

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: P564163

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564163  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-4STD-50-UNV-81-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

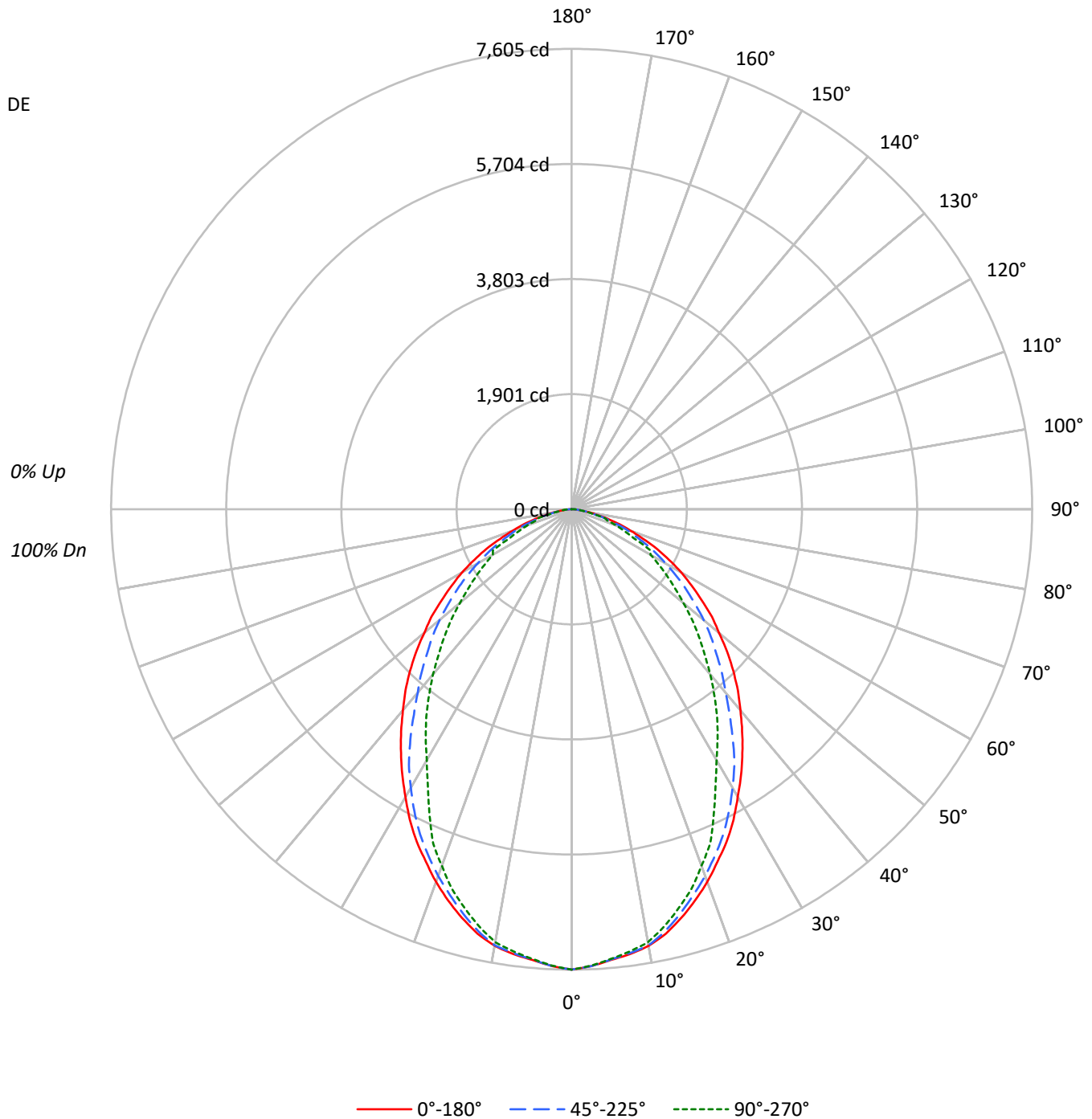
Lumens per Lamp: N/A  
Luminaire Lumens: 14929.0 lumens  
Efficiency: N/A  
Efficacy: 112.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P564163

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P564163

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-85-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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

