

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: P589898

Luminaire Tested: FSR-24-2-LD4-1HI-40-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589898  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

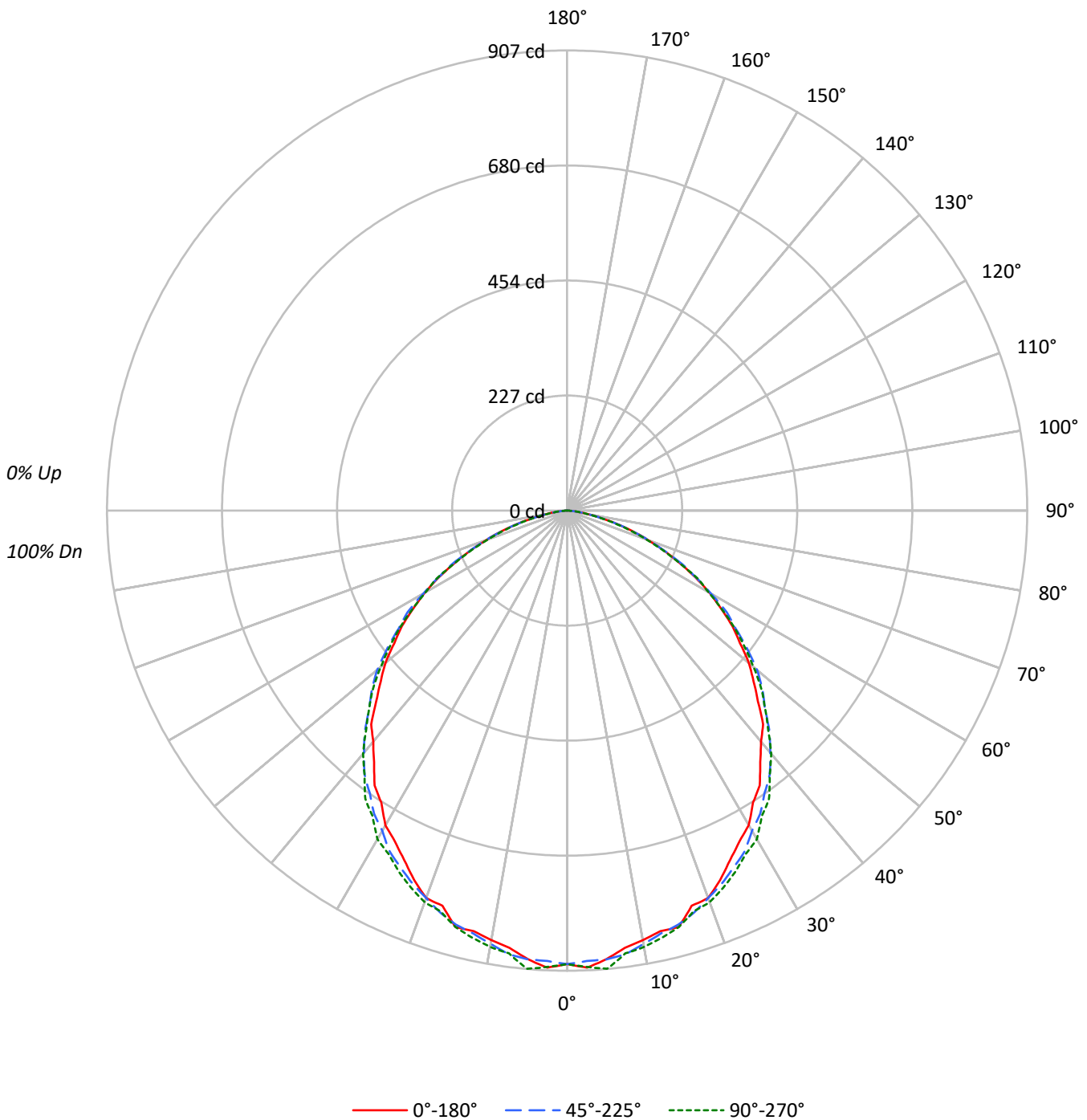
Lumens per Lamp: N/A  
Luminaire Lumens: 2253.0 lumens  
Efficiency: N/A  
Efficacy: 104.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: P589898

