

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: P561045

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561045  
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-40-UNV-82-86-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

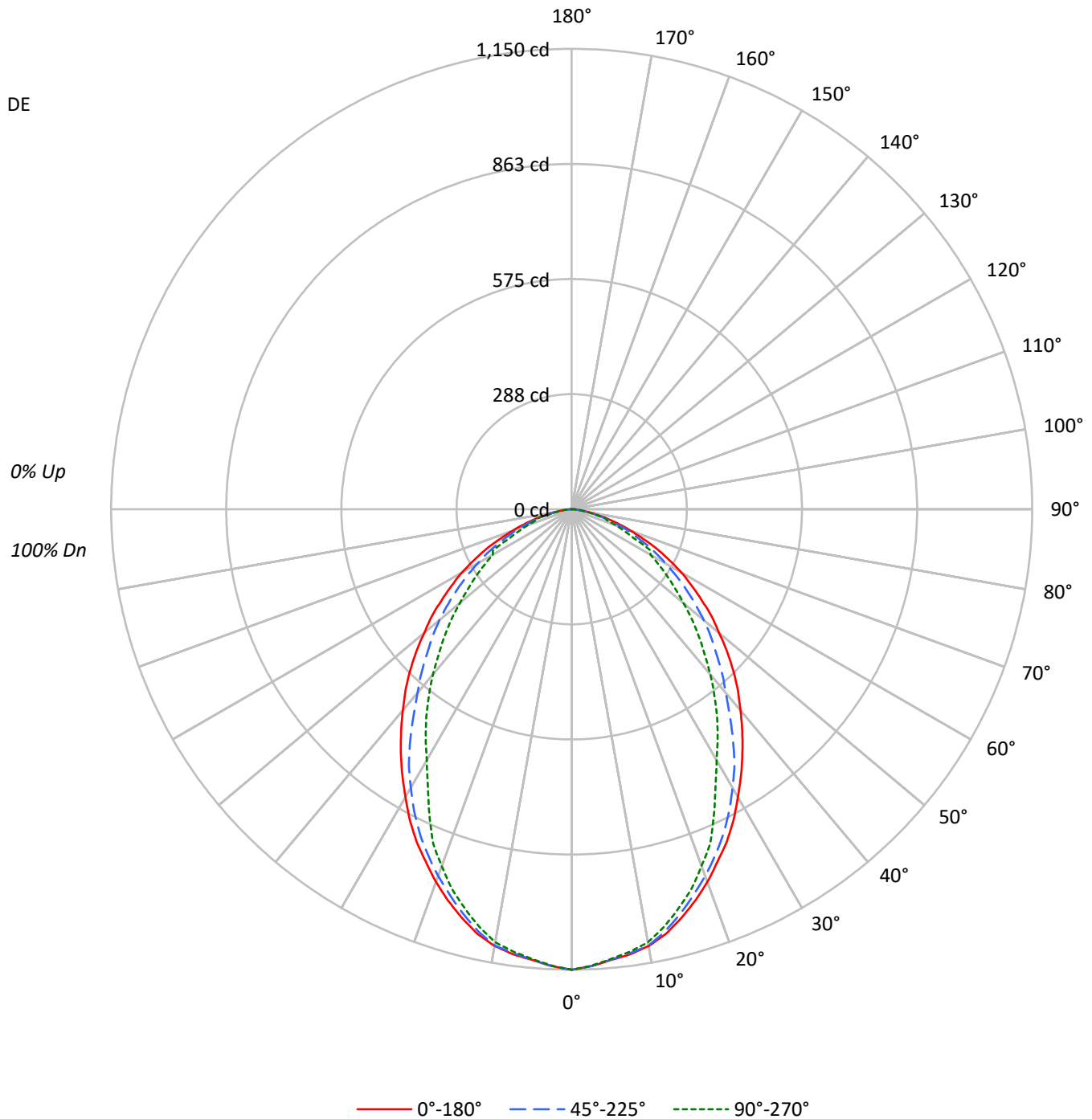
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2258.0 lumens  
Efficiency: N/A  
Efficacy: 96.5 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°	3095	3095	3095
5°	3053	3049	3046
10°	3027	3023	3001
15°	2945	2915	2875
20°	2837	2791	2715
25°	2720	2661	2495
30°	2578	2495	2248
35°	2442	2306	2079
40°	2303	2102	1892
45°	2171	1943	1710
50°	2009	1804	1525
55°	1859	1635	1366
60°	1703	1460	1224
65°	1499	1279	1084
70°	1234	1120	921
75°	981	857	898
80°	660	618	576
85°	411	494	574

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2171 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.1	4.7
10°-20°	293.8	13.0
20°-30°	406.8	18.0
30°-40°	433.8	19.2
40°-50°	395.7	17.5
50°-60°	310.0	13.7
60°-70°	202.1	8.9
70°-80°	89.5	4.0
80°-90°	19.2	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
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0°-30°	807.7	35.8
0°-40°	1241.5	55.0
0°-60°	1947.2	86.2
0°-90°	2258.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2258.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1150	1150	1150	1150	1150	
5°	1130	1129	1129	1128	1128	107
15°	1057	1057	1046	1036	1032	297
25°	916	911	896	864	840	421
35°	743	738	702	649	633	465
45°	570	558	511	468	449	439
55°	396	384	348	307	291	355
65°	235	222	201	205	170	232
75°	94	88	82	78	86	101
85°	13	15	16	17	19	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1150.2	1150.2	1150.2	1150.2	1150.2
2.5°	1142.2	1142.2	1142.2	1140.9	1140.9
5°	1130.2	1128.9	1128.9	1127.6	1127.6
7.5°	1120.9	1119.6	1118.3	1117.0	1114.3
10°	1107.6	1107.6	1106.3	1099.7	1098.3
12.5°	1086.4	1085.0	1079.7	1070.4	1067.8
15°	1057.1	1057.1	1046.5	1035.8	1031.9
17.5°	1025.2	1023.9	1010.6	999.9	994.6
20°	990.6	988.0	974.7	957.4	948.1
22.5°	952.1	952.1	936.1	913.5	904.2
25°	916.2	910.8	896.2	864.3	840.4
27.5°	874.9	867.0	851.0	805.8	777.9
30°	829.7	825.7	803.1	744.6	723.4
32.5°	787.2	780.5	756.6	695.4	678.1
35°	743.3	738.0	702.1	648.9	632.9
37.5°	699.4	692.8	647.6	605.0	585.1
40°	655.5	647.6	598.4	559.8	538.5
42.5°	614.3	603.7	555.8	514.6	490.7
45°	570.4	558.5	510.6	468.1	449.4
47.5°	526.6	515.9	472.0	428.2	406.9
50°	480.0	470.7	430.8	386.9	364.3
52.5°	441.5	426.8	388.3	344.4	325.8
55°	396.3	384.3	348.4	307.2	291.2
57.5°	355.0	343.1	309.8	271.3	258.0
60°	316.5	299.2	271.3	238.0	227.4
62.5°	273.9	260.6	236.7	208.8	222.1
65°	235.4	222.1	200.8	204.8	170.2
67.5°	192.8	186.2	167.5	148.9	143.6
70°	156.9	148.9	142.3	122.3	117.0
72.5°	125.0	117.0	107.7	97.1	93.1
75°	94.4	87.8	82.4	78.5	86.4
77.5°	65.2	62.5	58.5	54.5	53.2
80°	42.6	41.2	39.9	38.6	37.2
82.5°	25.3	25.3	25.3	25.3	25.3
85°	13.3	14.6	16.0	17.3	18.6
87.5°	8.0	8.0	9.3	10.6	12.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)