

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: P561321

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561321  
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-50-UNV-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

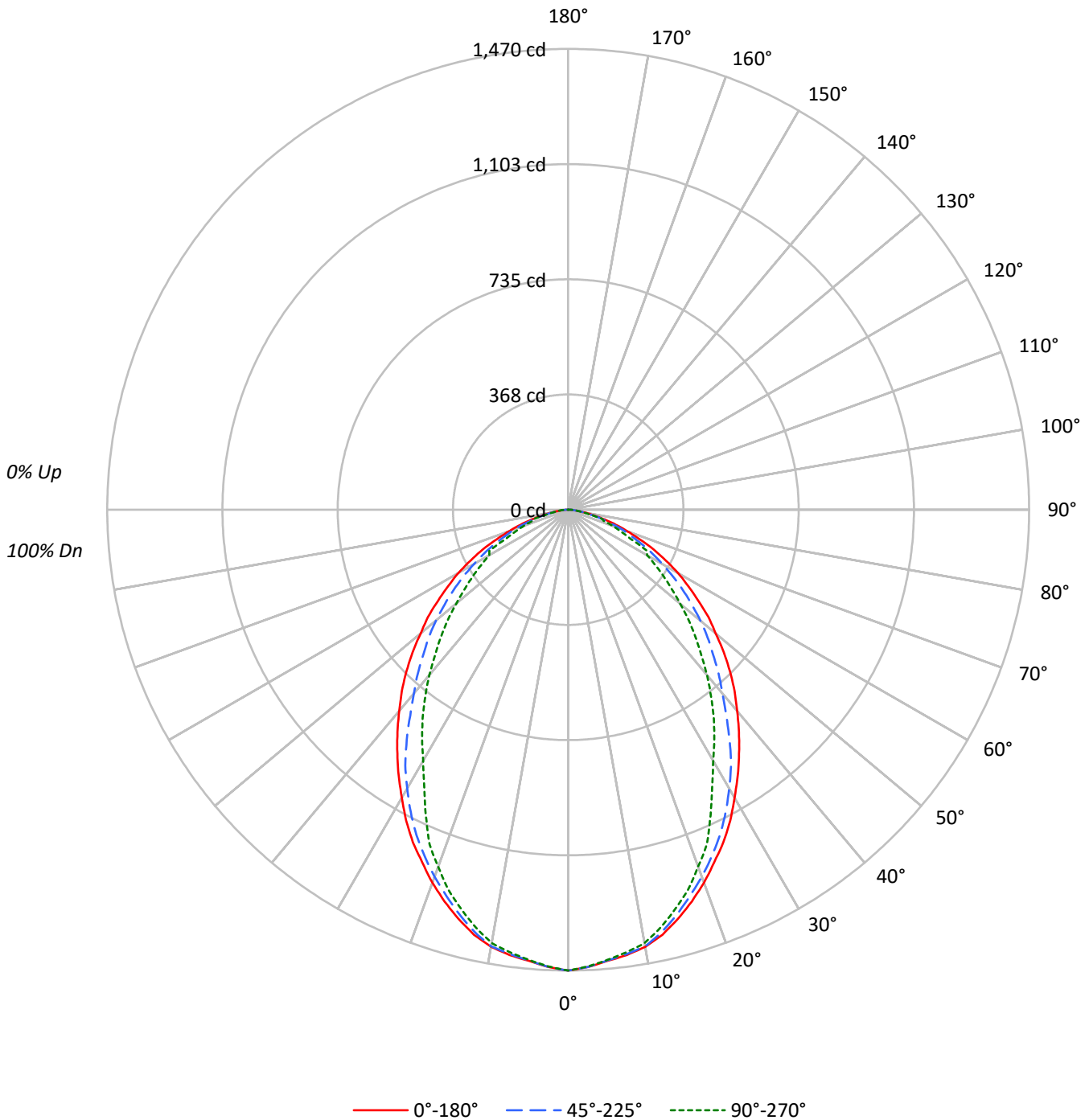
Lumens per Lamp: N/A  
Luminaire Lumens: 2886.0 lumens  
Efficiency: N/A  
Efficacy: 86.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													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°	3956	3956	3956
5°	3902	3898	3893
10°	3868	3864	3836
15°	3764	3726	3674
20°	3626	3568	3470
25°	3477	3401	3189
30°	3295	3190	2873
35°	3121	2948	2658
40°	2943	2687	2418
45°	2775	2484	2186
50°	2568	2305	1950
55°	2376	2089	1746
60°	2177	1866	1564
65°	1915	1634	1385
70°	1578	1430	1177
75°	1255	1096	1149
80°	843	790	738
85°	525	630	735

