

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: P563694

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563694  
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-93-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

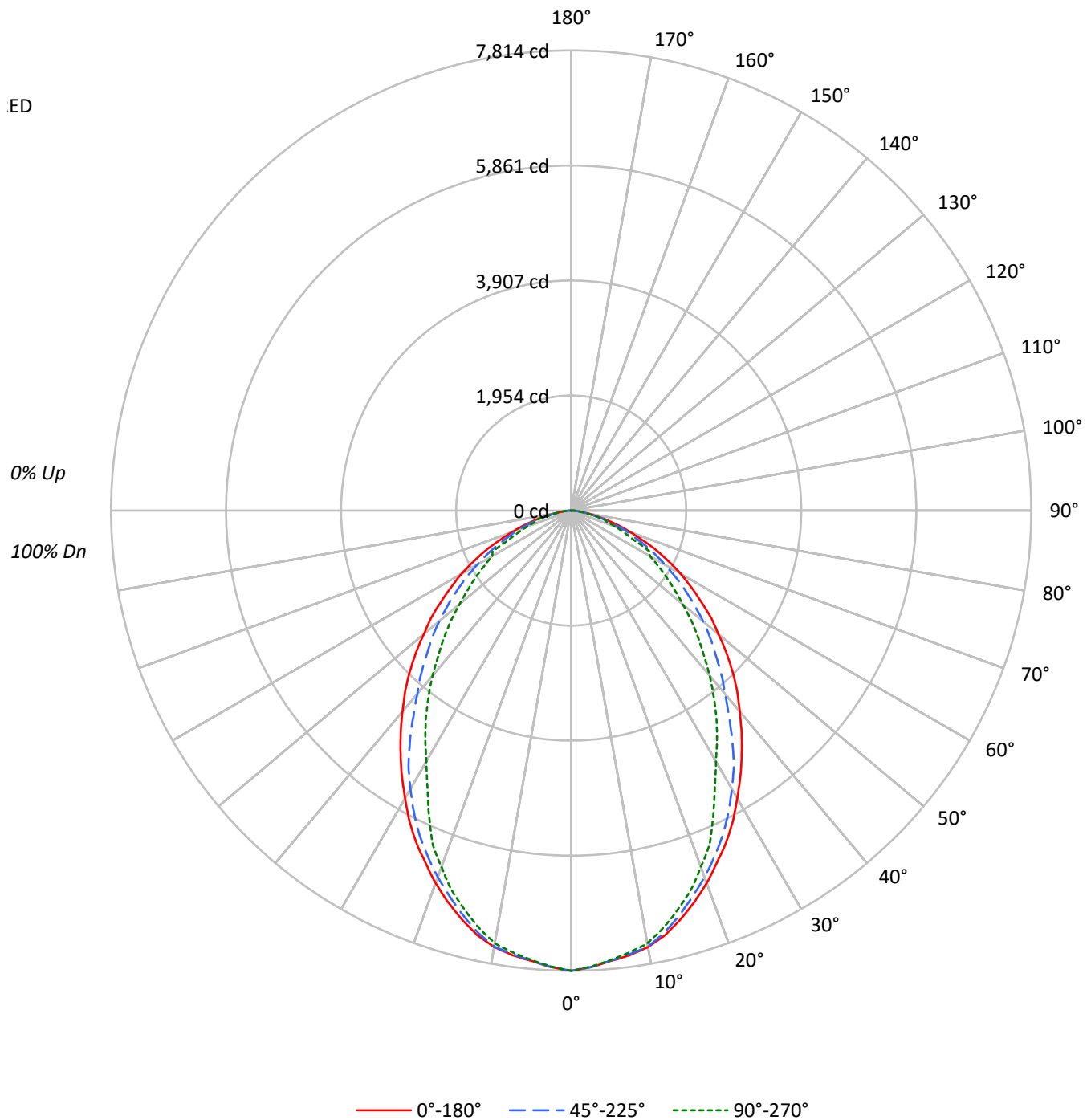
Lumens per Lamp: N/A  
Luminaire Lumens: 15341.0 lumens  
Efficiency: N/A  
Efficacy: 88.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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			
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°	10514	10514	10514
5°	10371	10359	10347
10°	10282	10269	10195
15°	10004	9904	9765
20°	9637	9482	9223
25°	9241	9040	8476
30°	8758	8478	7636
35°	8295	7835	7063
40°	7823	7140	6426
45°	7375	6601	5810
50°	6827	6127	5181
55°	6315	5552	4641
60°	5786	4959	4157
65°	5091	4343	3682
70°	4194	3803	3127
75°	3334	2912	3053
80°	2240	2100	1960
85°	1394	1673	1953

