

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: P563239

Luminaire Tested: FSR-24-4-LD4-3HI-50-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563239  
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-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

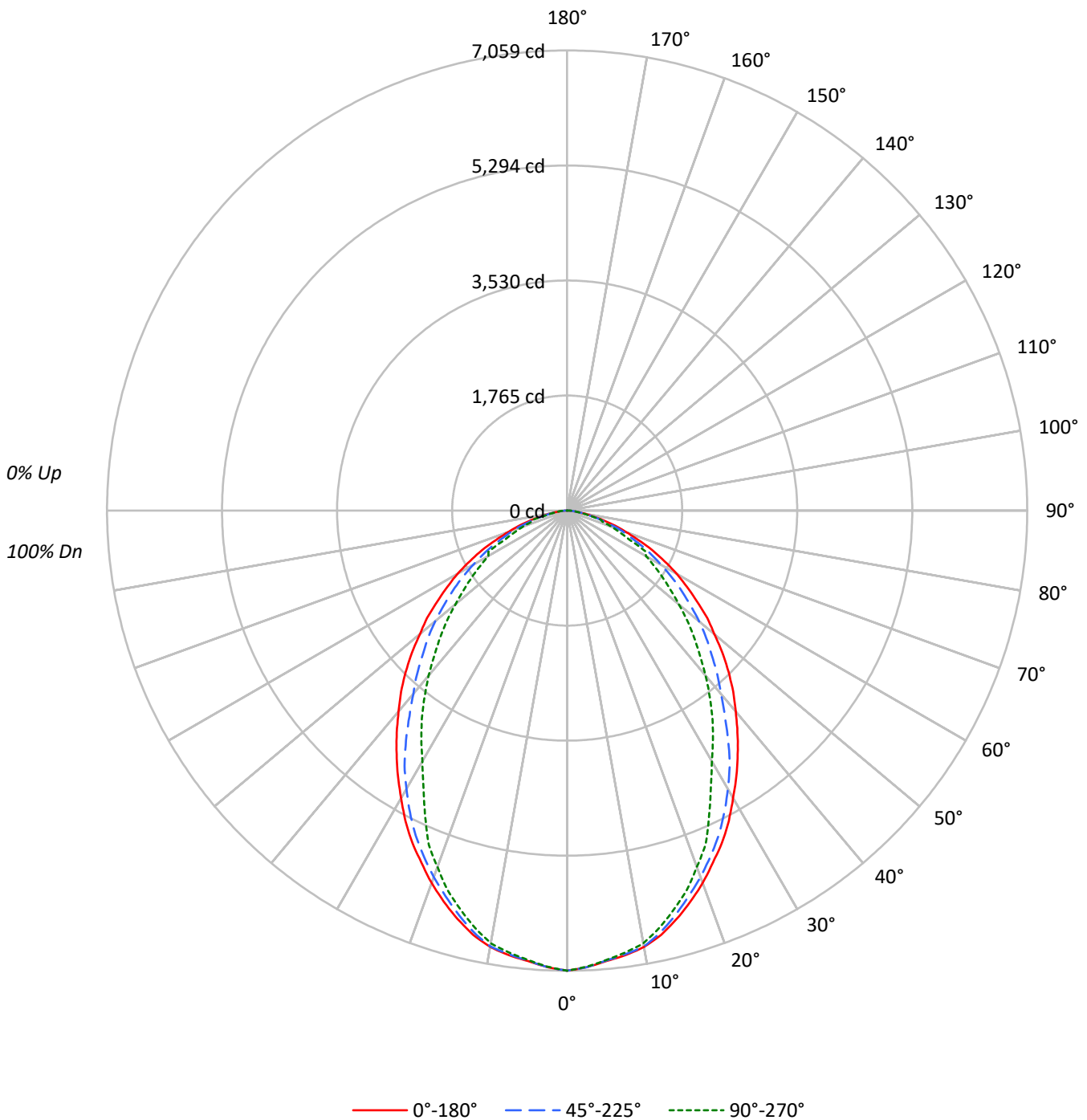
Lumens per Lamp: N/A  
Luminaire Lumens: 13857.0 lumens  
Efficiency: N/A  
Efficacy: 106.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9497	9497	9497
5°	9368	9357	9346
10°	9287	9276	9209
15°	9037	8946	8821
20°	8705	8564	8331
25°	8347	8165	7656
30°	7911	7658	6897
35°	7493	7077	6380
40°	7066	6450	5805
45°	6661	5962	5248
50°	6166	5534	4680
55°	5704	5015	4192
60°	5226	4480	3755
65°	4599	3923	3325
70°	3788	3435	2825
75°	3012	2630	2757
80°	2023	1897	1771
85°	1260	1511	1763

