

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: P590018

Luminaire Tested: FSR-24-2-LD4-1LO-50-UNV-81-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590018  
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-50-UNV-81-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

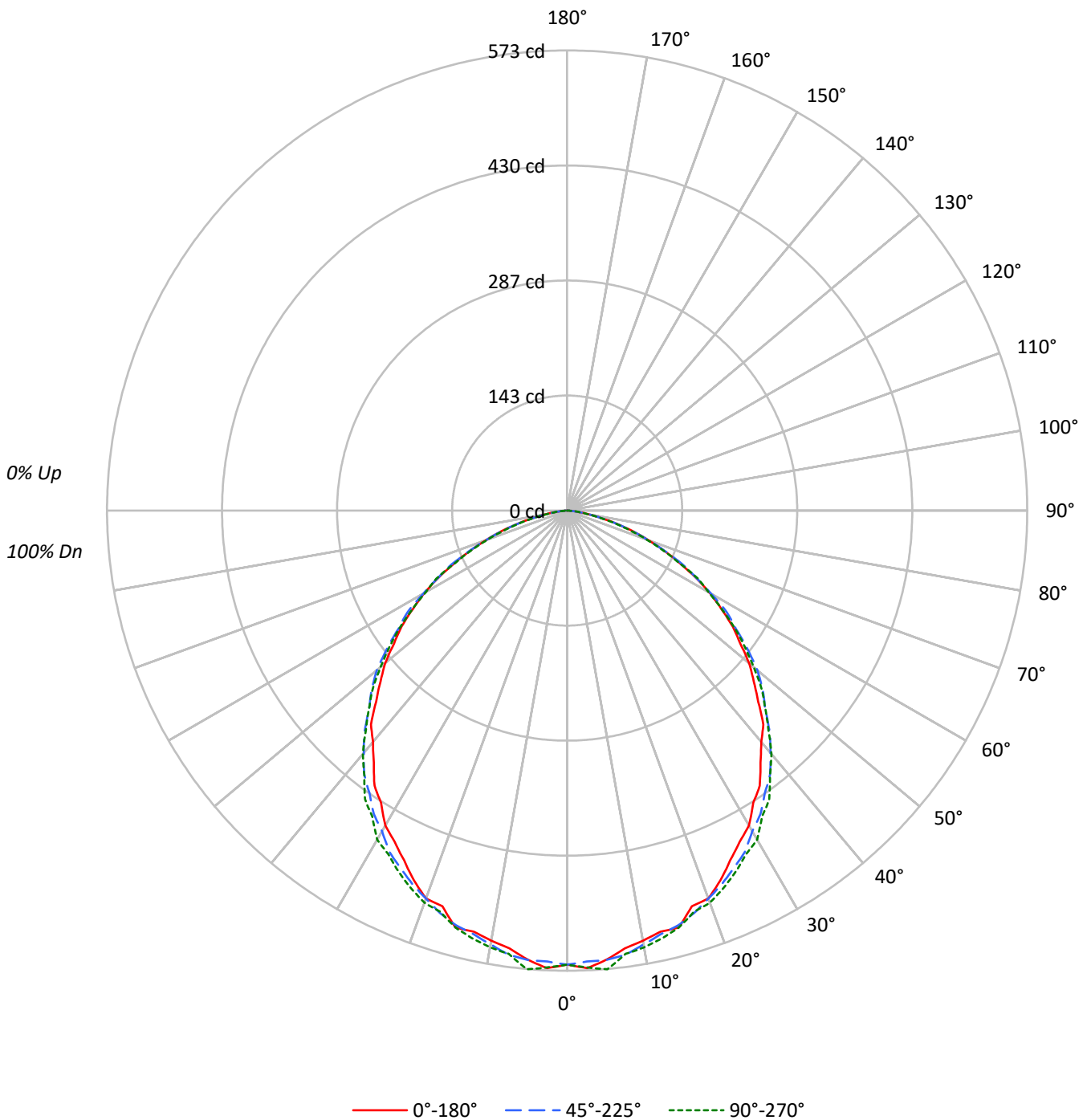
Lumens per Lamp: N/A  
Luminaire Lumens: 1425.0 lumens  
Efficiency: N/A  
Efficacy: 121.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
Input Voltage (V):  
Input Current (Ain): NR  
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					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°	1521	1521	1521
5°	1516	1517	1549
10°	1486	1499	1509
15°	1497	1489	1498
20°	1472	1472	1488
25°	1427	1458	1474
30°	1407	1432	1470
35°	1374	1410	1442
40°	1321	1384	1390
45°	1281	1326	1328
50°	1239	1294	1270
55°	1180	1203	1194
60°	1104	1115	1095
65°	984	1009	977
70°	844	847	824
75°	669	667	642
80°	448	435	418
85°	244	241	225

