

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: P590000

Luminaire Tested: FSR-24-2-LD4-1LO-40-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590000  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1LO-40-UNV-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

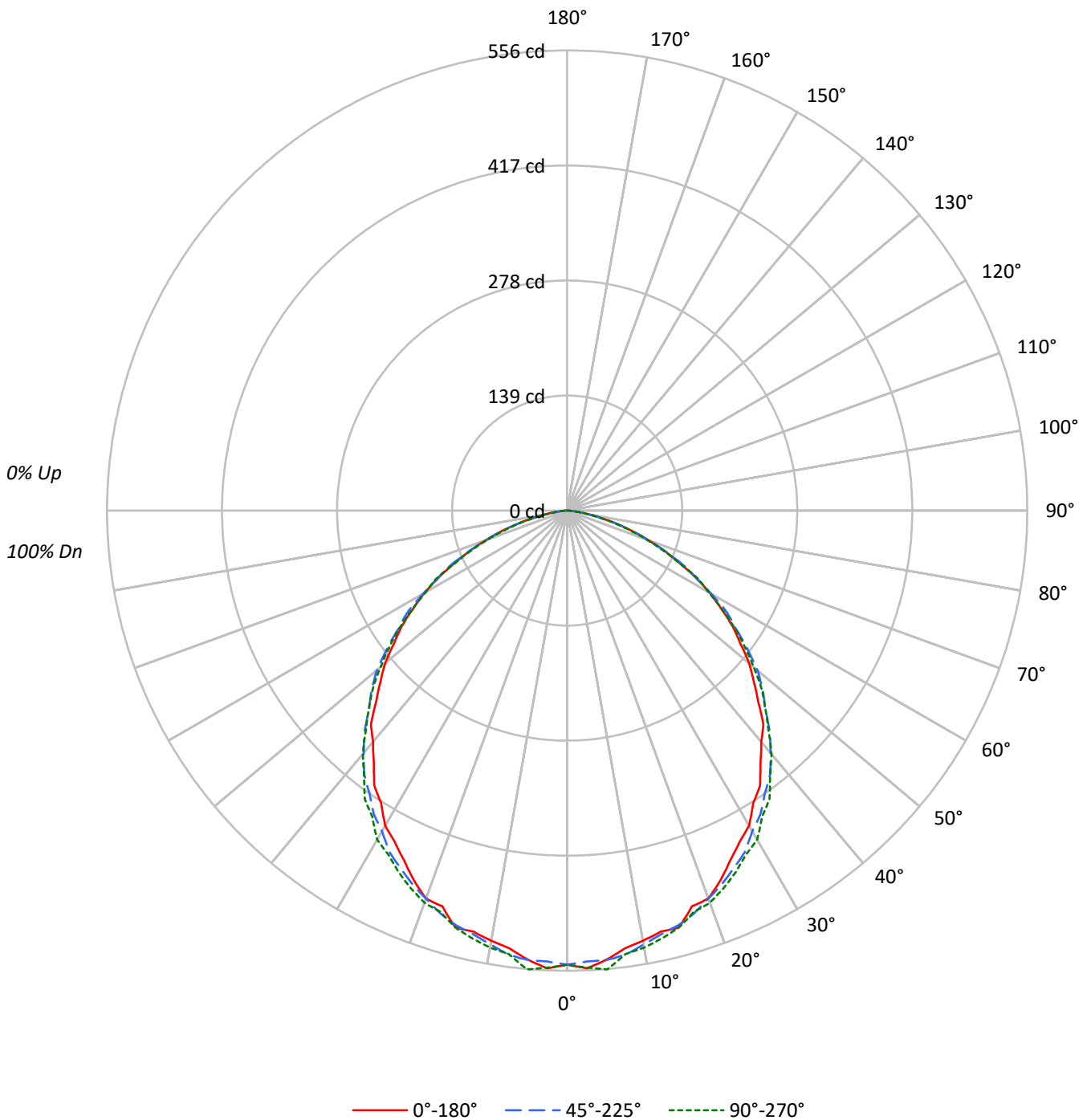
Lumens per Lamp: N/A  
Luminaire Lumens: 1383.0 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1477	1477	1477
5°	1472	1472	1503
10°	1442	1455	1465
15°	1453	1445	1453
20°	1429	1429	1444
25°	1385	1415	1431
30°	1366	1390	1427
35°	1334	1369	1399
40°	1282	1344	1350
45°	1243	1287	1289
50°	1202	1256	1232
55°	1146	1168	1159
60°	1071	1082	1062
65°	955	979	948
70°	820	822	799
75°	649	648	623
80°	435	423	406
85°	238	235	219

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 1321 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.6	3.7
10°-20°	146.3	10.6
20°-30°	219.2	15.8
30°-40°	259.8	18.8
40°-50°	260.2	18.8
50°-60°	220.9	16.0
60°-70°	148.9	10.8
70°-80°	65.4	4.7
80°-90°	10.6	0.8
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°	417.1	30.2
0°-40°	676.8	48.9
0°-60°	1158.0	83.7
0°-90°	1383.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1383.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	549	549	549	549	549	
5°	545	544	545	543	556	51
15°	522	516	519	522	522	145
25°	466	469	477	483	482	216
35°	406	407	417	426	426	252
45°	327	333	338	347	339	253
55°	244	242	249	247	247	217
65°	150	148	154	148	149	149
75°	62	61	62	58	60	67
85°	8	7	8	7	7	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	548.7	548.7	548.7	548.7	548.7
2.5°	553.5	549.3	545.4	549.9	552.7
5°	544.8	543.6	545.1	543.4	556.5
7.5°	533.6	538.5	541.4	539.6	540.4
10°	527.7	526.0	532.3	536.7	536.1
12.5°	521.3	523.9	524.2	529.0	529.4
15°	521.7	515.7	518.8	521.5	521.7
17.5°	501.4	507.9	510.1	516.3	508.6
20°	498.9	494.2	498.9	505.2	504.2
22.5°	483.7	478.4	488.6	494.2	493.8
25°	466.4	469.0	476.6	482.8	481.9
27.5°	451.2	454.2	465.1	473.7	468.2
30°	439.6	438.1	447.3	454.9	459.2
32.5°	418.7	424.0	434.8	442.4	438.4
35°	406.0	407.2	416.6	426.2	426.0
37.5°	383.8	389.4	402.6	405.3	402.9
40°	364.9	370.5	382.5	385.4	384.2
42.5°	350.9	351.9	362.2	365.5	360.2
45°	326.6	332.7	338.2	347.0	338.7
47.5°	305.9	308.8	320.7	323.0	318.7
50°	287.2	288.2	300.1	297.2	294.4
52.5°	263.6	267.7	274.5	273.9	270.6
55°	244.2	242.5	248.9	247.2	247.1
57.5°	220.8	223.7	228.9	226.2	221.9
60°	199.0	199.1	201.0	198.0	197.4
62.5°	174.7	175.6	176.0	172.2	178.3
65°	150.0	148.0	153.8	147.9	148.9
67.5°	127.2	128.2	127.7	124.0	125.4
70°	104.2	105.4	104.5	100.3	101.6
72.5°	83.0	81.5	82.5	77.2	79.6
75°	62.4	61.1	62.3	57.9	59.9
77.5°	42.5	43.5	42.8	40.5	41.8
80°	28.1	27.3	27.3	25.9	26.2
82.5°	16.4	15.6	15.4	14.9	15.6
85°	7.7	7.4	7.6	7.4	7.1
87.5°	2.8	2.8	2.8	2.7	2.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)