

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: P589924

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-81-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589924  
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-81-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

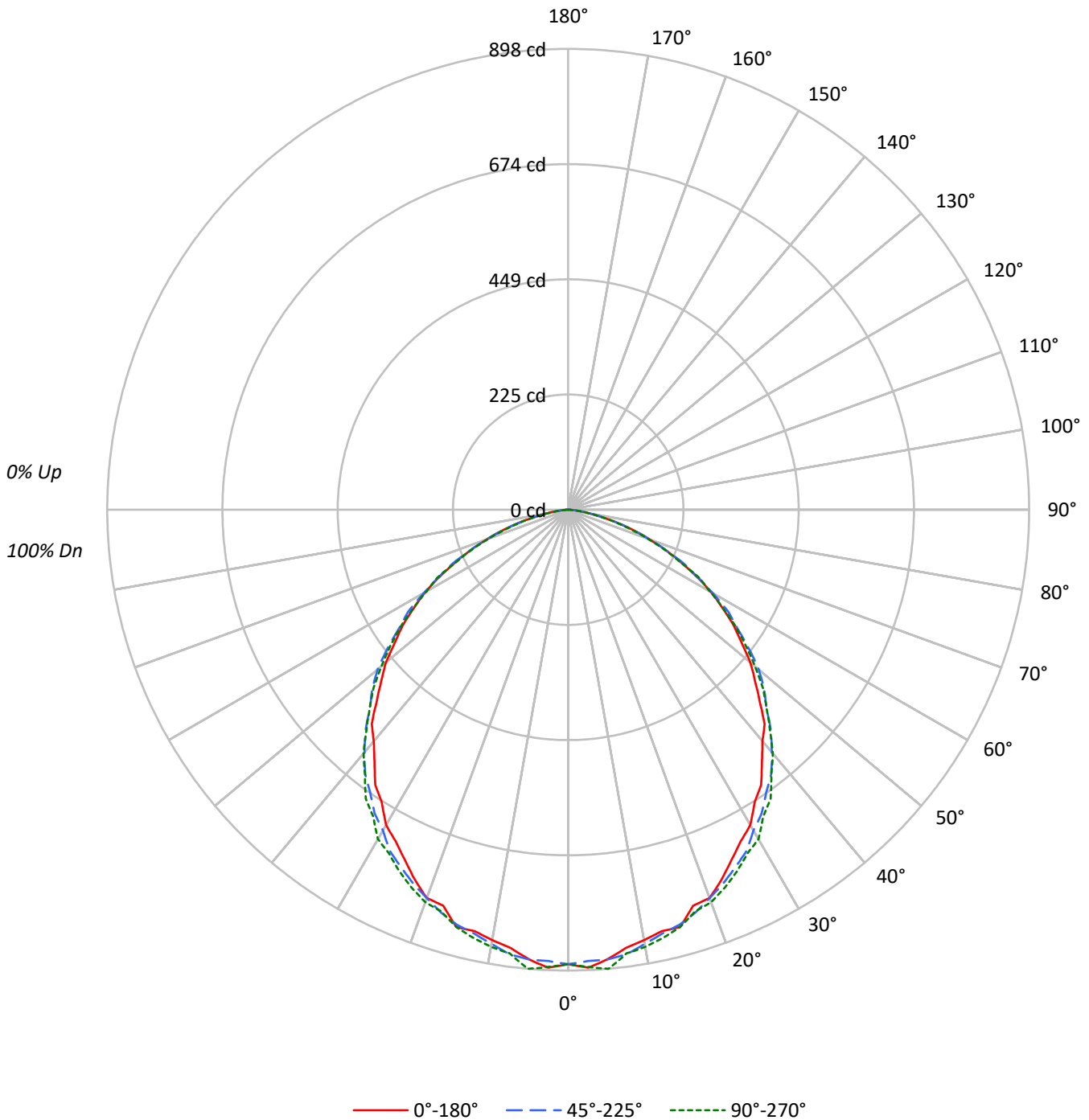
Lumens per Lamp: N/A  
Luminaire Lumens: 2232.0 lumens  
Efficiency: N/A  
Efficacy: 103.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P589924

