

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: P561830

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561830  
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-40-UNV-93-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

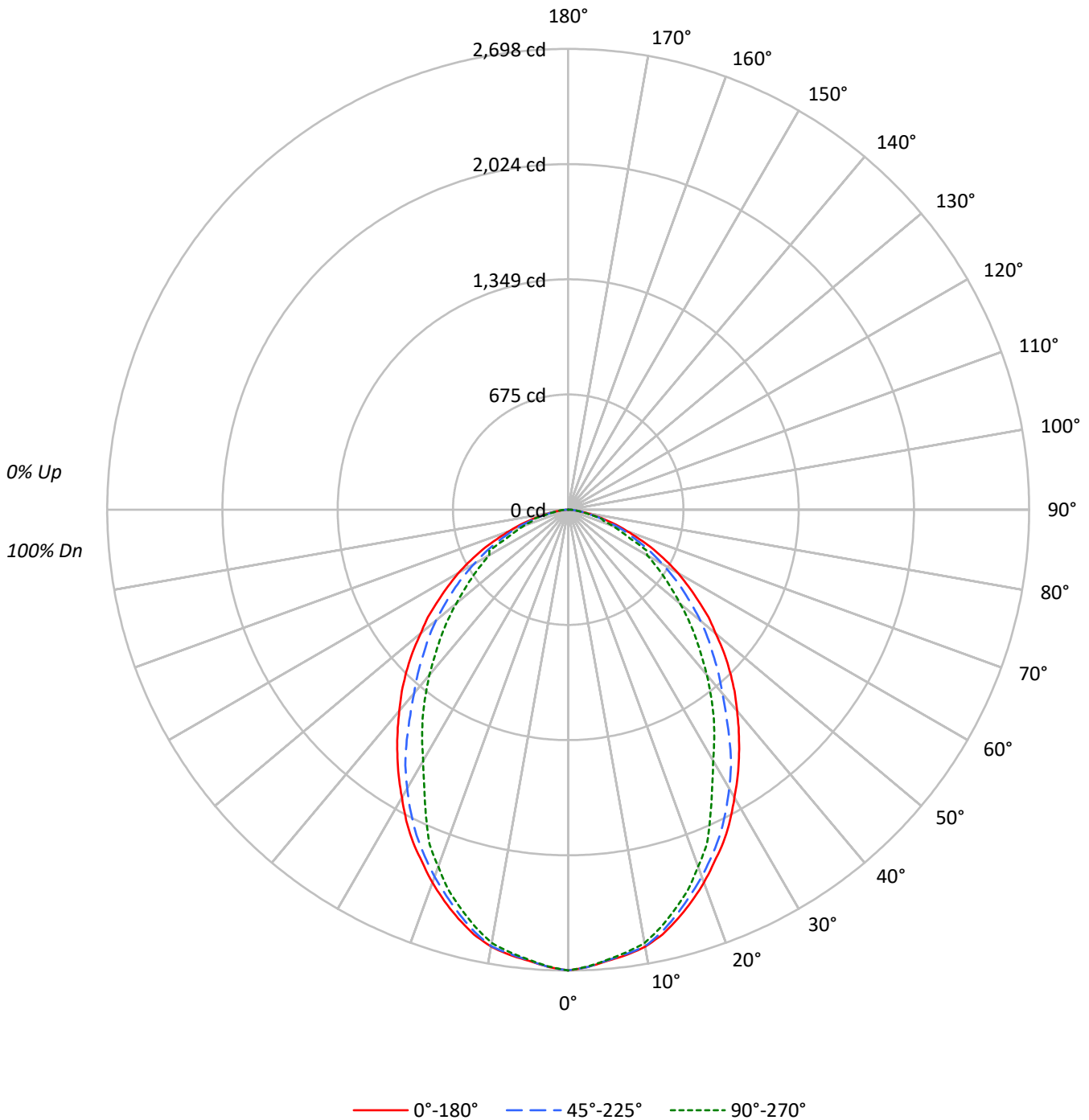
Lumens per Lamp: N/A  
Luminaire Lumens: 5296.0 lumens  
Efficiency: N/A  
Efficacy: 79.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7259	7259	7259
5°	7161	7152	7144
10°	7099	7090	7039
15°	6907	6838	6742
20°	6654	6546	6368
25°	6380	6241	5852
30°	6047	5853	5272
35°	5727	5410	4877
40°	5401	4930	4437
45°	5092	4558	4012
50°	4713	4230	3577
55°	4360	3833	3204
60°	3995	3424	2870
65°	3515	2998	2542
70°	2895	2626	2159
75°	2302	2011	2108
80°	1547	1450	1353
85°	963	1155	1349

