

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: P561294

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561294  
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-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

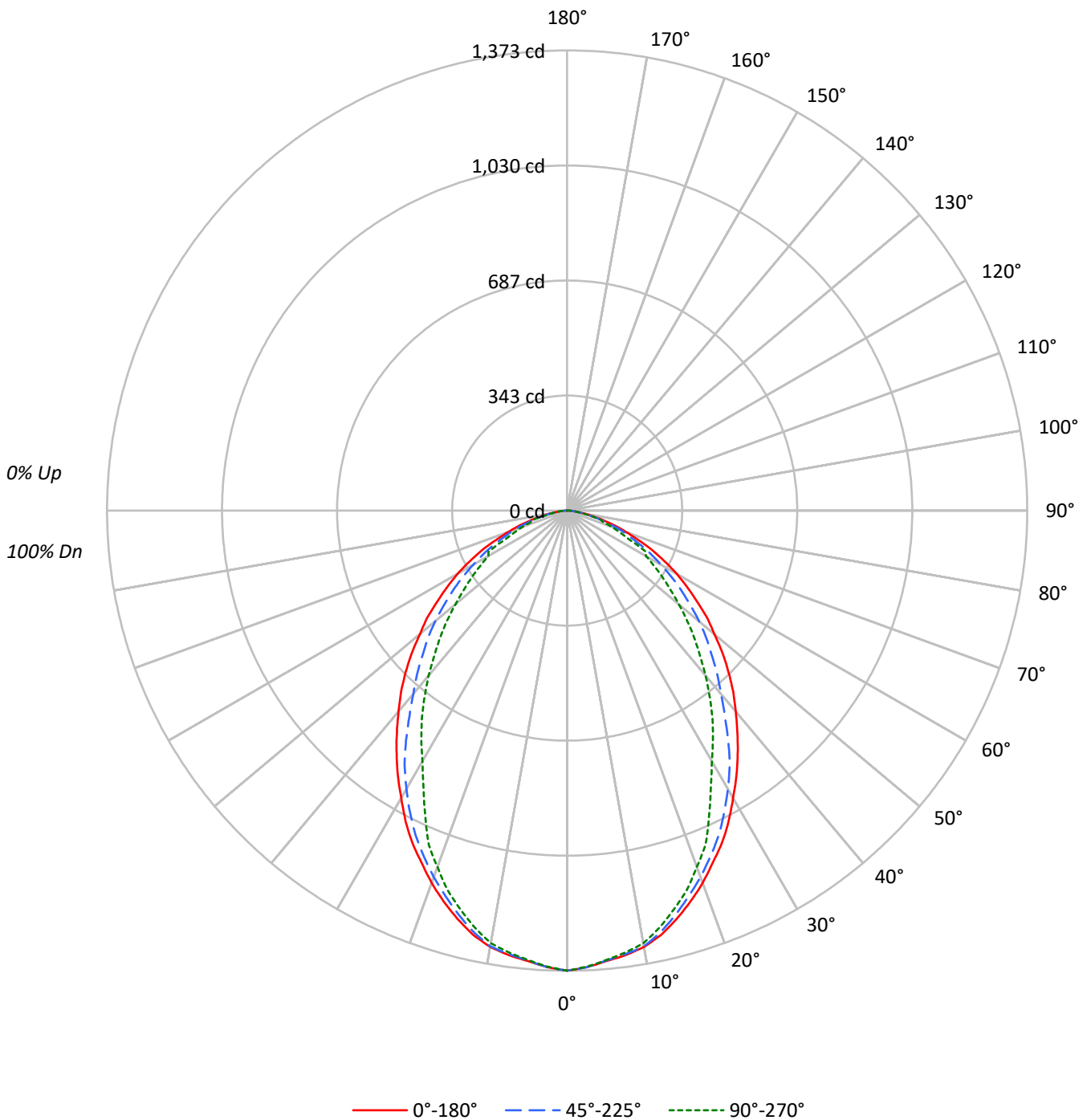
Lumens per Lamp: N/A  
Luminaire Lumens: 2695.0 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3694	3694	3694
5°	3644	3640	3635
10°	3612	3608	3582
15°	3515	3480	3431
20°	3386	3331	3241
25°	3247	3176	2978
30°	3077	2979	2683
35°	2915	2753	2482
40°	2748	2509	2258
45°	2591	2319	2041
50°	2398	2153	1821
55°	2219	1951	1631
60°	2033	1743	1461
65°	1789	1526	1293
70°	1474	1336	1099
75°	1172	1023	1073
80°	787	738	688
85°	491	587	685

