

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: P561422

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561422  
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-81-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

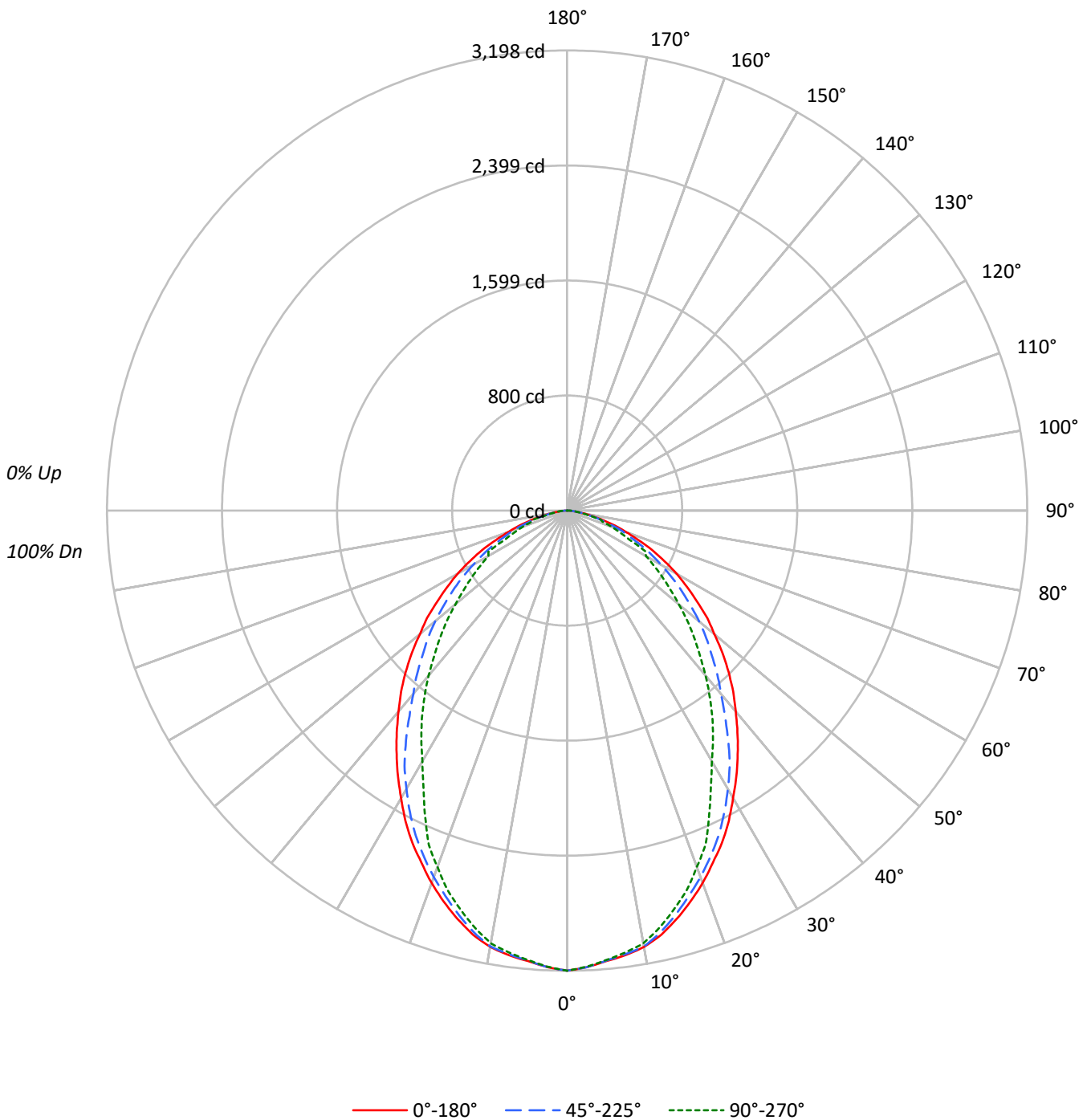
Lumens per Lamp: N/A  
Luminaire Lumens: 6278.0 lumens  
Efficiency: N/A  
Efficacy: 72.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8605	8605	8605
5°	8489	8479	8469
10°	8415	8405	8344
15°	8188	8106	7992
20°	7887	7760	7549
25°	7563	7399	6937
30°	7168	6939	6249
35°	6789	6412	5781
40°	6402	5844	5260
45°	6036	5403	4756
50°	5587	5014	4241
55°	5169	4544	3798
60°	4736	4059	3402
65°	4167	3555	3013
70°	3432	3113	2559
75°	2729	2383	2498
80°	1833	1719	1604
85°	1142	1371	1599

