

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: P561230

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561230  
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-40-UNV-81-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

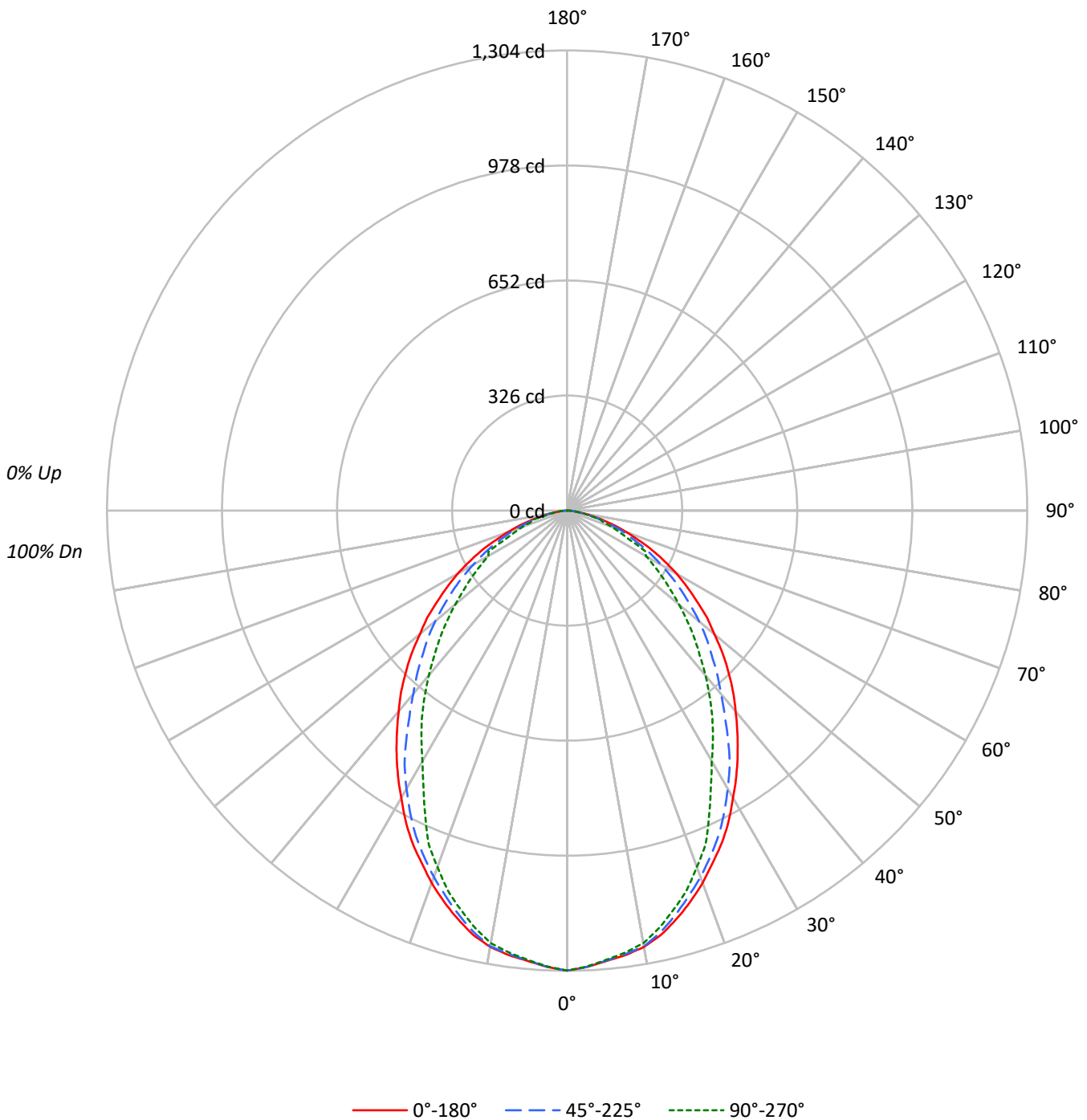
Lumens per Lamp: N/A  
Luminaire Lumens: 2559.0 lumens  
Efficiency: N/A  
Efficacy: 76.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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°	3508	3508	3508
5°	3460	3456	3452
10°	3430	3426	3401
15°	3338	3304	3258
20°	3215	3163	3077
25°	3083	3016	2828
30°	2922	2828	2547
35°	2767	2614	2356
40°	2610	2382	2144
45°	2460	2202	1939
50°	2277	2044	1729
55°	2107	1852	1548
60°	1931	1654	1387
65°	1698	1449	1228
70°	1399	1268	1043
75°	1112	971	1019
80°	747	700	654
85°	466	559	651