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2591 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	127.8	4.7
10°-20°	350.7	13.0
20°-30°	485.5	18.0
30°-40°	517.7	19.2
40°-50°	472.3	17.5
50°-60°	370.0	13.7
60°-70°	241.2	8.9
70°-80°	106.8	4.0
80°-90°	22.9	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°	964.0	35.8
0°-40°	1481.7	55.0
0°-60°	2324.1	86.2
0°-90°	2695.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2695.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1373	1373	1373	1373	1373	
5°	1349	1347	1347	1346	1346	128
15°	1262	1262	1249	1236	1232	355
25°	1094	1087	1070	1032	1003	502
35°	887	881	838	774	755	555
45°	681	667	609	559	536	524
55°	473	459	416	367	348	424
65°	281	265	240	244	203	277
75°	113	105	98	94	103	121
85°	16	18	19	21	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1372.8	1372.8	1372.8	1372.8	1372.8
2.5°	1363.3	1363.3	1363.3	1361.7	1361.7
5°	1349.0	1347.4	1347.4	1345.8	1345.8
7.5°	1337.9	1336.3	1334.7	1333.1	1329.9
10°	1322.0	1322.0	1320.4	1312.5	1310.9
12.5°	1296.6	1295.0	1288.7	1277.6	1274.4
15°	1261.7	1261.7	1249.0	1236.3	1231.5
17.5°	1223.6	1222.0	1206.2	1193.5	1187.1
20°	1182.4	1179.2	1163.3	1142.7	1131.6
22.5°	1136.3	1136.3	1117.3	1090.3	1079.2
25°	1093.5	1087.1	1069.7	1031.6	1003.0
27.5°	1044.3	1034.8	1015.7	961.8	928.4
30°	990.3	985.6	958.6	888.7	863.4
32.5°	939.5	931.6	903.0	830.0	809.4
35°	887.2	880.8	838.0	774.5	755.4
37.5°	834.8	826.9	772.9	722.1	698.3
40°	782.4	772.9	714.2	668.1	642.8
42.5°	733.2	720.5	663.4	614.2	585.6
45°	680.8	666.6	609.4	558.6	536.4
47.5°	628.5	615.8	563.4	511.0	485.6
50°	572.9	561.8	514.2	461.8	434.9
52.5°	526.9	509.4	463.4	411.0	388.8
55°	472.9	458.7	415.8	366.6	347.6
57.5°	423.7	409.5	369.8	323.8	307.9
60°	377.7	357.1	323.8	284.1	271.4
62.5°	326.9	311.1	282.5	249.2	265.0
65°	280.9	265.0	239.6	244.4	203.1
67.5°	230.1	222.2	200.0	177.7	171.4
70°	187.3	177.7	169.8	146.0	139.7
72.5°	149.2	139.7	128.6	115.9	111.1
75°	112.7	104.7	98.4	93.6	103.2
77.5°	77.8	74.6	69.8	65.1	63.5
80°	50.8	49.2	47.6	46.0	44.4
82.5°	30.2	30.2	30.2	30.2	30.2
85°	15.9	17.5	19.0	20.6	22.2
87.5°	9.5	9.5	11.1	12.7	14.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)