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2775 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	4.7
10°-20°	375.6	13.0
20°-30°	519.9	18.0
30°-40°	554.4	19.2
40°-50°	505.8	17.5
50°-60°	396.2	13.7
60°-70°	258.2	8.9
70°-80°	114.4	4.0
80°-90°	24.6	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°	1032.3	35.8
0°-40°	1586.8	55.0
0°-60°	2488.8	86.2
0°-90°	2886.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2886.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1470	1470	1470	1470	1470	
5°	1445	1443	1443	1441	1441	137
15°	1351	1351	1338	1324	1319	380
25°	1171	1164	1146	1105	1074	538
35°	950	943	897	829	809	594
45°	729	714	653	598	574	562
55°	506	491	445	393	372	454
65°	301	284	257	262	218	296
75°	121	112	105	100	110	129
85°	17	19	20	22	24	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1470.1	1470.1	1470.1	1470.1	1470.1
2.5°	1459.9	1459.9	1459.9	1458.2	1458.2
5°	1444.6	1442.9	1442.9	1441.2	1441.2
7.5°	1432.7	1431.0	1429.3	1427.6	1424.2
10°	1415.7	1415.7	1414.0	1405.5	1403.8
12.5°	1388.5	1386.8	1380.0	1368.1	1364.7
15°	1351.1	1351.1	1337.5	1323.9	1318.8
17.5°	1310.3	1308.6	1291.6	1278.0	1271.2
20°	1266.1	1262.7	1245.8	1223.7	1211.8
22.5°	1216.9	1216.9	1196.5	1167.6	1155.7
25°	1171.0	1164.2	1145.5	1104.7	1074.1
27.5°	1118.3	1108.1	1087.7	1029.9	994.2
30°	1060.5	1055.4	1026.5	951.7	924.5
32.5°	1006.1	997.6	967.0	888.9	866.8
35°	950.0	943.2	897.3	829.4	809.0
37.5°	894.0	885.5	827.7	773.3	747.8
40°	837.9	827.7	764.8	715.5	688.3
42.5°	785.2	771.6	710.4	657.7	627.1
45°	729.1	713.8	652.6	598.2	574.4
47.5°	673.0	659.4	603.3	547.2	520.1
50°	613.5	601.6	550.6	494.6	465.7
52.5°	564.2	545.5	496.3	440.2	416.4
55°	506.5	491.2	445.3	392.6	372.2
57.5°	453.8	438.5	396.0	346.7	329.7
60°	404.5	382.4	346.7	304.2	290.6
62.5°	350.1	333.1	302.5	266.8	283.8
65°	300.8	283.8	256.6	261.7	217.5
67.5°	246.4	237.9	214.1	190.3	183.5
70°	200.5	190.3	181.8	156.4	149.6
72.5°	159.8	149.6	137.7	124.1	119.0
75°	120.7	112.2	105.4	100.3	110.5
77.5°	83.3	79.9	74.8	69.7	68.0
80°	54.4	52.7	51.0	49.3	47.6
82.5°	32.3	32.3	32.3	32.3	32.3
85°	17.0	18.7	20.4	22.1	23.8
87.5°	10.2	10.2	11.9	13.6	15.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)