

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: P563235

Luminaire Tested: FSR-24-4-LD4-3HI-50-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563235  
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-LD4-3HI-50-UNV-93-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

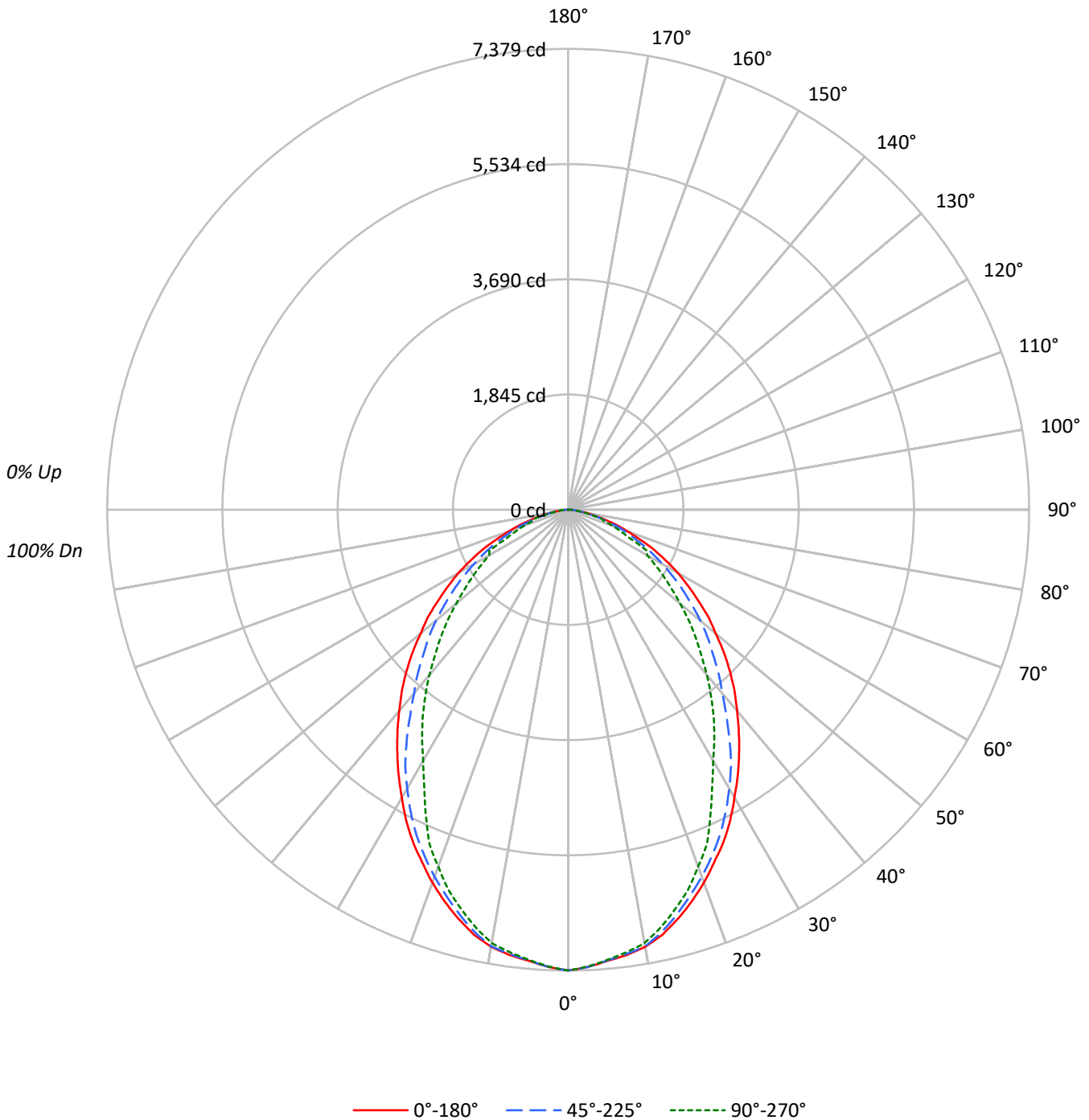
Lumens per Lamp: N/A  
Luminaire Lumens: 14486.0 lumens  
Efficiency: N/A  
Efficacy: 111.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563235

CATALOG NUMBER: FSR-24-4-LD4-3HI-50-UNV-93-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P563235

