

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: P563652

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563652  
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-LD4-4HI-35-UNV-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

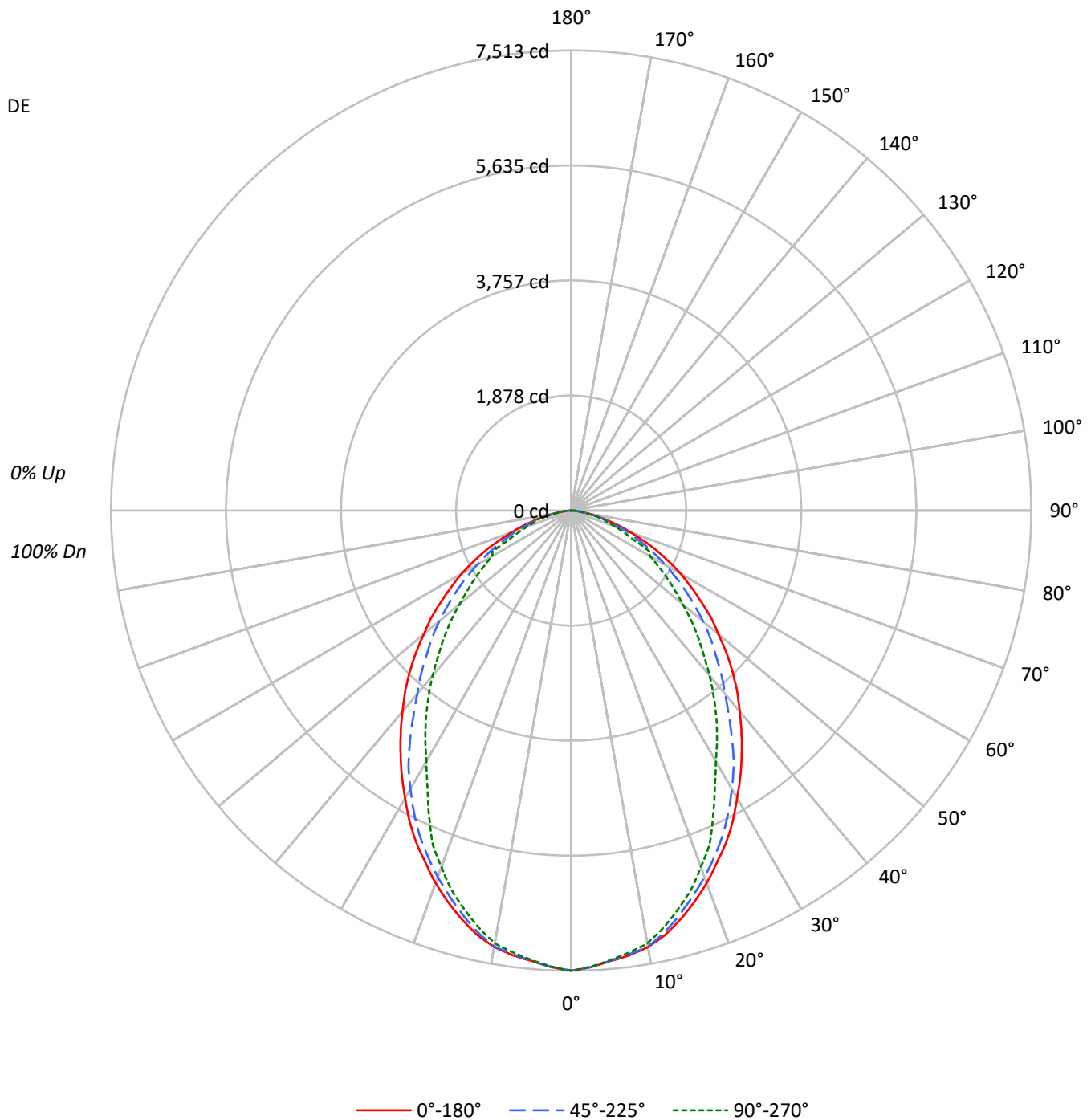
Lumens per Lamp: N/A  
Luminaire Lumens: 14749.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563652

CATALOG NUMBER: FSR-24-4-LD4-4HI-35-UNV-81-86-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563652

