

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: P561424

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561424  
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-LD4-2HI-40-UNV-82-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

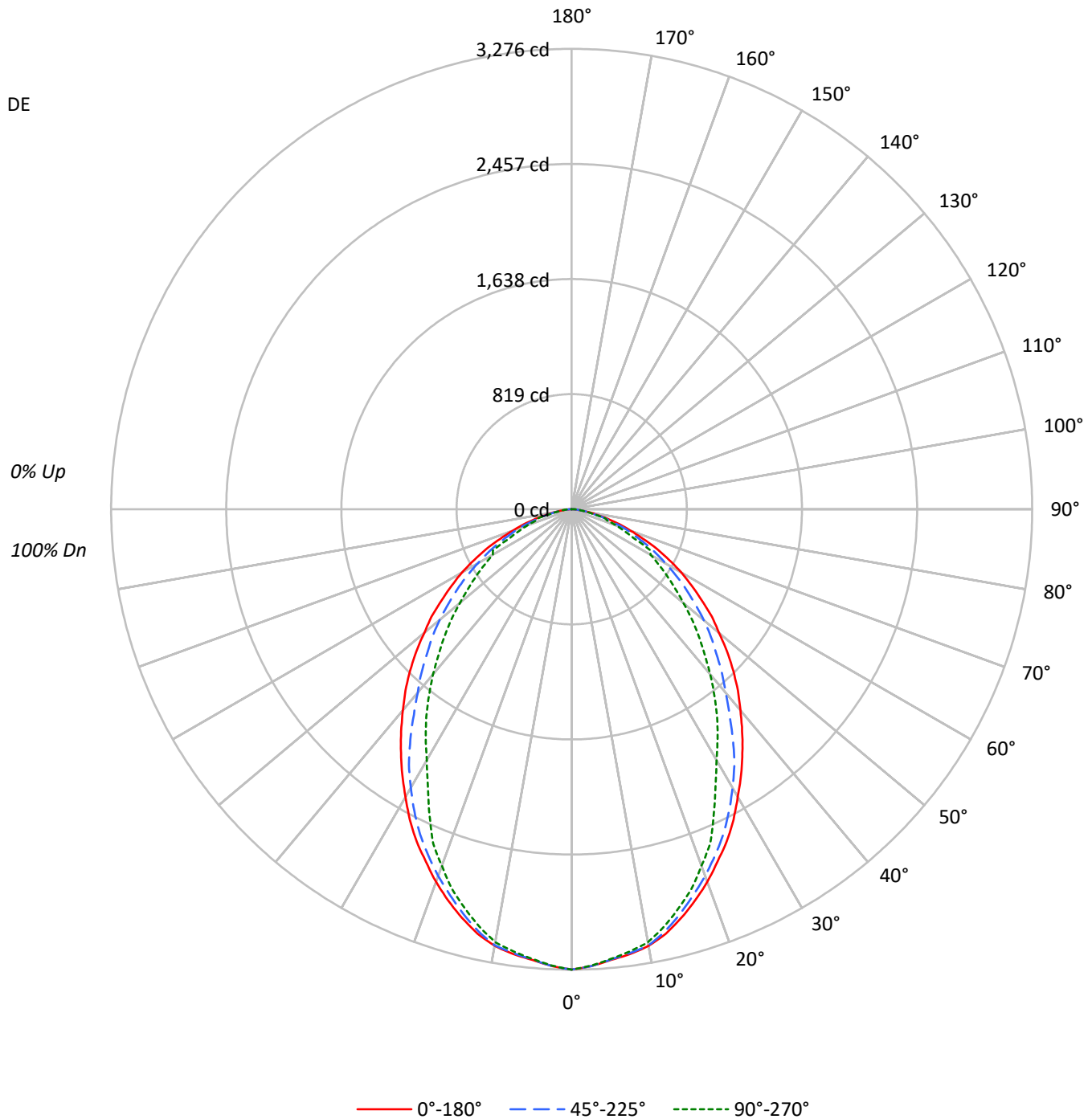
Lumens per Lamp: N/A  
Luminaire Lumens: 6431.0 lumens  
Efficiency: N/A  
Efficacy: 74.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8815	8815	8815
5°	8696	8685	8675
10°	8620	8610	8548
15°	8388	8303	8187
20°	8080	7950	7733
25°	7747	7579	7107
30°	7343	7108	6402
35°	6955	6569	5922
40°	6559	5987	5388
45°	6183	5535	4871
50°	5724	5137	4344
55°	5295	4655	3891
60°	4851	4158	3485
65°	4268	3642	3087
70°	3516	3188	2622
75°	2796	2441	2560
80°	1878	1760	1643
85°	1170	1402	1636

