

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: P561218

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561218  
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-81-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

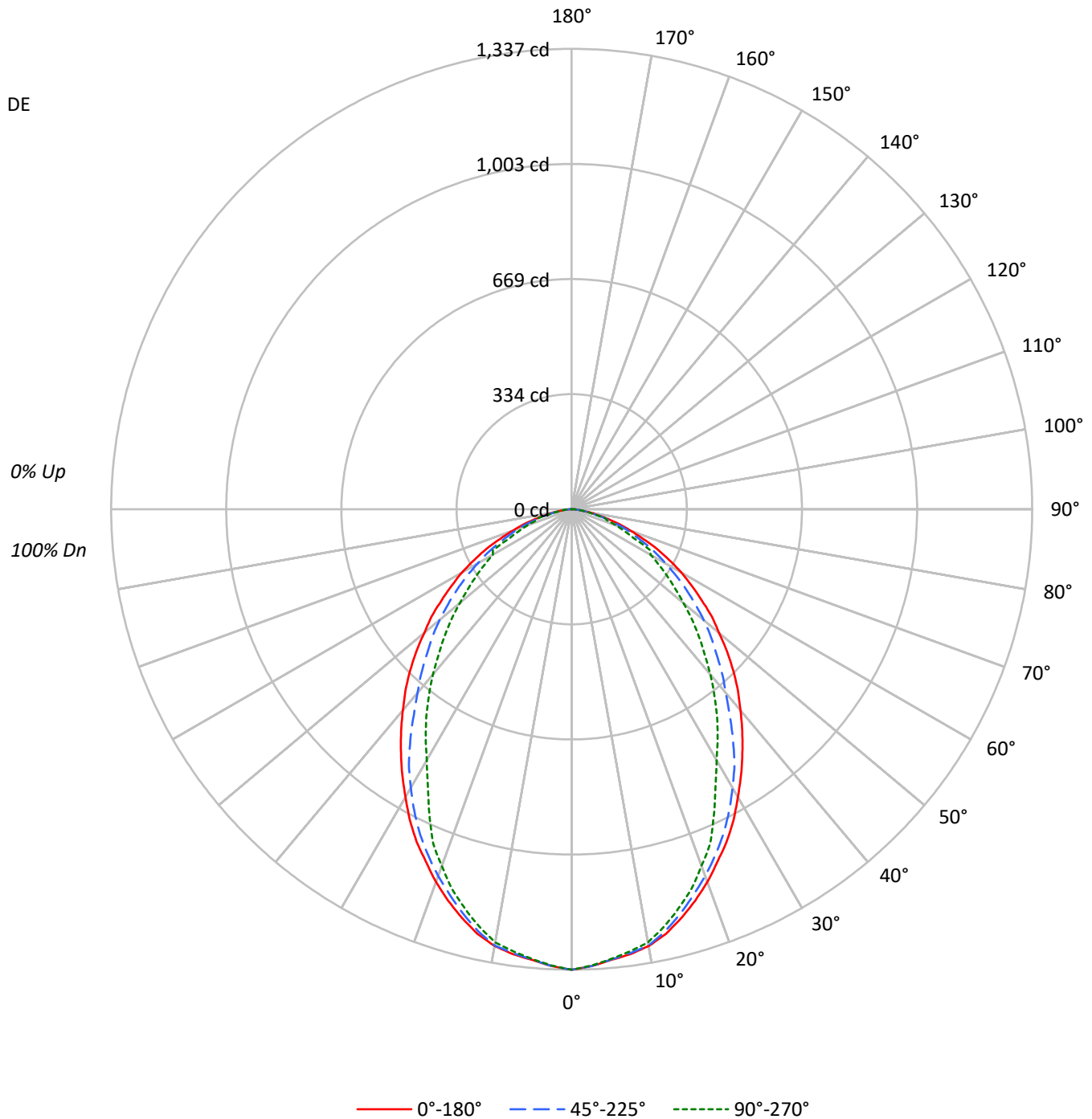
Lumens per Lamp: N/A  
Luminaire Lumens: 2625.0 lumens  
Efficiency: N/A  
Efficacy: 78.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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									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°	3598	3598	3598
5°	3549	3545	3541
10°	3519	3514	3489
15°	3424	3389	3342
20°	3298	3245	3156
25°	3162	3094	2901
30°	2997	2901	2613
35°	2839	2681	2417
40°	2677	2444	2199
45°	2524	2259	1988
50°	2336	2097	1773
55°	2161	1900	1588
60°	1980	1697	1422
65°	1742	1486	1260
70°	1435	1301	1070
75°	1142	996	1045
80°	767	719	671
85°	479	571	667

