

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: P560967

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560967  
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-35-UNV-81-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

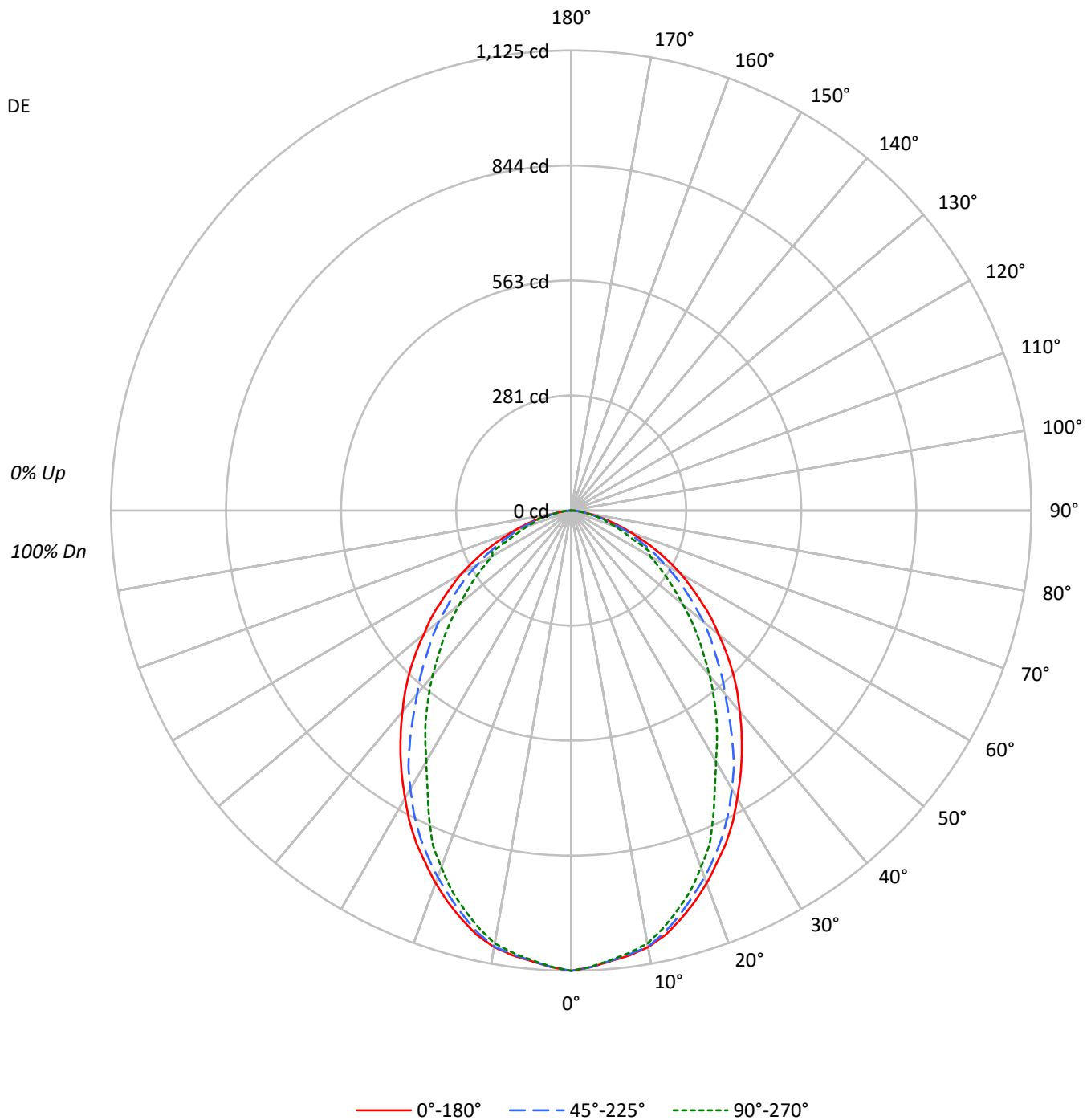
Lumens per Lamp: N/A  
Luminaire Lumens: 2209.0 lumens  
Efficiency: N/A  
Efficacy: 94.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P560967

