

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: P563707

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-80-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563707  
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-80-94-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

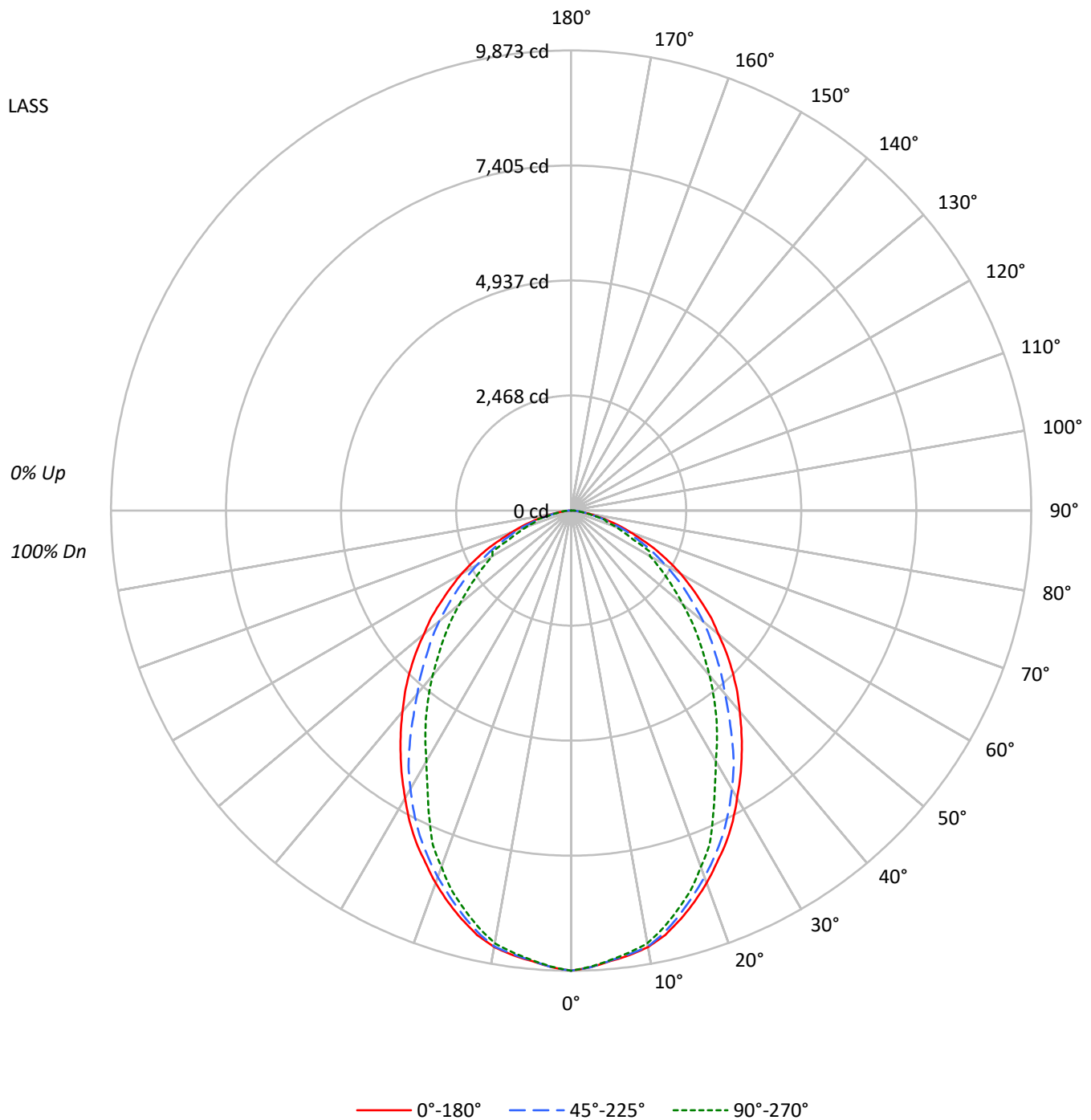
Lumens per Lamp: N/A  
Luminaire Lumens: 19382.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	13284	13284	13284
5°	13103	13088	13073
10°	12990	12974	12881
15°	12640	12512	12338
20°	12175	11979	11652
25°	11675	11421	10709
30°	11065	10711	9647
35°	10480	9899	8924
40°	9883	9021	8119
45°	9317	8340	7341
50°	8625	7741	6546
55°	7979	7015	5864
60°	7310	6266	5252
65°	6432	5487	4651
70°	5298	4805	3951
75°	4213	3679	3857
80°	2830	2653	2476
85°	1761	2115	2467

