

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: P563231

Luminaire Tested: FSR-24-4-LD4-3HI-50-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563231  
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-LD4-3HI-50-UNV-82-97-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

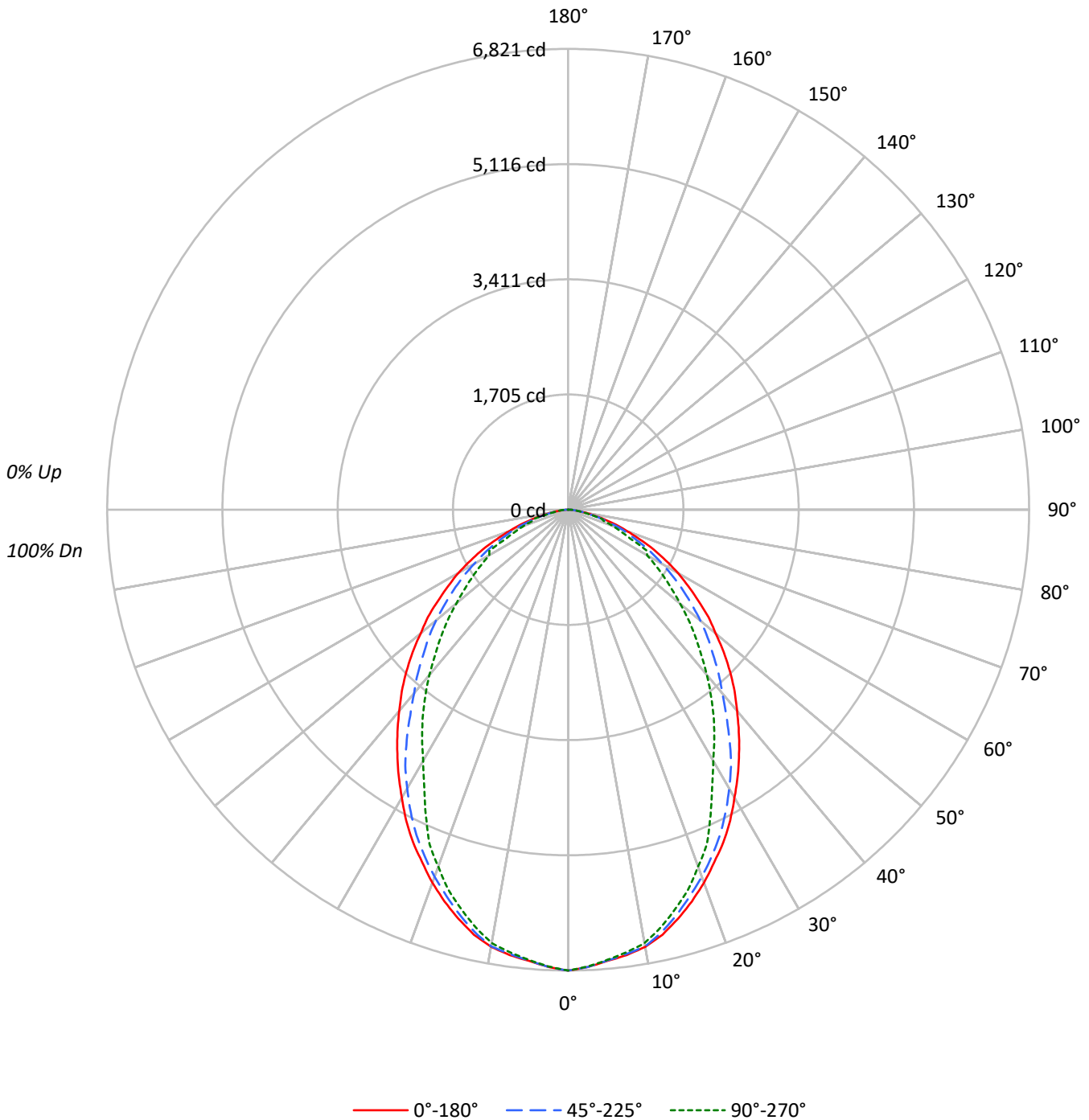
Lumens per Lamp: N/A  
Luminaire Lumens: 13391.0 lumens  
Efficiency: N/A  
Efficacy: 103.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