CATALOG NUMBER: FSR-24-4-LD4-4HI-35-UNV-81-86-EDD-90

**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°	10109	10109	10109
5°	9971	9960	9948
10°	9885	9873	9802
15°	9618	9522	9388
20°	9265	9116	8867
25°	8884	8691	8149
30°	8420	8150	7341
35°	7975	7533	6791
40°	7521	6865	6178
45°	7090	6346	5586
50°	6563	5891	4981
55°	6072	5338	4462
60°	5563	4768	3997
65°	4894	4175	3539
70°	4032	3656	3007
75°	3206	2799	2935
80°	2153	2019	1884
85°	1342	1609	1877

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7090 cd/sqm



TEST NUMBER: P563652

CATALOG NUMBER: FSR-24-4-LD4-4HI-35-UNV-81-86-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	699.4	4.7
10°-20°	1919.3	13.0
20°-30°	2657.2	18.0
30°-40°	2833.3	19.2
40°-50°	2584.8	17.5
50°-60°	2025.0	13.7
60°-70°	1319.8	8.9
70°-80°	584.7	4.0
80°-90°	125.5	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°	5275.8	35.8
0°-40°	8109.1	55.0
0°-60°	12718.9	86.2
0°-90°	14749.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14749.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7513	7513	7513	7513	7513	
5°	7383	7374	7374	7365	7365	701
15°	6905	6905	6836	6766	6740	1941
25°	5984	5950	5854	5646	5489	2747
35°	4855	4820	4586	4238	4134	3035
45°	3726	3648	3335	3057	2936	2870
55°	2588	2510	2276	2006	1902	2322
65°	1537	1450	1312	1338	1112	1515
75°	617	573	538	512	565	661
85°	87	96	104	113	122	120
90°	0	0	0	0	0	



TEST NUMBER: P563652

CATALOG NUMBER: FSR-24-4-LD4-4HI-35-UNV-81-86-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7512.9	7512.9	7512.9	7512.9	7512.9
2.5°	7460.8	7460.8	7460.8	7452.1	7452.1
5°	7382.7	7374.0	7374.0	7365.3	7365.3
7.5°	7321.9	7313.2	7304.5	7295.8	7278.4
10°	7235.0	7235.0	7226.3	7182.9	7174.2
12.5°	7096.0	7087.4	7052.6	6991.8	6974.4
15°	6905.0	6905.0	6835.5	6766.0	6739.9
17.5°	6696.5	6687.8	6601.0	6531.5	6496.7
20°	6470.7	6453.3	6366.5	6253.5	6192.7
22.5°	6218.8	6218.8	6114.6	5966.9	5906.1
25°	5984.3	5949.6	5854.0	5645.6	5489.2
27.5°	5715.0	5662.9	5558.7	5263.4	5081.0
30°	5419.7	5393.7	5246.0	4863.9	4724.9
32.5°	5141.8	5098.4	4942.0	4542.5	4429.6
35°	4855.2	4820.4	4585.9	4238.5	4134.3
37.5°	4568.6	4525.1	4229.8	3951.9	3821.6
40°	4281.9	4229.8	3908.5	3656.6	3517.6
42.5°	4012.7	3943.2	3630.5	3361.3	3204.9
45°	3726.1	3647.9	3335.2	3057.3	2935.7
47.5°	3439.5	3370.0	3083.3	2796.7	2657.8
50°	3135.5	3074.7	2814.1	2527.5	2379.8
52.5°	2883.6	2788.0	2536.2	2249.5	2127.9
55°	2588.3	2510.1	2275.6	2006.3	1902.1
57.5°	2319.0	2240.9	2023.7	1771.8	1685.0
60°	2067.1	1954.2	1771.8	1554.7	1485.2
62.5°	1789.2	1702.4	1546.0	1363.6	1450.5
65°	1537.3	1450.5	1311.5	1337.6	1111.7
67.5°	1259.4	1216.0	1094.4	972.8	938.0
70°	1024.9	972.8	929.3	799.1	764.3
72.5°	816.4	764.3	703.5	634.0	608.0
75°	616.7	573.2	538.5	512.4	564.6
77.5°	425.6	408.2	382.2	356.1	347.4
80°	277.9	269.2	260.6	251.9	243.2
82.5°	165.0	165.0	165.0	165.0	165.0
85°	86.9	95.5	104.2	112.9	121.6
87.5°	52.1	52.1	60.8	69.5	78.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)