

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: P590104

Luminaire Tested: FSR-24-2-LD4-1STD-50-UNV-80-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590104  
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-LD4-1STD-50-UNV-80-87-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

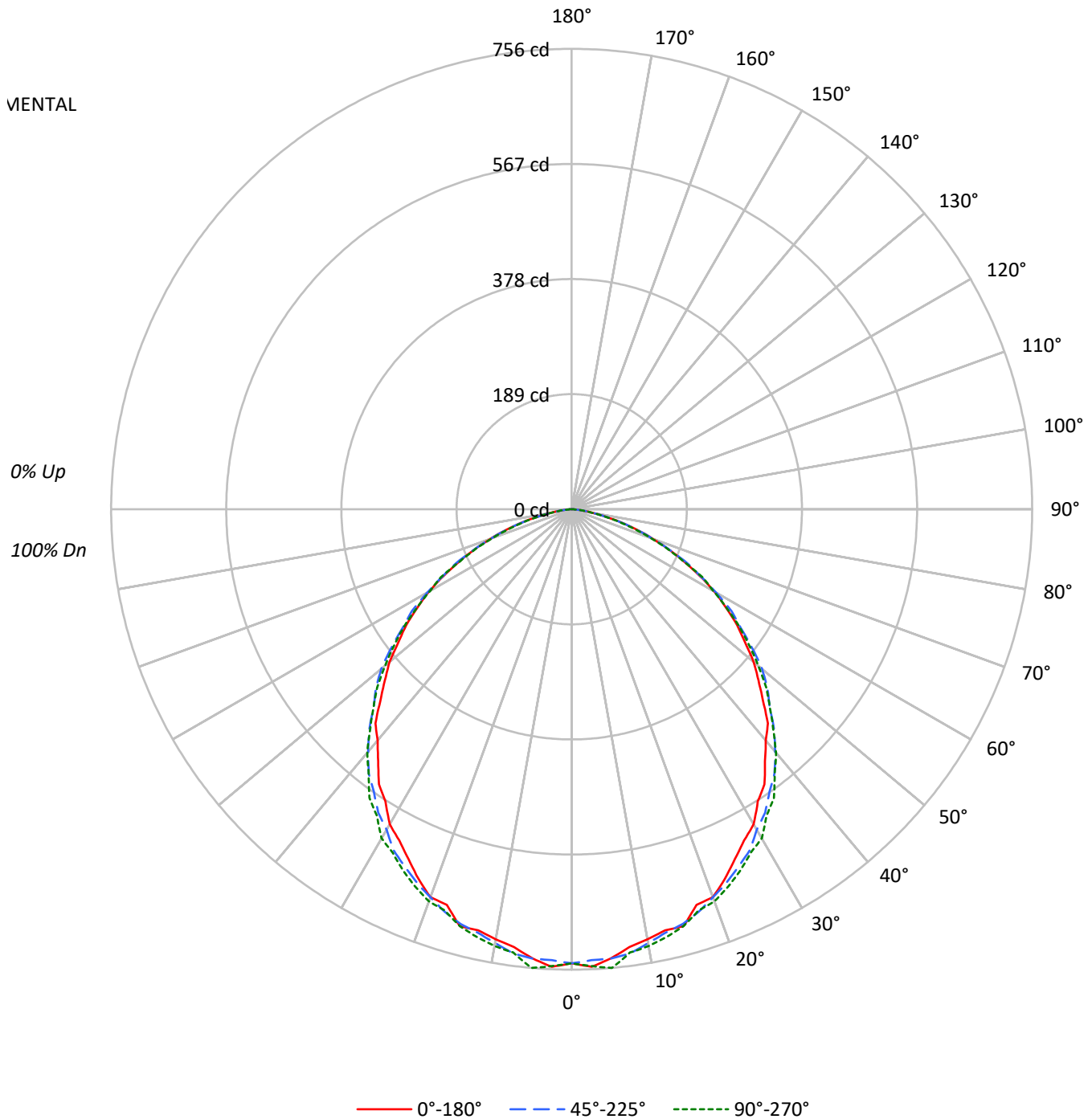
Lumens per Lamp: N/A  
Luminaire Lumens: 1879.0 lumens  
Efficiency: N/A  
Efficacy: 113.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590104