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5092 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	251.1	4.7
10°-20°	689.2	13.0
20°-30°	954.1	18.0
30°-40°	1017.4	19.2
40°-50°	928.1	17.5
50°-60°	727.1	13.7
60°-70°	473.9	8.9
70°-80°	210.0	4.0
80°-90°	45.1	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°	1894.4	35.8
0°-40°	2911.8	55.0
0°-60°	4567.0	86.2
0°-90°	5296.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5296.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2698	2698	2698	2698	2698	
5°	2651	2648	2648	2645	2645	252
15°	2479	2479	2454	2430	2420	697
25°	2149	2136	2102	2027	1971	987
35°	1743	1731	1647	1522	1484	1090
45°	1338	1310	1198	1098	1054	1031
55°	929	901	817	720	683	834
65°	552	521	471	480	399	544
75°	221	206	193	184	203	237
85°	31	34	37	40	44	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2697.7	2697.7	2697.7	2697.7	2697.7
2.5°	2679.0	2679.0	2679.0	2675.9	2675.9
5°	2650.9	2647.8	2647.8	2644.7	2644.7
7.5°	2629.1	2626.0	2622.9	2619.7	2613.5
10°	2597.9	2597.9	2594.8	2579.2	2576.1
12.5°	2548.0	2544.9	2532.4	2510.6	2504.3
15°	2479.4	2479.4	2454.4	2429.5	2420.1
17.5°	2404.5	2401.4	2370.2	2345.3	2332.8
20°	2323.5	2317.2	2286.0	2245.5	2223.7
22.5°	2233.0	2233.0	2195.6	2142.6	2120.7
25°	2148.8	2136.3	2102.0	2027.2	1971.0
27.5°	2052.1	2033.4	1996.0	1890.0	1824.5
30°	1946.1	1936.7	1883.7	1746.5	1696.6
32.5°	1846.3	1830.7	1774.6	1631.1	1590.6
35°	1743.4	1730.9	1646.7	1521.9	1484.5
37.5°	1640.5	1624.9	1518.8	1419.0	1372.2
40°	1537.5	1518.8	1403.4	1313.0	1263.1
42.5°	1440.9	1415.9	1303.6	1207.0	1150.8
45°	1337.9	1309.9	1197.6	1097.8	1054.1
47.5°	1235.0	1210.1	1107.2	1004.2	954.3
50°	1125.9	1104.0	1010.5	907.6	854.5
52.5°	1035.4	1001.1	910.7	807.8	764.1
55°	929.4	901.3	817.1	720.4	683.0
57.5°	832.7	804.6	726.7	636.2	605.0
60°	742.3	701.7	636.2	558.3	533.3
62.5°	642.5	611.3	555.1	489.6	520.8
65°	552.0	520.8	470.9	480.3	399.2
67.5°	452.2	436.6	393.0	349.3	336.8
70°	368.0	349.3	333.7	286.9	274.4
72.5°	293.2	274.4	252.6	227.7	218.3
75°	221.4	205.8	193.4	184.0	202.7
77.5°	152.8	146.6	137.2	127.9	124.7
80°	99.8	96.7	93.6	90.4	87.3
82.5°	59.3	59.3	59.3	59.3	59.3
85°	31.2	34.3	37.4	40.5	43.7
87.5°	18.7	18.7	21.8	24.9	28.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)