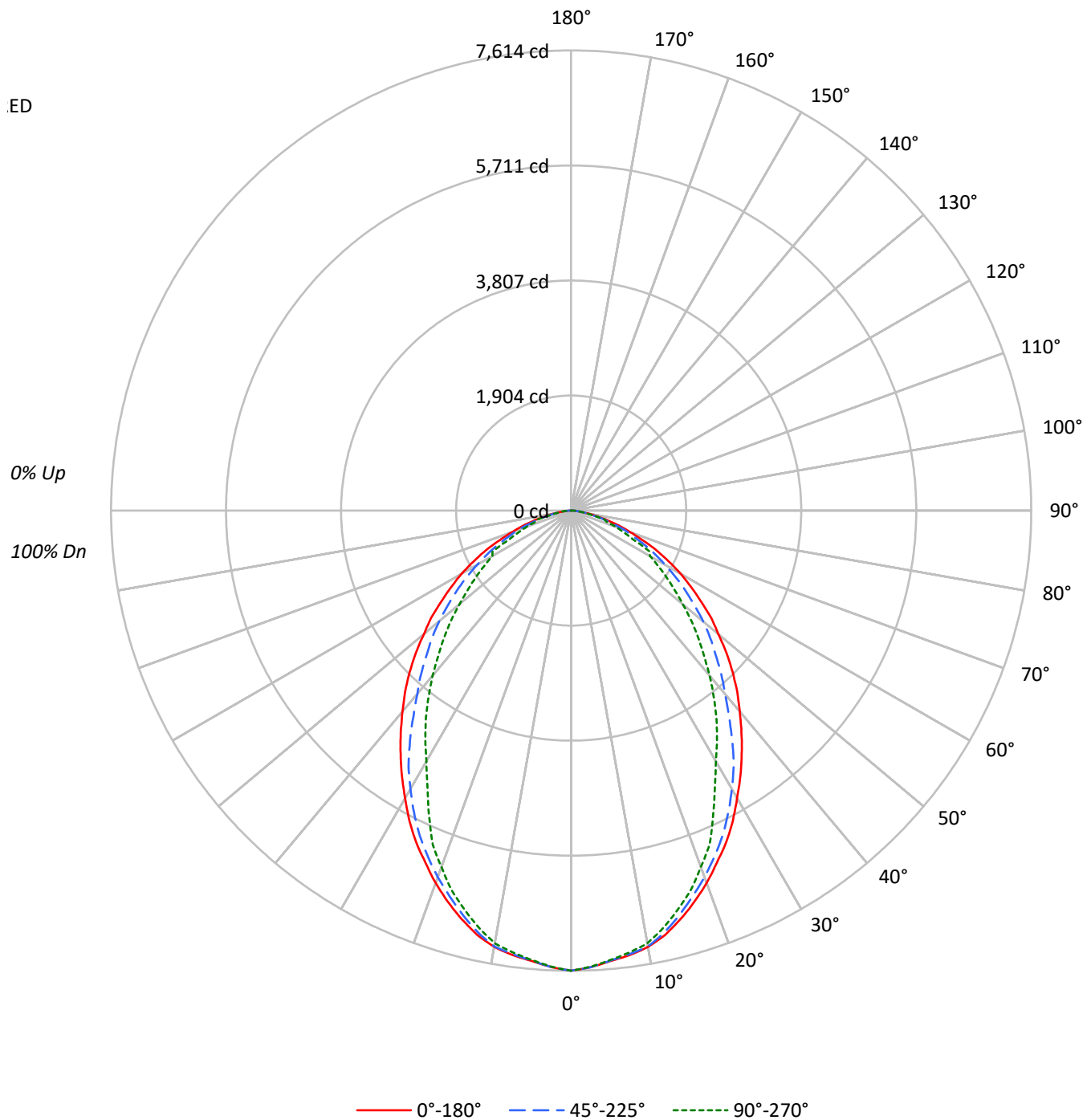
Lumens per Lamp: N/A  
Luminaire Lumens: 14947.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	10244	10244	10244
5°	10105	10093	10081
10°	10017	10005	9933
15°	9747	9649	9514
20°	9389	9238	8986
25°	9003	8807	8259
30°	8533	8260	7439
35°	8082	7634	6882
40°	7622	6957	6261
45°	7185	6431	5661
50°	6651	5970	5048
55°	6153	5410	4522
60°	5637	4832	4050
65°	4960	4231	3587
70°	4086	3705	3047
75°	3249	2837	2974
80°	2183	2046	1910
85°	1359	1630	1902

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7185 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	708.7	4.7
10°-20°	1945.1	13.0
20°-30°	2692.8	18.0
30°-40°	2871.3	19.2
40°-50°	2619.5	17.5
50°-60°	2052.2	13.7
60°-70°	1337.5	8.9
70°-80°	592.6	4.0
80°-90°	127.2	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°	5346.7	35.8
0°-40°	8218.0	55.0
0°-60°	12889.7	86.2
0°-90°	14947.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14947.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7614	7614	7614	7614	7614	
5°	7482	7473	7473	7464	7464	710
15°	6998	6998	6927	6857	6830	1967
25°	6065	6029	5933	5721	5563	2784
35°	4920	4885	4648	4295	4190	3076
45°	3776	3697	3380	3098	2975	2909
55°	2623	2544	2306	2033	1928	2353
65°	1558	1470	1329	1356	1127	1535
75°	625	581	546	519	572	670
85°	88	97	106	114	123	122
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7613.8	7613.8	7613.8	7613.8	7613.8
