

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: P563921

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563921  
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-40-UNV-82-84-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

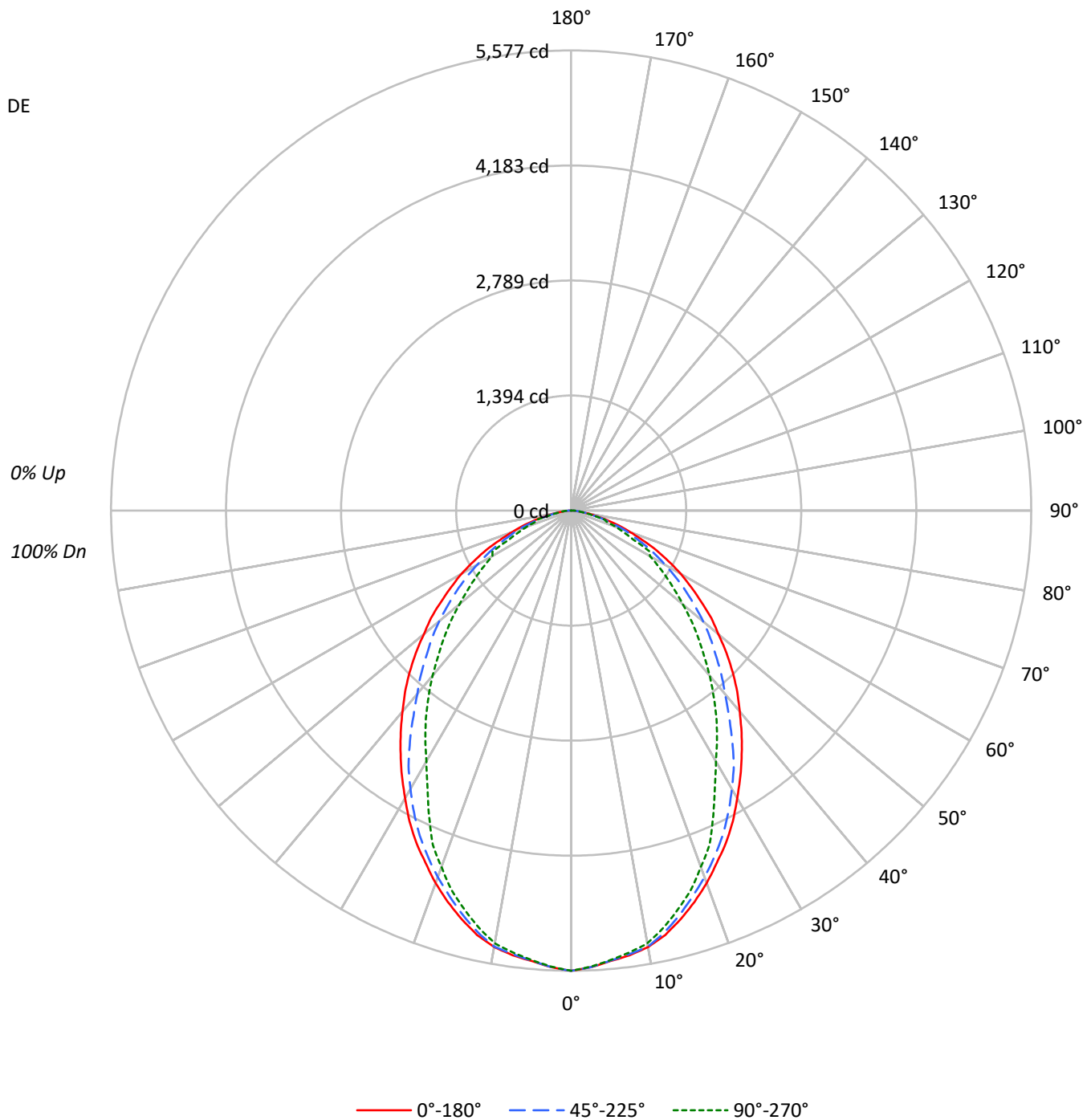
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10949.0 lumens  
Efficiency: N/A  
Efficacy: 117.0 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	7504	7504	7504
5°	7402	7393	7385
10°	7338	7329	7276
15°	7140	7068	6970
20°	6878	6767	6582
25°	6595	6452	6050
30°	6251	6050	5450
35°	5920	5592	5041
40°	5583	5096	4587
45°	5263	4711	4147
50°	4872	4373	3698
55°	4507	3963	3312
60°	4130	3539	2967
65°	3633	3100	2628
70°	2993	2714	2232
75°	2380	2078	2179
80°	1598	1499	1399
85°	996	1195	1394