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7375 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	727.4	4.7
10°-20°	1996.4	13.0
20°-30°	2763.8	18.0
30°-40°	2947.0	19.2
40°-50°	2688.6	17.5
50°-60°	2106.3	13.7
60°-70°	1372.8	8.9
70°-80°	608.2	4.0
80°-90°	130.6	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°	5487.6	35.8
0°-40°	8434.6	55.0
0°-60°	13229.5	86.2
0°-90°	15341.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15341.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7814	7814	7814	7814	7814	
5°	7679	7670	7670	7661	7661	729
15°	7182	7182	7110	7038	7010	2019
25°	6224	6188	6089	5872	5710	2858
35°	5050	5014	4770	4409	4300	3157
45°	3876	3794	3469	3180	3054	2985
55°	2692	2611	2367	2087	1978	2415
65°	1599	1509	1364	1391	1156	1576
75°	641	596	560	533	587	687
85°	90	99	108	117	126	125
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7814.5	7814.5	7814.5	7814.5	7814.5
2.5°	7760.3	7760.3	7760.3	7751.3	7751.3
5°	7679.0	7670.0	7670.0	7660.9	7660.9
7.5°	7615.8	7606.7	7597.7	7588.6	7570.6
10°	7525.4	7525.4	7516.4	7471.2	7462.2
12.5°	7380.9	7371.8	7335.7	7272.5	7254.4
15°	7182.1	7182.1	7109.8	7037.6	7010.5
17.5°	6965.3	6956.3	6865.9	6793.6	6757.5
20°	6730.4	6712.3	6622.0	6504.6	6441.3
22.5°	6468.4	6468.4	6360.0	6206.4	6143.2
25°	6224.5	6188.4	6089.0	5872.2	5709.6
27.5°	5944.4	5890.2	5781.8	5474.7	5285.0
30°	5637.3	5610.2	5456.6	5059.1	4914.6
32.5°	5348.2	5303.0	5140.4	4724.8	4607.4
35°	5050.1	5013.9	4770.0	4408.6	4300.2
37.5°	4751.9	4706.8	4399.6	4110.5	3975.0
40°	4453.8	4399.6	4065.3	3803.4	3658.8
42.5°	4173.8	4101.5	3776.3	3496.2	3333.6
45°	3875.6	3794.3	3469.1	3180.0	3053.5
47.5°	3577.5	3505.2	3207.1	2909.0	2764.4
50°	3261.3	3198.1	2927.0	2628.9	2475.3
52.5°	2999.3	2899.9	2638.0	2339.8	2213.4
55°	2692.2	2610.9	2366.9	2086.9	1978.5
57.5°	2412.1	2330.8	2104.9	1843.0	1752.6
60°	2150.1	2032.7	1843.0	1617.1	1544.8
62.5°	1861.0	1770.7	1608.1	1418.4	1508.7
65°	1599.0	1508.7	1364.1	1391.3	1156.4
67.5°	1309.9	1264.8	1138.3	1011.8	975.7
70°	1066.0	1011.8	966.6	831.1	795.0
72.5°	849.2	795.0	731.8	659.5	632.4
75°	641.4	596.3	560.1	533.0	587.2
77.5°	442.7	424.6	397.5	370.4	361.4
80°	289.1	280.1	271.0	262.0	253.0
82.5°	171.6	171.6	171.6	171.6	171.6
85°	90.3	99.4	108.4	117.4	126.5
87.5°	54.2	54.2	63.2	72.3	81.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)