

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: P589930

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589930  
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-LD4-1HI-50-UNV-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

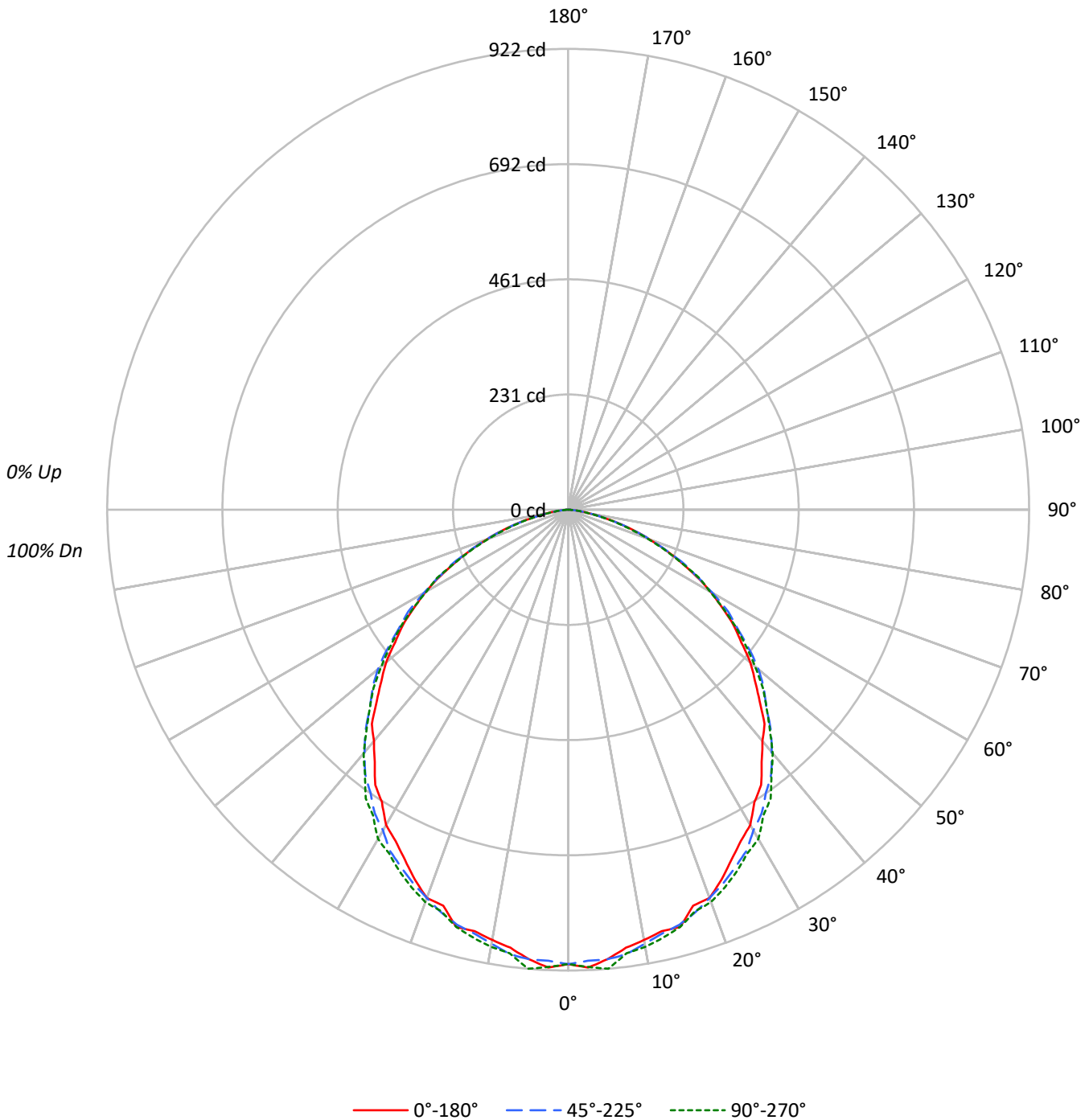
Lumens per Lamp: N/A  
Luminaire Lumens: 2291.0 lumens  
Efficiency: N/A  
Efficacy: 106.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2446	2446	2446
5°	2438	2439	2490
10°	2389	2410	2426
15°	2408	2394	2408
20°	2367	2367	2392
25°	2294	2344	2370
30°	2262	2302	2364
35°	2209	2267	2318
40°	2123	2225	2236
45°	2059	2132	2135
50°	1991	2081	2042
55°	1897	1934	1921
60°	1774	1792	1760
65°	1582	1622	1571
70°	1357	1362	1324
75°	1075	1073	1031
80°	721	700	673
85°	392	389	361

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2187 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.5	3.7
10°-20°	242.3	10.6
20°-30°	363.1	15.8
30°-40°	430.3	18.8
40°-50°	431.1	18.8
50°-60°	365.9	16.0
60°-70°	246.7	10.8
70°-80°	108.4	4.7
80°-90°	17.6	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°	690.9	30.2
0°-40°	1121.2	48.9
0°-60°	1918.3	83.7
0°-90°	2291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2291.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	909	909	909	909	909	
5°	903	900	903	900	922	85
15°	864	854	860	864	864	241
25°	773	777	790	800	798	357
35°	672	674	690	706	706	418
45°	541	551	560	575	561	419
55°	404	402	412	410	409	360
65°	248	245	255	245	247	247
75°	103	101	103	96	99	111
85°	13	12	13	12	12	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	909.0	909.0	909.0	909.0	909.0
2.5°	916.9	909.9	903.5	911.0	915.6
5°	902.6	900.4	902.9	900.2	921.9
7.5°	884.0	892.1	896.8	893.9	895.2
10°	874.2	871.3	881.8	889.1	888.0
12.5°	863.6	867.8	868.4	876.3	877.0
15°	864.2	854.2	859.5	863.9	864.3
17.5°	830.6	841.4	845.0	855.3	842.6
20°	826.5	818.6	826.5	836.9	835.3
22.5°	801.3	792.5	809.4	818.6	818.1
25°	772.6	776.9	789.5	799.9	798.2
27.5°	747.5	752.4	770.5	784.7	775.6
30°	728.1	725.7	740.9	753.6	760.7
32.5°	693.5	702.4	720.3	732.8	726.2
35°	672.5	674.5	690.1	706.1	705.6
37.5°	635.8	645.1	667.0	671.5	667.4
40°	604.4	613.7	633.5	638.4	636.4
42.5°	581.3	583.0	600.0	605.5	596.7
45°	541.1	551.2	560.3	574.7	561.1
47.5°	506.8	511.5	531.2	535.1	527.9
50°	475.7	477.3	497.2	492.4	487.7
52.5°	436.6	443.5	454.7	453.7	448.2
55°	404.4	401.7	412.3	409.5	409.4
57.5°	365.8	370.5	379.2	374.8	367.6
60°	329.7	329.8	333.0	327.9	327.0
62.5°	289.4	290.8	291.5	285.3	295.4
65°	248.5	245.2	254.8	245.1	246.7
67.5°	210.8	212.4	211.5	205.4	207.7
70°	172.5	174.6	173.1	166.2	168.3
72.5°	137.6	135.0	136.6	127.9	131.9
75°	103.4	101.3	103.2	95.9	99.2
77.5°	70.4	72.1	70.9	67.0	69.2
80°	46.5	45.2	45.2	43.0	43.4
82.5°	27.1	25.8	25.5	24.8	25.8
85°	12.7	12.3	12.6	12.2	11.7
87.5°	4.6	4.7	4.7	4.5	4.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)