CATALOG NUMBER: FSR-24-4-LD4-3HI-50-UNV-93-85-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	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°	9928	9928	9928
5°	9793	9782	9770
10°	9709	9697	9627
15°	9447	9352	9221
20°	9100	8953	8709
25°	8726	8536	8004
30°	8270	8005	7210
35°	7833	7398	6670
40°	7387	6743	6068
45°	6964	6233	5486
50°	6446	5785	4893
55°	5963	5243	4382
60°	5463	4683	3925
65°	4807	4101	3476
70°	3960	3591	2953
75°	3149	2750	2883
80°	2115	1983	1851
85°	1317	1581	1843

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6964 cd/sqm



TEST NUMBER: P563235

CATALOG NUMBER: FSR-24-4-LD4-3HI-50-UNV-93-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	686.9	4.7
10°-20°	1885.1	13.0
20°-30°	2609.8	18.0
30°-40°	2782.8	19.2
40°-50°	2538.7	17.5
50°-60°	1988.9	13.7
60°-70°	1296.2	8.9
70°-80°	574.3	4.0
80°-90°	123.3	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°	5181.8	35.8
0°-40°	7964.5	55.0
0°-60°	12492.1	86.2
0°-90°	14486.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14486.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7379	7379	7379	7379	7379	
5°	7251	7242	7242	7234	7234	688
15°	6782	6782	6714	6645	6620	1907
25°	5878	5844	5750	5545	5391	2698
35°	4769	4734	4504	4163	4061	2981
45°	3660	3583	3276	3003	2883	2819
55°	2542	2465	2235	1971	1868	2280
65°	1510	1425	1288	1314	1092	1488
75°	606	563	529	503	554	649
85°	85	94	102	111	119	118
90°	0	0	0	0	0	



TEST NUMBER: P563235

CATALOG NUMBER: FSR-24-4-LD4-3HI-50-UNV-93-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7379.0	7379.0	7379.0	7379.0	7379.0
2.5°	7327.8	7327.8	7327.8	7319.3	7319.3
5°	7251.0	7242.5	7242.5	7234.0	7234.0
7.5°	7191.3	7182.8	7174.2	7165.7	7148.6
10°	7106.0	7106.0	7097.5	7054.8	7046.3
12.5°	6969.5	6961.0	6926.9	6867.1	6850.1
15°	6781.8	6781.8	6713.6	6645.3	6619.8
17.5°	6577.1	6568.6	6483.3	6415.0	6380.9
20°	6355.3	6338.2	6252.9	6142.0	6082.3
22.5°	6107.9	6107.9	6005.5	5860.5	5800.8
25°	5877.6	5843.5	5749.6	5544.9	5391.3
27.5°	5613.1	5562.0	5459.6	5169.5	4990.4
30°	5323.1	5297.5	5152.5	4777.1	4640.7
32.5°	5050.1	5007.5	4853.9	4461.5	4350.6
35°	4768.6	4734.5	4504.2	4162.9	4060.6
37.5°	4487.1	4444.4	4154.4	3881.4	3753.5
40°	4205.6	4154.4	3838.8	3591.4	3454.9
42.5°	3941.1	3872.9	3565.8	3301.3	3147.8
45°	3659.6	3582.9	3275.8	3002.8	2883.3
47.5°	3378.1	3309.9	3028.4	2746.9	2610.4
50°	3079.5	3019.8	2763.9	2482.4	2337.4
52.5°	2832.2	2738.3	2490.9	2209.4	2090.0
55°	2542.1	2465.3	2235.0	1970.6	1868.2
57.5°	2277.7	2200.9	1987.6	1740.2	1654.9
60°	2030.3	1919.4	1740.2	1527.0	1458.7
62.5°	1757.3	1672.0	1518.4	1339.3	1424.6
65°	1509.9	1424.6	1288.1	1313.7	1091.9
67.5°	1236.9	1194.3	1074.9	955.4	921.3
70°	1006.6	955.4	912.8	784.8	750.7
72.5°	801.9	750.7	691.0	622.7	597.1
75°	605.7	563.0	528.9	503.3	554.5
77.5°	418.0	400.9	375.3	349.8	341.2
80°	273.0	264.4	255.9	247.4	238.9
82.5°	162.1	162.1	162.1	162.1	162.1
85°	85.3	93.8	102.4	110.9	119.4
87.5°	51.2	51.2	59.7	68.2	76.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)