

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: P561740

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561740  
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-12-4-LD4-2STD-35-UNV-81-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

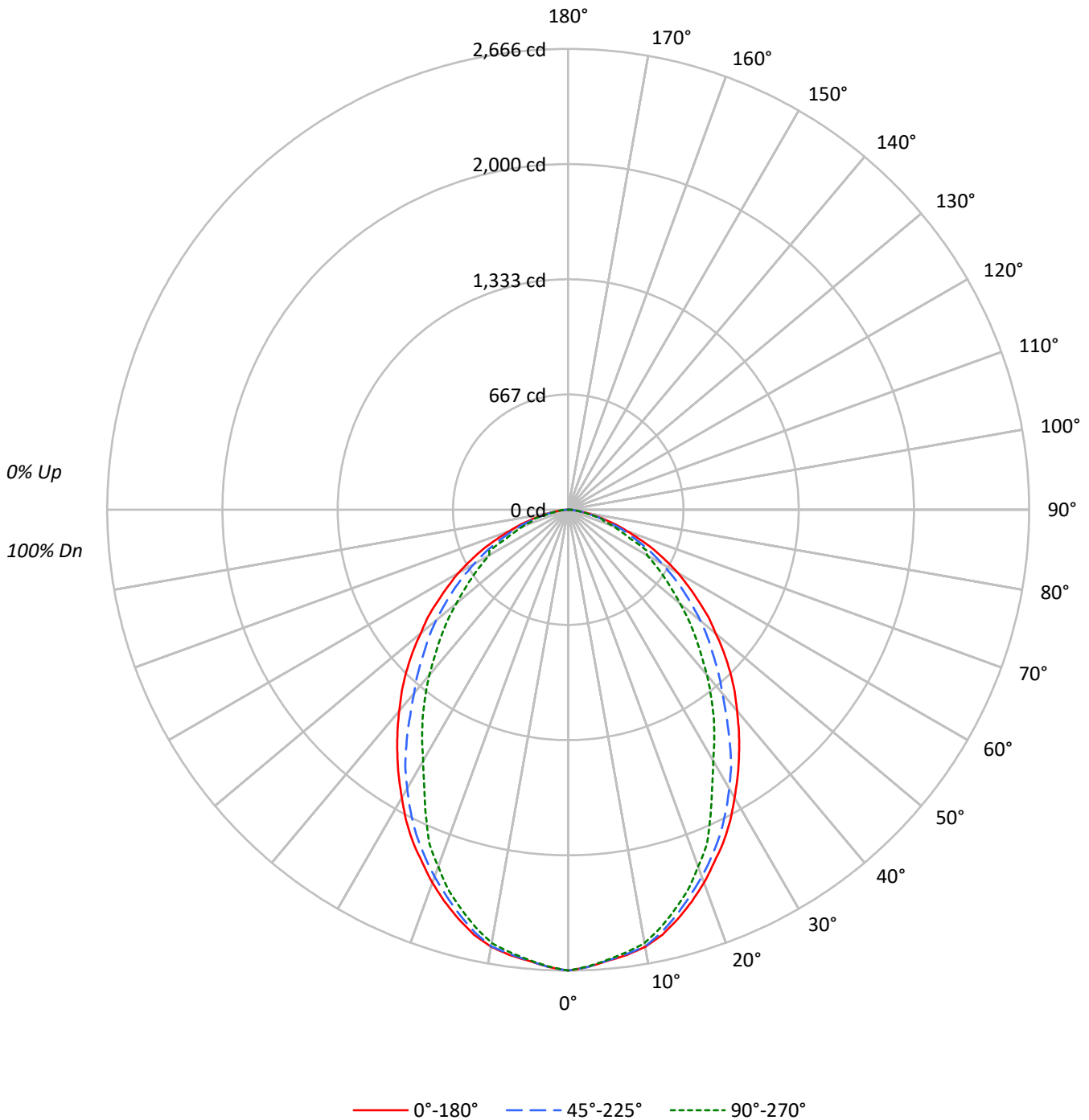
Lumens per Lamp: N/A  
Luminaire Lumens: 5234.0 lumens  
Efficiency: N/A  
Efficacy: 78.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7174	7174	7174
5°	7077	7069	7060
10°	7016	7007	6957
15°	6827	6758	6663
20°	6576	6470	6293
25°	6306	6168	5784
30°	5976	5785	5210
35°	5660	5346	4820
40°	5338	4872	4385
45°	5032	4504	3965
50°	4658	4181	3535
55°	4309	3788	3167
60°	3948	3384	2837
65°	3474	2963	2512
70°	2862	2595	2134
75°	2275	1987	2083
80°	1528	1433	1337
85°	951	1142	1334