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6661 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	657.1	4.7
10°-20°	1803.2	13.0
20°-30°	2496.5	18.0
30°-40°	2662.0	19.2
40°-50°	2428.5	17.5
50°-60°	1902.5	13.7
60°-70°	1240.0	8.9
70°-80°	549.4	4.0
80°-90°	117.9	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°	4956.8	35.8
0°-40°	7618.7	55.0
0°-60°	11949.7	86.2
0°-90°	13857.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13857.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7059	7059	7059	7059	7059	
5°	6936	6928	6928	6920	6920	658
15°	6487	6487	6422	6357	6332	1824
25°	5622	5590	5500	5304	5157	2581
35°	4562	4529	4309	3982	3884	2852
45°	3501	3427	3134	2872	2758	2697
55°	2432	2358	2138	1885	1787	2181
65°	1444	1363	1232	1257	1044	1423
75°	579	539	506	482	530	621
85°	82	90	98	106	114	113
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7058.6	7058.6	7058.6	7058.6	7058.6
2.5°	7009.6	7009.6	7009.6	7001.4	7001.4
5°	6936.2	6928.0	6928.0	6919.8	6919.8
7.5°	6879.0	6870.9	6862.7	6854.6	6838.2
10°	6797.4	6797.4	6789.3	6748.5	6740.3
12.5°	6666.9	6658.7	6626.1	6569.0	6552.6
15°	6487.4	6487.4	6422.1	6356.8	6332.3
17.5°	6291.5	6283.4	6201.7	6136.5	6103.8
20°	6079.3	6063.0	5981.4	5875.3	5818.2
22.5°	5842.7	5842.7	5744.8	5606.1	5548.9
25°	5622.4	5589.7	5500.0	5304.1	5157.2
27.5°	5369.4	5320.4	5222.5	4945.1	4773.7
30°	5092.0	5067.5	4928.8	4569.7	4439.1
32.5°	4830.8	4790.0	4643.2	4267.8	4161.7
35°	4561.6	4528.9	4308.6	3982.2	3884.3
37.5°	4292.3	4251.5	3974.0	3712.9	3590.5
40°	4023.0	3974.0	3672.1	3435.4	3304.9
42.5°	3770.0	3704.7	3411.0	3158.0	3011.1
45°	3500.7	3427.3	3133.5	2872.4	2758.1
47.5°	3231.4	3166.2	2896.9	2627.6	2497.0
50°	2945.8	2888.7	2643.9	2374.6	2235.9
52.5°	2709.2	2619.4	2382.8	2113.5	1999.2
55°	2431.7	2358.3	2138.0	1885.0	1787.1
57.5°	2178.8	2105.3	1901.3	1664.7	1583.1
60°	1942.1	1836.0	1664.7	1460.7	1395.4
62.5°	1681.0	1599.4	1452.5	1281.2	1362.8
65°	1444.4	1362.8	1232.2	1256.7	1044.5
67.5°	1183.2	1142.4	1028.2	913.9	881.3
70°	962.9	913.9	873.1	750.7	718.1
72.5°	767.1	718.1	661.0	595.7	571.2
75°	579.4	538.6	505.9	481.5	530.4
77.5°	399.8	383.5	359.0	334.6	326.4
80°	261.1	253.0	244.8	236.6	228.5
82.5°	155.0	155.0	155.0	155.0	155.0
85°	81.6	89.8	97.9	106.1	114.2
87.5°	49.0	49.0	57.1	65.3	73.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)