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6183 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	304.9	4.7
10°-20°	836.9	13.0
20°-30°	1158.6	18.0
30°-40°	1235.4	19.2
40°-50°	1127.1	17.5
50°-60°	883.0	13.7
60°-70°	575.5	8.9
70°-80°	255.0	4.0
80°-90°	54.7	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°	2300.4	35.8
0°-40°	3535.8	55.0
0°-60°	5545.8	86.2
0°-90°	6431.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6431.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3276	3276	3276	3276	3276	
5°	3219	3215	3215	3212	3212	306
15°	3011	3011	2980	2950	2939	846
25°	2609	2594	2552	2462	2394	1198
35°	2117	2102	2000	1848	1803	1324
45°	1625	1591	1454	1333	1280	1251
55°	1129	1094	992	875	829	1012
65°	670	632	572	583	485	661
75°	269	250	235	223	246	288
85°	38	42	45	49	53	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3275.9	3275.9	3275.9	3275.9	3275.9
2.5°	3253.1	3253.1	3253.1	3249.4	3249.4
5°	3219.1	3215.3	3215.3	3211.5	3211.5
7.5°	3192.5	3188.8	3185.0	3181.2	3173.6
10°	3154.7	3154.7	3150.9	3132.0	3128.2
12.5°	3094.1	3090.3	3075.1	3048.6	3041.1
15°	3010.8	3010.8	2980.5	2950.2	2938.8
17.5°	2919.9	2916.1	2878.2	2847.9	2832.8
20°	2821.4	2813.8	2776.0	2726.7	2700.2
22.5°	2711.6	2711.6	2666.1	2601.8	2575.2
25°	2609.3	2594.2	2552.5	2461.6	2393.5
27.5°	2491.9	2469.2	2423.8	2295.0	2215.5
30°	2363.2	2351.8	2287.4	2120.8	2060.2
32.5°	2242.0	2223.0	2154.9	1980.7	1931.4
35°	2117.0	2101.9	1999.6	1848.1	1802.7
37.5°	1992.0	1973.1	1844.3	1723.1	1666.3
40°	1867.1	1844.3	1704.2	1594.4	1533.8
42.5°	1749.7	1719.4	1583.0	1465.6	1397.5
45°	1624.7	1590.6	1454.3	1333.1	1280.0
47.5°	1499.7	1469.4	1344.4	1219.5	1158.9
50°	1367.2	1340.6	1227.0	1102.1	1037.7
52.5°	1257.3	1215.7	1105.8	980.9	927.8
55°	1128.6	1094.5	992.2	874.8	829.4
57.5°	1011.2	977.1	882.4	772.6	734.7
60°	901.3	852.1	772.6	677.9	647.6
62.5°	780.1	742.3	674.1	594.6	632.5
65°	670.3	632.5	571.9	583.2	484.8
67.5°	549.1	530.2	477.2	424.2	409.0
70°	446.9	424.2	405.2	348.4	333.3
72.5°	356.0	333.3	306.8	276.5	265.1
75°	268.9	250.0	234.8	223.4	246.2
77.5°	185.6	178.0	166.6	155.3	151.5
80°	121.2	117.4	113.6	109.8	106.0
82.5°	72.0	72.0	72.0	72.0	72.0
85°	37.9	41.7	45.4	49.2	53.0
87.5°	22.7	22.7	26.5	30.3	34.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)