

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: P561348

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561348  
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-35-UNV-81-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

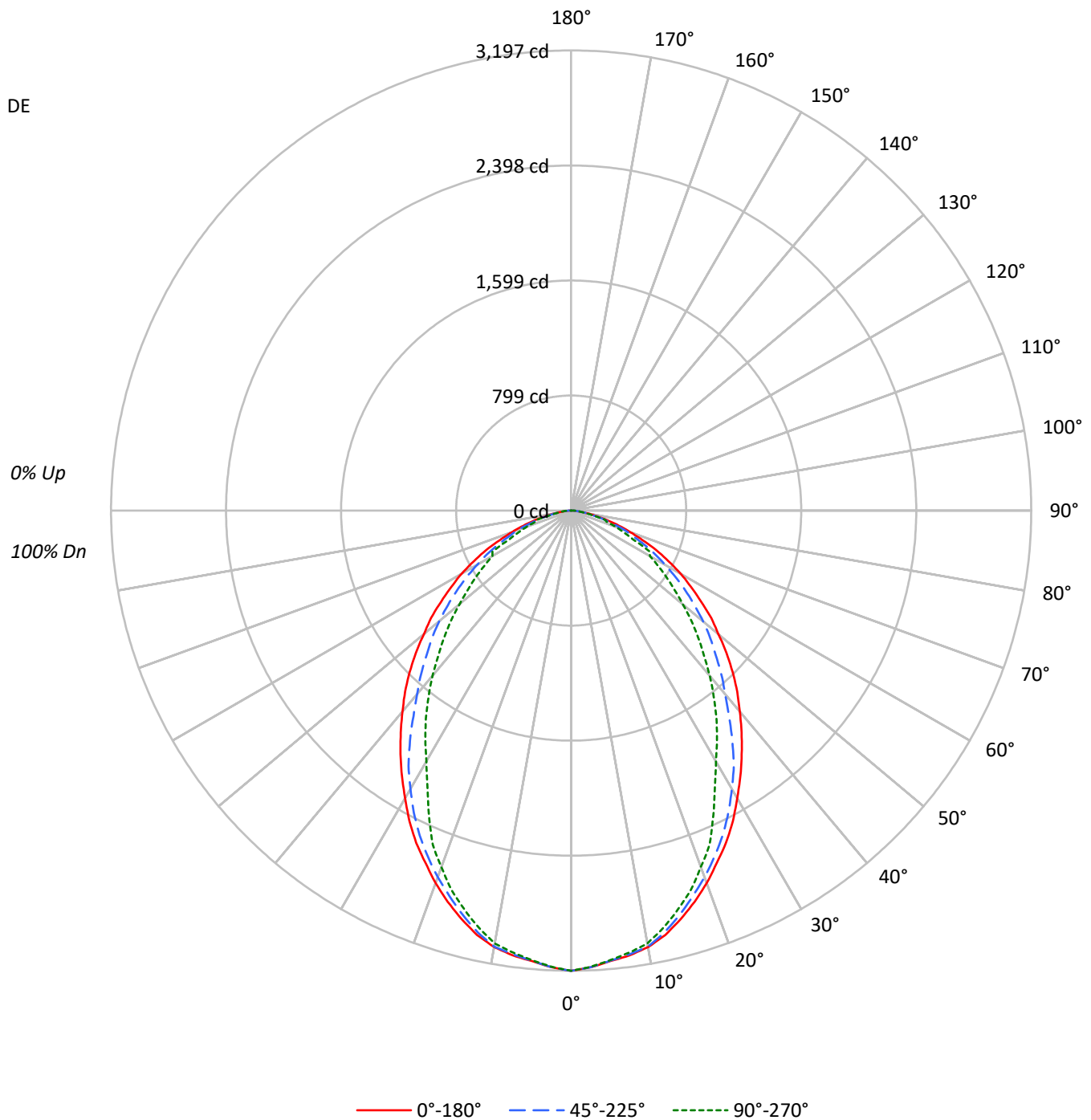
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6277.0 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	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°	8604	8604	8604
5°	8487	8477	8467
10°	8414	8404	8343
15°	8187	8104	7991
20°	7886	7759	7548
25°	7562	7397	6936
30°	7167	6937	6248
35°	6788	6411	5780
40°	6401	5843	5259
45°	6035	5402	4755
50°	5586	5014	4240
55°	5168	4544	3798
60°	4735	4059	3402
65°	4166	3554	3012
70°	3432	3112	2559
75°	2728	2383	2498
80°	1833	1719	1604
85°	1142	1371	1599

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6035 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	297.6	4.7
10°-20°	816.8	13.0
20°-30°	1130.9	18.0
30°-40°	1205.8	19.2
40°-50°	1100.1	17.5
50°-60°	861.8	13.7
60°-70°	561.7	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°	2245.3	35.8
0°-40°	3451.2	55.0
0°-60°	5413.0	86.2
0°-90°	6277.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6277.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3197	3197	3197	3197	3197	
5°	3142	3138	3138	3135	3135	298
15°	2939	2939	2909	2880	2868	826
25°	2547	2532	2491	2403	2336	1169
35°	2066	2052	1952	1804	1760	1292
45°	1586	1552	1419	1301	1249	1222
55°	1102	1068	968	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°	3197.4	3197.4	3197.4	3197.4	3197.4
2.5°	3175.2	3175.2	3175.2	3171.5	3171.5
5°	3142.0	3138.3	3138.3	3134.6	3134.6
7.5°	3116.1	3112.4	3108.7	3105.0	3097.6
10°	3079.1	3079.1	3075.4	3057.0	3053.3
12.5°	3020.0	3016.3	3001.5	2975.6	2968.2
15°	2938.7	2938.7	2909.1	2879.5	2868.4
17.5°	2850.0	2846.3	2809.3	2779.7	2764.9
20°	2753.8	2746.5	2709.5	2661.4	2635.6
22.5°	2646.7	2646.7	2602.3	2539.5	2513.6
25°	2546.8	2532.1	2491.4	2402.7	2336.1
27.5°	2432.3	2410.1	2365.7	2240.0	2162.4
30°	2306.6	2295.5	2232.6	2070.0	2010.9
32.5°	2188.3	2169.8	2103.3	1933.2	1885.2
35°	2066.3	2051.5	1951.7	1803.9	1759.5
37.5°	1944.3	1925.8	1800.2	1681.9	1626.4
40°	1822.3	1800.2	1663.4	1556.2	1497.1
42.5°	1707.8	1678.2	1545.1	1430.5	1364.0
45°	1585.8	1552.5	1419.4	1301.1	1249.4
47.5°	1463.8	1434.2	1312.2	1190.3	1131.1
50°	1334.4	1308.5	1197.6	1075.7	1012.8
52.5°	1227.2	1186.6	1079.4	957.4	905.6
55°	1101.5	1068.3	968.5	853.9	809.5
57.5°	986.9	953.7	861.3	754.1	717.1
60°	879.8	831.7	754.1	661.7	632.1
62.5°	761.5	724.5	658.0	580.3	617.3
65°	654.3	617.3	558.2	569.3	473.1
67.5°	536.0	517.5	465.8	414.0	399.2
70°	436.2	414.0	395.5	340.1	325.3
72.5°	347.5	325.3	299.4	269.8	258.8
75°	262.4	244.0	229.2	218.1	240.3
77.5°	181.1	173.7	162.6	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)