

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: P561232

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561232  
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-LD4-1STD-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**

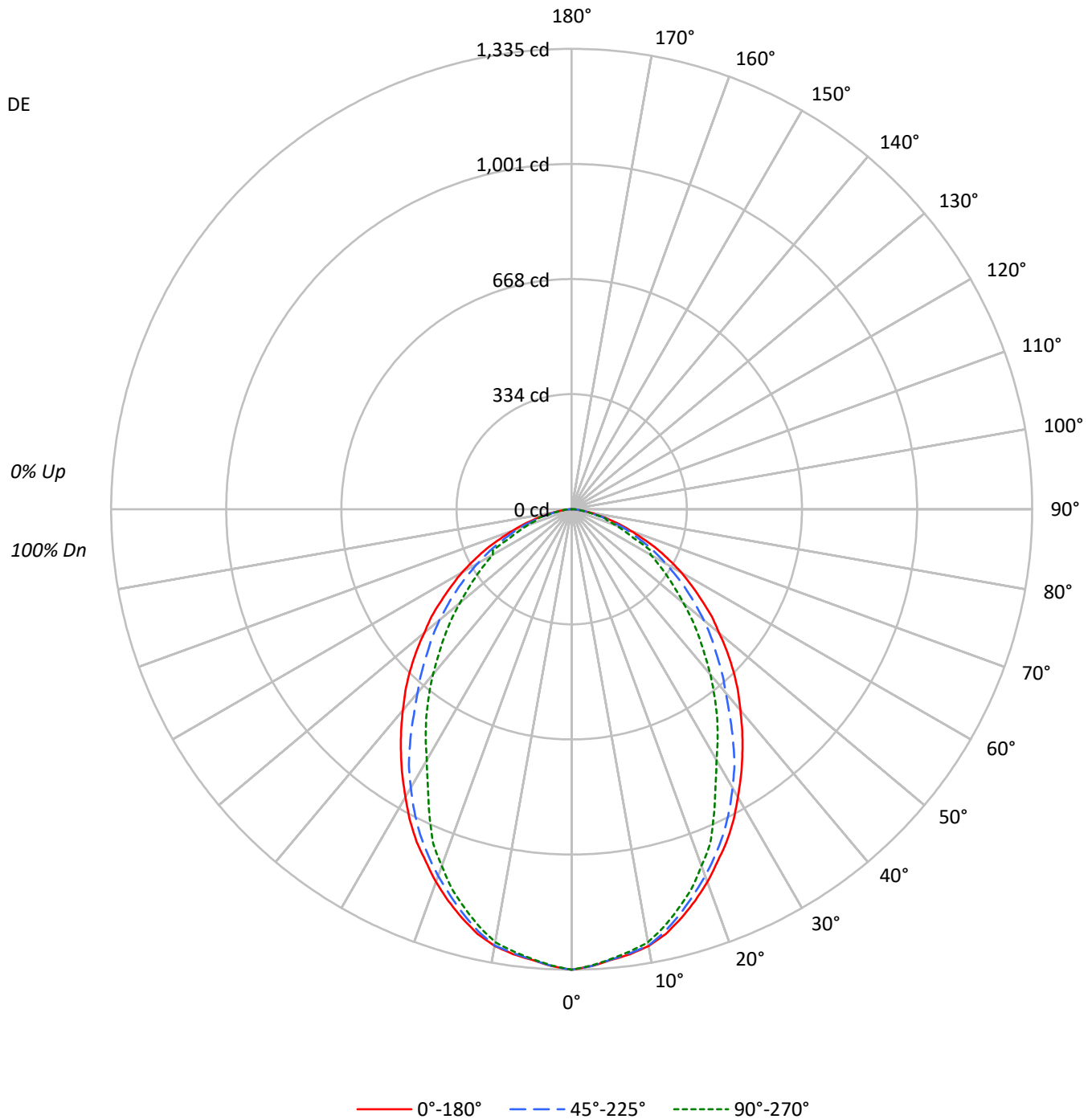
Lumens per Lamp: N/A  
Luminaire Lumens: 2621.0 lumens  
Efficiency: N/A  
Efficacy: 78.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3593	3593	3593
5°	3544	3540	3536
10°	3513	3509	3484
15°	3419	3384	3337
20°	3293	3240	3151
25°	3158	3089	2896
30°	2993	2897	2609
35°	2834	2677	2414
40°	2673	2440	2196
45°	2520	2256	1985
50°	2333	2094	1770
55°	2158	1897	1586
60°	1977	1695	1420
65°	1740	1484	1258
70°	1433	1300	1068
75°	1140	995	1043
80°	766	717	669
85°	475	571	667

