

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: P561434

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561434  
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-82-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

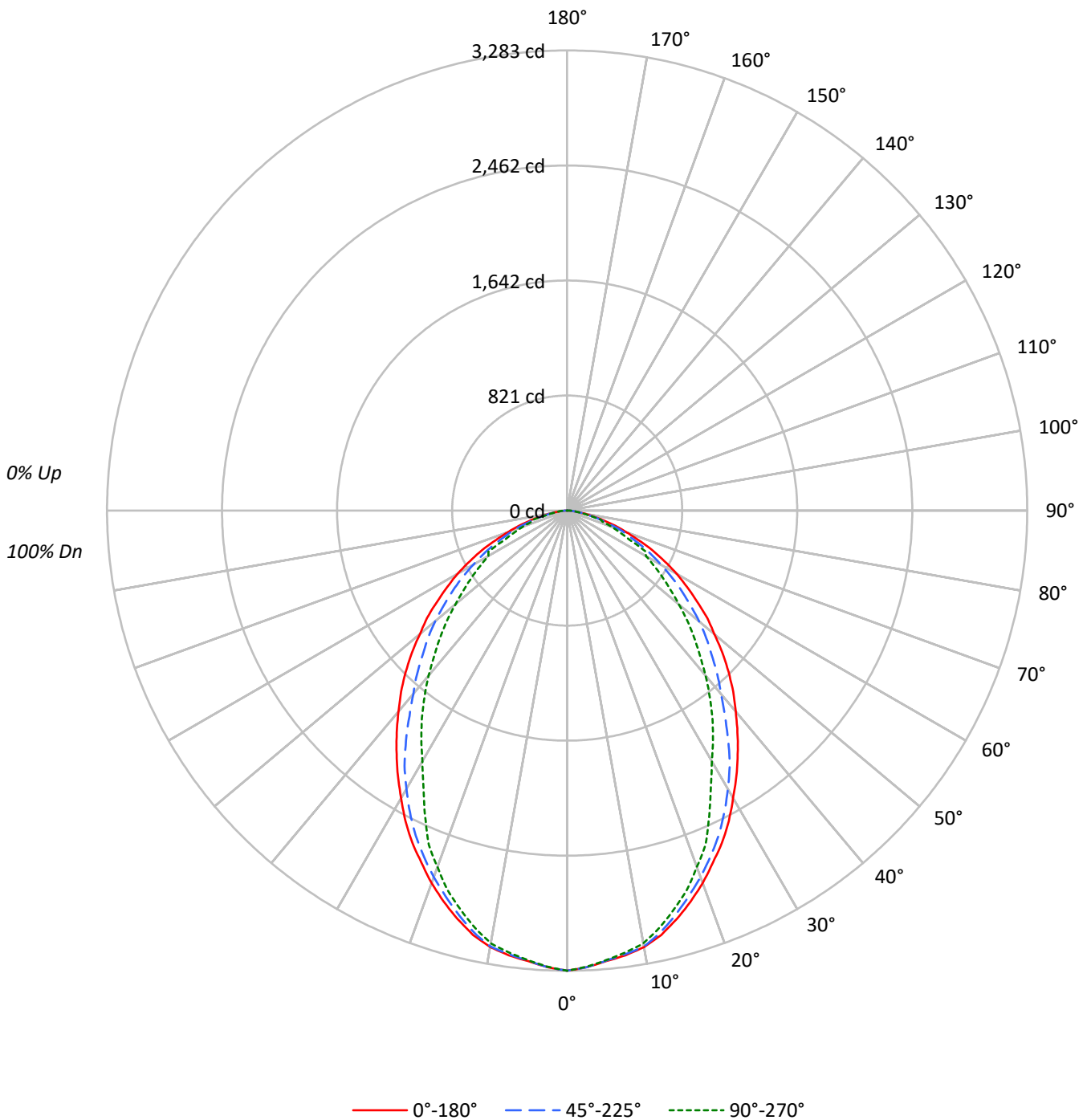
Lumens per Lamp: N/A  
Luminaire Lumens: 6445.0 lumens  
Efficiency: N/A  
Efficacy: 74.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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									100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

