

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: P563851

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563851  
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-LD4-4LO-35-UNV-81-94-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

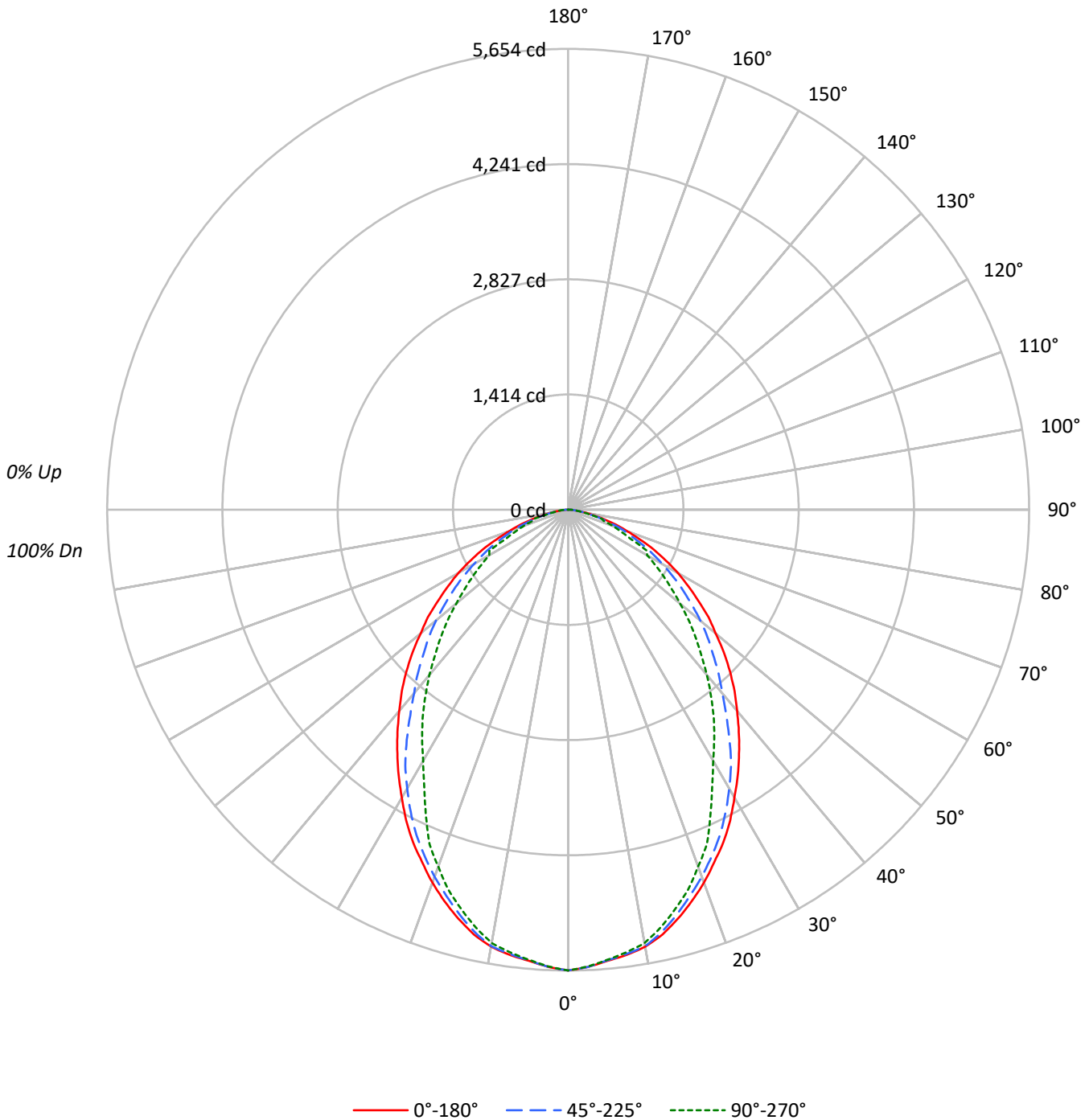
Lumens per Lamp: N/A  
Luminaire Lumens: 11099.0 lumens  
Efficiency: N/A  
Efficacy: 118.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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### Luminous Intensity Polar Plot





