

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: P564167

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564167  
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-81-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

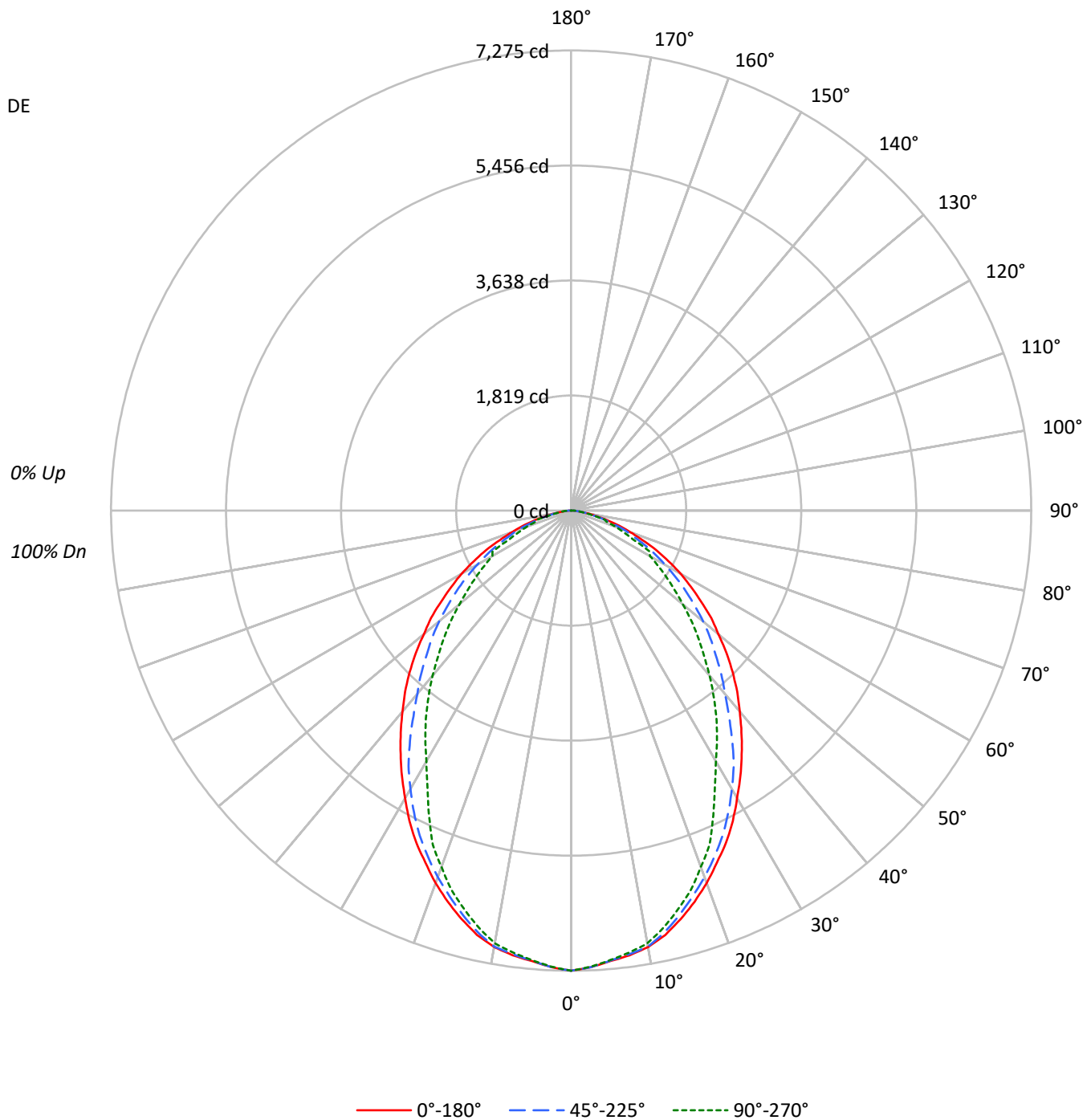
Lumens per Lamp: N/A  
Luminaire Lumens: 14282.0 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P564167