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9317 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	919.0	4.7
10°-20°	2522.2	13.0
20°-30°	3491.8	18.0
30°-40°	3723.3	19.2
40°-50°	3396.8	17.5
50°-60°	2661.1	13.7
60°-70°	1734.4	8.9
70°-80°	768.4	4.0
80°-90°	165.0	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°	6933.1	35.8
0°-40°	10656.4	55.0
0°-60°	16714.3	86.2
0°-90°	19382.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	19382.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9873	9873	9873	9873	9873	
5°	9702	9690	9690	9679	9679	921
15°	9074	9074	8983	8891	8857	2551
25°	7864	7818	7693	7419	7214	3610
35°	6380	6335	6026	5570	5433	3989
45°	4896	4794	4383	4018	3858	3772
55°	3401	3299	2990	2637	2500	3051
65°	2020	1906	1724	1758	1461	1991
75°	810	753	708	673	742	869
85°	114	126	137	148	160	158
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9872.9	9872.9	9872.9	9872.9	9872.9
2.5°	9804.4	9804.4	9804.4	9793.0	9793.0
5°	9701.7	9690.3	9690.3	9678.9	9678.9
7.5°	9621.8	9610.4	9599.0	9587.6	9564.8
10°	9507.7	9507.7	9496.3	9439.2	9427.8
12.5°	9325.1	9313.7	9268.0	9188.1	9165.3
15°	9074.0	9074.0	8982.7	8891.3	8857.1
17.5°	8800.0	8788.6	8674.5	8583.2	8537.5
20°	8503.3	8480.4	8366.3	8217.9	8138.0
22.5°	8172.3	8172.3	8035.3	7841.3	7761.4
25°	7864.1	7818.4	7692.9	7419.0	7213.5
27.5°	7510.3	7441.8	7304.8	6916.8	6677.1
30°	7122.2	7088.0	6893.9	6391.7	6209.1
32.5°	6757.0	6699.9	6494.4	5969.4	5821.0
35°	6380.3	6334.7	6026.5	5569.9	5433.0
37.5°	6003.7	5946.6	5558.5	5193.3	5022.1
40°	5627.0	5558.5	5136.2	4805.2	4622.6
42.5°	5273.2	5181.9	4771.0	4417.1	4211.7
45°	4896.5	4793.8	4382.9	4017.7	3857.9
47.5°	4519.9	4428.6	4051.9	3675.2	3492.6
50°	4120.4	4040.5	3698.1	3321.4	3127.4
52.5°	3789.4	3663.8	3332.8	2956.2	2796.4
55°	3401.3	3298.6	2990.4	2636.6	2499.6
57.5°	3047.5	2944.8	2659.4	2328.4	2214.3
60°	2716.5	2568.1	2328.4	2043.1	1951.8
62.5°	2351.2	2237.1	2031.7	1792.0	1906.1
65°	2020.2	1906.1	1723.5	1757.7	1461.0
67.5°	1655.0	1597.9	1438.1	1278.3	1232.7
70°	1346.8	1278.3	1221.3	1050.1	1004.4
72.5°	1072.9	1004.4	924.5	833.2	799.0
75°	810.4	753.3	707.7	673.4	741.9
77.5°	559.3	536.4	502.2	468.0	456.6
80°	365.2	353.8	342.4	331.0	319.6
82.5°	216.9	216.9	216.9	216.9	216.9
85°	114.1	125.6	137.0	148.4	159.8
87.5°	68.5	68.5	79.9	91.3	102.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)