

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: P590309

Luminaire Tested: FSR-24-2-LD4-2LO-50-UNV-82-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590309  
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-LD4-2LO-50-UNV-82-84-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

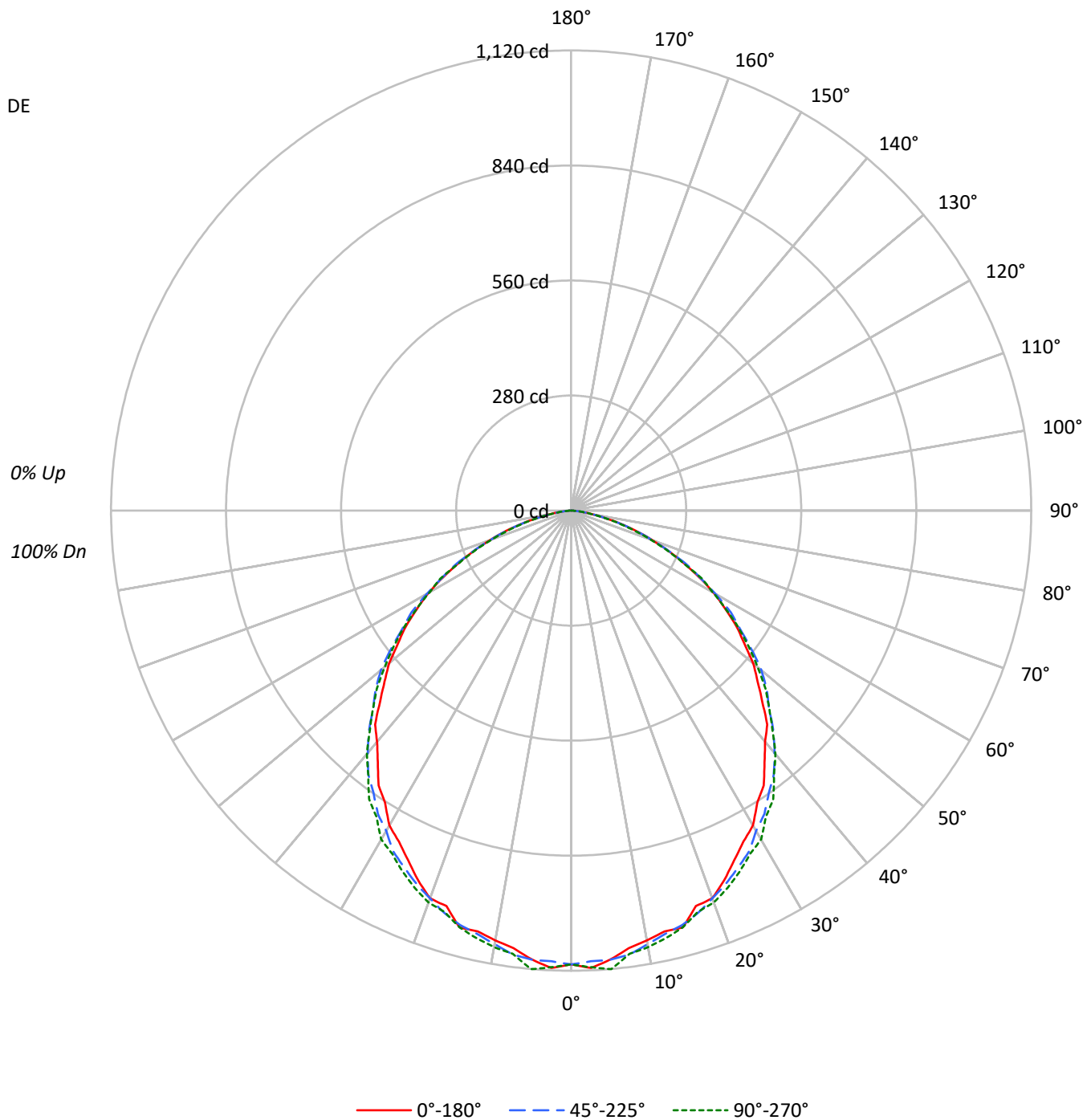
Lumens per Lamp: N/A  
Luminaire Lumens: 2784.0 lumens  
Efficiency: N/A  
Efficacy: 119.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590309

CATALOG NUMBER: FSR-24-2-LD4-2LO-50-UNV-82-84-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590309

