

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: P561193

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561193  
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-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

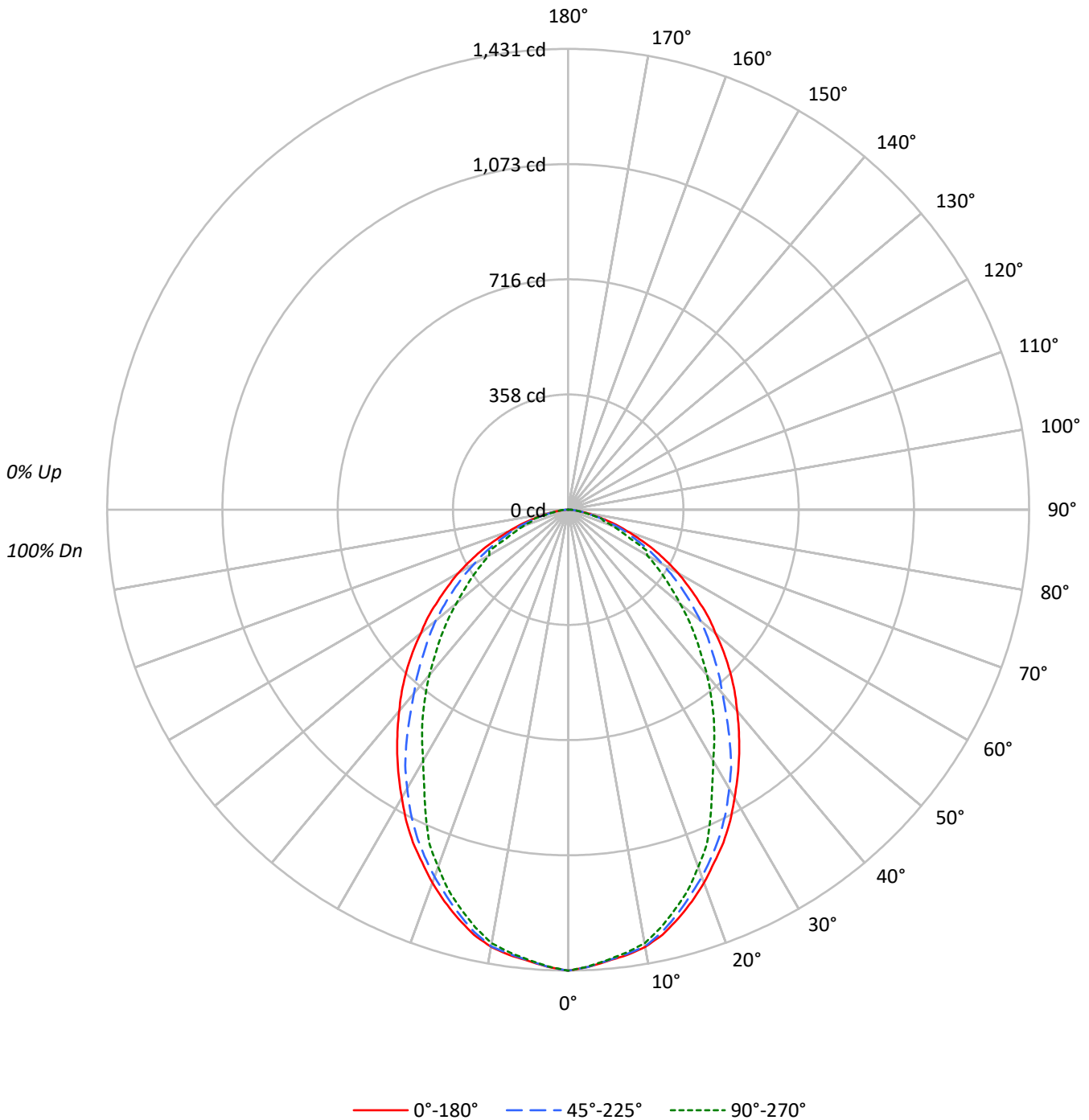
Lumens per Lamp: N/A  
Luminaire Lumens: 2810.0 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3852	3852	3852
5°	3800	3795	3790
10°	3766	3762	3735
15°	3665	3628	3577
20°	3530	3473	3379
25°	3385	3312	3105
30°	3209	3106	2797
35°	3039	2870	2588
40°	2866	2616	2354
45°	2702	2418	2128
50°	2501	2244	1898
55°	2313	2034	1700
60°	2119	1817	1523
65°	1865	1591	1349
70°	1537	1393	1146
75°	1222	1067	1119
80°	821	769	717
85°	509	614	716