CATALOG NUMBER: FSR-24-2-LD4-1HI-40-UNV-82-94-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P589898

CATALOG NUMBER: FSR-24-2-LD4-1HI-40-UNV-82-94-EDD

**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	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°	2405	2405	2405
5°	2398	2398	2449
10°	2349	2370	2386
15°	2367	2355	2368
20°	2328	2328	2352
25°	2256	2305	2331
30°	2225	2264	2324
35°	2173	2230	2280
40°	2088	2188	2198
45°	2025	2097	2100
50°	1958	2047	2008
55°	1866	1902	1889
60°	1745	1762	1731
65°	1556	1596	1545
70°	1335	1339	1302
75°	1057	1055	1014
80°	708	688	662
85°	386	383	355

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2151 cd/sqm



TEST NUMBER: P589898

CATALOG NUMBER: FSR-24-2-LD4-1HI-40-UNV-82-94-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	84.1	3.7
10°-20°	238.3	10.6
20°-30°	357.0	15.8
30°-40°	423.2	18.8
40°-50°	424.0	18.8
50°-60°	359.9	16.0
60°-70°	242.6	10.8
70°-80°	106.6	4.7
80°-90°	17.3	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°	679.4	30.2
0°-40°	1102.6	48.9
0°-60°	1886.4	83.7
0°-90°	2253.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2253.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	894	894	894	894	894	
5°	888	886	888	885	907	84
15°	850	840	845	850	850	237
25°	760	764	776	787	785	351
35°	661	663	679	694	694	411
45°	532	542	551	565	552	412
55°	398	395	406	403	403	354
65°	244	241	251	241	243	243
75°	102	100	102	94	98	109
85°	12	12	12	12	12	18
90°	0	0	0	0	0	



TEST NUMBER: P589898

CATALOG NUMBER: FSR-24-2-LD4-1HI-40-UNV-82-94-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	893.9	893.9	893.9	893.9	893.9
2.5°	901.7	894.9	888.5	895.9	900.4
5°	887.6	885.5	887.9	885.3	906.6
7.5°	869.3	877.3	881.9	879.0	880.3
10°	859.7	856.9	867.2	874.3	873.3
12.5°	849.3	853.4	854.0	861.7	862.4
15°	849.8	840.0	845.2	849.6	850.0
17.5°	816.8	827.5	831.0	841.1	828.6
20°	812.8	805.1	812.8	823.1	821.4
22.5°	788.0	779.3	795.9	805.1	804.5
25°	759.8	764.0	776.4	786.6	785.0
27.5°	735.1	740.0	757.7	771.7	762.7
30°	716.1	713.6	728.7	741.1	748.0
32.5°	682.0	690.8	708.3	720.7	714.1
35°	661.4	663.3	678.7	694.4	693.9
37.5°	625.2	634.4	655.9	660.3	656.3
40°	594.4	603.5	623.0	627.8	625.8
42.5°	571.7	573.3	590.0	595.5	586.8
45°	532.1	542.0	551.0	565.2	551.8
47.5°	498.4	503.0	522.4	526.2	519.2
50°	467.8	469.4	488.9	484.2	479.6
52.5°	429.4	436.2	447.1	446.2	440.8
55°	397.7	395.1	405.5	402.7	402.6
57.5°	359.8	364.4	372.9	368.5	361.5
60°	324.2	324.3	327.4	322.5	321.6
62.5°	284.6	286.0	286.7	280.6	290.5
65°	244.3	241.1	250.6	241.0	242.6
67.5°	207.3	208.9	208.0	202.0	204.3
70°	169.7	171.7	170.2	163.4	165.5
72.5°	135.3	132.7	134.3	125.8	129.7
75°	101.7	99.6	101.5	94.3	97.5
77.5°	69.3	70.9	69.7	65.9	68.1
80°	45.7	44.4	44.4	42.2	42.7
82.5°	26.7	25.4	25.0	24.4	25.4
85°	12.5	12.1	12.4	12.0	11.5
87.5°	4.5	4.6	4.6	4.4	4.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)