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2524 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	124.5	4.7
10°-20°	341.6	13.0
20°-30°	472.9	18.0
30°-40°	504.3	19.2
40°-50°	460.0	17.5
50°-60°	360.4	13.7
60°-70°	234.9	8.9
70°-80°	104.1	4.0
80°-90°	22.4	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°	939.0	35.8
0°-40°	1443.3	55.0
0°-60°	2263.7	86.2
0°-90°	2625.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2625.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1337	1337	1337	1337	1337	
5°	1314	1312	1312	1311	1311	125
15°	1229	1229	1217	1204	1200	345
25°	1065	1059	1042	1005	977	489
35°	864	858	816	754	736	540
45°	663	649	594	544	522	511
55°	461	447	405	357	338	413
65°	274	258	233	238	198	270
75°	110	102	96	91	100	118
85°	16	17	18	20	22	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1337.1	1337.1	1337.1	1337.1	1337.1
2.5°	1327.9	1327.9	1327.9	1326.3	1326.3
5°	1314.0	1312.4	1312.4	1310.9	1310.9
7.5°	1303.1	1301.6	1300.0	1298.5	1295.4
10°	1287.7	1287.7	1286.1	1278.4	1276.9
12.5°	1262.9	1261.4	1255.2	1244.4	1241.3
15°	1228.9	1228.9	1216.6	1204.2	1199.6
17.5°	1191.8	1190.3	1174.8	1162.5	1156.3
20°	1151.6	1148.5	1133.1	1113.0	1102.2
22.5°	1106.8	1106.8	1088.3	1062.0	1051.2
25°	1065.1	1058.9	1041.9	1004.8	977.0
27.5°	1017.2	1007.9	989.3	936.8	904.3
30°	964.6	960.0	933.7	865.7	840.9
32.5°	915.1	907.4	879.6	808.5	788.4
35°	864.1	857.9	816.2	754.4	735.8
37.5°	813.1	805.4	752.8	703.4	680.2
40°	762.1	752.8	695.6	650.8	626.1
42.5°	714.2	701.8	646.2	598.2	570.4
45°	663.2	649.2	593.6	544.1	522.5
47.5°	612.1	599.8	548.8	497.8	473.0
50°	558.0	547.2	500.8	449.8	423.6
52.5°	513.2	496.2	451.4	400.4	378.7
55°	460.7	446.7	405.0	357.1	338.5
57.5°	412.7	398.8	360.2	315.3	299.9
60°	367.9	347.8	315.3	276.7	264.3
62.5°	318.4	303.0	275.2	242.7	258.2
65°	273.6	258.2	233.4	238.1	197.9
67.5°	224.1	216.4	194.8	173.1	166.9
70°	182.4	173.1	165.4	142.2	136.0
72.5°	145.3	136.0	125.2	112.8	108.2
75°	109.8	102.0	95.8	91.2	100.5
77.5°	75.7	72.7	68.0	63.4	61.8
80°	49.5	47.9	46.4	44.8	43.3
82.5°	29.4	29.4	29.4	29.4	29.4
85°	15.5	17.0	18.5	20.1	21.6
87.5°	9.3	9.3	10.8	12.4	13.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)