

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: P561119

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561119  
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-LD4-1LO-50-UNV-82-97-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

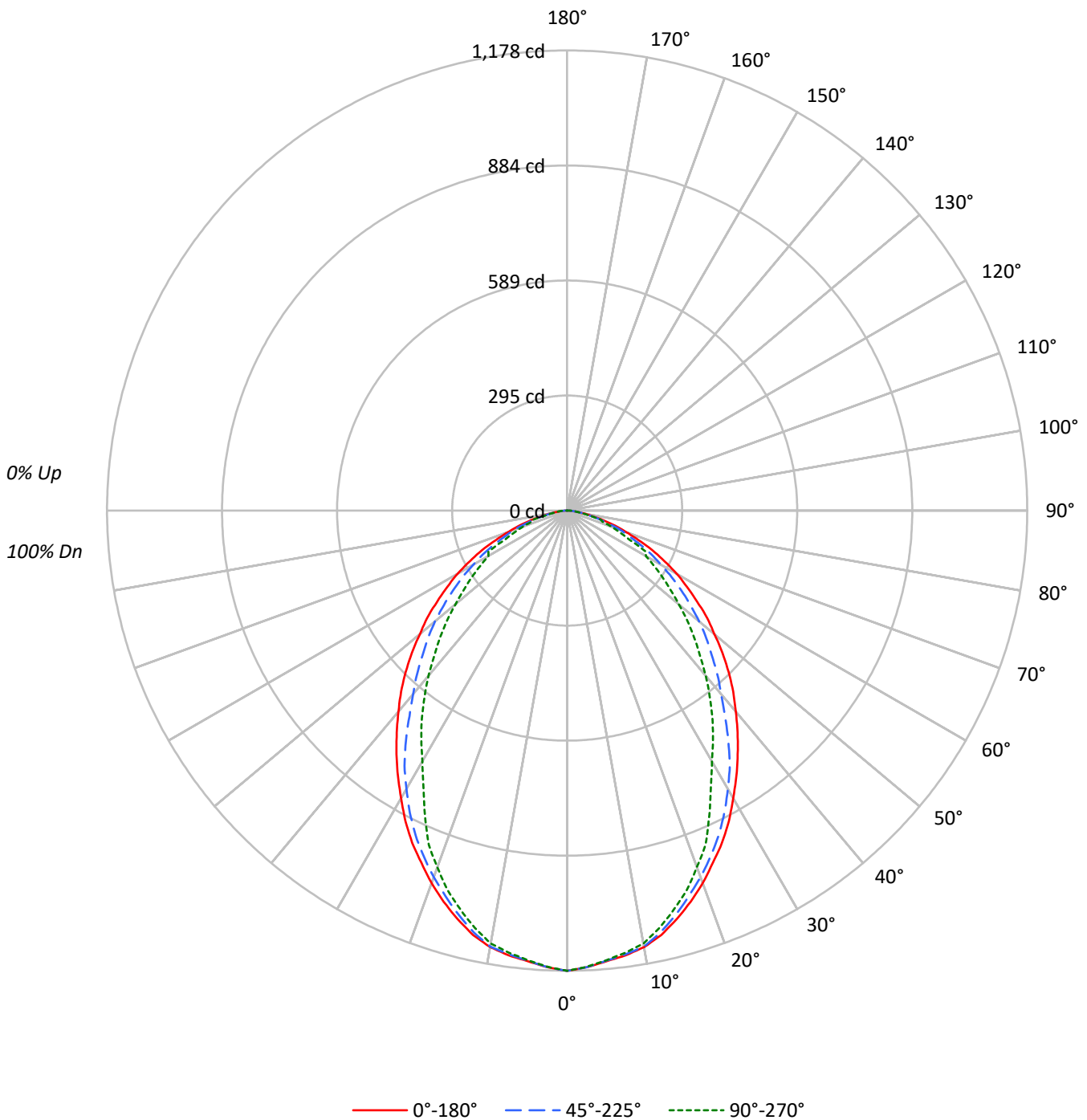
Lumens per Lamp: N/A  
Luminaire Lumens: 2313.0 lumens  
Efficiency: N/A  
Efficacy: 98.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3171	3171	3171
5°	3128	3124	3120
10°	3100	3097	3074
15°	3017	2986	2945
20°	2906	2859	2781
25°	2787	2726	2556
30°	2641	2556	2302
35°	2501	2363	2130
40°	2359	2153	1938
45°	2224	1990	1752
50°	2058	1847	1562
55°	1904	1674	1399
60°	1745	1496	1253
65°	1535	1310	1110
70°	1264	1146	943
75°	1005	878	920
80°	676	634	590
85°	420	503	590

