

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: P562537

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562537  
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-LD4-2HI-35-UNV-93-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

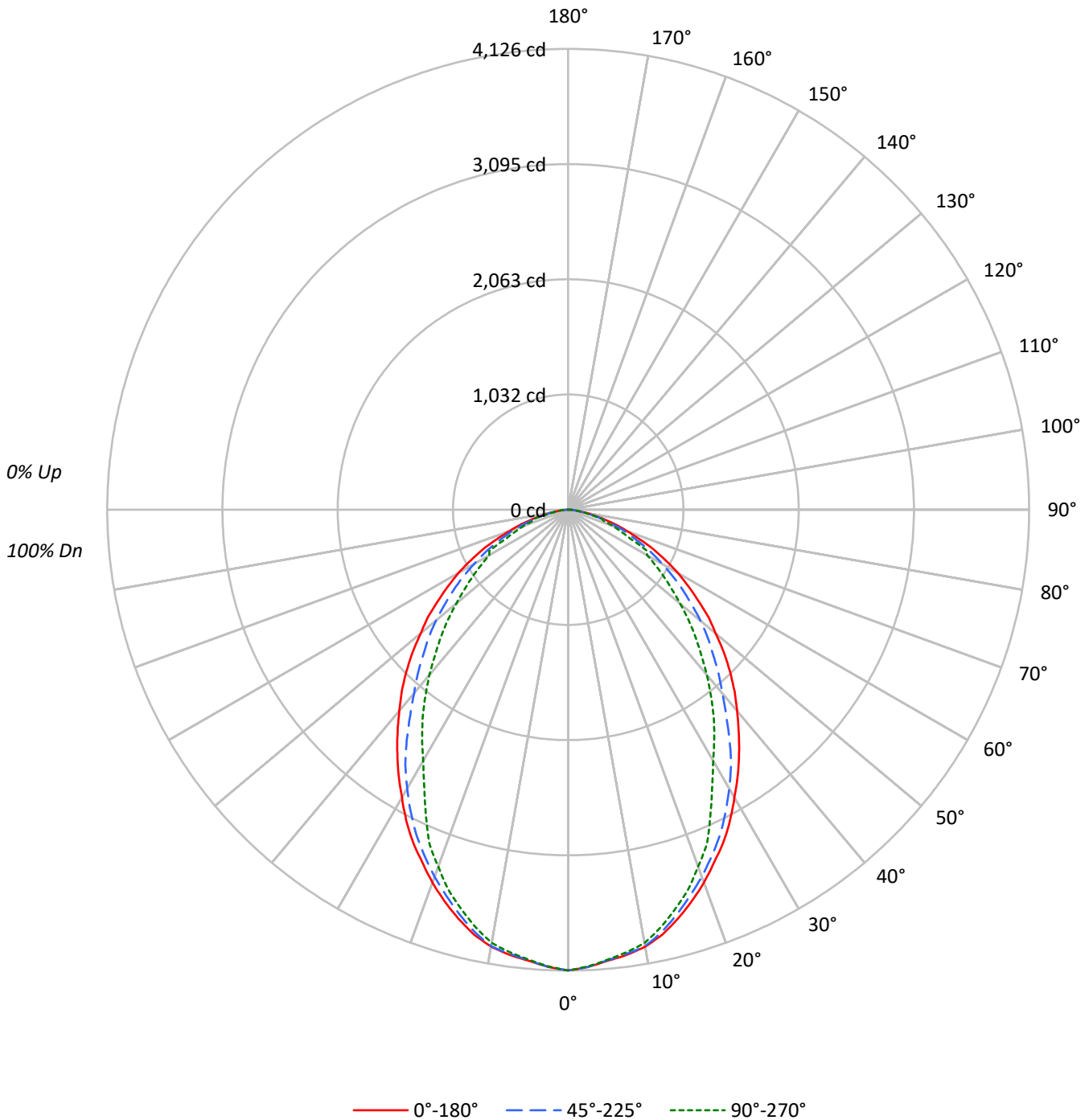
Lumens per Lamp: N/A  
Luminaire Lumens: 8099.0 lumens  
Efficiency: N/A  
Efficacy: 93.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P562537

CATALOG NUMBER: FSR-24-4-LD4-2HI-35-UNV-93-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P562537