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2460 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.3	4.7
10°-20°	333.0	13.0
20°-30°	461.0	18.0
30°-40°	491.6	19.2
40°-50°	448.5	17.5
50°-60°	351.3	13.7
60°-70°	229.0	8.9
70°-80°	101.5	4.0
80°-90°	21.8	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°	915.4	35.8
0°-40°	1407.0	55.0
0°-60°	2206.8	86.2
0°-90°	2559.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2559.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1304	1304	1304	1304	1304	
5°	1281	1279	1279	1278	1278	122
15°	1198	1198	1186	1174	1169	337
25°	1038	1032	1016	980	952	477
35°	842	836	796	735	717	527
45°	646	633	579	530	509	498
55°	449	436	395	348	330	403
65°	267	252	228	232	193	263
75°	107	100	93	89	98	115
85°	15	17	18	20	21	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1303.5	1303.5	1303.5	1303.5	1303.5
2.5°	1294.5	1294.5	1294.5	1293.0	1293.0
5°	1280.9	1279.4	1279.4	1277.9	1277.9
7.5°	1270.4	1268.9	1267.4	1265.8	1262.8
10°	1255.3	1255.3	1253.8	1246.3	1244.7
12.5°	1231.2	1229.7	1223.7	1213.1	1210.1
15°	1198.0	1198.0	1186.0	1173.9	1169.4
17.5°	1161.9	1160.4	1145.3	1133.2	1127.2
20°	1122.7	1119.7	1104.6	1085.0	1074.5
22.5°	1079.0	1079.0	1060.9	1035.3	1024.7
25°	1038.3	1032.3	1015.7	979.5	952.4
27.5°	991.6	982.5	964.5	913.2	881.6
30°	940.3	935.8	910.2	843.9	819.8
32.5°	892.1	884.6	857.5	788.1	768.5
35°	842.4	836.4	795.7	735.4	717.3
37.5°	792.7	785.1	733.9	685.7	663.1
40°	742.9	733.9	678.1	634.4	610.3
42.5°	696.2	684.2	629.9	583.2	556.1
45°	646.5	632.9	578.7	530.4	509.4
47.5°	596.8	584.7	535.0	485.2	461.1
50°	544.0	533.5	488.3	438.5	412.9
52.5°	500.3	483.7	440.0	390.3	369.2
55°	449.1	435.5	394.8	348.1	330.0
57.5°	402.4	388.8	351.1	307.4	292.4
60°	358.7	339.1	307.4	269.7	257.7
62.5°	310.4	295.4	268.2	236.6	251.7
65°	266.7	251.7	227.6	232.1	192.9
67.5°	218.5	211.0	189.9	168.8	162.8
70°	177.8	168.8	161.2	138.6	132.6
72.5°	141.7	132.6	122.1	110.0	105.5
75°	107.0	99.5	93.4	88.9	98.0
77.5°	73.8	70.8	66.3	61.8	60.3
80°	48.2	46.7	45.2	43.7	42.2
82.5°	28.6	28.6	28.6	28.6	28.6
85°	15.1	16.6	18.1	19.6	21.1
87.5°	9.0	9.0	10.5	12.1	13.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)