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2702 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.2	4.7
10°-20°	365.7	13.0
20°-30°	506.2	18.0
30°-40°	539.8	19.2
40°-50°	492.5	17.5
50°-60°	385.8	13.7
60°-70°	251.4	8.9
70°-80°	111.4	4.0
80°-90°	23.9	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°	1005.2	35.8
0°-40°	1545.0	55.0
0°-60°	2423.2	86.2
0°-90°	2810.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2810.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1431	1431	1431	1431	1431	
5°	1407	1405	1405	1403	1403	134
15°	1316	1316	1302	1289	1284	370
25°	1140	1134	1115	1076	1046	523
35°	925	918	874	808	788	578
45°	710	695	635	582	559	547
55°	493	478	434	382	362	442
65°	293	276	250	255	212	289
75°	118	109	103	98	108	126
85°	16	18	20	22	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1431.4	1431.4	1431.4	1431.4	1431.4
2.5°	1421.4	1421.4	1421.4	1419.8	1419.8
5°	1406.6	1404.9	1404.9	1403.2	1403.2
7.5°	1395.0	1393.3	1391.7	1390.0	1386.7
10°	1378.4	1378.4	1376.8	1368.5	1366.8
12.5°	1351.9	1350.3	1343.7	1332.1	1328.8
15°	1315.5	1315.5	1302.3	1289.1	1284.1
17.5°	1275.8	1274.2	1257.6	1244.4	1237.8
20°	1232.8	1229.5	1212.9	1191.4	1179.9
22.5°	1184.8	1184.8	1165.0	1136.8	1125.2
25°	1140.1	1133.5	1115.3	1075.6	1045.8
27.5°	1088.8	1078.9	1059.1	1002.8	968.0
30°	1032.6	1027.6	999.5	926.7	900.2
32.5°	979.6	971.4	941.6	865.4	843.9
35°	925.0	918.4	873.7	807.5	787.7
37.5°	870.4	862.1	805.9	752.9	728.1
40°	815.8	805.9	744.6	696.7	670.2
42.5°	764.5	751.3	691.7	640.4	610.6
45°	709.9	695.0	635.4	582.5	559.3
47.5°	655.3	642.1	587.4	532.8	506.4
50°	597.4	585.8	536.1	481.5	453.4
52.5°	549.4	531.2	483.2	428.6	405.4
55°	493.1	478.2	433.5	382.3	362.4
57.5°	441.8	426.9	385.6	337.6	321.0
60°	393.8	372.3	337.6	296.2	283.0
62.5°	340.9	324.3	294.5	259.8	276.3
65°	292.9	276.3	249.9	254.8	211.8
67.5°	239.9	231.7	208.5	185.3	178.7
70°	195.3	185.3	177.1	152.2	145.6
72.5°	155.5	145.6	134.0	120.8	115.8
75°	117.5	109.2	102.6	97.6	107.6
77.5°	81.1	77.8	72.8	67.8	66.2
80°	53.0	51.3	49.6	48.0	46.3
82.5°	31.4	31.4	31.4	31.4	31.4
85°	16.5	18.2	19.9	21.5	23.2
87.5°	9.9	9.9	11.6	13.2	14.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)