

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: P561250

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561250  
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-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

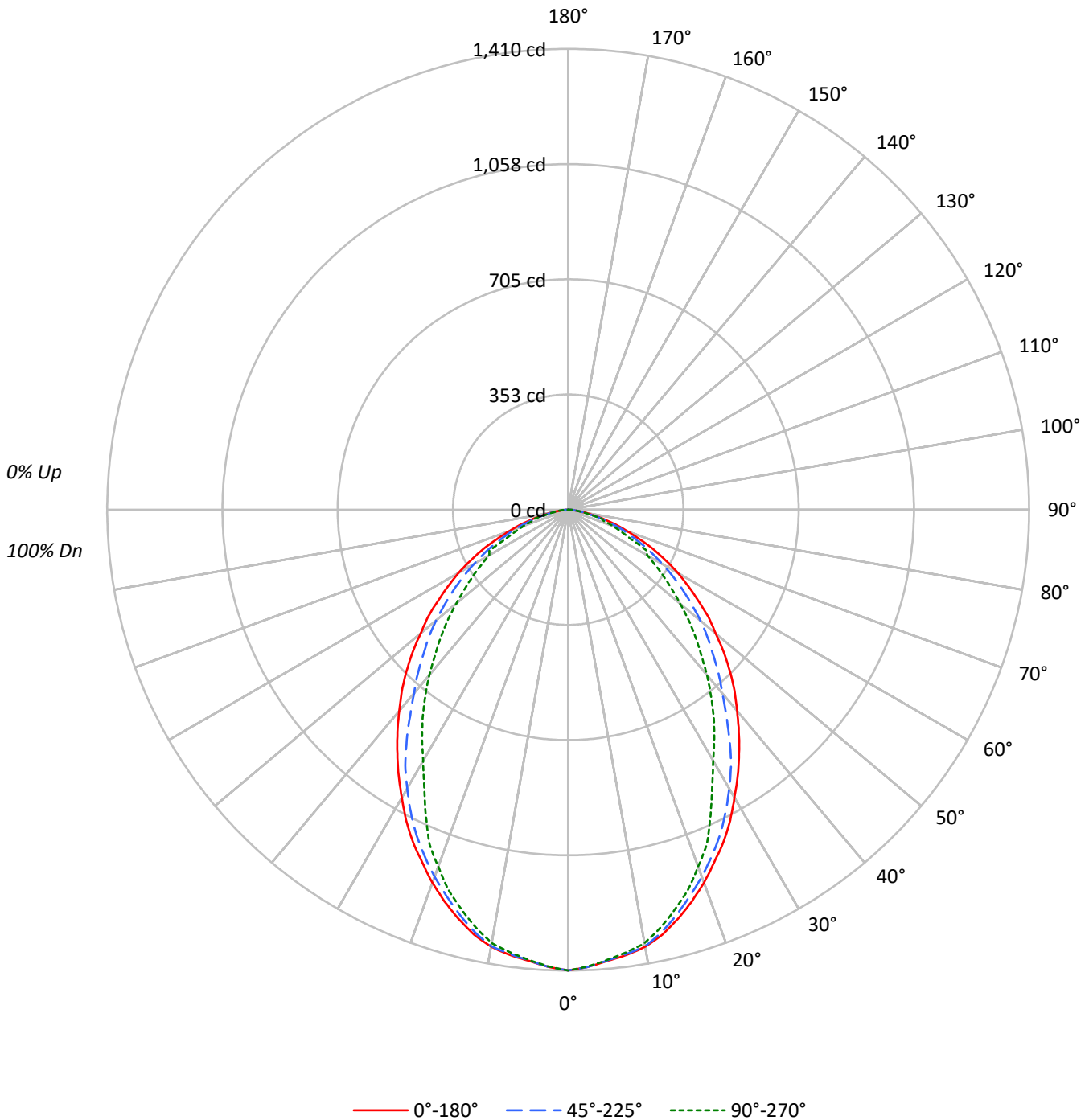
Lumens per Lamp: N/A  
Luminaire Lumens: 2768.0 lumens  
Efficiency: N/A  
Efficacy: 83.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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									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°	3794	3794	3794
5°	3743	3738	3734
10°	3710	3706	3679
15°	3610	3574	3524
20°	3478	3422	3328
25°	3335	3262	3059
30°	3160	3059	2755
35°	2993	2827	2549
40°	2823	2577	2319
45°	2661	2382	2097
50°	2463	2211	1870
55°	2279	2004	1675
60°	2088	1790	1500
65°	1837	1567	1328
70°	1513	1372	1128
75°	1203	1051	1102
80°	809	758	707
85°	503	605	704

