

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: P563704

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-80-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563704  
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-40-UNV-80-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

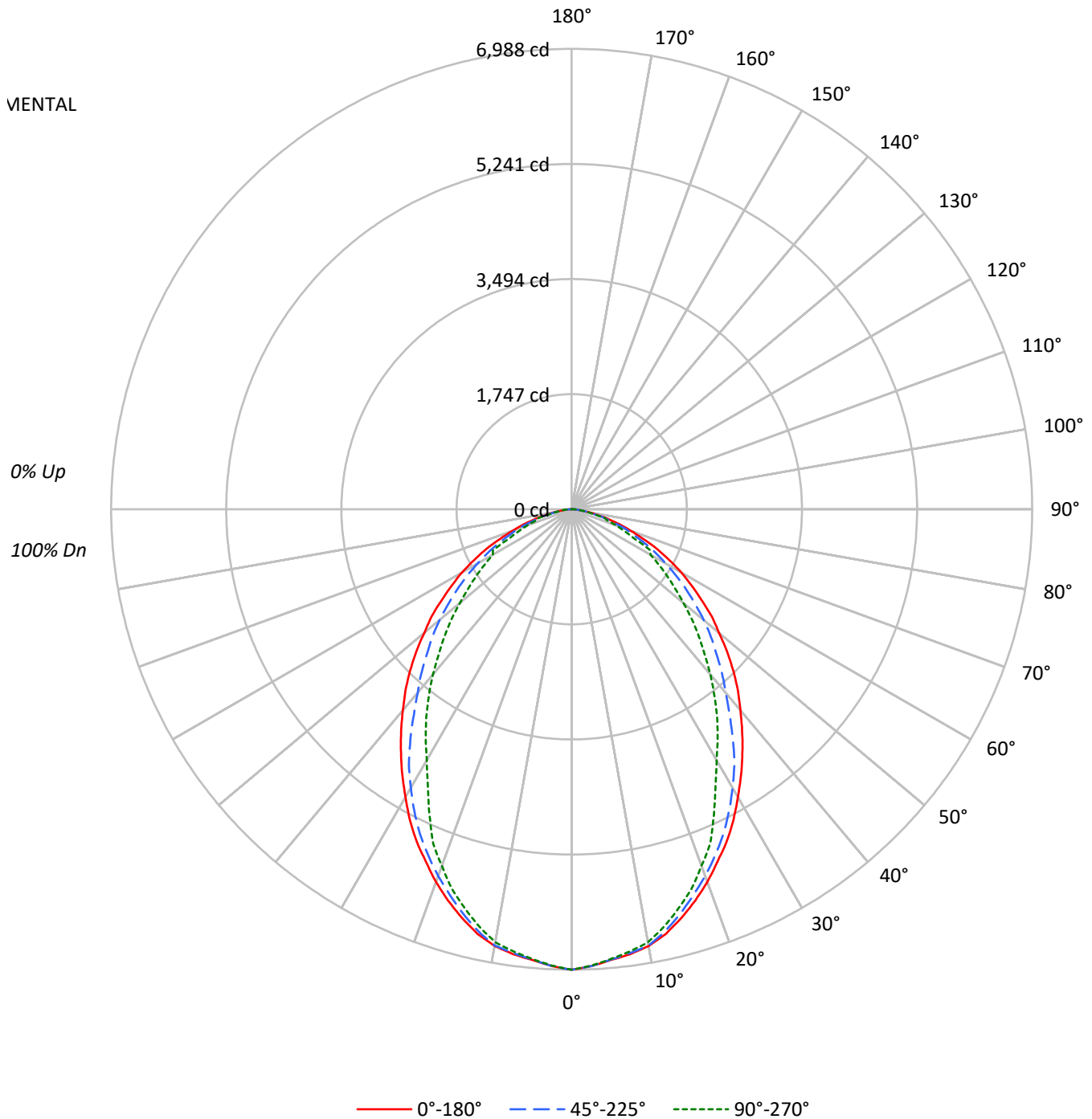
Lumens per Lamp: N/A  
Luminaire Lumens: 13719.0 lumens  
Efficiency: N/A  
Efficacy: 79.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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									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°	9403	9403	9403
5°	9275	9264	9253
10°	9194	9183	9117
15°	8947	8857	8733
20°	8618	8479	8248
25°	8264	8084	7580
30°	7832	7581	6828
35°	7418	7007	6317
40°	6996	6385	5747
45°	6595	5903	5196
50°	6105	5479	4634
55°	5647	4965	4150
60°	5174	4435	3718
65°	4553	3884	3292
70°	3750	3401	2797
75°	2982	2604	2730
80°	2003	1878	1753
85°	1247	1496	1746

