

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: P590469

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-82-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590469  
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-40-UNV-82-84-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

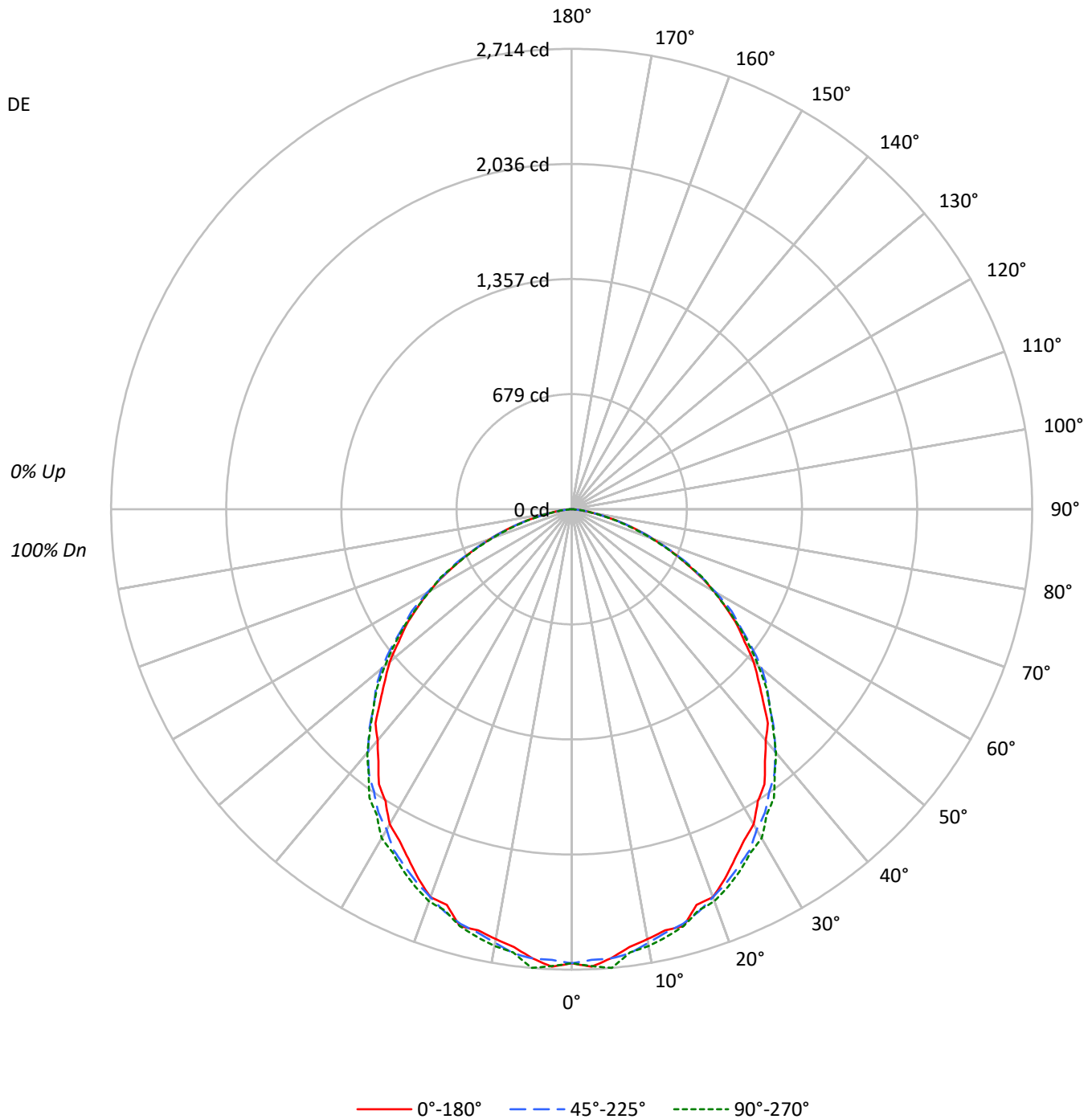
Lumens per Lamp: N/A  
Luminaire Lumens: 6744.0 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