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5263 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	519.2	4.7
10°-20°	1424.8	13.0
20°-30°	1972.6	18.0
30°-40°	2103.3	19.2
40°-50°	1918.8	17.5
50°-60°	1503.3	13.7
60°-70°	979.7	8.9
70°-80°	434.1	4.0
80°-90°	93.2	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°	3916.5	35.8
0°-40°	6019.9	55.0
0°-60°	9442.0	86.2
0°-90°	10949.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10949.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5577	5577	5577	5577	5577	
5°	5481	5474	5474	5468	5468	520
15°	5126	5126	5074	5023	5003	1441
25°	4442	4417	4346	4191	4075	2040
35°	3604	3578	3404	3146	3069	2253
45°	2766	2708	2476	2270	2179	2131
55°	1921	1863	1689	1489	1412	1723
65°	1141	1077	974	993	825	1125
75°	458	426	400	380	419	491
85°	64	71	77	84	90	89
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5577.3	5577.3	5577.3	5577.3	5577.3
2.5°	5538.6	5538.6	5538.6	5532.1	5532.1
5°	5480.6	5474.1	5474.1	5467.7	5467.7
7.5°	5435.4	5429.0	5422.5	5416.1	5403.2
10°	5370.9	5370.9	5364.5	5332.3	5325.8
12.5°	5267.8	5261.3	5235.5	5190.4	5177.5
15°	5125.9	5125.9	5074.4	5022.8	5003.4
17.5°	4971.2	4964.7	4900.3	4848.7	4822.9
20°	4803.5	4790.7	4726.2	4642.4	4597.2
22.5°	4616.6	4616.6	4539.2	4429.6	4384.4
25°	4442.5	4416.7	4345.8	4191.0	4075.0
27.5°	4242.6	4203.9	4126.5	3907.3	3771.9
30°	4023.4	4004.0	3894.4	3610.7	3507.6
32.5°	3817.0	3784.8	3668.8	3372.2	3288.3
35°	3604.3	3578.5	3404.4	3146.5	3069.1
37.5°	3391.5	3359.3	3140.0	2933.7	2837.0
40°	3178.7	3140.0	2901.5	2714.5	2611.3
42.5°	2978.8	2927.3	2695.1	2495.3	2379.2
45°	2766.1	2708.0	2475.9	2269.6	2179.3
47.5°	2553.3	2501.7	2288.9	2076.2	1973.0
50°	2327.6	2282.5	2089.1	1876.3	1766.7
52.5°	2140.6	2069.7	1882.7	1670.0	1579.7
55°	1921.4	1863.4	1689.3	1489.4	1412.0
57.5°	1721.5	1663.5	1502.3	1315.3	1250.9
60°	1534.6	1450.7	1315.3	1154.1	1102.6
62.5°	1328.2	1263.8	1147.7	1012.3	1076.8
65°	1141.2	1076.8	973.6	992.9	825.3
67.5°	934.9	902.7	812.4	722.1	696.4
70°	760.8	722.1	689.9	593.2	567.4
72.5°	606.1	567.4	522.3	470.7	451.3
75°	457.8	425.5	399.8	380.4	419.1
77.5°	315.9	303.0	283.7	264.4	257.9
80°	206.3	199.9	193.4	187.0	180.5
82.5°	122.5	122.5	122.5	122.5	122.5
85°	64.5	70.9	77.4	83.8	90.3
87.5°	38.7	38.7	45.1	51.6	58.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)