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6595 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	650.5	4.7
10°-20°	1785.3	13.0
20°-30°	2471.6	18.0
30°-40°	2635.4	19.2
40°-50°	2404.3	17.5
50°-60°	1883.6	13.7
60°-70°	1227.6	8.9
70°-80°	543.9	4.0
80°-90°	116.8	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°	4907.4	35.8
0°-40°	7542.8	55.0
0°-60°	11830.7	86.2
0°-90°	13719.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13719.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6988	6988	6988	6988	6988	
5°	6867	6859	6859	6851	6851	652
15°	6423	6423	6358	6294	6269	1806
25°	5566	5534	5445	5251	5106	2556
35°	4516	4484	4266	3942	3846	2823
45°	3466	3393	3102	2844	2731	2670
55°	2408	2335	2117	1866	1769	2159
65°	1430	1349	1220	1244	1034	1409
75°	574	533	501	477	525	615
85°	81	89	97	105	113	112
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6988.3	6988.3	6988.3	6988.3	6988.3
2.5°	6939.8	6939.8	6939.8	6931.7	6931.7
5°	6867.1	6859.0	6859.0	6850.9	6850.9
7.5°	6810.5	6802.5	6794.4	6786.3	6770.1
10°	6729.7	6729.7	6721.7	6681.3	6673.2
12.5°	6600.5	6592.4	6560.1	6503.5	6487.4
15°	6422.8	6422.8	6358.1	6293.5	6269.3
17.5°	6228.9	6220.8	6140.0	6075.4	6043.0
20°	6018.8	6002.6	5921.9	5816.8	5760.3
22.5°	5784.5	5784.5	5687.6	5550.2	5493.7
25°	5566.4	5534.1	5445.2	5251.3	5105.9
27.5°	5315.9	5267.5	5170.5	4895.8	4726.2
30°	5041.3	5017.0	4879.7	4524.2	4394.9
32.5°	4782.7	4742.3	4596.9	4225.3	4120.3
35°	4516.1	4483.8	4265.7	3942.5	3845.6
37.5°	4249.5	4209.1	3934.4	3675.9	3554.7
40°	3982.9	3934.4	3635.5	3401.2	3272.0
42.5°	3732.5	3667.8	3377.0	3126.5	2981.1
45°	3465.9	3393.2	3102.3	2843.8	2730.7
47.5°	3199.3	3134.6	2868.0	2601.4	2472.2
50°	2916.5	2859.9	2617.6	2351.0	2213.6
52.5°	2682.2	2593.3	2359.0	2092.4	1979.3
55°	2407.5	2334.8	2116.7	1866.2	1769.3
57.5°	2157.1	2084.4	1882.4	1648.1	1567.3
60°	1922.8	1817.8	1648.1	1446.1	1381.5
62.5°	1664.3	1583.5	1438.0	1268.4	1349.2
65°	1430.0	1349.2	1219.9	1244.2	1034.1
67.5°	1171.4	1131.1	1017.9	904.8	872.5
70°	953.3	904.8	864.4	743.3	710.9
72.5°	759.4	710.9	654.4	589.8	565.5
75°	573.6	533.2	500.9	476.7	525.1
77.5°	395.9	379.7	355.5	331.2	323.2
80°	258.5	250.4	242.4	234.3	226.2
82.5°	153.5	153.5	153.5	153.5	153.5
85°	80.8	88.9	96.9	105.0	113.1
87.5°	48.5	48.5	56.6	64.6	72.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)