

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: P563302

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563302  
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-LD4-3LO-35-UNV-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

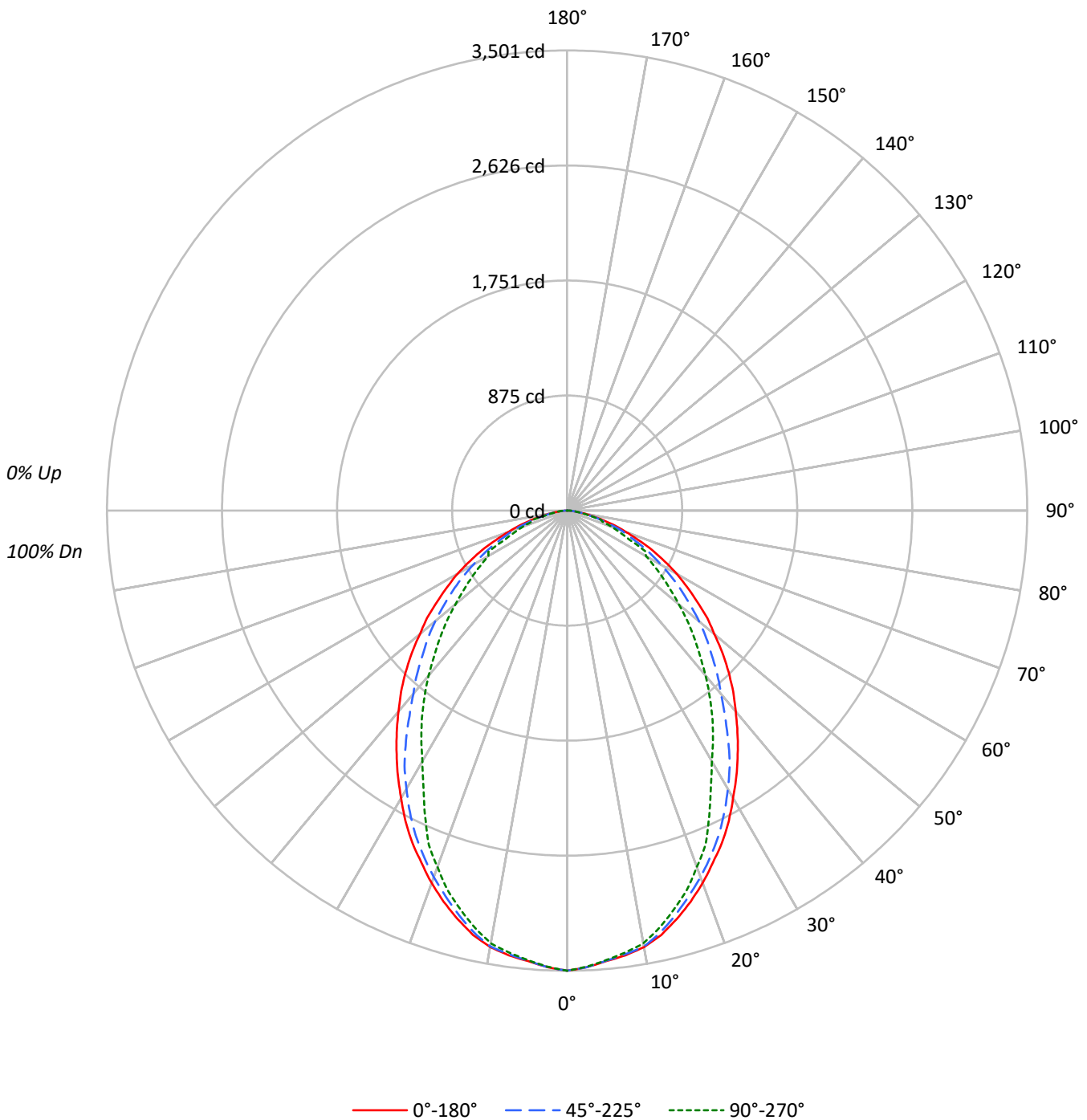
Lumens per Lamp: N/A  
Luminaire Lumens: 6873.0 lumens  
Efficiency: N/A  
Efficacy: 97.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4711	4711	4711
5°	4647	4641	4636
10°	4606	4601	4568
15°	4482	4437	4375
20°	4317	4248	4132
25°	4140	4050	3798
30°	3924	3798	3421
35°	3716	3510	3165
40°	3505	3199	2879
45°	3304	2957	2603
50°	3058	2745	2321
55°	2829	2487	2079
60°	2592	2222	1862
65°	2281	1946	1649
70°	1879	1704	1401
75°	1494	1304	1368
80°	1003	941	878
85°	625	750	875

