

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: P559720

Luminaire Tested: FSR-12-2-LD4-1HI-40-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559720  
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-12-2-LD4-1HI-40-UNV-93-88-EDD-90  
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

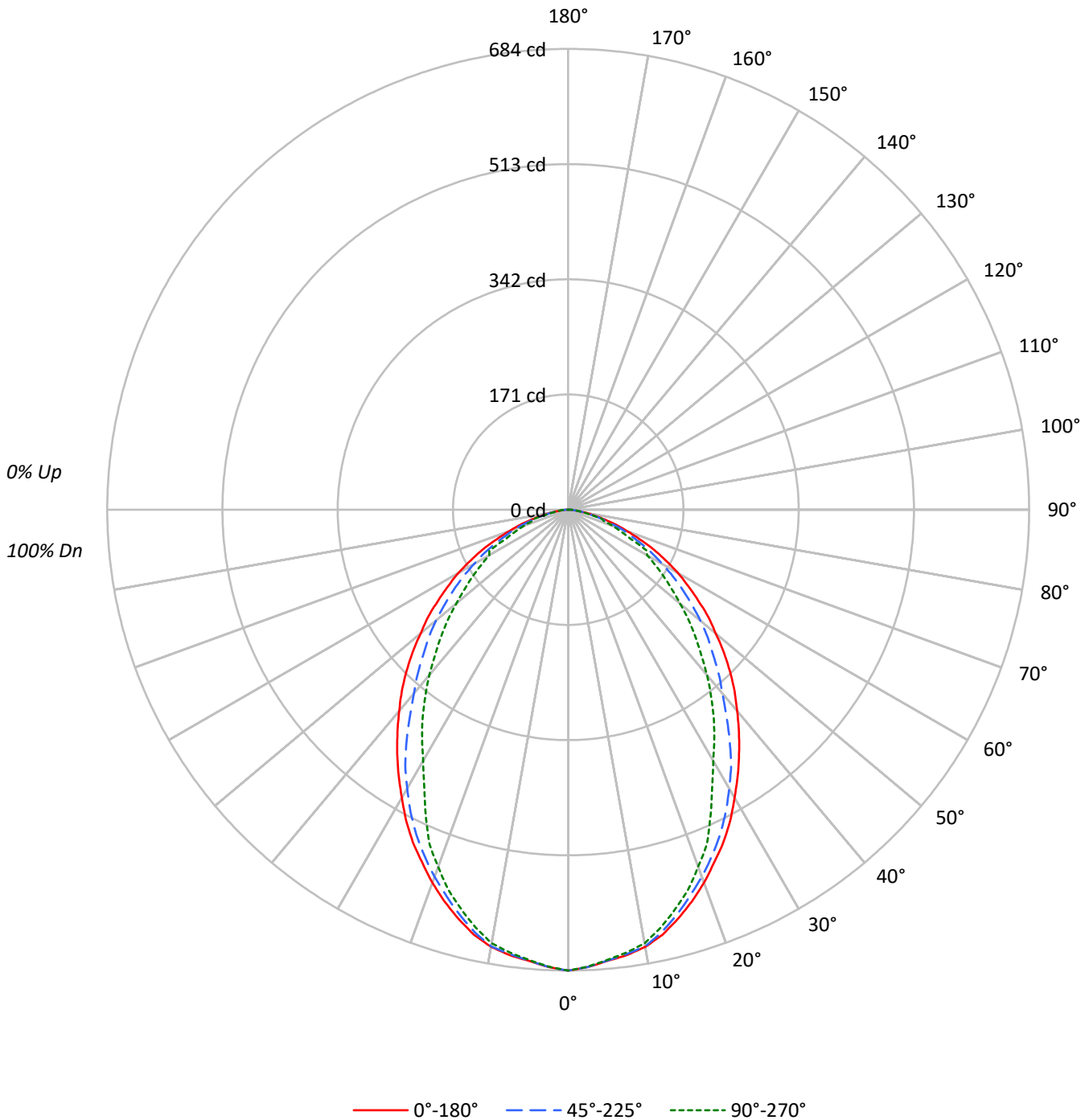
Lumens per Lamp: N/A  
Luminaire Lumens: 1343.0 lumens  
Efficiency: N/A  
Efficacy: 62.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3682	3682	3682
5°	3632	3628	3623
10°	3600	3596	3570
15°	3503	3468	3419
20°	3375	3320	3230
25°	3236	3165	2968
30°	3067	2969	2673
35°	2905	2744	2474
40°	2739	2500	2250
45°	2582	2312	2034
50°	2390	2145	1814
55°	2212	1944	1625
60°	2026	1736	1455
65°	1783	1521	1289
70°	1468	1331	1095
75°	1169	1019	1069
80°	784	735	685
85°	488	587	685

