

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: P563411

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-82-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563411  
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-LD4-3LO-50-UNV-82-85-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

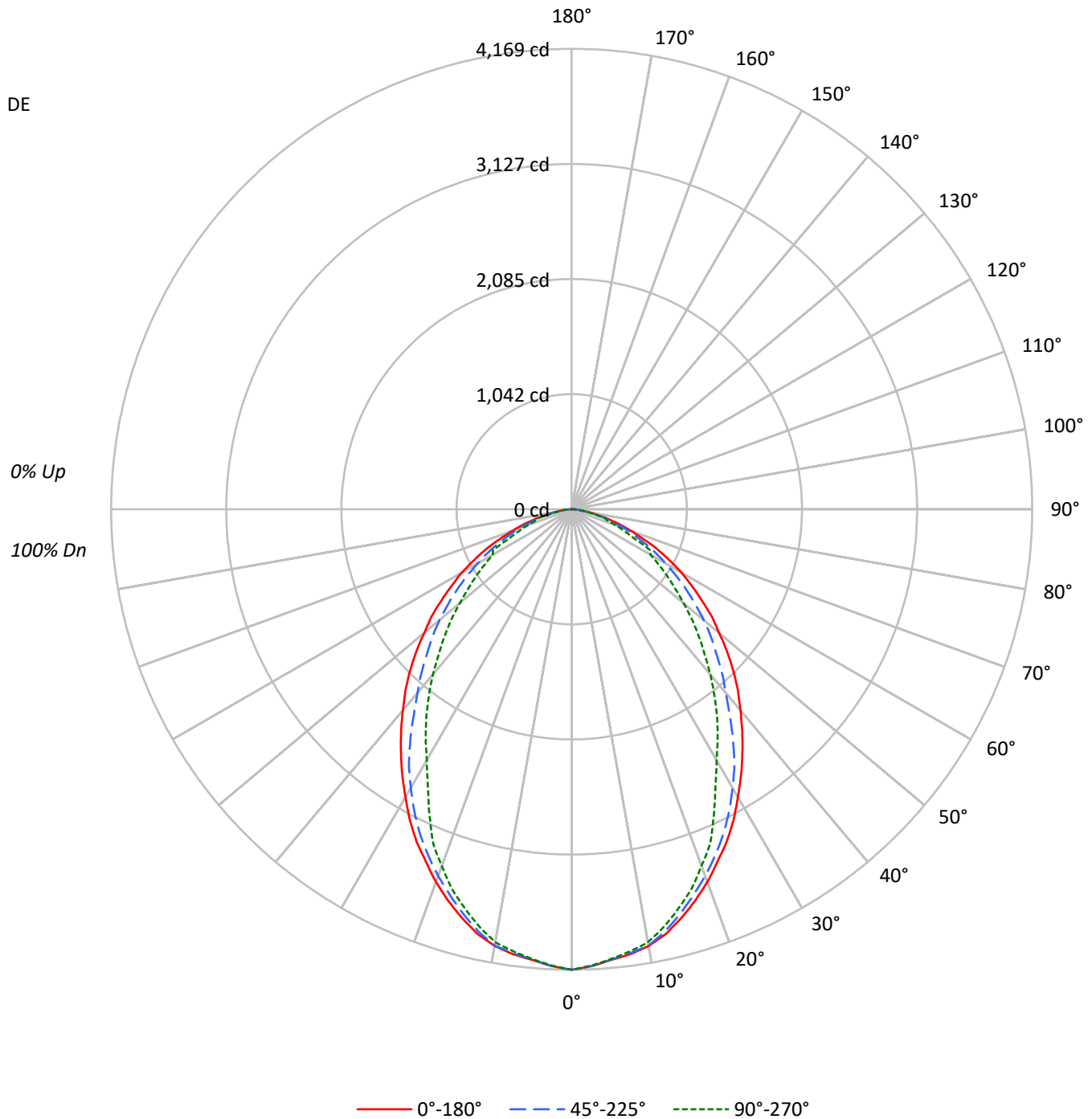
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8185.0 lumens  
Efficiency: N/A  
Efficacy: 116.6 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): 70.2  
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: P563411  
CATALOG NUMBER: FSR-24-4-LD4-3LO-50-UNV-82-85-EDD

### Luminous Intensity Polar Plot



TEST NUMBER: P563411

CATALOG NUMBER: FSR-24-4-LD4-3LO-50-UNV-82-85-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32