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

	0°	45°	90°
0°	10232	10232	10232
5°	10093	10081	10069
10°	10005	9993	9921
15°	9736	9638	9503
20°	9378	9227	8975
25°	8993	8797	8249
30°	8523	8250	7430
35°	8072	7625	6874
40°	7613	6949	6254
45°	7176	6424	5654
50°	6643	5962	5042
55°	6146	5403	4516
60°	5631	4826	4045
65°	4954	4226	3583
70°	4081	3701	3044
75°	3245	2834	2970
80°	2180	2043	1908
85°	1357	1629	1900

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7176 cd/sqm



TEST NUMBER: P564163

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	707.9	4.7
10°-20°	1942.7	13.0
20°-30°	2689.6	18.0
30°-40°	2867.9	19.2
40°-50°	2616.4	17.5
50°-60°	2049.7	13.7
60°-70°	1335.9	8.9
70°-80°	591.9	4.0
80°-90°	127.1	0.9
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°	5340.2	35.8
0°-40°	8208.1	55.0
0°-60°	12874.2	86.2
0°-90°	14929.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14929.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7605	7605	7605	7605	7605	
5°	7473	7464	7464	7455	7455	709
15°	6989	6989	6919	6849	6822	1965
25°	6057	6022	5926	5714	5556	2781
35°	4914	4879	4642	4290	4185	3072
45°	3772	3692	3376	3095	2972	2905
55°	2620	2541	2303	2031	1925	2350
65°	1556	1468	1328	1354	1125	1534
75°	624	580	545	519	571	669
85°	88	97	106	114	123	122
90°	0	0	0	0	0	



TEST NUMBER: P564163

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7604.6	7604.6	7604.6	7604.6	7604.6
2.5°	7551.9	7551.9	7551.9	7543.1	7543.1
5°	7472.8	7464.0	7464.0	7455.2	7455.2
7.5°	7411.2	7402.4	7393.6	7384.8	7367.3
10°	7323.3	7323.3	7314.5	7270.6	7261.8
12.5°	7182.6	7173.9	7138.7	7077.1	7059.6
15°	6989.2	6989.2	6918.9	6848.6	6822.2
17.5°	6778.2	6769.4	6681.5	6611.2	6576.0
20°	6549.7	6532.1	6444.2	6329.9	6268.3
22.5°	6294.7	6294.7	6189.2	6039.7	5978.2
25°	6057.3	6022.2	5925.5	5714.5	5556.2
27.5°	5784.8	5732.0	5626.5	5327.6	5143.0
30°	5485.9	5459.5	5310.1	4923.2	4782.6
32.5°	5204.6	5160.6	5002.4	4597.9	4483.7
35°	4914.4	4879.3	4641.9	4290.2	4184.7
37.5°	4624.3	4580.4	4281.5	4000.1	3868.3
40°	4334.2	4281.5	3956.2	3701.2	3560.6
42.5°	4061.7	3991.3	3674.8	3402.3	3244.1
45°	3771.5	3692.4	3375.9	3094.6	2971.5
47.5°	3481.4	3411.1	3121.0	2830.9	2690.2
50°	3173.7	3112.2	2848.4	2558.3	2408.9
52.5°	2918.8	2822.1	2567.1	2277.0	2153.9
55°	2619.9	2540.7	2303.4	2030.8	1925.3
57.5°	2347.3	2268.2	2048.4	1793.5	1705.5
60°	2092.4	1978.1	1793.5	1573.7	1503.3
62.5°	1811.0	1723.1	1564.9	1380.3	1468.2
65°	1556.1	1468.2	1327.5	1353.9	1125.3
67.5°	1274.8	1230.8	1107.7	984.6	949.5
70°	1037.4	984.6	940.7	808.8	773.7
72.5°	826.4	773.7	712.1	641.8	615.4
75°	624.2	580.2	545.1	518.7	571.4
77.5°	430.8	413.2	386.8	360.5	351.7
80°	281.3	272.5	263.7	255.0	246.2
82.5°	167.0	167.0	167.0	167.0	167.0
85°	87.9	96.7	105.5	114.3	123.1
87.5°	52.7	52.7	61.5	70.3	79.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)