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

	0°	45°	90°
0°	9178	9178	9178
5°	9053	9042	9032
10°	8975	8964	8899
15°	8733	8645	8524
20°	8412	8276	8051
25°	8066	7891	7399
30°	7645	7400	6665
35°	7240	6839	6165
40°	6828	6233	5609
45°	6437	5762	5072
50°	5959	5348	4523
55°	5513	4847	4051
60°	5050	4329	3629
65°	4444	3791	3214
70°	3661	3319	2730
75°	2911	2542	2665
80°	1955	1833	1711
85°	1218	1460	1704

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6437 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	635.0	4.7
10°-20°	1742.6	13.0
20°-30°	2412.5	18.0
30°-40°	2572.4	19.2
40°-50°	2346.8	17.5
50°-60°	1838.5	13.7
60°-70°	1198.3	8.9
70°-80°	530.9	4.0
80°-90°	114.0	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°	4790.1	35.8
0°-40°	7362.5	55.0
0°-60°	11547.9	86.2
0°-90°	13391.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13391.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6821	6821	6821	6821	6821	
5°	6703	6695	6695	6687	6687	636
15°	6269	6269	6206	6143	6119	1762
25°	5433	5402	5315	5126	4984	2494
35°	4408	4377	4164	3848	3754	2756
45°	3383	3312	3028	2776	2665	2606
55°	2350	2279	2066	1822	1727	2108
65°	1396	1317	1191	1214	1009	1376
75°	560	520	489	465	513	600
85°	79	87	95	102	110	109
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6821.2	6821.2	6821.2	6821.2	6821.2
2.5°	6773.9	6773.9	6773.9	6766.0	6766.0
5°	6702.9	6695.0	6695.0	6687.1	6687.1
7.5°	6647.7	6639.8	6631.9	6624.1	6608.3
10°	6568.9	6568.9	6561.0	6521.5	6513.7
12.5°	6442.7	6434.8	6403.3	6348.0	6332.3
15°	6269.2	6269.2	6206.1	6143.0	6119.4
17.5°	6079.9	6072.0	5993.2	5930.1	5898.6
20°	5874.9	5859.1	5780.3	5677.8	5622.6
22.5°	5646.2	5646.2	5551.6	5417.5	5362.3
25°	5433.3	5401.8	5315.0	5125.8	4983.8
27.5°	5188.8	5141.5	5046.9	4778.8	4613.2
30°	4920.7	4897.1	4763.0	4416.0	4289.9
32.5°	4668.4	4629.0	4487.0	4124.3	4021.7
35°	4408.1	4376.6	4163.7	3848.3	3753.6
37.5°	4147.9	4108.5	3840.4	3588.0	3469.7
40°	3887.7	3840.4	3548.6	3319.9	3193.7
42.5°	3643.2	3580.1	3296.3	3051.8	2909.9
45°	3383.0	3312.0	3028.1	2775.8	2665.4
47.5°	3122.8	3059.7	2799.5	2539.2	2413.0
50°	2846.8	2791.6	2555.0	2294.8	2160.7
52.5°	2618.1	2531.3	2302.6	2042.4	1932.0
55°	2350.0	2279.0	2066.1	1821.6	1727.0
57.5°	2105.5	2034.5	1837.4	1608.7	1529.8
60°	1876.8	1774.3	1608.7	1411.6	1348.5
62.5°	1624.5	1545.6	1403.7	1238.1	1316.9
65°	1395.8	1316.9	1190.8	1214.4	1009.4
67.5°	1143.4	1104.0	993.6	883.2	851.7
70°	930.5	883.2	843.8	725.5	693.9
72.5°	741.3	693.9	638.7	575.7	552.0
75°	559.9	520.5	488.9	465.3	512.6
77.5°	386.4	370.6	347.0	323.3	315.4
80°	252.3	244.5	236.6	228.7	220.8
82.5°	149.8	149.8	149.8	149.8	149.8
85°	78.9	86.7	94.6	102.5	110.4
87.5°	47.3	47.3	55.2	63.1	71.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)