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3304 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	325.9	4.7
10°-20°	894.4	13.0
20°-30°	1238.2	18.0
30°-40°	1320.3	19.2
40°-50°	1204.5	17.5
50°-60°	943.6	13.7
60°-70°	615.0	8.9
70°-80°	272.5	4.0
80°-90°	58.5	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°	2458.5	35.8
0°-40°	3778.8	55.0
0°-60°	5927.0	86.2
0°-90°	6873.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6873.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3501	3501	3501	3501	3501	
5°	3440	3436	3436	3432	3432	327
15°	3218	3218	3185	3153	3141	905
25°	2789	2772	2728	2631	2558	1280
35°	2262	2246	2137	1975	1927	1414
45°	1736	1700	1554	1425	1368	1337
55°	1206	1170	1060	935	886	1082
65°	716	676	611	623	518	706
75°	287	267	251	239	263	308
85°	40	44	49	53	57	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3501.0	3501.0	3501.0	3501.0	3501.0
2.5°	3476.7	3476.7	3476.7	3472.7	3472.7
5°	3440.3	3436.3	3436.3	3432.2	3432.2
7.5°	3412.0	3407.9	3403.9	3399.8	3391.7
10°	3371.5	3371.5	3367.4	3347.2	3343.2
12.5°	3306.7	3302.7	3286.5	3258.2	3250.1
15°	3217.7	3217.7	3185.3	3152.9	3140.8
17.5°	3120.6	3116.5	3076.0	3043.7	3027.5
20°	3015.3	3007.2	2966.8	2914.1	2885.8
22.5°	2897.9	2897.9	2849.4	2780.6	2752.2
25°	2788.7	2772.5	2728.0	2630.8	2558.0
27.5°	2663.2	2638.9	2590.3	2452.7	2367.7
30°	2525.6	2513.4	2444.6	2266.6	2201.8
32.5°	2396.1	2375.8	2303.0	2116.8	2064.2
35°	2262.5	2246.3	2137.0	1975.1	1926.6
37.5°	2128.9	2108.7	1971.1	1841.6	1780.9
40°	1995.4	1971.1	1821.3	1704.0	1639.2
42.5°	1869.9	1837.5	1691.8	1566.3	1493.5
45°	1736.3	1699.9	1554.2	1424.7	1368.0
47.5°	1602.8	1570.4	1436.8	1303.3	1238.5
50°	1461.1	1432.8	1311.4	1177.8	1109.0
52.5°	1343.7	1299.2	1181.8	1048.3	991.6
55°	1206.1	1169.7	1060.4	935.0	886.4
57.5°	1080.7	1044.2	943.0	825.7	785.2
60°	963.3	910.7	825.7	724.5	692.1
62.5°	833.8	793.3	720.4	635.4	675.9
65°	716.4	675.9	611.2	623.3	518.1
67.5°	586.9	566.6	510.0	453.3	437.1
70°	477.6	453.3	433.1	372.4	356.2
72.5°	380.5	356.2	327.8	295.5	283.3
75°	287.4	267.1	250.9	238.8	263.1
77.5°	198.3	190.2	178.1	165.9	161.9
80°	129.5	125.5	121.4	117.4	113.3
82.5°	76.9	76.9	76.9	76.9	76.9
85°	40.5	44.5	48.6	52.6	56.7
87.5°	24.3	24.3	28.3	32.4	36.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)