

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: P560990

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560990  
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-82-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

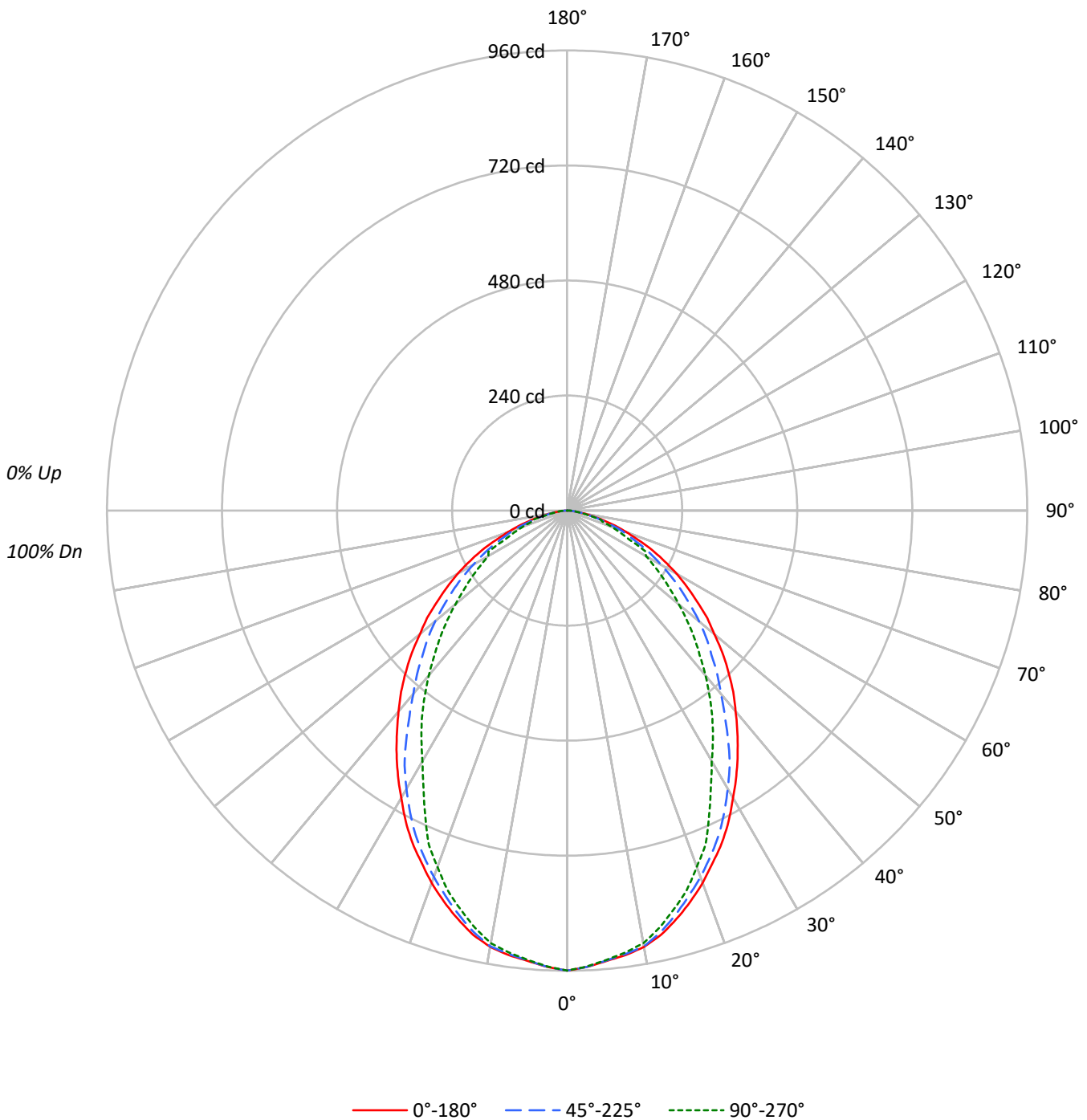
Lumens per Lamp: N/A  
Luminaire Lumens: 1884.0 lumens  
Efficiency: N/A  
Efficacy: 80.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2583	2583	2583
5°	2547	2544	2541
10°	2525	2522	2504
15°	2457	2432	2398
20°	2367	2329	2265
25°	2270	2220	2082
30°	2151	2082	1875
35°	2037	1924	1735
40°	1922	1754	1578
45°	1811	1621	1427
50°	1677	1505	1273
55°	1551	1364	1140
60°	1421	1218	1021
65°	1251	1067	904
70°	1030	934	768
75°	819	715	750
80°	550	516	482
85°	343	411	479

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1811 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	89.3	4.7
10°-20°	245.2	13.0
20°-30°	339.4	18.0
30°-40°	361.9	19.2
40°-50°	330.2	17.5
50°-60°	258.7	13.7
60°-70°	168.6	8.9
70°-80°	74.7	4.0
80°-90°	16.0	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°	673.9	35.8
0°-40°	1035.8	55.0
0°-60°	1624.7	86.2
0°-90°	1884.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1884.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	960	960	960	960	960	
5°	943	942	942	941	941	90
15°	882	882	873	864	861	248
25°	764	760	748	721	701	351
35°	620	616	586	541	528	388
45°	476	466	426	390	375	367
55°	331	321	291	256	243	297
65°	196	185	168	171	142	194
75°	79	73	69	66	72	84
85°	11	12	13	14	16	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	959.7	959.7	959.7	959.7	959.7
2.5°	953.0	953.0	953.0	951.9	951.9
5°	943.0	941.9	941.9	940.8	940.8
7.5°	935.3	934.2	933.1	931.9	929.7
10°	924.2	924.2	923.1	917.5	916.4
12.5°	906.4	905.3	900.9	893.1	890.9
15°	882.0	882.0	873.1	864.3	860.9
17.5°	855.4	854.3	843.2	834.3	829.9
20°	826.5	824.3	813.2	798.8	791.0
22.5°	794.4	794.4	781.1	762.2	754.4
25°	764.4	760.0	747.8	721.2	701.2
27.5°	730.0	723.4	710.1	672.3	649.0
30°	692.3	689.0	670.1	621.3	603.5
32.5°	656.8	651.3	631.3	580.2	565.8
35°	620.2	615.8	585.8	541.4	528.1
37.5°	583.6	578.0	540.3	504.8	488.2
40°	547.0	540.3	499.3	467.1	449.3
42.5°	512.6	503.7	463.8	429.4	409.4
45°	476.0	466.0	426.0	390.5	375.0
47.5°	439.3	430.5	393.9	357.2	339.5
50°	400.5	392.7	359.5	322.9	304.0
52.5°	368.3	356.1	324.0	287.4	271.8
55°	330.6	320.6	290.7	256.3	243.0
57.5°	296.2	286.2	258.5	226.3	215.2
60°	264.1	249.6	226.3	198.6	189.7
62.5°	228.5	217.5	197.5	174.2	185.3
65°	196.4	185.3	167.5	170.9	142.0
67.5°	160.9	155.3	139.8	124.3	119.8
70°	130.9	124.3	118.7	102.1	97.6
72.5°	104.3	97.6	89.9	81.0	77.7
75°	78.8	73.2	68.8	65.5	72.1
77.5°	54.4	52.1	48.8	45.5	44.4
80°	35.5	34.4	33.3	32.2	31.1
82.5°	21.1	21.1	21.1	21.1	21.1
85°	11.1	12.2	13.3	14.4	15.5
87.5°	6.7	6.7	7.8	8.9	10.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)