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

	0°	45°	90°
0°	7201	7201	7201
5°	7177	7180	7331
10°	7031	7093	7143
15°	7087	7049	7088
20°	6967	6967	7042
25°	6753	6901	6977
30°	6660	6777	6957
35°	6503	6674	6823
40°	6250	6551	6581
45°	6061	6277	6286
50°	5862	6127	6010
55°	5586	5694	5654
60°	5223	5275	5180
65°	4657	4776	4624
70°	3996	4009	3898
75°	3165	3158	3035
80°	2120	2061	1980
85°	1152	1142	1065

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6439 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	251.7	3.7
10°-20°	713.4	10.6
20°-30°	1068.8	15.8
30°-40°	1266.7	18.8
40°-50°	1269.0	18.8
50°-60°	1077.2	16.0
60°-70°	726.2	10.8
70°-80°	319.1	4.7
80°-90°	51.9	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°	2033.8	30.2
0°-40°	3300.5	48.9
0°-60°	5646.8	83.7
0°-90°	6744.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6744.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2676	2676	2676	2676	2676	
5°	2657	2651	2658	2650	2714	250
15°	2544	2514	2530	2543	2544	709
25°	2274	2287	2324	2354	2350	1051
35°	1980	1986	2032	2078	2077	1229
45°	1593	1622	1649	1692	1652	1232
55°	1191	1183	1214	1205	1205	1059
65°	731	722	750	721	726	727
75°	304	298	304	282	292	326
85°	37	36	37	36	34	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2675.8	2675.8	2675.8	2675.8	2675.8
2.5°	2699.0	2678.6	2659.6	2681.7	2695.2
5°	2656.8	2650.6	2657.9	2649.9	2713.9
7.5°	2602.3	2626.1	2639.9	2631.3	2635.1
10°	2573.2	2564.9	2595.7	2617.1	2614.0
12.5°	2542.1	2554.6	2556.3	2579.5	2581.5
15°	2543.9	2514.5	2530.1	2543.2	2544.2
17.5°	2445.1	2476.8	2487.6	2517.6	2480.3
20°	2433.0	2409.8	2433.0	2463.7	2458.9
22.5°	2358.7	2332.8	2382.5	2409.8	2408.1
25°	2274.4	2286.8	2324.1	2354.5	2349.7
27.5°	2200.4	2215.0	2268.2	2310.0	2283.0
30°	2143.4	2136.2	2181.1	2218.4	2239.1
32.5°	2041.5	2067.8	2120.3	2157.3	2137.6
35°	1979.7	1985.6	2031.5	2078.5	2077.1
37.5°	1871.5	1898.8	1963.4	1976.6	1964.5
40°	1779.3	1806.6	1865.0	1879.1	1873.3
42.5°	1711.2	1716.1	1766.2	1782.4	1756.5
45°	1592.7	1622.4	1649.4	1691.9	1651.8
47.5°	1491.8	1505.7	1563.7	1575.1	1554.0
50°	1400.3	1405.1	1463.5	1449.3	1435.5
52.5°	1285.2	1305.6	1338.4	1335.7	1319.4
55°	1190.6	1182.6	1213.7	1205.4	1205.1
57.5°	1076.9	1090.7	1116.3	1103.2	1082.1
60°	970.5	970.8	980.2	965.3	962.5
62.5°	852.0	856.1	858.2	839.9	869.6
65°	731.4	721.7	750.1	721.4	726.2
67.5°	620.5	625.3	622.6	604.6	611.5
70°	507.9	514.1	509.6	489.2	495.4
72.5°	404.9	397.3	402.2	376.6	388.3
75°	304.4	298.2	303.7	282.3	291.9
77.5°	207.3	212.1	208.7	197.3	203.8
80°	136.8	133.0	133.0	126.5	127.8
82.5°	79.8	76.0	75.0	72.9	76.0
85°	37.3	36.3	37.0	35.9	34.5
87.5°	13.5	13.8	13.8	13.1	12.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)