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590104

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-87-EDD

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

RF	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																												
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°	2006	2006	2006
5°	1999	2000	2042
10°	1959	1976	1990
15°	1975	1964	1975
20°	1941	1941	1962
25°	1882	1923	1944
30°	1856	1888	1939
35°	1812	1859	1901
40°	1741	1825	1833
45°	1689	1749	1751
50°	1633	1707	1675
55°	1556	1587	1575
60°	1455	1470	1443
65°	1298	1331	1288
70°	1113	1117	1086
75°	882	880	845
80°	590	575	552
85°	321	318	296

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1794 cd/sqm



TEST NUMBER: P590104

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.1	3.7
10°-20°	198.8	10.6
20°-30°	297.8	15.8
30°-40°	352.9	18.8
40°-50°	353.6	18.8
50°-60°	300.1	16.0
60°-70°	202.4	10.8
70°-80°	88.9	4.7
80°-90°	14.5	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°	566.7	30.2
0°-40°	919.6	48.9
0°-60°	1573.3	83.7
0°-90°	1879.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1879.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	746	746	746	746	746	
5°	740	738	740	738	756	70
15°	709	701	705	709	709	197
25°	634	637	648	656	655	293
35°	552	553	566	579	579	342
45°	444	452	460	471	460	343
55°	332	330	338	336	336	295
65°	204	201	209	201	202	203
75°	85	83	85	79	81	91
85°	10	10	10	10	10	15
90°	0	0	0	0	0	



TEST NUMBER: P590104

CATALOG NUMBER: FSR-24-2-LD4-1STD-50-UNV-80-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	745.5	745.5	745.5	745.5	745.5
2.5°	752.0	746.3	741.0	747.2	750.9
5°	740.2	738.5	740.5	738.3	756.1
7.5°	725.0	731.7	735.5	733.1	734.2
10°	717.0	714.6	723.2	729.2	728.3
12.5°	708.3	711.8	712.2	718.7	719.3
15°	708.8	700.6	704.9	708.6	708.9
17.5°	681.2	690.1	693.1	701.5	691.1
20°	677.9	671.4	677.9	686.4	685.1
22.5°	657.2	650.0	663.8	671.4	670.9
25°	633.7	637.2	647.5	656.0	654.7
27.5°	613.1	617.1	632.0	643.6	636.1
30°	597.2	595.2	607.7	618.1	623.9
32.5°	568.8	576.1	590.8	601.1	595.6
35°	551.6	553.2	566.0	579.1	578.7
37.5°	521.4	529.0	547.1	550.7	547.3
40°	495.7	503.3	519.6	523.6	521.9
42.5°	476.8	478.1	492.1	496.6	489.4
45°	443.8	452.0	459.5	471.4	460.2
47.5°	415.7	419.5	435.7	438.9	433.0
50°	390.1	391.5	407.8	403.8	400.0
52.5°	358.1	363.8	372.9	372.1	367.6
55°	331.7	329.5	338.2	335.9	335.8
57.5°	300.0	303.9	311.0	307.4	301.5
60°	270.4	270.5	273.1	269.0	268.2
62.5°	237.4	238.5	239.1	234.0	242.3
65°	203.8	201.1	209.0	201.0	202.3
67.5°	172.9	174.2	173.5	168.5	170.4
70°	141.5	143.2	142.0	136.3	138.0
72.5°	112.8	110.7	112.0	104.9	108.2
75°	84.8	83.1	84.6	78.6	81.3
77.5°	57.8	59.1	58.1	55.0	56.8
80°	38.1	37.1	37.1	35.2	35.6
82.5°	22.2	21.2	20.9	20.3	21.2
85°	10.4	10.1	10.3	10.0	9.6
87.5°	3.8	3.9	3.9	3.7	3.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)