

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: P561190

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561190  
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-35-UNV-93-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

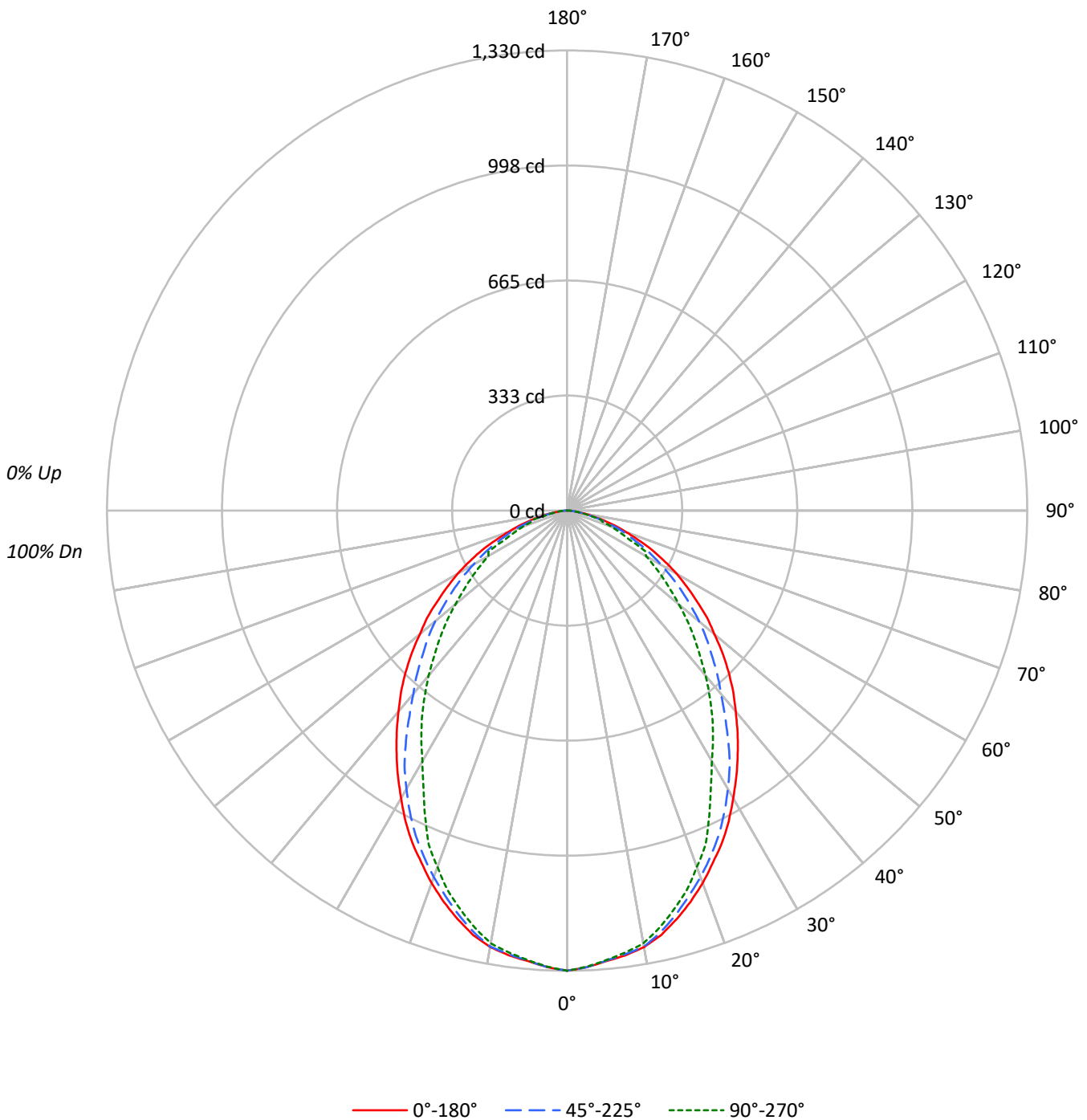
Lumens per Lamp: N/A  
Luminaire Lumens: 2611.0 lumens  
Efficiency: N/A  
Efficacy: 78.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	3579	3579	3579
5°	3530	3526	3522
10°	3500	3496	3470
15°	3405	3371	3324
20°	3280	3227	3139
25°	3146	3077	2885
30°	2981	2886	2599
35°	2824	2667	2404
40°	2663	2431	2187
45°	2510	2247	1978
50°	2324	2086	1764
55°	2150	1890	1580
60°	1969	1688	1415
65°	1733	1479	1253
70°	1427	1294	1065
75°	1135	991	1039
80°	762	714	668
85°	475	571	664