2.5°	7561.0	7561.0	7561.0	7552.2	7552.2
5°	7481.8	7473.0	7473.0	7464.2	7464.2
7.5°	7420.2	7411.4	7402.6	7393.8	7376.1
10°	7332.1	7332.1	7323.3	7279.3	7270.5
12.5°	7191.3	7182.5	7147.3	7085.7	7068.1
15°	6997.7	6997.7	6927.2	6856.8	6830.4
17.5°	6786.4	6777.6	6689.6	6619.2	6584.0
20°	6557.6	6539.9	6451.9	6337.5	6275.9
22.5°	6302.3	6302.3	6196.7	6047.0	5985.4
25°	6064.6	6029.4	5932.6	5721.4	5562.9
27.5°	5791.8	5739.0	5633.3	5334.1	5149.2
30°	5492.5	5466.1	5316.5	4929.2	4788.3
32.5°	5210.8	5166.8	5008.4	4603.5	4489.1
35°	4920.4	4885.2	4647.5	4295.4	4189.8
37.5°	4629.9	4585.9	4286.6	4004.9	3872.9
40°	4339.4	4286.6	3960.9	3705.7	3564.8
42.5°	4066.6	3996.1	3679.3	3406.4	3248.0
45°	3776.1	3696.9	3380.0	3098.3	2975.1
47.5°	3485.6	3415.2	3124.7	2834.3	2693.4
50°	3177.6	3115.9	2851.9	2561.4	2411.8
52.5°	2922.3	2825.5	2570.2	2279.7	2156.5
55°	2623.0	2543.8	2306.1	2033.3	1927.7
57.5°	2350.2	2270.9	2050.9	1795.6	1707.6
60°	2094.9	1980.5	1795.6	1575.6	1505.2
62.5°	1813.2	1725.2	1566.8	1381.9	1469.9
65°	1558.0	1469.9	1329.1	1355.5	1126.7
67.5°	1276.3	1232.3	1109.1	985.8	950.6
70°	1038.6	985.8	941.8	809.8	774.6
72.5°	827.4	774.6	713.0	642.6	616.1
75°	624.9	580.9	545.7	519.3	572.1
77.5°	431.3	413.7	387.3	360.9	352.1
80°	281.7	272.9	264.1	255.3	246.5
82.5°	167.2	167.2	167.2	167.2	167.2
85°	88.0	96.8	105.6	114.4	123.2
87.5°	52.8	52.8	61.6	70.4	79.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)