

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: P561318

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561318  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

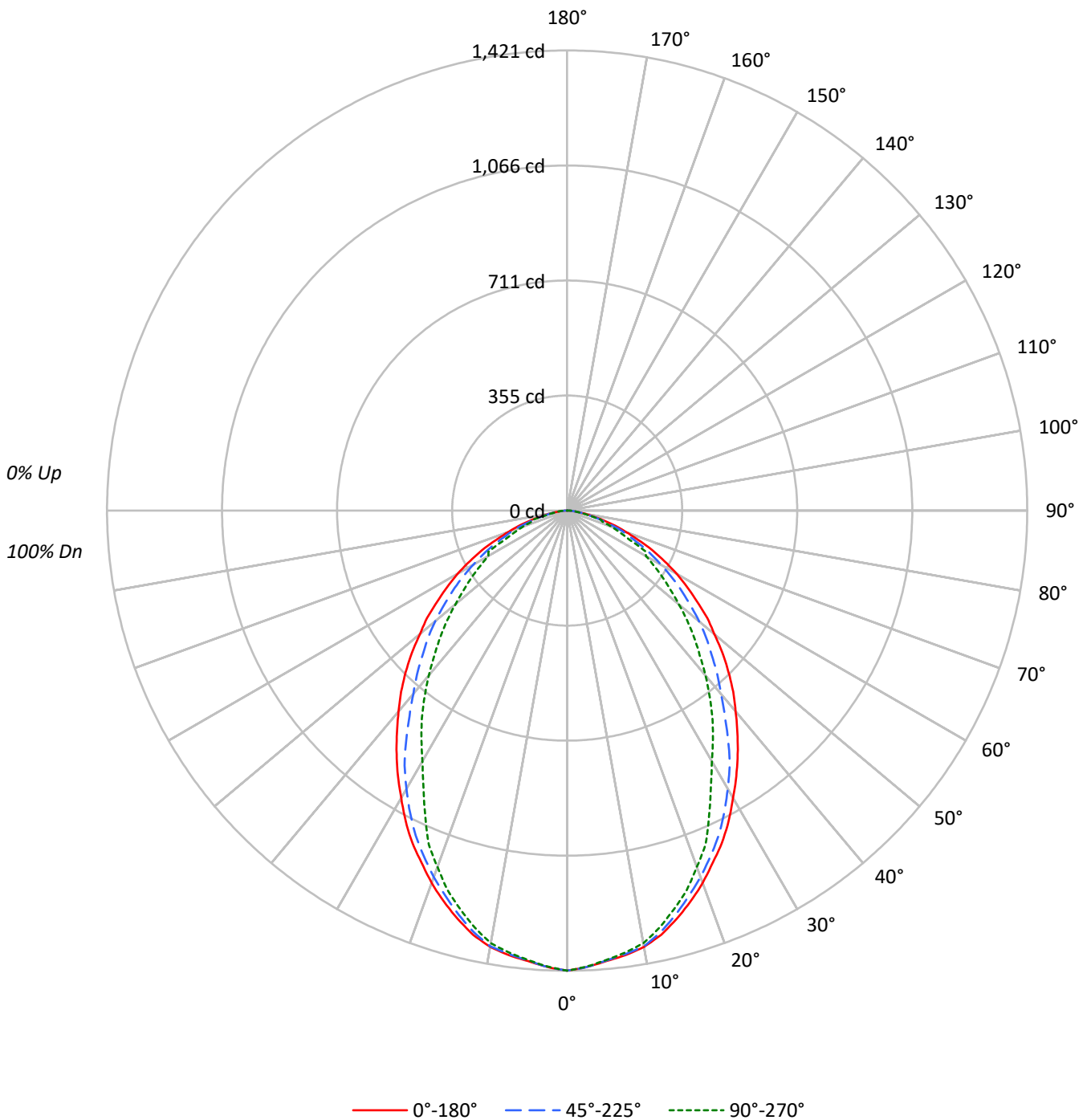
Lumens per Lamp: N/A  
Luminaire Lumens: 2789.0 lumens  
Efficiency: N/A  
Efficacy: 83.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P561318