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2510 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	123.8	4.7
10°-20°	339.8	13.0
20°-30°	470.4	18.0
30°-40°	501.6	19.2
40°-50°	457.6	17.5
50°-60°	358.5	13.7
60°-70°	233.6	8.9
70°-80°	103.5	4.0
80°-90°	22.2	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
0°-30°	934.0	35.8
0°-40°	1435.6	55.0
0°-60°	2251.6	86.2
0°-90°	2611.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2611.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1330	1330	1330	1330	1330	
5°	1307	1305	1305	1304	1304	124
15°	1222	1222	1210	1198	1193	344
25°	1059	1053	1036	999	972	486
35°	860	853	812	750	732	537
45°	660	646	590	541	520	508
55°	458	444	403	355	337	411
65°	272	257	232	237	197	268
75°	109	102	95	91	100	117
85°	15	17	18	20	22	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1330.0	1330.0	1330.0	1330.0	1330.0
2.5°	1320.8	1320.8	1320.8	1319.2	1319.2
5°	1306.9	1305.4	1305.4	1303.9	1303.9
7.5°	1296.2	1294.6	1293.1	1291.6	1288.5
10°	1280.8	1280.8	1279.3	1271.6	1270.0
12.5°	1256.2	1254.7	1248.5	1237.8	1234.7
15°	1222.4	1222.4	1210.1	1197.8	1193.2
17.5°	1185.5	1183.9	1168.6	1156.3	1150.1
20°	1145.5	1142.4	1127.0	1107.1	1096.3
22.5°	1100.9	1100.9	1082.5	1056.3	1045.6
25°	1059.4	1053.2	1036.3	999.4	971.8
27.5°	1011.7	1002.5	984.1	931.8	899.5
30°	959.5	954.8	928.7	861.0	836.4
32.5°	910.2	902.6	874.9	804.2	784.2
35°	859.5	853.4	811.8	750.3	731.9
37.5°	808.8	801.1	748.8	699.6	676.5
40°	758.0	748.8	691.9	647.3	622.7
42.5°	710.4	698.1	642.7	595.0	567.4
45°	659.6	645.8	590.4	541.2	519.7
47.5°	608.9	596.6	545.8	495.1	470.5
50°	555.1	544.3	498.2	447.4	421.3
52.5°	510.5	493.6	449.0	398.2	376.7
55°	458.2	444.4	402.8	355.2	336.7
57.5°	410.5	396.7	358.3	313.7	298.3
60°	365.9	346.0	313.7	275.2	262.9
62.5°	316.7	301.4	273.7	241.4	256.8
65°	272.2	256.8	232.2	236.8	196.8
67.5°	222.9	215.3	193.7	172.2	166.1
70°	181.4	172.2	164.5	141.5	135.3
72.5°	144.5	135.3	124.5	112.2	107.6
75°	109.2	101.5	95.3	90.7	99.9
77.5°	75.3	72.3	67.7	63.0	61.5
80°	49.2	47.7	46.1	44.6	43.1
82.5°	29.2	29.2	29.2	29.2	29.2
85°	15.4	16.9	18.5	20.0	21.5
87.5°	9.2	9.2	10.8	12.3	13.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)