

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: P561112

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-82-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561112  
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-12-4-LD4-1LO-50-UNV-82-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

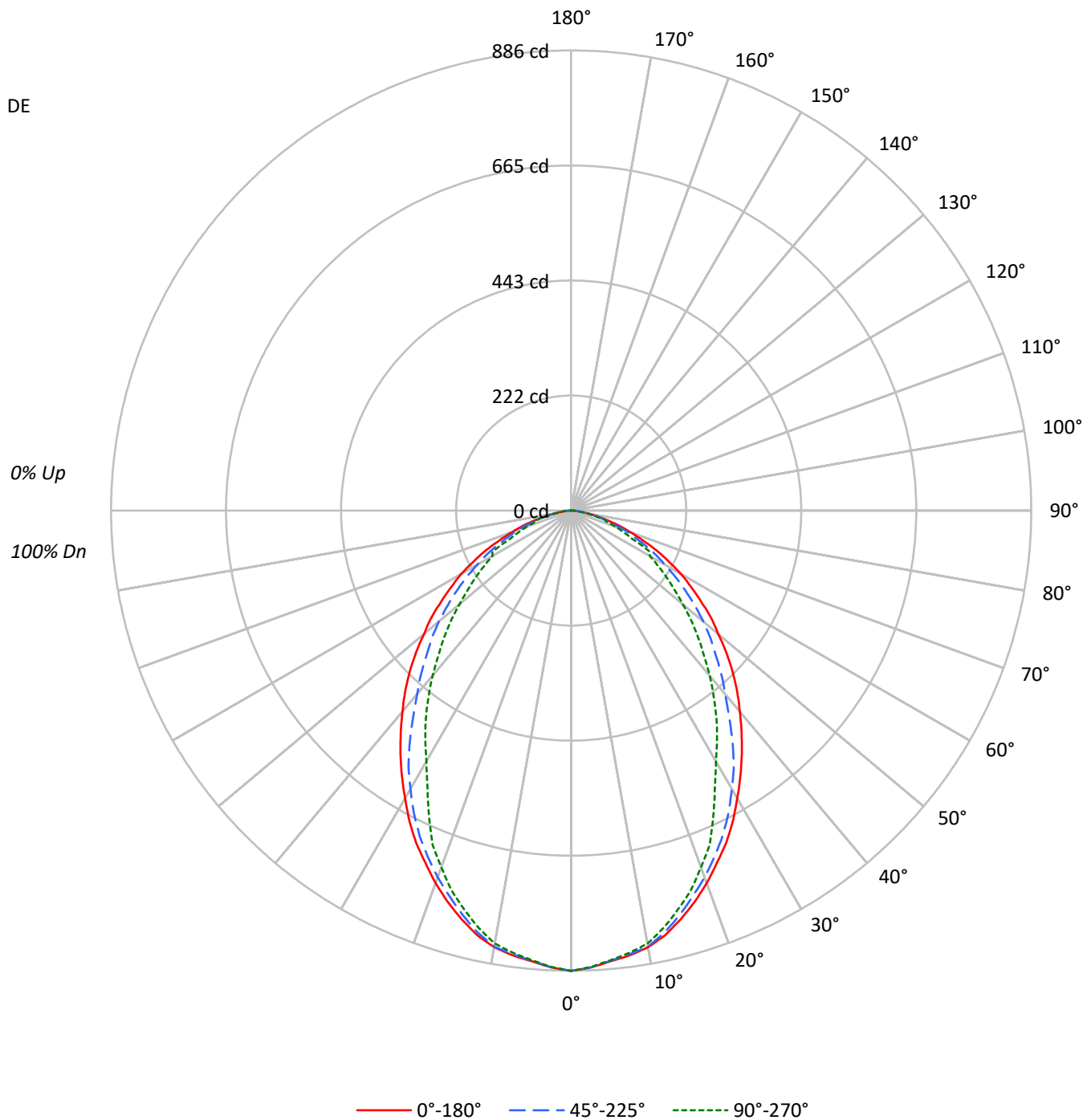
Lumens per Lamp: N/A  
Luminaire Lumens: 1740.0 lumens  
Efficiency: N/A  
Efficacy: 74.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2385	2385	2385
5°	2353	2350	2347
10°	2332	2329	2313
15°	2269	2247	2215
20°	2186	2151	2092
25°	2096	2051	1923
30°	1987	1923	1732
35°	1882	1777	1602
40°	1775	1620	1458
45°	1673	1498	1318
50°	1549	1390	1176
55°	1432	1260	1053
60°	1313	1125	943
65°	1155	985	835
70°	951	862	710
75°	757	660	692
80°	508	476	445
85°	315	380	442

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1673 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.5	4.7
10°-20°	226.4	13.0
20°-30°	313.5	18.0
30°-40°	334.3	19.2
40°-50°	304.9	17.5
50°-60°	238.9	13.7
60°-70°	155.7	8.9
70°-80°	69.0	4.0
80°-90°	14.8	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°	622.4	35.8
0°-40°	956.7	55.0
0°-60°	1500.5	86.2
0°-90°	1740.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1740.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	886	886	886	886	886	
5°	871	870	870	869	869	83
15°	815	815	806	798	795	229
25°	706	702	691	666	648	324
35°	573	569	541	500	488	358
45°	440	430	394	361	346	339
55°	305	296	268	237	224	274
65°	181	171	155	158	131	179
75°	73	68	64	60	67	78
85°	10	11	12	13	14	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	886.3	886.3	886.3	886.3	886.3
2.5°	880.2	880.2	880.2	879.2	879.2
5°	871.0	869.9	869.9	868.9	868.9
7.5°	863.8	862.8	861.7	860.7	858.7
10°	853.5	853.5	852.5	847.4	846.4
12.5°	837.1	836.1	832.0	824.9	822.8
15°	814.6	814.6	806.4	798.2	795.1
17.5°	790.0	789.0	778.7	770.5	766.4
20°	763.4	761.3	751.1	737.8	730.6
22.5°	733.7	733.7	721.4	703.9	696.8
25°	706.0	701.9	690.6	666.0	647.6
27.5°	674.2	668.1	655.8	620.9	599.4
30°	639.4	636.3	618.9	573.8	557.4
32.5°	606.6	601.5	583.0	535.9	522.6
35°	572.8	568.7	541.0	500.0	487.7
37.5°	539.0	533.8	499.0	466.2	450.9
40°	505.2	499.0	461.1	431.4	415.0
42.5°	473.4	465.2	428.3	396.5	378.1
45°	439.6	430.4	393.5	360.7	346.3
47.5°	405.8	397.6	363.8	329.9	313.5
50°	369.9	362.7	332.0	298.2	280.8
52.5°	340.2	328.9	299.2	265.4	251.0
55°	305.3	296.1	268.5	236.7	224.4
57.5°	273.6	264.4	238.7	209.0	198.8
60°	243.9	230.5	209.0	183.4	175.2
62.5°	211.1	200.8	182.4	160.9	171.1
65°	181.4	171.1	154.7	157.8	131.2
67.5°	148.6	143.5	129.1	114.8	110.7
70°	120.9	114.8	109.6	94.3	90.2
72.5°	96.3	90.2	83.0	74.8	71.7
75°	72.8	67.6	63.5	60.5	66.6
77.5°	50.2	48.2	45.1	42.0	41.0
80°	32.8	31.8	30.7	29.7	28.7
82.5°	19.5	19.5	19.5	19.5	19.5
85°	10.2	11.3	12.3	13.3	14.3
87.5°	6.1	6.1	7.2	8.2	9.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)