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

	0°	45°	90°
0°	8834	8834	8834
5°	8715	8704	8694
10°	8639	8628	8566
15°	8406	8322	8205
20°	8097	7967	7749
25°	7764	7595	7122
30°	7359	7123	6416
35°	6970	6583	5935
40°	6573	6000	5400
45°	6196	5546	4882
50°	5736	5148	4353
55°	5306	4665	3900
60°	4862	4167	3493
65°	4278	3649	3093
70°	3524	3195	2628
75°	2802	2446	2565
80°	1883	1765	1647
85°	1173	1405	1639

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6196 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	305.6	4.7
10°-20°	838.7	13.0
20°-30°	1161.1	18.0
30°-40°	1238.1	19.2
40°-50°	1129.5	17.5
50°-60°	884.9	13.7
60°-70°	576.7	8.9
70°-80°	255.5	4.0
80°-90°	54.9	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°	2305.4	35.8
0°-40°	3543.5	55.0
0°-60°	5557.9	86.2
0°-90°	6445.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6445.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3283	3283	3283	3283	3283	
5°	3226	3222	3222	3218	3218	306
15°	3017	3017	2987	2957	2945	848
25°	2615	2600	2558	2467	2399	1201
35°	2122	2106	2004	1852	1807	1326
45°	1628	1594	1457	1336	1283	1254
55°	1131	1097	994	877	831	1014
65°	672	634	573	584	486	662
75°	270	250	235	224	247	289
85°	38	42	46	49	53	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3283.0	3283.0	3283.0	3283.0	3283.0
2.5°	3260.2	3260.2	3260.2	3256.4	3256.4
5°	3226.1	3222.3	3222.3	3218.5	3218.5
7.5°	3199.5	3195.7	3191.9	3188.1	3180.5
10°	3161.5	3161.5	3157.7	3138.8	3135.0
12.5°	3100.8	3097.0	3081.8	3055.3	3047.7
15°	3017.3	3017.3	2987.0	2956.6	2945.2
17.5°	2926.2	2922.4	2884.5	2854.1	2838.9
20°	2827.6	2820.0	2782.0	2732.7	2706.1
22.5°	2717.5	2717.5	2671.9	2607.4	2580.9
25°	2615.0	2599.8	2558.1	2467.0	2398.7
27.5°	2497.4	2474.6	2429.0	2300.0	2220.3
30°	2368.3	2356.9	2292.4	2125.4	2064.7
32.5°	2246.9	2227.9	2159.6	1985.0	1935.6
35°	2121.6	2106.4	2004.0	1852.1	1806.6
37.5°	1996.4	1977.4	1848.3	1726.9	1670.0
40°	1871.1	1848.3	1707.9	1597.9	1537.1
42.5°	1753.5	1723.1	1586.5	1468.8	1400.5
45°	1628.2	1594.1	1457.4	1336.0	1282.8
47.5°	1503.0	1472.6	1347.4	1222.1	1161.4
50°	1370.1	1343.6	1229.7	1104.5	1039.9
52.5°	1260.1	1218.3	1108.2	983.0	929.9
55°	1131.0	1096.9	994.4	876.7	831.2
57.5°	1013.4	979.2	884.3	774.3	736.3
60°	903.3	854.0	774.3	679.4	649.0
62.5°	781.8	743.9	675.6	595.9	633.8
65°	671.8	633.8	573.1	584.5	485.8
67.5°	550.3	531.4	478.2	425.1	409.9
70°	447.9	425.1	406.1	349.2	334.0
72.5°	356.8	334.0	307.4	277.1	265.7
75°	269.5	250.5	235.3	223.9	246.7
77.5°	186.0	178.4	167.0	155.6	151.8
80°	121.5	117.7	113.9	110.1	106.3
82.5°	72.1	72.1	72.1	72.1	72.1
85°	38.0	41.7	45.5	49.3	53.1
87.5°	22.8	22.8	26.6	30.4	34.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)