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2520 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	124.3	4.7
10°-20°	341.1	13.0
20°-30°	472.2	18.0
30°-40°	503.5	19.2
40°-50°	459.3	17.5
50°-60°	359.9	13.7
60°-70°	234.5	8.9
70°-80°	103.9	4.0
80°-90°	22.3	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°	937.6	35.8
0°-40°	1441.1	55.0
0°-60°	2260.3	86.2
0°-90°	2621.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2621.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1335	1335	1335	1335	1335	
5°	1312	1310	1310	1309	1309	125
15°	1227	1227	1215	1202	1198	345
25°	1064	1057	1040	1003	976	488
35°	863	857	815	753	735	539
45°	662	648	593	543	522	510
55°	460	446	404	356	338	413
65°	273	258	233	238	198	269
75°	110	102	96	91	100	117
85°	15	17	18	20	22	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1335.1	1335.1	1335.1	1335.1	1335.1
2.5°	1325.8	1325.8	1325.8	1324.3	1324.3
5°	1312.0	1310.4	1310.4	1308.9	1308.9
7.5°	1301.1	1299.6	1298.1	1296.5	1293.4
10°	1285.7	1285.7	1284.2	1276.5	1274.9
12.5°	1261.0	1259.5	1253.3	1242.5	1239.4
15°	1227.1	1227.1	1214.7	1202.4	1197.7
17.5°	1190.0	1188.5	1173.0	1160.7	1154.5
20°	1149.9	1146.8	1131.4	1111.3	1100.5
22.5°	1105.1	1105.1	1086.6	1060.4	1049.6
25°	1063.5	1057.3	1040.3	1003.3	975.5
27.5°	1015.6	1006.3	987.8	935.3	902.9
30°	963.1	958.5	932.3	864.3	839.6
32.5°	913.7	906.0	878.2	807.2	787.2
35°	862.8	856.6	815.0	753.2	734.7
37.5°	811.9	804.1	751.7	702.3	679.1
40°	760.9	751.7	694.6	649.8	625.1
42.5°	713.1	700.7	645.2	597.3	569.5
45°	662.1	648.3	592.7	543.3	521.7
47.5°	611.2	598.9	547.9	497.0	472.3
50°	557.2	546.4	500.1	449.2	422.9
52.5°	512.4	495.5	450.7	399.8	378.2
55°	460.0	446.1	404.4	356.5	338.0
57.5°	412.1	398.2	359.6	314.9	299.4
60°	367.3	347.3	314.9	276.3	263.9
62.5°	318.0	302.5	274.7	242.3	257.8
65°	273.2	257.8	233.1	237.7	197.6
67.5°	223.8	216.1	194.5	172.9	166.7
70°	182.1	172.9	165.2	142.0	135.8
72.5°	145.1	135.8	125.0	112.7	108.0
75°	109.6	101.9	95.7	91.1	100.3
77.5°	75.6	72.5	67.9	63.3	61.7
80°	49.4	47.8	46.3	44.8	43.2
82.5°	29.3	29.3	29.3	29.3	29.3
85°	15.4	17.0	18.5	20.1	21.6
87.5°	9.3	9.3	10.8	12.3	13.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)