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5032 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	248.2	4.7
10°-20°	681.1	13.0
20°-30°	943.0	18.0
30°-40°	1005.5	19.2
40°-50°	917.3	17.5
50°-60°	718.6	13.7
60°-70°	468.4	8.9
70°-80°	207.5	4.0
80°-90°	44.6	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°	1872.2	35.8
0°-40°	2877.7	55.0
0°-60°	4513.6	86.2
0°-90°	5234.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5234.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2666	2666	2666	2666	2666	
5°	2620	2617	2617	2614	2614	249
15°	2450	2450	2426	2401	2392	689
25°	2124	2111	2077	2004	1948	975
35°	1723	1711	1627	1504	1467	1077
45°	1322	1294	1184	1085	1042	1019
55°	918	891	808	712	675	824
65°	546	515	465	475	394	538
75°	219	203	191	182	200	235
85°	31	34	37	40	43	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2666.1	2666.1	2666.1	2666.1	2666.1
2.5°	2647.6	2647.6	2647.6	2644.6	2644.6
5°	2619.9	2616.8	2616.8	2613.7	2613.7
7.5°	2598.3	2595.2	2592.2	2589.1	2582.9
10°	2567.5	2567.5	2564.4	2549.0	2545.9
12.5°	2518.2	2515.1	2502.8	2481.2	2475.0
15°	2450.4	2450.4	2425.7	2401.1	2391.8
17.5°	2376.4	2373.3	2342.5	2317.8	2305.5
20°	2296.3	2290.1	2259.3	2219.2	2197.6
22.5°	2206.9	2206.9	2169.9	2117.5	2095.9
25°	2123.7	2111.3	2077.4	2003.5	1948.0
27.5°	2028.1	2009.6	1972.6	1867.8	1803.1
30°	1923.3	1914.1	1861.7	1726.0	1676.7
32.5°	1824.7	1809.3	1753.8	1612.0	1571.9
35°	1723.0	1710.6	1627.4	1504.1	1467.1
37.5°	1621.3	1605.8	1501.0	1402.4	1356.2
40°	1519.5	1501.0	1387.0	1297.6	1248.3
42.5°	1424.0	1399.3	1288.4	1192.8	1137.3
45°	1322.3	1294.5	1183.6	1084.9	1041.8
47.5°	1220.6	1195.9	1094.2	992.5	943.2
50°	1112.7	1091.1	998.6	896.9	844.5
52.5°	1023.3	989.4	900.0	798.3	755.1
55°	918.5	890.8	807.5	712.0	675.0
57.5°	823.0	795.2	718.2	628.8	598.0
60°	733.6	693.5	628.8	551.7	527.1
62.5°	634.9	604.1	548.6	483.9	514.7
65°	545.6	514.7	465.4	474.7	394.5
67.5°	446.9	431.5	388.4	345.2	332.9
70°	363.7	345.2	329.8	283.6	271.2
72.5°	289.7	271.2	249.7	225.0	215.8
75°	218.8	203.4	191.1	181.9	200.3
77.5°	151.0	144.9	135.6	126.4	123.3
80°	98.6	95.5	92.5	89.4	86.3
82.5°	58.6	58.6	58.6	58.6	58.6
85°	30.8	33.9	37.0	40.1	43.2
87.5°	18.5	18.5	21.6	24.7	27.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)