CATALOG NUMBER: FSR-24-4-LD4-2HI-35-UNV-93-88-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°	5551	5551	5551
5°	5475	5469	5462
10°	5428	5421	5382
15°	5282	5228	5155
20°	5088	5006	4869
25°	4878	4772	4475
30°	4624	4476	4031
35°	4379	4136	3729
40°	4130	3770	3393
45°	3893	3485	3068
50°	3604	3235	2735
55°	3334	2931	2450
60°	3055	2618	2195
65°	2688	2293	1944
70°	2214	2007	1651
75°	1760	1537	1612
80°	1182	1109	1034
85°	736	883	1031

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3893 cd/sqm



TEST NUMBER: P562537

CATALOG NUMBER: FSR-24-4-LD4-2HI-35-UNV-93-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	384.0	4.7
10°-20°	1053.9	13.0
20°-30°	1459.1	18.0
30°-40°	1555.8	19.2
40°-50°	1419.4	17.5
50°-60°	1112.0	13.7
60°-70°	724.7	8.9
70°-80°	321.1	4.0
80°-90°	68.9	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°	2897.1	35.8
0°-40°	4452.9	55.0
0°-60°	6984.3	86.2
0°-90°	8099.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8099.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4126	4126	4126	4126	4126	
5°	4054	4049	4049	4044	4044	385
15°	3792	3792	3754	3715	3701	1066
25°	3286	3267	3215	3100	3014	1509
35°	2666	2647	2518	2328	2270	1667
45°	2046	2003	1831	1679	1612	1576
55°	1421	1378	1250	1102	1044	1275
65°	844	796	720	734	610	832
75°	339	315	296	281	310	363
85°	48	52	57	62	67	66
90°	0	0	0	0	0	



TEST NUMBER: P562537

CATALOG NUMBER: FSR-24-4-LD4-2HI-35-UNV-93-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4125.5	4125.5	4125.5	4125.5	4125.5
2.5°	4096.9	4096.9	4096.9	4092.1	4092.1
5°	4054.0	4049.2	4049.2	4044.4	4044.4
7.5°	4020.6	4015.8	4011.1	4006.3	3996.7
10°	3972.9	3972.9	3968.1	3944.3	3939.5
12.5°	3896.6	3891.8	3872.7	3839.4	3829.8
15°	3791.7	3791.7	3753.5	3715.4	3701.0
17.5°	3677.2	3672.4	3624.7	3586.6	3567.5
20°	3553.2	3543.7	3496.0	3434.0	3400.6
22.5°	3414.9	3414.9	3357.7	3276.6	3243.2
25°	3286.1	3267.0	3214.6	3100.1	3014.3
27.5°	3138.3	3109.6	3052.4	2890.3	2790.1
30°	2976.1	2961.8	2880.7	2670.9	2594.5
32.5°	2823.5	2799.6	2713.8	2494.4	2432.4
35°	2666.1	2647.0	2518.2	2327.5	2270.2
37.5°	2508.7	2484.9	2322.7	2170.1	2098.5
40°	2351.3	2322.7	2146.2	2007.9	1931.6
42.5°	2203.5	2165.3	1993.6	1845.8	1759.9
45°	2046.1	2003.1	1831.4	1678.8	1612.1
47.5°	1888.7	1850.5	1693.1	1535.7	1459.4
50°	1721.7	1688.4	1545.3	1387.9	1306.8
52.5°	1583.4	1531.0	1392.7	1235.3	1168.5
55°	1421.3	1378.4	1249.6	1101.7	1044.5
57.5°	1273.4	1230.5	1111.3	973.0	925.3
60°	1135.1	1073.1	973.0	853.7	815.6
62.5°	982.5	934.8	849.0	748.8	796.5
65°	844.2	796.5	720.2	734.5	610.5
67.5°	691.6	667.7	600.9	534.2	515.1
70°	562.8	534.2	510.3	438.8	419.7
72.5°	448.3	419.7	386.3	348.2	333.9
75°	338.6	314.8	295.7	281.4	310.0
77.5°	233.7	224.2	209.9	195.5	190.8
80°	152.6	147.9	143.1	138.3	133.5
82.5°	90.6	90.6	90.6	90.6	90.6
85°	47.7	52.5	57.2	62.0	66.8
87.5°	28.6	28.6	33.4	38.2	42.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)