

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: P563236

Luminaire Tested: FSR-24-4-LD4-3HI-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563236  
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-50-UNV-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

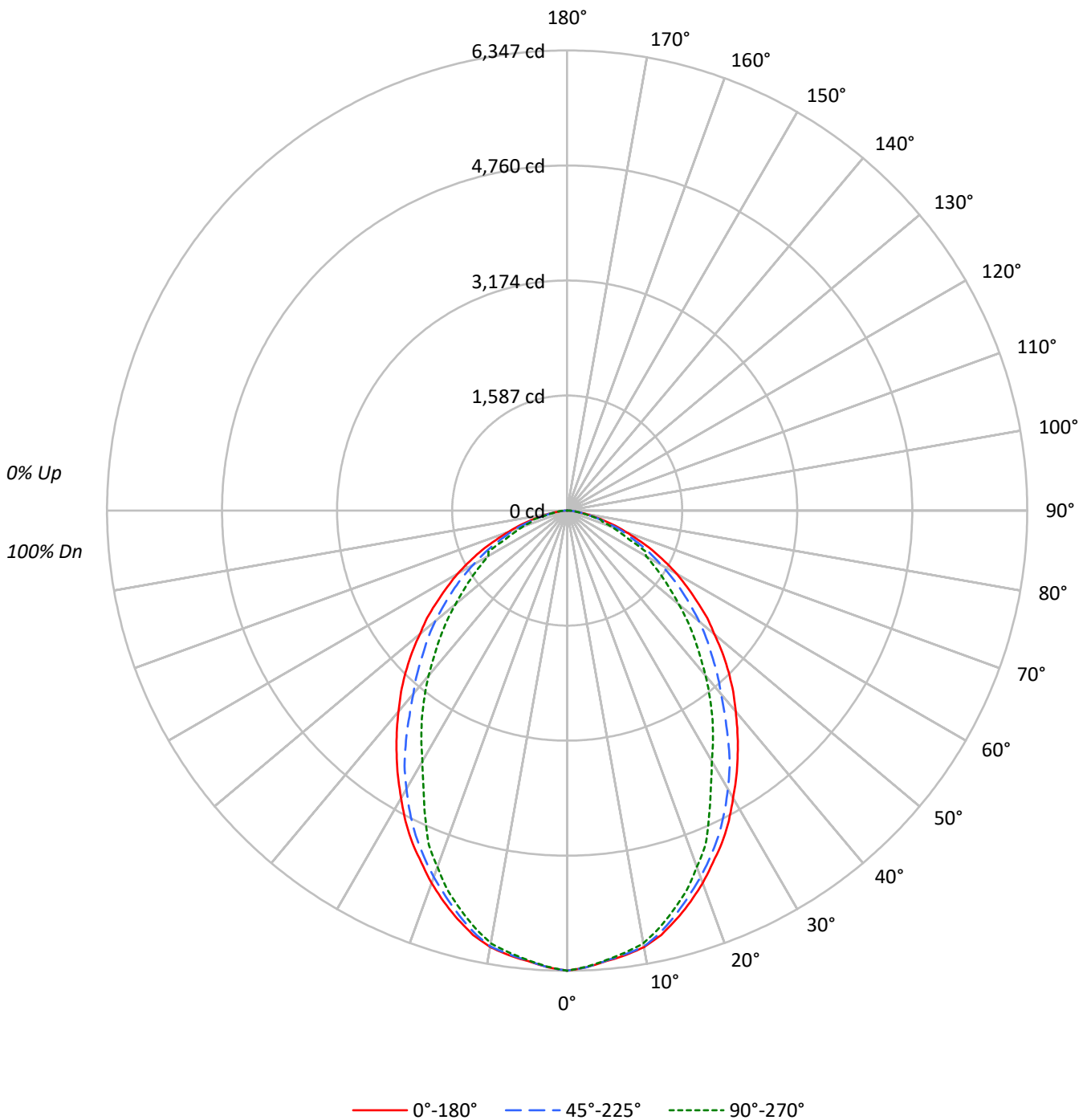
Lumens per Lamp: N/A  
Luminaire Lumens: 12460.0 lumens  
Efficiency: N/A  
Efficacy: 96.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8540	8540	8540
5°	8424	8414	8404
10°	8351	8341	8281
15°	8126	8044	7931
20°	7827	7701	7491
25°	7505	7342	6884
30°	7113	6886	6201
35°	6737	6364	5737
40°	6354	5799	5220
45°	5990	5361	4719
50°	5544	4976	4208
55°	5129	4510	3769
60°	4699	4028	3376
65°	4135	3528	2990
70°	3406	3089	2540
75°	2708	2365	2479
80°	1819	1705	1592
85°	1133	1360	1585