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

	0°	45°	90°
0°	5610	5610	5610
5°	5534	5527	5521
10°	5486	5479	5439
15°	5338	5284	5210
20°	5142	5059	4921
25°	4930	4823	4522
30°	4673	4523	4074
35°	4426	4180	3768
40°	4174	3810	3429
45°	3935	3522	3100
50°	3642	3269	2765
55°	3369	2962	2476
60°	3087	2646	2218
65°	2716	2317	1964
70°	2238	2029	1669
75°	1779	1553	1629
80°	1195	1120	1046
85°	744	892	1042

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3935 cd/sqm



TEST NUMBER: P563411

CATALOG NUMBER: FSR-24-4-LD4-3LO-50-UNV-82-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	388.1	4.7
10°-20°	1065.1	13.0
20°-30°	1474.6	18.0
30°-40°	1572.4	19.2
40°-50°	1434.5	17.5
50°-60°	1123.8	13.7
60°-70°	732.4	8.9
70°-80°	324.5	4.0
80°-90°	69.7	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°	2927.8	35.8
0°-40°	4500.2	55.0
0°-60°	7058.4	86.2
0°-90°	8185.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8185.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4169	4169	4169	4169	4169	
5°	4097	4092	4092	4087	4087	389
15°	3832	3832	3793	3755	3740	1077
25°	3321	3302	3249	3133	3046	1525
35°	2694	2675	2545	2352	2294	1684
45°	2068	2024	1851	1697	1629	1593
55°	1436	1393	1263	1113	1056	1288
65°	853	805	728	742	617	841
75°	342	318	299	284	313	367
85°	48	53	58	63	68	67
90°	0	0	0	0	0	



TEST NUMBER: P563411

CATALOG NUMBER: FSR-24-4-LD4-3LO-50-UNV-82-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4169.3	4169.3	4169.3	4169.3	4169.3
2.5°	4140.4	4140.4	4140.4	4135.6	4135.6
5°	4097.0	4092.2	4092.2	4087.4	4087.4
7.5°	4063.3	4058.5	4053.6	4048.8	4039.2
10°	4015.1	4015.1	4010.3	3986.2	3981.3
12.5°	3938.0	3933.1	3913.9	3880.1	3870.5
15°	3831.9	3831.9	3793.4	3754.8	3740.3
17.5°	3716.2	3711.4	3663.2	3624.7	3605.4
20°	3590.9	3581.3	3533.1	3470.4	3436.7
22.5°	3451.1	3451.1	3393.3	3311.4	3277.6
25°	3321.0	3301.7	3248.7	3133.0	3046.3
27.5°	3171.6	3142.7	3084.8	2920.9	2819.7
30°	3007.7	2993.2	2911.3	2699.2	2622.1
32.5°	2853.5	2829.4	2742.6	2520.9	2458.2
35°	2694.4	2675.1	2545.0	2352.2	2294.3
37.5°	2535.3	2511.2	2347.4	2193.1	2120.8
40°	2376.3	2347.4	2169.0	2029.2	1952.1
42.5°	2226.9	2188.3	2014.8	1865.4	1778.6
45°	2067.8	2024.4	1850.9	1696.7	1629.2
47.5°	1908.7	1870.2	1711.1	1552.1	1474.9
50°	1740.0	1706.3	1561.7	1402.6	1320.7
52.5°	1600.3	1547.2	1407.5	1248.4	1180.9
55°	1436.4	1393.0	1262.8	1113.4	1055.6
57.5°	1286.9	1243.6	1123.1	983.3	935.1
60°	1147.2	1084.5	983.3	862.8	824.2
62.5°	992.9	944.7	858.0	756.7	804.9
65°	853.1	804.9	727.8	742.3	617.0
67.5°	698.9	674.8	607.3	539.8	520.6
70°	568.8	539.8	515.7	443.4	424.2
72.5°	453.1	424.2	390.4	351.9	337.4
75°	342.2	318.1	298.8	284.4	313.3
77.5°	236.2	226.5	212.1	197.6	192.8
80°	154.2	149.4	144.6	139.8	135.0
82.5°	91.6	91.6	91.6	91.6	91.6
85°	48.2	53.0	57.8	62.7	67.5
87.5°	28.9	28.9	33.7	38.6	43.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)