

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: P561098

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561098  
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-50-UNV-81-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

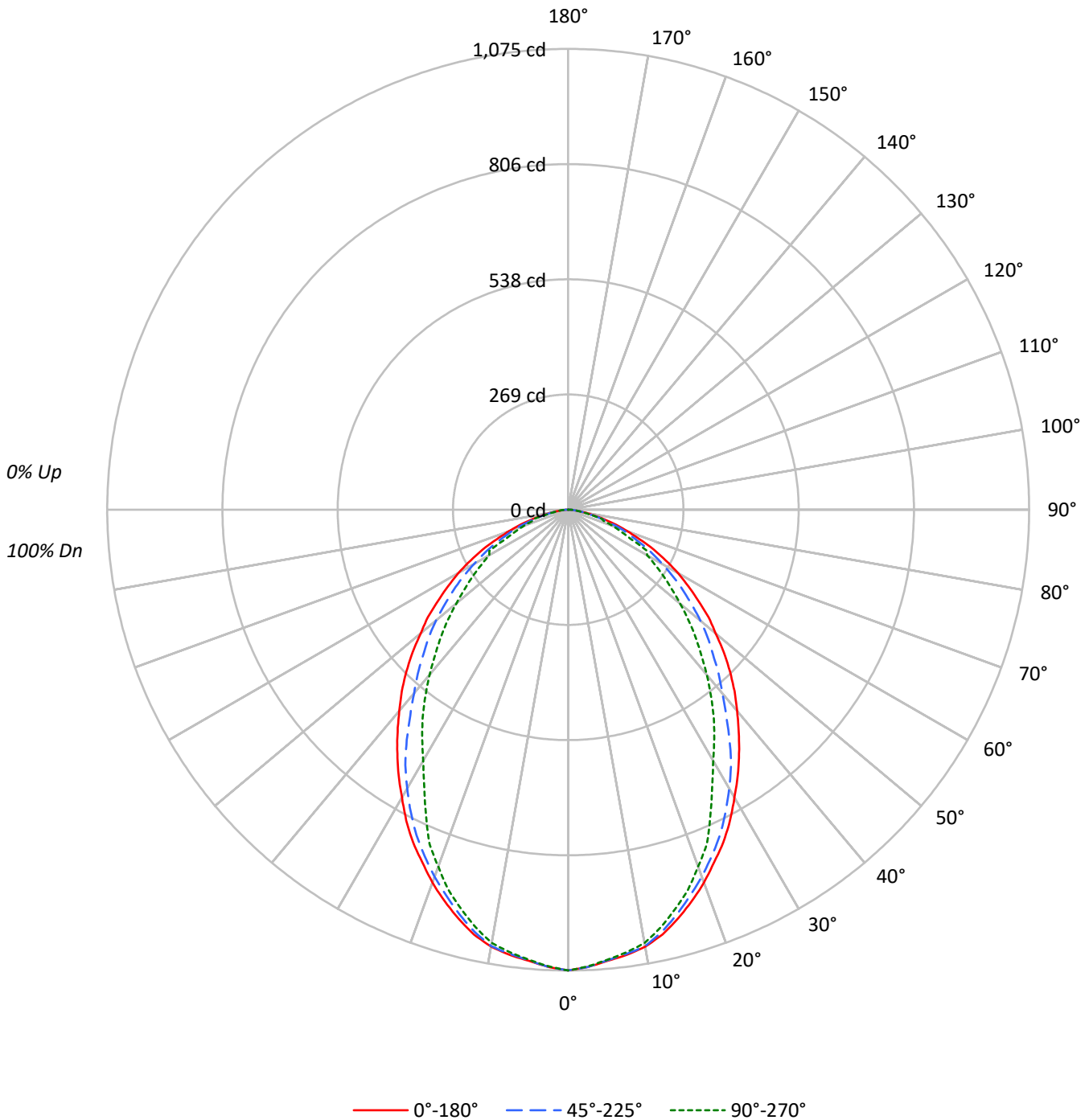
Lumens per Lamp: N/A  
Luminaire Lumens: 2110.0 lumens  
Efficiency: N/A  
Efficacy: 90.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2892	2892	2892
5°	2853	2850	2846
10°	2828	2825	2804
15°	2752	2724	2686
20°	2651	2608	2537
25°	2542	2487	2332
30°	2409	2332	2100
35°	2282	2155	1943
40°	2152	1964	1768
45°	2029	1816	1598
50°	1878	1685	1425
55°	1737	1527	1277
60°	1591	1364	1144
65°	1400	1195	1012
70°	1153	1046	860
75°	917	801	840
80°	617	578	539
85°	383	460	537

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2029 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.0	4.7
10°-20°	274.6	13.0
20°-30°	380.1	18.0
30°-40°	405.3	19.2
40°-50°	369.8	17.5
50°-60°	289.7	13.7
60°-70°	188.8	8.9
70°-80°	83.6	4.0
80°-90°	18.0	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°	754.8	35.8
0°-40°	1160.1	55.0
0°-60°	1819.6	86.2
0°-90°	2110.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2110.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1075	1075	1075	1075	1075	
5°	1056	1055	1055	1054	1054	100
15°	988	988	978	968	964	278
25°	856	851	838	808	785	393
35°	695	690	656	606	592	434
45°	533	522	477	437	420	411
55°	370	359	326	287	272	332
65°	220	208	188	191	159	217
75°	88	82	77	73	81	95
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1074.8	1074.8	1074.8	1074.8	1074.8
2.5°	1067.4	1067.4	1067.4	1066.1	1066.1
5°	1056.2	1054.9	1054.9	1053.7	1053.7
7.5°	1047.5	1046.2	1045.0	1043.7	1041.3
10°	1035.0	1035.0	1033.8	1027.6	1026.3
12.5°	1015.2	1013.9	1009.0	1000.3	997.8
15°	987.8	987.8	977.9	967.9	964.2
17.5°	958.0	956.8	944.3	934.4	929.4
20°	925.7	923.2	910.8	894.6	885.9
22.5°	889.7	889.7	874.8	853.6	844.9
25°	856.1	851.1	837.5	807.7	785.3
27.5°	817.6	810.1	795.2	753.0	726.9
30°	775.4	771.6	750.5	695.8	675.9
32.5°	735.6	729.4	707.0	649.9	633.7
35°	694.6	689.6	656.1	606.4	591.5
37.5°	653.6	647.4	605.1	565.4	546.7
40°	612.6	605.1	559.1	523.1	503.2
42.5°	574.1	564.1	519.4	480.9	458.5
45°	533.1	521.9	477.1	437.4	420.0
47.5°	492.0	482.1	441.1	400.1	380.2
50°	448.6	439.9	402.6	361.6	340.5
52.5°	412.5	398.9	362.8	321.8	304.4
55°	370.3	359.1	325.5	287.0	272.1
57.5°	331.8	320.6	289.5	253.5	241.1
60°	295.7	279.6	253.5	222.4	212.5
62.5°	256.0	243.5	221.2	195.1	207.5
65°	219.9	207.5	187.6	191.4	159.0
67.5°	180.2	174.0	156.6	139.2	134.2
70°	146.6	139.2	133.0	114.3	109.3
72.5°	116.8	109.3	100.6	90.7	87.0
75°	88.2	82.0	77.0	73.3	80.8
77.5°	60.9	58.4	54.7	50.9	49.7
80°	39.8	38.5	37.3	36.0	34.8
82.5°	23.6	23.6	23.6	23.6	23.6
85°	12.4	13.7	14.9	16.2	17.4
87.5°	7.5	7.5	8.7	9.9	11.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)