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P564167

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

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

	0°	45°	90°
0°	9789	9789	9789
5°	9656	9644	9633
10°	9572	9560	9491
15°	9314	9220	9091
20°	8972	8827	8586
25°	8603	8416	7891
30°	8154	7892	7108
35°	7722	7294	6576
40°	7283	6647	5983
45°	6866	6145	5409
50°	6355	5704	4824
55°	5879	5169	4321
60°	5387	4617	3870
65°	4740	4043	3427
70°	3904	3540	2912
75°	3104	2711	2842
80°	2085	1955	1825
85°	1298	1558	1817

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6866 cd/sqm



TEST NUMBER: P564167

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	677.2	4.7
10°-20°	1858.5	13.0
20°-30°	2573.0	18.0
30°-40°	2743.6	19.2
40°-50°	2503.0	17.5
50°-60°	1960.9	13.7
60°-70°	1278.0	8.9
70°-80°	566.2	4.0
80°-90°	121.6	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°	5108.8	35.8
0°-40°	7852.4	55.0
0°-60°	12316.2	86.2
0°-90°	14282.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14282.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7275	7275	7275	7275	7275	
5°	7149	7140	7140	7132	7132	679
15°	6686	6686	6619	6552	6526	1880
25°	5795	5761	5669	5467	5315	2660
35°	4702	4668	4441	4104	4003	2939
45°	3608	3532	3230	2960	2843	2779
55°	2506	2431	2204	1943	1842	2248
65°	1489	1404	1270	1295	1076	1467
75°	597	555	521	496	547	640
85°	84	92	101	109	118	117
90°	0	0	0	0	0	



TEST NUMBER: P564167

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-81-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7275.1	7275.1	7275.1	7275.1	7275.1
2.5°	7224.6	7224.6	7224.6	7216.2	7216.2
5°	7148.9	7140.5	7140.5	7132.1	7132.1
7.5°	7090.0	7081.6	7073.2	7064.8	7048.0
10°	7005.9	7005.9	6997.5	6955.5	6947.1
12.5°	6871.4	6862.9	6829.3	6770.4	6753.6
15°	6686.3	6686.3	6619.0	6551.8	6526.5
17.5°	6484.5	6476.1	6392.0	6324.7	6291.0
20°	6265.8	6249.0	6164.9	6055.5	5996.7
22.5°	6021.9	6021.9	5921.0	5778.0	5719.1
25°	5794.8	5761.2	5668.7	5466.8	5315.4
27.5°	5534.1	5483.6	5382.7	5096.7	4920.1
30°	5248.1	5222.9	5079.9	4709.9	4575.3
32.5°	4979.0	4936.9	4785.6	4398.7	4289.3
35°	4701.5	4667.8	4440.7	4104.3	4003.4
37.5°	4423.9	4381.9	4095.9	3826.8	3700.6
40°	4146.4	4095.9	3784.7	3540.8	3406.2
42.5°	3885.6	3818.4	3515.6	3254.9	3103.5
45°	3608.1	3532.4	3229.6	2960.5	2842.7
47.5°	3330.5	3263.3	2985.7	2708.2	2573.6
50°	3036.2	2977.3	2725.0	2447.4	2304.5
52.5°	2792.3	2699.8	2455.9	2178.3	2060.6
55°	2506.3	2430.6	2203.5	1942.8	1841.9
57.5°	2245.6	2169.9	1959.6	1715.7	1631.6
60°	2001.7	1892.4	1715.7	1505.5	1438.2
62.5°	1732.6	1648.5	1497.1	1320.4	1404.5
65°	1488.7	1404.5	1270.0	1295.2	1076.5
67.5°	1219.5	1177.5	1059.7	942.0	908.3
70°	992.4	942.0	899.9	773.8	740.1
72.5°	790.6	740.1	681.2	614.0	588.7
75°	597.1	555.1	521.4	496.2	546.7
77.5°	412.1	395.3	370.1	344.8	336.4
80°	269.1	260.7	252.3	243.9	235.5
82.5°	159.8	159.8	159.8	159.8	159.8
85°	84.1	92.5	100.9	109.3	117.7
87.5°	50.5	50.5	58.9	67.3	75.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)