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2661 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.3	4.7
10°-20°	360.2	13.0
20°-30°	498.7	18.0
30°-40°	531.7	19.2
40°-50°	485.1	17.5
50°-60°	380.0	13.7
60°-70°	247.7	8.9
70°-80°	109.7	4.0
80°-90°	23.6	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°	990.1	35.8
0°-40°	1521.9	55.0
0°-60°	2387.0	86.2
0°-90°	2768.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2768.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1410	1410	1410	1410	1410	
5°	1386	1384	1384	1382	1382	132
15°	1296	1296	1283	1270	1265	364
25°	1123	1117	1099	1060	1030	516
35°	911	905	861	796	776	570
45°	699	685	626	574	551	539
55°	486	471	427	376	357	436
65°	288	272	246	251	209	284
75°	116	108	101	96	106	124
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1410.0	1410.0	1410.0	1410.0	1410.0
2.5°	1400.2	1400.2	1400.2	1398.6	1398.6
5°	1385.5	1383.9	1383.9	1382.3	1382.3
7.5°	1374.1	1372.5	1370.9	1369.2	1366.0
10°	1357.8	1357.8	1356.2	1348.0	1346.4
12.5°	1331.7	1330.1	1323.6	1312.2	1308.9
15°	1295.9	1295.9	1282.8	1269.8	1264.9
17.5°	1256.8	1255.1	1238.8	1225.8	1219.3
20°	1214.4	1211.1	1194.8	1173.6	1162.2
22.5°	1167.1	1167.1	1147.5	1119.8	1108.4
25°	1123.1	1116.6	1098.6	1059.5	1030.2
27.5°	1072.6	1062.8	1043.2	987.8	953.6
30°	1017.1	1012.3	984.5	912.8	886.7
32.5°	965.0	956.8	927.5	852.5	831.3
35°	911.2	904.7	860.7	795.5	775.9
37.5°	857.4	849.2	793.8	741.7	717.2
40°	803.6	793.8	733.5	686.2	660.2
42.5°	753.1	740.0	681.4	630.8	601.5
45°	699.3	684.6	625.9	573.8	551.0
47.5°	645.5	632.5	578.7	524.9	498.8
50°	588.4	577.0	528.1	474.3	446.6
52.5°	541.2	523.2	476.0	422.2	399.4
55°	485.8	471.1	427.1	376.5	357.0
57.5°	435.2	420.5	379.8	332.5	316.2
60°	387.9	366.8	332.5	291.8	278.7
62.5°	335.8	319.5	290.1	255.9	272.2
65°	288.5	272.2	246.1	251.0	208.6
67.5°	236.4	228.2	205.4	182.6	176.0
70°	192.3	182.6	174.4	150.0	143.4
72.5°	153.2	143.4	132.0	119.0	114.1
75°	115.7	107.6	101.1	96.2	106.0
77.5°	79.9	76.6	71.7	66.8	65.2
80°	52.2	50.5	48.9	47.3	45.6
82.5°	31.0	31.0	31.0	31.0	31.0
85°	16.3	17.9	19.6	21.2	22.8
87.5°	9.8	9.8	11.4	13.0	14.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)