

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: P560479

Luminaire Tested: FSR-12-2-LD4-2LO-40-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560479  
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-LD4-2LO-40-UNV-82-97-EDD  
Description: 1X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

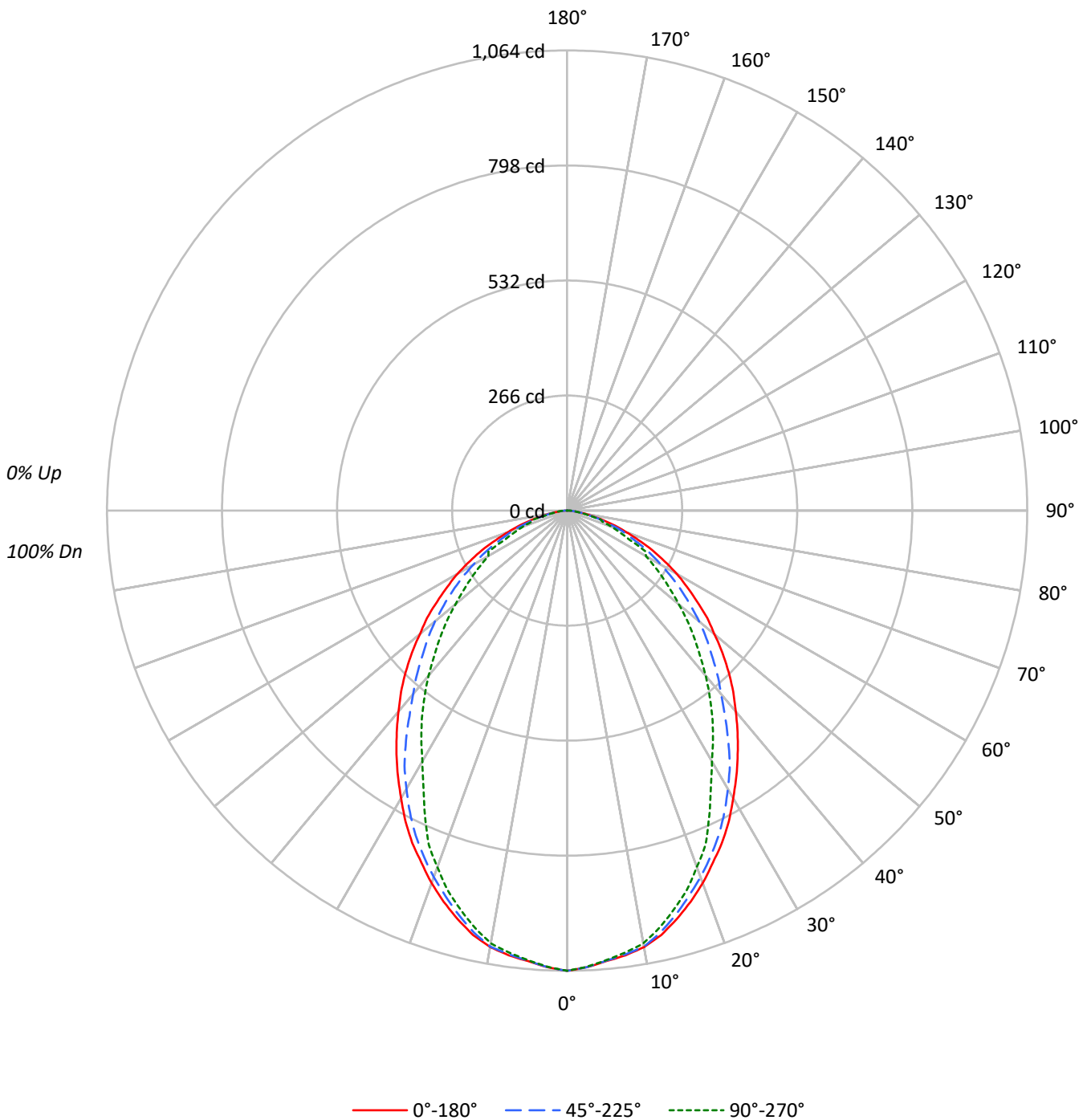
Lumens per Lamp: N/A  
Luminaire Lumens: 2089.0 lumens  
Efficiency: N/A  
Efficacy: 89.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	5727	5727	5727
5°	5649	5642	5636
10°	5600	5593	5553
15°	5449	5395	5319
20°	5249	5164	5023
25°	5033	4923	4617
30°	4770	4617	4159
35°	4518	4267	3847
40°	4261	3889	3500
45°	4016	3596	3165
50°	3718	3337	2822
55°	3440	3024	2528
60°	3152	2702	2265
65°	2772	2366	2006
70°	2285	2071	1704
75°	1815	1587	1664
80°	1221	1144	1066
85°	760	914	1062