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-81-97-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P589924

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-81-97-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									70									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						86													
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73						73													
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62						62													
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53						53													
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46						46													
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41						41													
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36						36													
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32						32													
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29						29													
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26						26													

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

	0°	45°	90°
0°	2383	2383	2383
5°	2375	2376	2426
10°	2327	2347	2364
15°	2345	2333	2346
20°	2306	2306	2330
25°	2235	2284	2309
30°	2204	2243	2303
35°	2152	2209	2258
40°	2069	2168	2178
45°	2006	2077	2081
50°	1940	2028	1989
55°	1848	1885	1871
60°	1729	1746	1715
65°	1542	1580	1531
70°	1323	1327	1290
75°	1047	1045	1004
80°	702	682	656
85°	380	377	352

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2131 cd/sqm



TEST NUMBER: P589924

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-81-97-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.3	3.7
10°-20°	236.1	10.6
20°-30°	353.7	15.8
30°-40°	419.2	18.8
40°-50°	420.0	18.8
50°-60°	356.5	16.0
60°-70°	240.4	10.8
70°-80°	105.6	4.7
80°-90°	17.2	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°	673.1	30.2
0°-40°	1092.3	48.9
0°-60°	1868.9	83.7
0°-90°	2232.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2232.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	886	886	886	886	886	
5°	879	877	880	877	898	83
15°	842	832	837	842	842	235
25°	753	757	769	779	778	348
35°	655	657	672	688	687	407
45°	527	537	546	560	547	408
55°	394	391	402	399	399	351
65°	242	239	248	239	240	241
75°	101	99	100	93	97	108
85°	12	12	12	12	11	18
90°	0	0	0	0	0	



TEST NUMBER: P589924

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-81-97-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	885.6	885.6	885.6	885.6	885.6
2.5°	893.3	886.5	880.2	887.5	892.0
5°	879.3	877.3	879.7	877.0	898.2
7.5°	861.2	869.1	873.7	870.9	872.1
10°	851.6	848.9	859.1	866.2	865.1
12.5°	841.3	845.5	846.0	853.7	854.4
15°	841.9	832.2	837.3	841.7	842.0
17.5°	809.2	819.7	823.3	833.2	820.9
20°	805.2	797.6	805.2	815.4	813.8
22.5°	780.6	772.1	788.5	797.6	797.0
25°	752.7	756.8	769.2	779.3	777.7
27.5°	728.3	733.1	750.7	764.5	755.6
30°	709.4	707.0	721.9	734.2	741.1
32.5°	675.7	684.4	701.7	714.0	707.5
35°	655.2	657.1	672.3	687.9	687.4
37.5°	619.4	628.4	649.8	654.2	650.2
40°	588.9	597.9	617.2	621.9	620.0
42.5°	566.4	568.0	584.5	589.9	581.3
45°	527.1	537.0	545.9	559.9	546.7
47.5°	493.7	498.3	517.5	521.3	514.3
50°	463.4	465.0	484.4	479.7	475.1
52.5°	425.4	432.1	443.0	442.1	436.7
55°	394.0	391.4	401.7	398.9	398.8
57.5°	356.4	361.0	369.4	365.1	358.1
60°	321.2	321.3	324.4	319.5	318.6
62.5°	282.0	283.3	284.0	278.0	287.8
65°	242.1	238.9	248.2	238.8	240.4
67.5°	205.4	207.0	206.0	200.1	202.4
70°	168.1	170.1	168.7	161.9	164.0
72.5°	134.0	131.5	133.1	124.6	128.5
75°	100.7	98.7	100.5	93.4	96.6
77.5°	68.6	70.2	69.1	65.3	67.5
80°	45.3	44.0	44.0	41.9	42.3
82.5°	26.4	25.2	24.8	24.1	25.2
85°	12.3	12.0	12.2	11.9	11.4
87.5°	4.5	4.6	4.6	4.3	4.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)