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-81-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P560967

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-81-87-EDD

**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°	3028	3028	3028
5°	2987	2983	2980
10°	2961	2957	2936
15°	2881	2852	2812
20°	2775	2731	2656
25°	2661	2603	2441
30°	2522	2441	2199
35°	2389	2256	2034
40°	2253	2056	1851
45°	2124	1901	1673
50°	1966	1765	1492
55°	1819	1599	1337
60°	1666	1428	1197
65°	1466	1251	1060
70°	1208	1095	901
75°	961	839	880
80°	645	604	564
85°	401	482	562

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2124 cd/sqm



TEST NUMBER: P560967

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-81-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.7	4.7
10°-20°	287.5	13.0
20°-30°	398.0	18.0
30°-40°	424.3	19.2
40°-50°	387.1	17.5
50°-60°	303.3	13.7
60°-70°	197.7	8.9
70°-80°	87.6	4.0
80°-90°	18.8	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°	790.2	35.8
0°-40°	1214.5	55.0
0°-60°	1904.9	86.2
0°-90°	2209.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2209.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1125	1125	1125	1125	1125	
5°	1106	1104	1104	1103	1103	105
15°	1034	1034	1024	1013	1010	291
25°	896	891	877	846	822	411
35°	727	722	687	635	619	455
45°	558	546	500	458	440	430
55°	388	376	341	300	285	348
65°	230	217	196	200	166	227
75°	92	86	81	77	85	99
85°	13	14	16	17	18	18
90°	0	0	0	0	0	



TEST NUMBER: P560967

CATALOG NUMBER: FSR-12-4-LD4-1LO-35-UNV-81-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1125.2	1125.2	1125.2	1125.2	1125.2
2.5°	1117.4	1117.4	1117.4	1116.1	1116.1
5°	1105.7	1104.4	1104.4	1103.1	1103.1
7.5°	1096.6	1095.3	1094.0	1092.7	1090.1
10°	1083.6	1083.6	1082.3	1075.8	1074.5
12.5°	1062.8	1061.5	1056.3	1047.2	1044.6
15°	1034.2	1034.2	1023.8	1013.4	1009.5
17.5°	1003.0	1001.7	988.6	978.2	973.0
20°	969.1	966.5	953.5	936.6	927.5
22.5°	931.4	931.4	915.8	893.7	884.6
25°	896.3	891.1	876.8	845.6	822.1
27.5°	856.0	848.2	832.5	788.3	761.0
30°	811.7	807.8	785.7	728.5	707.7
32.5°	770.1	763.6	740.2	680.3	663.4
35°	727.2	722.0	686.8	634.8	619.2
37.5°	684.2	677.7	633.5	591.9	572.4
40°	641.3	633.5	585.4	547.7	526.8
42.5°	601.0	590.6	543.8	503.4	480.0
45°	558.1	546.4	499.5	457.9	439.7
47.5°	515.1	504.7	461.8	418.9	398.1
50°	469.6	460.5	421.5	378.5	356.4
52.5°	431.9	417.6	379.8	336.9	318.7
55°	387.7	375.9	340.8	300.5	284.9
57.5°	347.3	335.6	303.1	265.4	252.4
60°	309.6	292.7	265.4	232.9	222.4
62.5°	268.0	255.0	231.6	204.2	217.2
65°	230.3	217.2	196.4	200.3	166.5
67.5°	188.6	182.1	163.9	145.7	140.5
70°	153.5	145.7	139.2	119.7	114.5
72.5°	122.3	114.5	105.4	95.0	91.1
75°	92.4	85.9	80.7	76.8	84.6
77.5°	63.7	61.1	57.2	53.3	52.0
80°	41.6	40.3	39.0	37.7	36.4
82.5°	24.7	24.7	24.7	24.7	24.7
85°	13.0	14.3	15.6	16.9	18.2
87.5°	7.8	7.8	9.1	10.4	11.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)