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1361 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.2	3.7
10°-20°	150.7	10.6
20°-30°	225.8	15.8
30°-40°	267.7	18.8
40°-50°	268.1	18.8
50°-60°	227.6	16.0
60°-70°	153.5	10.8
70°-80°	67.4	4.7
80°-90°	11.0	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°	429.7	30.2
0°-40°	697.4	48.9
0°-60°	1193.2	83.7
0°-90°	1425.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1425.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	565	565	565	565	565	
5°	561	560	562	560	573	53
15°	538	531	535	537	538	150
25°	481	483	491	498	496	222
35°	418	420	429	439	439	260
45°	336	343	348	358	349	260
55°	252	250	256	255	255	224
65°	154	152	158	152	154	154
75°	64	63	64	60	62	69
85°	8	8	8	8	7	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	565.4	565.4	565.4	565.4	565.4
2.5°	570.3	566.0	562.0	566.6	569.5
5°	561.4	560.1	561.6	559.9	573.4
7.5°	549.9	554.9	557.8	556.0	556.8
10°	543.7	542.0	548.5	553.0	552.3
12.5°	537.2	539.8	540.1	545.0	545.5
15°	537.5	531.3	534.6	537.4	537.6
17.5°	516.6	523.4	525.6	532.0	524.1
20°	514.1	509.2	514.1	520.6	519.6
22.5°	498.4	492.9	503.4	509.2	508.8
25°	480.6	483.2	491.1	497.5	496.5
27.5°	465.0	468.0	479.3	488.1	482.4
30°	452.9	451.4	460.9	468.7	473.1
32.5°	431.4	436.9	448.0	455.8	451.7
35°	418.3	419.5	429.3	439.2	438.9
37.5°	395.5	401.2	414.9	417.6	415.1
40°	376.0	381.7	394.1	397.1	395.8
42.5°	361.6	362.6	373.2	376.6	371.1
45°	336.5	342.8	348.5	357.5	349.0
47.5°	315.2	318.1	330.4	332.8	328.4
50°	295.9	296.9	309.2	306.2	303.3
52.5°	271.6	275.9	282.8	282.2	278.8
55°	251.6	249.9	256.5	254.7	254.6
57.5°	227.5	230.5	235.9	233.1	228.6
60°	205.1	205.1	207.1	204.0	203.4
62.5°	180.0	180.9	181.3	177.5	183.7
65°	154.5	152.5	158.5	152.4	153.5
67.5°	131.1	132.1	131.6	127.8	129.2
70°	107.3	108.6	107.7	103.4	104.7
72.5°	85.6	84.0	85.0	79.6	82.1
75°	64.3	63.0	64.2	59.6	61.7
77.5°	43.8	44.8	44.1	41.7	43.1
80°	28.9	28.1	28.1	26.7	27.0
82.5°	16.9	16.1	15.8	15.4	16.1
85°	7.9	7.7	7.8	7.6	7.3
87.5°	2.8	2.9	2.9	2.8	2.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)