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-93-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561318

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-93-87-EDD-90

**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	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°	3823	3823	3823
5°	3771	3767	3762
10°	3738	3734	3707
15°	3638	3601	3551
20°	3504	3448	3353
25°	3360	3287	3082
30°	3185	3082	2776
35°	3016	2849	2568
40°	2844	2596	2337
45°	2681	2400	2112
50°	2482	2228	1884
55°	2296	2019	1688
60°	2104	1803	1512
65°	1851	1579	1338
70°	1525	1382	1137
75°	1212	1058	1110
80°	815	764	713
85°	506	608	710

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2681 cd/sqm



TEST NUMBER: P561318

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-93-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.2	4.7
10°-20°	362.9	13.0
20°-30°	502.5	18.0
30°-40°	535.8	19.2
40°-50°	488.8	17.5
50°-60°	382.9	13.7
60°-70°	249.6	8.9
70°-80°	110.6	4.0
80°-90°	23.7	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
<hr/>		
0°-30°	997.6	35.8
0°-40°	1533.4	55.0
0°-60°	2405.1	86.2
0°-90°	2789.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2789.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1421	1421	1421	1421	1421	
5°	1396	1394	1394	1393	1393	133
15°	1306	1306	1293	1279	1274	367
25°	1132	1125	1107	1068	1038	520
35°	918	912	867	802	782	574
45°	705	690	631	578	555	543
55°	489	475	430	379	360	439
65°	291	274	248	253	210	286
75°	117	108	102	97	107	125
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



TEST NUMBER: P561318

CATALOG NUMBER: FSR-12-4-LD4-1STD-50-UNV-93-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1420.7	1420.7	1420.7	1420.7	1420.7
2.5°	1410.8	1410.8	1410.8	1409.2	1409.2
5°	1396.0	1394.4	1394.4	1392.8	1392.8
7.5°	1384.5	1382.9	1381.3	1379.6	1376.3
10°	1368.1	1368.1	1366.5	1358.3	1356.6
12.5°	1341.8	1340.2	1333.6	1322.1	1318.9
15°	1305.7	1305.7	1292.6	1279.4	1274.5
17.5°	1266.3	1264.7	1248.2	1235.1	1228.5
20°	1223.6	1220.3	1203.9	1182.5	1171.0
22.5°	1176.0	1176.0	1156.3	1128.3	1116.8
25°	1131.6	1125.0	1107.0	1067.6	1038.0
27.5°	1080.7	1070.8	1051.1	995.3	960.8
30°	1024.9	1019.9	992.0	919.7	893.5
32.5°	972.3	964.1	934.5	859.0	837.6
35°	918.1	911.5	867.2	801.5	781.8
37.5°	863.9	855.7	799.9	747.3	722.7
40°	809.7	799.9	739.1	691.5	665.2
42.5°	758.8	745.7	686.5	635.6	606.0
45°	704.6	689.8	630.7	578.1	555.1
47.5°	650.4	637.3	583.1	528.9	502.6
50°	592.9	581.4	532.1	477.9	450.0
52.5°	545.3	527.2	479.6	425.4	402.4
55°	489.4	474.7	430.3	379.4	359.7
57.5°	438.5	423.7	382.7	335.1	318.6
60°	390.9	369.5	335.1	294.0	280.9
62.5°	338.3	321.9	292.3	257.9	274.3
65°	290.7	274.3	248.0	252.9	210.2
67.5°	238.1	229.9	206.9	183.9	177.4
70°	193.8	183.9	175.7	151.1	144.5
72.5°	154.4	144.5	133.0	119.9	115.0
75°	116.6	108.4	101.8	96.9	106.8
77.5°	80.5	77.2	72.3	67.3	65.7
80°	52.6	50.9	49.3	47.6	46.0
82.5°	31.2	31.2	31.2	31.2	31.2
85°	16.4	18.1	19.7	21.4	23.0
87.5°	9.9	9.9	11.5	13.1	14.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)