

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: P590510

Luminaire Tested: FSR-24-2-LD4-3HI-50-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590510  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-3HI-50-UNV-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

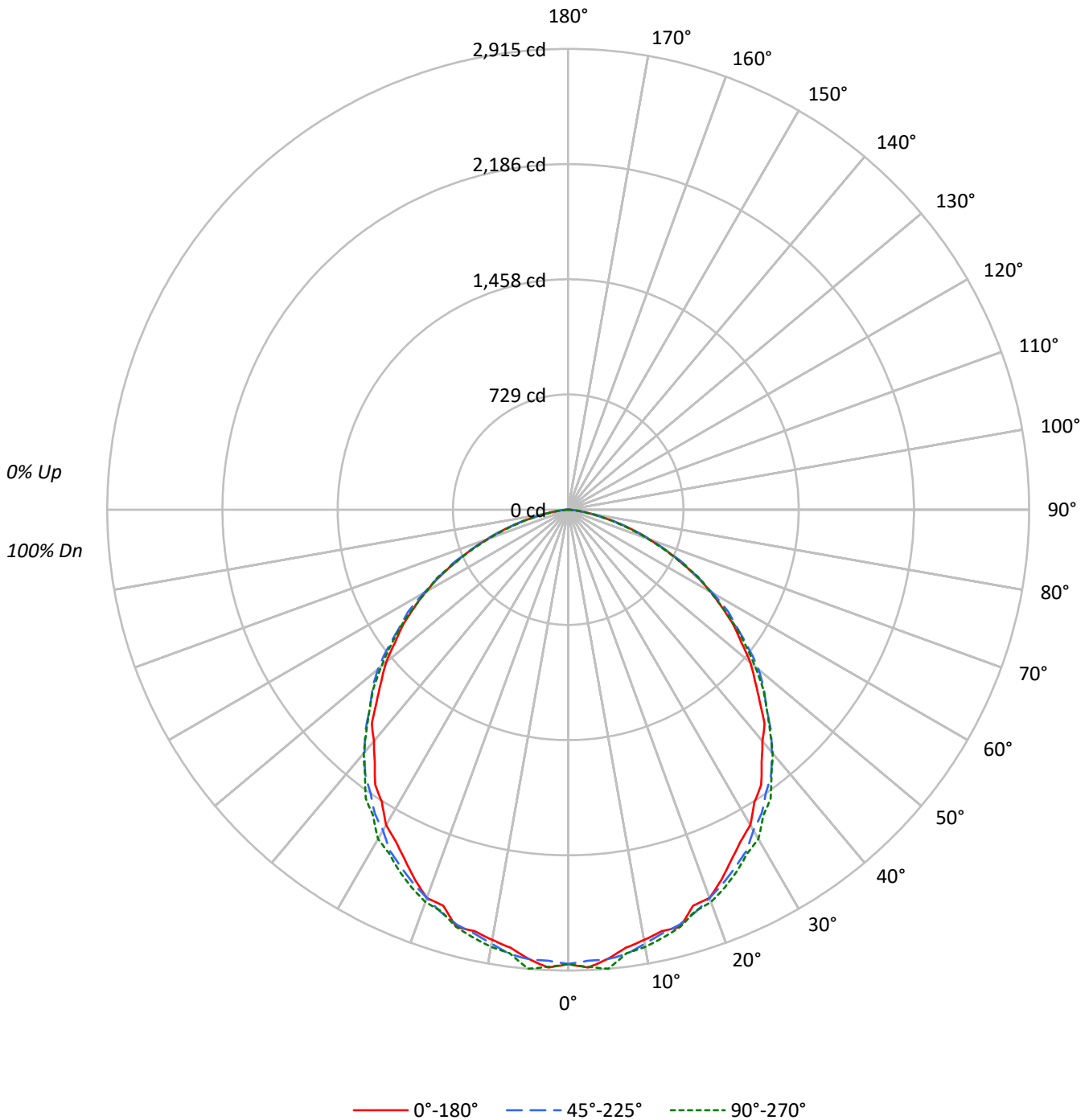
Lumens per Lamp: N/A  
Luminaire Lumens: 7243.0 lumens  
Efficiency: N/A  
Efficacy: 111.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	7733	7733	7733
5°	7708	7711	7873
10°	7552	7618	7671
15°	7611	7570	7612
20°	7483	7483	7562
25°	7253	7411	7493
30°	7153	7279	7472
35°	6985	7167	7328
40°	6713	7036	7067
45°	6510	6741	6751
50°	6296	6580	6454
55°	5999	6115	6072
60°	5610	5666	5564
65°	5002	5130	4967
70°	4292	4306	4187
75°	3399	3392	3260
80°	2276	2214	2128
85°	1238	1226	1145