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2224 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.7	4.7
10°-20°	301.0	13.0
20°-30°	416.7	18.0
30°-40°	444.3	19.2
40°-50°	405.4	17.5
50°-60°	317.6	13.7
60°-70°	207.0	8.9
70°-80°	91.7	4.0
80°-90°	19.7	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°	827.4	35.8
0°-40°	1271.7	55.0
0°-60°	1994.6	86.2
0°-90°	2313.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2313.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1178	1178	1178	1178	1178	
5°	1158	1156	1156	1155	1155	110
15°	1083	1083	1072	1061	1057	304
25°	938	933	918	885	861	431
35°	761	756	719	665	648	476
45°	584	572	523	480	460	450
55°	406	394	357	315	298	364
65°	241	228	206	210	174	238
75°	97	90	84	80	88	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1178.2	1178.2	1178.2	1178.2	1178.2
2.5°	1170.0	1170.0	1170.0	1168.7	1168.7
5°	1157.8	1156.4	1156.4	1155.1	1155.1
7.5°	1148.2	1146.9	1145.5	1144.2	1141.4
10°	1134.6	1134.6	1133.3	1126.5	1125.1
12.5°	1112.8	1111.5	1106.0	1096.5	1093.8
15°	1082.9	1082.9	1072.0	1061.1	1057.0
17.5°	1050.2	1048.8	1035.2	1024.3	1018.8
20°	1014.8	1012.0	998.4	980.7	971.2
22.5°	975.3	975.3	958.9	935.8	926.2
25°	938.5	933.0	918.1	885.4	860.8
27.5°	896.3	888.1	871.7	825.4	796.8
30°	849.9	845.9	822.7	762.8	741.0
32.5°	806.4	799.5	775.0	712.4	694.7
35°	761.4	756.0	719.2	664.7	648.4
37.5°	716.5	709.7	663.3	619.8	599.3
40°	671.5	663.3	612.9	573.4	551.6
42.5°	629.3	618.4	569.4	527.1	502.6
45°	584.3	572.1	523.0	479.5	460.4
47.5°	539.4	528.5	483.5	438.6	416.8
50°	491.7	482.2	441.3	396.4	373.2
52.5°	452.2	437.2	397.7	352.8	333.7
55°	405.9	393.6	356.9	314.6	298.3
57.5°	363.7	351.4	317.4	277.9	264.2
60°	324.2	306.5	277.9	243.8	232.9
62.5°	280.6	267.0	242.5	213.8	227.5
65°	241.1	227.5	205.7	209.8	174.3
67.5°	197.5	190.7	171.6	152.6	147.1
70°	160.7	152.6	145.7	125.3	119.9
72.5°	128.0	119.9	110.3	99.4	95.3
75°	96.7	89.9	84.4	80.4	88.5
77.5°	66.7	64.0	59.9	55.8	54.5
80°	43.6	42.2	40.9	39.5	38.1
82.5°	25.9	25.9	25.9	25.9	25.9
85°	13.6	15.0	16.3	17.7	19.1
87.5°	8.2	8.2	9.5	10.9	12.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)