

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: P589923

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-81-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589923  
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-81-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

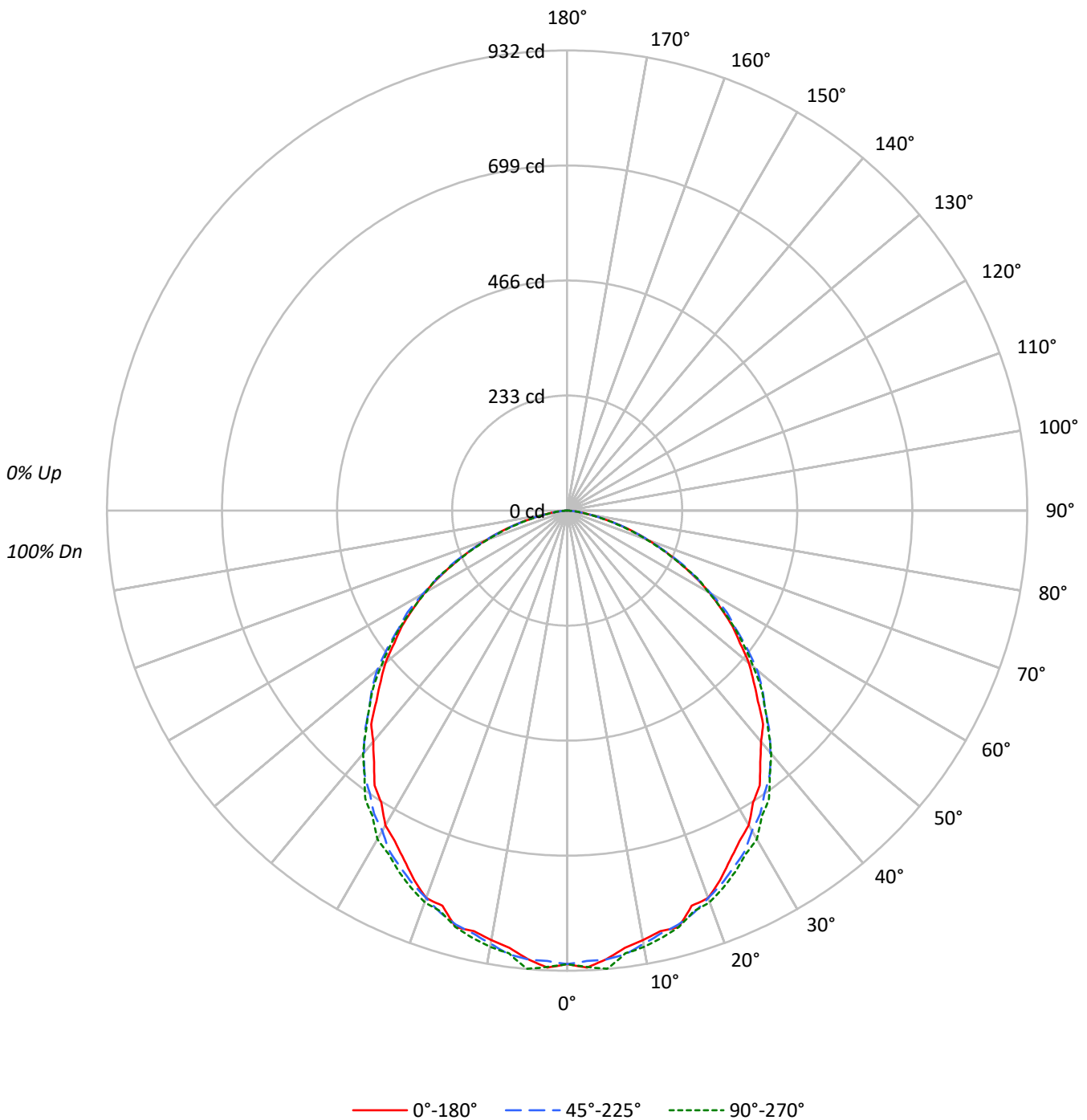
Lumens per Lamp: N/A  
Luminaire Lumens: 2315.0 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2472	2472	2472
5°	2464	2465	2516
10°	2414	2435	2452
15°	2433	2420	2433
20°	2392	2392	2417
25°	2318	2369	2395
30°	2286	2326	2388
35°	2233	2291	2342
40°	2146	2249	2259
45°	2081	2155	2158
50°	2012	2103	2063
55°	1917	1955	1941
60°	1793	1811	1778
65°	1599	1640	1587
70°	1371	1376	1338
75°	1087	1083	1042
80°	728	708	680
85°	395	392	367

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2210 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.4	3.7
10°-20°	244.9	10.6
20°-30°	366.9	15.8
30°-40°	434.8	18.8
40°-50°	435.6	18.8
50°-60°	369.8	16.0
60°-70°	249.3	10.8
70°-80°	109.5	4.7
80°-90°	17.8	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°	698.1	30.2
0°-40°	1133.0	48.9
0°-60°	1938.4	83.7
0°-90°	2315.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2315.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	918	918	918	918	918	
5°	912	910	912	910	932	86
15°	873	863	868	873	873	243
25°	781	785	798	808	807	361
35°	680	682	697	714	713	422
45°	547	557	566	581	567	423
55°	409	406	417	414	414	364
65°	251	248	258	248	249	250
75°	104	102	104	97	100	112
85°	13	12	13	12	12	19
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	918.5	918.5	918.5	918.5	918.5
2.5°	926.5	919.5	913.0	920.5	925.2
5°	912.0	909.9	912.4	909.6	931.6
7.5°	893.3	901.5	906.2	903.2	904.5
10°	883.3	880.5	891.0	898.4	897.3
12.5°	872.6	876.9	877.5	885.4	886.2
15°	873.2	863.1	868.5	873.0	873.3
17.5°	839.3	850.2	853.9	864.2	851.4
20°	835.2	827.2	835.2	845.7	844.1
22.5°	809.7	800.8	817.8	827.2	826.6
25°	780.7	785.0	797.8	808.2	806.6
27.5°	755.3	760.3	778.6	792.9	783.7
30°	735.8	733.3	748.7	761.5	768.6
32.5°	700.8	709.8	727.8	740.5	733.8
35°	679.6	681.6	697.4	713.5	713.0
37.5°	642.4	651.8	674.0	678.5	674.3
40°	610.8	620.1	640.2	645.0	643.0
42.5°	587.4	589.1	606.3	611.8	602.9
45°	546.7	556.9	566.2	580.8	567.0
47.5°	512.1	516.8	536.8	540.7	533.4
50°	480.7	482.3	502.4	497.5	492.8
52.5°	441.2	448.2	459.4	458.5	452.9
55°	408.7	406.0	416.6	413.8	413.7
57.5°	369.7	374.4	383.2	378.7	371.4
60°	333.1	333.3	336.5	331.4	330.4
62.5°	292.5	293.9	294.6	288.3	298.5
65°	251.1	247.7	257.5	247.6	249.3
67.5°	213.0	214.7	213.7	207.5	209.9
70°	174.3	176.5	174.9	167.9	170.1
72.5°	139.0	136.4	138.0	129.3	133.3
75°	104.5	102.3	104.2	96.9	100.2
77.5°	71.2	72.8	71.6	67.7	70.0
80°	47.0	45.7	45.7	43.4	43.9
82.5°	27.4	26.1	25.7	25.0	26.1
85°	12.8	12.5	12.7	12.3	11.9
87.5°	4.6	4.7	4.7	4.5	4.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)