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4016 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.1	4.7
10°-20°	271.8	13.0
20°-30°	376.3	18.0
30°-40°	401.3	19.2
40°-50°	366.1	17.5
50°-60°	286.8	13.7
60°-70°	186.9	8.9
70°-80°	82.8	4.0
80°-90°	17.8	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°	747.2	35.8
0°-40°	1148.5	55.0
0°-60°	1801.5	86.2
0°-90°	2089.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2089.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1064	1064	1064	1064	1064	
5°	1046	1044	1044	1043	1043	99
15°	978	978	968	958	955	275
25°	848	843	829	800	778	389
35°	688	683	650	600	586	430
45°	528	517	472	433	416	407
55°	367	356	322	284	269	329
65°	218	205	186	189	158	215
75°	87	81	76	73	80	94
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1064.1	1064.1	1064.1	1064.1	1064.1
2.5°	1056.7	1056.7	1056.7	1055.5	1055.5
5°	1045.7	1044.4	1044.4	1043.2	1043.2
7.5°	1037.0	1035.8	1034.6	1033.4	1030.9
10°	1024.7	1024.7	1023.5	1017.4	1016.1
12.5°	1005.1	1003.8	998.9	990.3	987.8
15°	978.0	978.0	968.2	958.3	954.6
17.5°	948.5	947.2	934.9	925.1	920.2
20°	916.5	914.0	901.7	885.7	877.1
22.5°	880.8	880.8	866.0	845.1	836.5
25°	847.6	842.7	829.1	799.6	777.5
27.5°	809.5	802.1	787.3	745.5	719.7
30°	767.6	763.9	743.0	688.9	669.2
32.5°	728.3	722.1	700.0	643.4	627.4
35°	687.7	682.8	649.5	600.3	585.6
37.5°	647.1	640.9	599.1	559.7	541.3
40°	606.5	599.1	553.6	517.9	498.2
42.5°	568.3	558.5	514.2	476.1	453.9
45°	527.7	516.7	472.4	433.0	415.8
47.5°	487.2	477.3	436.7	396.1	376.4
50°	444.1	435.5	398.6	358.0	337.1
52.5°	408.4	394.9	359.2	318.6	301.4
55°	366.6	355.5	322.3	284.2	269.4
57.5°	328.5	317.4	286.6	251.0	238.7
60°	292.8	276.8	251.0	220.2	210.4
62.5°	253.4	241.1	219.0	193.1	205.4
65°	217.7	205.4	185.8	189.4	157.5
67.5°	178.4	172.2	155.0	137.8	132.9
70°	145.2	137.8	131.6	113.2	108.3
72.5°	115.6	108.3	99.6	89.8	86.1
75°	87.3	81.2	76.3	72.6	80.0
77.5°	60.3	57.8	54.1	50.4	49.2
80°	39.4	38.1	36.9	35.7	34.4
82.5°	23.4	23.4	23.4	23.4	23.4
85°	12.3	13.5	14.8	16.0	17.2
87.5°	7.4	7.4	8.6	9.8	11.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)