CATALOG NUMBER: FSR-24-2-LD4-2LO-50-UNV-82-84-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	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°	2972	2972	2972
5°	2963	2964	3026
10°	2903	2928	2949
15°	2925	2910	2926
20°	2876	2876	2907
25°	2788	2849	2880
30°	2749	2798	2872
35°	2685	2755	2817
40°	2580	2705	2716
45°	2502	2591	2595
50°	2420	2529	2481
55°	2306	2350	2334
60°	2156	2178	2138
65°	1922	1971	1909
70°	1650	1655	1609
75°	1307	1304	1253
80°	876	851	818
85°	475	472	442

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2658 cd/sqm



TEST NUMBER: P590309

CATALOG NUMBER: FSR-24-2-LD4-2LO-50-UNV-82-84-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.9	3.7
10°-20°	294.5	10.6
20°-30°	441.2	15.8
30°-40°	522.9	18.8
40°-50°	523.9	18.8
50°-60°	444.7	16.0
60°-70°	299.8	10.8
70°-80°	131.7	4.7
80°-90°	21.4	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°	839.6	30.2
0°-40°	1362.5	48.9
0°-60°	2331.1	83.7
0°-90°	2784.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2784.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1105	1105	1105	1105	1105	
5°	1097	1094	1097	1094	1120	103
15°	1050	1038	1044	1050	1050	293
25°	939	944	959	972	970	434
35°	817	820	839	858	858	507
45°	658	670	681	698	682	509
55°	492	488	501	498	498	437
65°	302	298	310	298	300	300
75°	126	123	125	116	120	135
85°	15	15	15	15	14	22
90°	0	0	0	0	0	



TEST NUMBER: P590309

CATALOG NUMBER: FSR-24-2-LD4-2LO-50-UNV-82-84-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1104.6	1104.6	1104.6	1104.6	<i>1104.6</i>
2.5°	1114.2	1105.8	1097.9	1107.0	<i>1112.6</i>
5°	<i>1096.8</i>	<i>1094.2</i>	<i>1097.2</i>	<i>1093.9</i>	<i>1120.3</i>
7.5°	1074.2	1084.1	1089.8	1086.2	<i>1087.8</i>
10°	1062.3	1058.8	1071.5	1080.4	<i>1079.1</i>
12.5°	1049.4	1054.6	1055.3	1064.8	<i>1065.7</i>
15°	1050.1	1038.0	1044.4	1049.9	<i>1050.3</i>
17.5°	1009.3	1022.5	1026.9	1039.3	<i>1023.9</i>
20°	1004.4	994.8	1004.4	1017.0	<i>1015.1</i>
22.5°	973.7	963.0	983.5	994.8	<i>994.1</i>
25°	938.9	944.0	959.4	972.0	<i>970.0</i>
27.5°	908.4	914.4	936.3	953.6	<i>942.5</i>
30°	884.8	881.8	900.4	915.8	<i>924.3</i>
32.5°	842.8	853.6	875.3	890.5	<i>882.4</i>
35°	817.2	819.7	838.6	858.0	<i>857.5</i>
37.5°	772.6	783.9	810.5	816.0	<i>811.0</i>
40°	734.5	745.8	769.9	775.7	<i>773.3</i>
42.5°	706.4	708.4	729.1	735.8	<i>725.1</i>
45°	657.5	669.8	680.9	698.4	<i>681.9</i>
47.5°	615.8	621.6	645.5	650.2	<i>641.5</i>
50°	578.1	580.1	604.2	598.3	<i>592.6</i>
52.5°	530.6	539.0	552.5	551.4	<i>544.7</i>
55°	491.5	488.2	501.0	497.6	<i>497.5</i>
57.5°	444.6	450.3	460.8	455.4	<i>446.7</i>
60°	400.6	400.8	404.6	398.5	<i>397.3</i>
62.5°	351.7	353.4	354.3	346.7	<i>359.0</i>
65°	301.9	297.9	309.6	297.8	<i>299.8</i>
67.5°	256.2	258.1	257.0	249.6	<i>252.4</i>
70°	209.7	212.2	210.4	202.0	<i>204.5</i>
72.5°	167.2	164.0	166.0	155.5	<i>160.3</i>
75°	125.7	123.1	125.4	116.5	<i>120.5</i>
77.5°	85.6	87.6	86.1	81.4	<i>84.1</i>
80°	56.5	54.9	54.9	52.2	<i>52.8</i>
82.5°	32.9	31.4	30.9	30.1	<i>31.4</i>
85°	15.4	15.0	15.3	14.8	<i>14.3</i>
87.5°	5.6	5.7	5.7	5.4	<i>5.1</i>
90°	0.0	0.0	0.0	0.0	<i>0.0</i>

(END OF REPORT)