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2582 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	63.7	4.7
10°-20°	174.8	13.0
20°-30°	242.0	18.0
30°-40°	258.0	19.2
40°-50°	235.4	17.5
50°-60°	184.4	13.7
60°-70°	120.2	8.9
70°-80°	53.2	4.0
80°-90°	11.4	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°	480.4	35.8
0°-40°	738.4	55.0
0°-60°	1158.2	86.2
0°-90°	1343.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1343.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	684	684	684	684	684	
5°	672	672	672	671	671	64
15°	629	629	622	616	614	177
25°	545	542	533	514	500	250
35°	442	439	418	386	376	276
45°	339	332	304	278	267	261
55°	236	229	207	183	173	211
65°	140	132	119	122	101	138
75°	56	52	49	47	51	60
85°	8	9	10	10	11	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	684.1	684.1	684.1	684.1	684.1
2.5°	679.4	679.4	679.4	678.6	678.6
5°	672.2	671.5	671.5	670.7	670.7
7.5°	666.7	665.9	665.1	664.3	662.8
10°	658.8	658.8	658.0	654.1	653.3
12.5°	646.1	645.4	642.2	636.7	635.1
15°	628.7	628.7	622.4	616.1	613.7
17.5°	609.8	609.0	601.1	594.7	591.6
20°	589.2	587.6	579.7	569.4	563.9
22.5°	566.3	566.3	556.8	543.3	537.8
25°	544.9	541.7	533.0	514.1	499.8
27.5°	520.4	515.7	506.2	479.3	462.7
30°	493.5	491.1	477.7	442.9	430.2
32.5°	468.2	464.2	450.0	413.6	403.3
35°	442.1	438.9	417.6	385.9	376.5
37.5°	416.0	412.0	385.2	359.8	348.0
40°	389.9	385.2	355.9	333.0	320.3
42.5°	365.4	359.1	330.6	306.1	291.8
45°	339.3	332.2	303.7	278.4	267.3
47.5°	313.2	306.9	280.8	254.7	242.0
50°	285.5	280.0	256.2	230.1	216.7
52.5°	262.6	253.9	230.9	204.8	193.8
55°	235.7	228.6	207.2	182.7	173.2
57.5°	211.2	204.0	184.3	161.3	153.4
60°	188.2	177.9	161.3	141.6	135.2
62.5°	162.9	155.0	140.8	124.2	132.1
65°	140.0	132.1	119.4	121.8	101.2
67.5°	114.7	110.7	99.7	88.6	85.4
70°	93.3	88.6	84.6	72.8	69.6
72.5°	74.3	69.6	64.1	57.7	55.4
75°	56.2	52.2	49.0	46.7	51.4
77.5°	38.8	37.2	34.8	32.4	31.6
80°	25.3	24.5	23.7	22.9	22.1
82.5°	15.0	15.0	15.0	15.0	15.0
85°	7.9	8.7	9.5	10.3	11.1
87.5°	4.7	4.7	5.5	6.3	7.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)