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6915 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	270.3	3.7
10°-20°	766.1	10.6
20°-30°	1147.8	15.8
30°-40°	1360.4	18.8
40°-50°	1362.9	18.8
50°-60°	1156.9	16.0
60°-70°	780.0	10.8
70°-80°	342.7	4.7
80°-90°	55.7	0.8
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°	2184.3	30.2
0°-40°	3544.7	48.9
0°-60°	6064.6	83.7
0°-90°	7243.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7243.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2874	2874	2874	2874	2874	
5°	2853	2847	2854	2846	2915	269
15°	2732	2701	2717	2731	2732	761
25°	2443	2456	2496	2529	2524	1129
35°	2126	2132	2182	2232	2231	1320
45°	1711	1742	1771	1817	1774	1323
55°	1279	1270	1304	1295	1294	1137
65°	786	775	806	775	780	781
75°	327	320	326	303	314	350
85°	40	39	40	39	37	58
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2873.8	2873.8	2873.8	2873.8	2873.8
2.5°	2898.7	2876.8	2856.4	2880.1	2894.6
5°	2853.4	2846.8	2854.5	2846.0	2914.7
7.5°	2794.8	2820.4	2835.2	2826.0	2830.1
10°	2763.6	2754.7	2787.8	2810.8	2807.4
12.5°	2730.2	2743.6	2745.5	2770.3	2772.5
15°	2732.1	2700.6	2717.3	2731.4	2732.5
17.5°	2626.0	2660.1	2671.6	2703.9	2663.8
20°	2613.0	2588.1	2613.0	2646.0	2640.8
22.5°	2533.2	2505.4	2558.8	2588.1	2586.3
25°	2442.7	2456.0	2496.1	2528.8	2523.6
27.5°	2363.3	2378.8	2436.0	2480.9	2451.9
30°	2302.0	2294.2	2342.5	2382.6	2404.8
32.5°	2192.6	2220.8	2277.2	2316.9	2295.7
35°	2126.2	2132.5	2181.8	2232.3	2230.8
37.5°	2010.0	2039.3	2108.7	2122.8	2109.8
40°	1910.9	1940.3	2003.0	2018.2	2011.9
42.5°	1837.8	1843.0	1896.8	1914.3	1886.5
45°	1710.6	1742.5	1771.4	1817.1	1774.0
47.5°	1602.2	1617.1	1679.4	1691.7	1669.0
50°	1503.9	1509.1	1571.8	1556.6	1541.7
52.5°	1380.3	1402.2	1437.5	1434.5	1417.1
55°	1278.7	1270.1	1303.5	1294.6	1294.2
57.5°	1156.6	1171.4	1198.9	1184.8	1162.2
60°	1042.3	1042.7	1052.7	1036.7	1033.8
62.5°	915.0	919.5	921.7	902.0	934.0
65°	785.5	775.1	805.6	774.8	780.0
67.5°	666.4	671.6	668.6	649.4	656.8
70°	545.5	552.1	547.3	525.4	532.1
72.5°	434.9	426.7	431.9	404.5	417.1
75°	326.9	320.2	326.2	303.2	313.5
77.5°	222.6	227.8	224.1	211.9	218.9
80°	146.9	142.9	142.9	135.8	137.3
82.5°	85.7	81.6	80.5	78.3	81.6
85°	40.1	39.0	39.7	38.6	37.1
87.5°	14.5	14.8	14.8	14.1	13.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)