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6036 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	297.7	4.7
10°-20°	817.0	13.0
20°-30°	1131.0	18.0
30°-40°	1206.0	19.2
40°-50°	1100.2	17.5
50°-60°	861.9	13.7
60°-70°	561.8	8.9
70°-80°	248.9	4.0
80°-90°	53.4	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°	2245.7	35.8
0°-40°	3451.7	55.0
0°-60°	5413.9	86.2
0°-90°	6278.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6278.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3198	3198	3198	3198	3198	
5°	3142	3139	3139	3135	3135	298
15°	2939	2939	2910	2880	2869	826
25°	2547	2532	2492	2403	2336	1169
35°	2067	2052	1952	1804	1760	1292
45°	1586	1553	1420	1301	1250	1222
55°	1102	1068	969	854	810	988
65°	654	617	558	569	473	645
75°	262	244	229	218	240	281
85°	37	41	44	48	52	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3197.9	3197.9	3197.9	3197.9	3197.9
2.5°	3175.7	3175.7	3175.7	3172.1	3172.1
5°	3142.5	3138.8	3138.8	3135.1	3135.1
7.5°	3116.6	3112.9	3109.2	3105.5	3098.1
10°	3079.6	3079.6	3075.9	3057.4	3053.7
12.5°	3020.5	3016.8	3002.0	2976.1	2968.7
15°	2939.1	2939.1	2909.6	2880.0	2868.9
17.5°	2850.4	2846.7	2809.7	2780.2	2765.4
20°	2754.3	2746.9	2709.9	2661.9	2636.0
22.5°	2647.1	2647.1	2602.7	2539.9	2514.0
25°	2547.3	2532.5	2491.8	2403.1	2336.5
27.5°	2432.6	2410.5	2366.1	2240.4	2162.8
30°	2306.9	2295.9	2233.0	2070.3	2011.2
32.5°	2188.6	2170.2	2103.6	1933.5	1885.5
35°	2066.6	2051.9	1952.0	1804.1	1759.8
37.5°	1944.6	1926.2	1800.5	1682.1	1626.7
40°	1822.6	1800.5	1663.7	1556.4	1497.3
42.5°	1708.0	1678.5	1545.4	1430.7	1364.2
45°	1586.0	1552.8	1419.7	1301.4	1249.6
47.5°	1464.0	1434.4	1312.4	1190.4	1131.3
50°	1334.6	1308.7	1197.8	1075.8	1013.0
52.5°	1227.4	1186.7	1079.5	957.5	905.8
55°	1101.7	1068.4	968.6	854.0	809.6
57.5°	987.1	953.8	861.4	754.2	717.2
60°	879.9	831.8	754.2	661.8	632.2
62.5°	761.6	724.6	658.1	580.4	617.4
65°	654.4	617.4	558.3	569.3	473.2
67.5°	536.1	517.6	465.8	414.1	399.3
70°	436.2	414.1	395.6	340.1	325.3
72.5°	347.5	325.3	299.5	269.9	258.8
75°	262.5	244.0	229.2	218.1	240.3
77.5°	181.2	173.8	162.7	151.6	147.9
80°	118.3	114.6	110.9	107.2	103.5
82.5°	70.2	70.2	70.2	70.2	70.2
85°	37.0	40.7	44.4	48.1	51.8
87.5°	22.2	22.2	25.9	29.6	33.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)