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5990 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	590.8	4.7
10°-20°	1621.4	13.0
20°-30°	2244.8	18.0
30°-40°	2393.6	19.2
40°-50°	2183.7	17.5
50°-60°	1710.7	13.7
60°-70°	1115.0	8.9
70°-80°	494.0	4.0
80°-90°	106.1	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°	4457.0	35.8
0°-40°	6850.6	55.0
0°-60°	10745.0	86.2
0°-90°	12460.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12460.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6347	6347	6347	6347	6347	
5°	6237	6230	6230	6222	6222	592
15°	5833	5833	5775	5716	5694	1640
25°	5056	5026	4946	4769	4637	2321
35°	4102	4072	3874	3581	3493	2564
45°	3148	3082	2818	2583	2480	2425
55°	2187	2120	1922	1695	1607	1961
65°	1299	1225	1108	1130	939	1280
75°	521	484	455	433	477	558
85°	73	81	88	95	103	102
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6347.0	6347.0	6347.0	6347.0	6347.0
2.5°	6302.9	6302.9	6302.9	6295.6	6295.6
5°	6236.9	6229.6	6229.6	6222.2	6222.2
7.5°	6185.5	6178.2	6170.9	6163.5	6148.8
10°	6112.2	6112.2	6104.8	6068.1	6060.8
12.5°	5994.8	5987.4	5958.1	5906.7	5892.0
15°	5833.3	5833.3	5774.6	5715.9	5693.9
17.5°	5657.2	5649.9	5576.5	5517.8	5488.5
20°	5466.5	5451.8	5378.4	5283.0	5231.7
22.5°	5253.7	5253.7	5165.6	5040.9	4989.5
25°	5055.6	5026.2	4945.5	4769.4	4637.3
27.5°	4828.1	4784.1	4696.0	4446.5	4292.5
30°	4578.6	4556.6	4431.9	4109.0	3991.6
32.5°	4343.8	4307.1	4175.1	3837.5	3742.1
35°	4101.7	4072.3	3874.2	3580.7	3492.7
37.5°	3859.5	3822.8	3573.4	3338.6	3228.5
40°	3617.4	3573.4	3301.9	3089.1	2971.7
42.5°	3389.9	3331.2	3067.1	2839.6	2707.5
45°	3147.8	3081.8	2817.6	2582.8	2480.1
47.5°	2905.7	2847.0	2604.8	2362.7	2245.3
50°	2648.8	2597.5	2377.4	2135.2	2010.5
52.5°	2436.1	2355.3	2142.6	1900.4	1797.7
55°	2186.6	2120.5	1922.4	1695.0	1606.9
57.5°	1959.1	1893.1	1709.6	1496.9	1423.5
60°	1746.3	1650.9	1496.9	1313.4	1254.7
62.5°	1511.5	1438.2	1306.1	1152.0	1225.4
65°	1298.7	1225.4	1108.0	1130.0	939.2
67.5°	1063.9	1027.3	924.5	821.8	792.5
70°	865.8	821.8	785.1	675.1	645.7
72.5°	689.7	645.7	594.3	535.6	513.6
75°	521.0	484.3	454.9	432.9	476.9
77.5°	359.5	344.9	322.9	300.8	293.5
80°	234.8	227.5	220.1	212.8	205.5
82.5°	139.4	139.4	139.4	139.4	139.4
85°	73.4	80.7	88.1	95.4	102.7
87.5°	44.0	44.0	51.4	58.7	66.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)