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**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	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°	7607	7607	7607
5°	7504	7495	7486
10°	7439	7430	7376
15°	7238	7165	7065
20°	6972	6860	6673
25°	6686	6540	6133
30°	6337	6133	5524
35°	6001	5668	5110
40°	5660	5166	4649
45°	5335	4776	4204
50°	4939	4433	3749
55°	4569	4017	3358
60°	4186	3588	3008
65°	3683	3142	2663
70°	3034	2751	2263
75°	2413	2106	2208
80°	1621	1519	1418
85°	1010	1210	1413

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5335 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	526.3	4.7
10°-20°	1444.3	13.0
20°-30°	1999.6	18.0
30°-40°	2132.1	19.2
40°-50°	1945.1	17.5
50°-60°	1523.9	13.7
60°-70°	993.2	8.9
70°-80°	440.0	4.0
80°-90°	94.5	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°	3970.2	35.8
0°-40°	6102.4	55.0
0°-60°	9571.4	86.2
0°-90°	11099.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11099.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5654	5654	5654	5654	5654	
5°	5556	5549	5549	5543	5543	527
15°	5196	5196	5144	5092	5072	1461
25°	4503	4477	4405	4248	4131	2067
35°	3654	3628	3451	3190	3111	2284
45°	2804	2745	2510	2301	2209	2160
55°	1948	1889	1712	1510	1431	1747
65°	1157	1092	987	1007	837	1140
75°	464	431	405	386	425	497
85°	65	72	78	85	92	91
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5653.7	5653.7	5653.7	5653.7	5653.7
2.5°	5614.5	5614.5	5614.5	5607.9	5607.9
5°	5555.6	5549.1	5549.1	5542.6	5542.6
7.5°	5509.9	5503.4	5496.8	5490.3	5477.2
10°	5444.5	5444.5	5438.0	5405.3	5398.8
12.5°	5340.0	5333.4	5307.3	5261.5	5248.4
15°	5196.2	5196.2	5143.9	5091.6	5072.0
17.5°	5039.3	5032.8	4967.4	4915.1	4889.0
20°	4869.4	4856.3	4790.9	4706.0	4660.2
22.5°	4679.8	4679.8	4601.4	4490.3	4444.5
25°	4503.3	4477.2	4405.3	4248.4	4130.8
27.5°	4300.7	4261.5	4183.1	3960.8	3823.6
30°	4078.5	4058.9	3947.8	3660.2	3555.6
32.5°	3869.3	3836.7	3719.0	3418.4	3333.4
35°	3653.7	3627.5	3451.0	3189.6	3111.2
37.5°	3438.0	3405.3	3183.1	2973.9	2875.9
40°	3222.3	3183.1	2941.2	2751.7	2647.1
42.5°	3019.7	2967.4	2732.1	2529.5	2411.8
45°	2804.0	2745.1	2509.8	2300.7	2209.2
47.5°	2588.3	2536.0	2320.3	2104.6	2000.0
50°	2359.5	2313.8	2117.7	1902.0	1790.9
52.5°	2170.0	2098.1	1908.5	1692.8	1601.3
55°	1947.7	1888.9	1712.4	1509.8	1431.4
57.5°	1745.1	1686.3	1522.9	1333.4	1268.0
60°	1555.6	1470.6	1333.4	1170.0	1117.7
62.5°	1346.4	1281.1	1163.4	1026.2	1091.5
65°	1156.9	1091.5	986.9	1006.6	836.6
67.5°	947.7	915.0	823.5	732.0	705.9
70°	771.3	732.0	699.4	601.3	575.2
72.5°	614.4	575.2	529.4	477.1	457.5
75°	464.1	431.4	405.2	385.6	424.8
77.5°	320.3	307.2	287.6	268.0	261.4
80°	209.2	202.6	196.1	189.5	183.0
82.5°	124.2	124.2	124.2	124.2	124.2
85°	65.4	71.9	78.4	85.0	91.5
87.5°	39.2	39.2	45.8	52.3	58.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)