

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: P562848

Luminaire Tested: FSR-24-4-LD4-2LO-50-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562848  
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-LD4-2LO-50-UNV-93-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

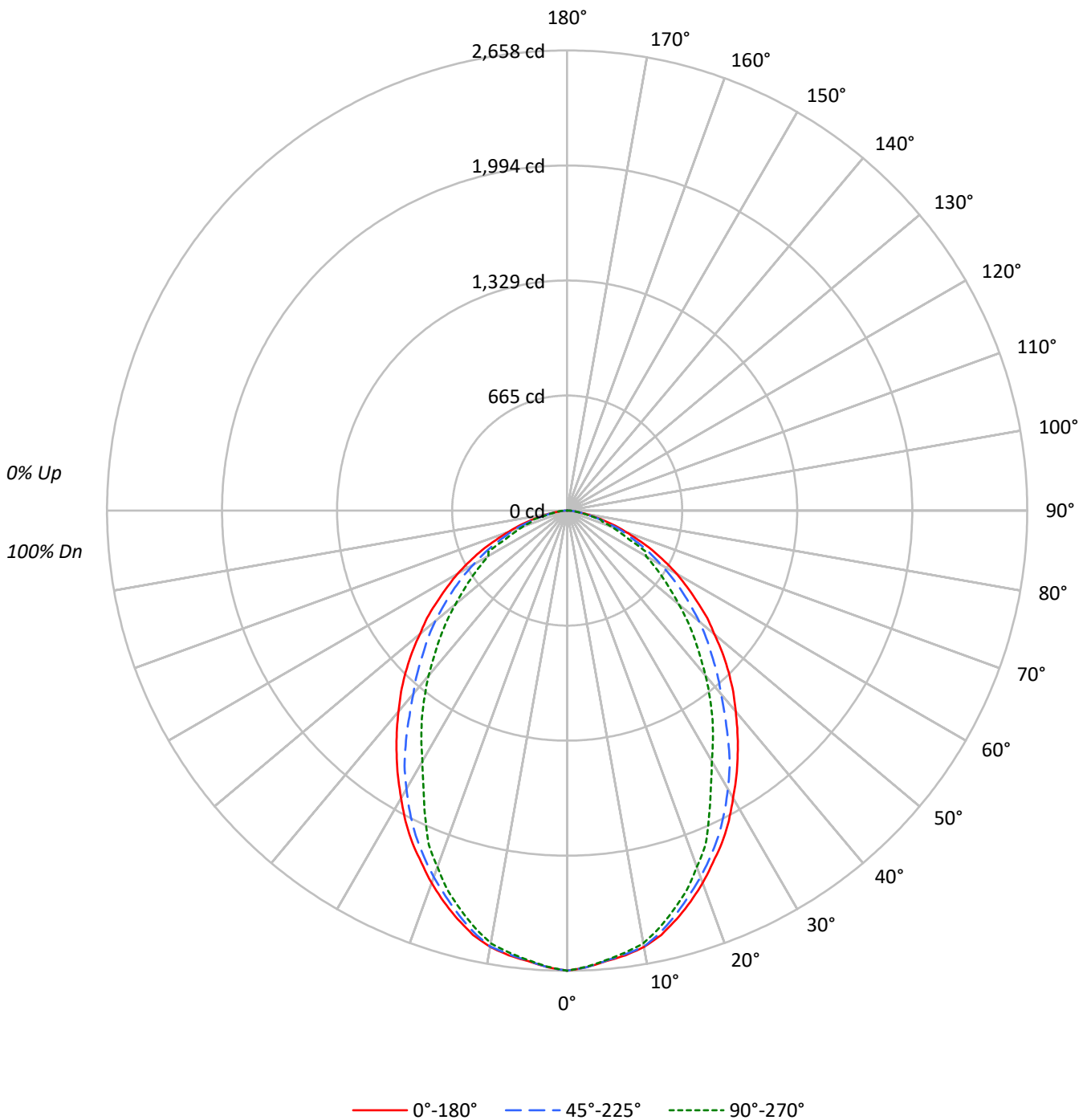
Lumens per Lamp: N/A  
Luminaire Lumens: 5218.0 lumens  
Efficiency: N/A  
Efficacy: 111.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3576	3576	3576
5°	3528	3524	3519
10°	3497	3493	3468
15°	3403	3369	3321
20°	3278	3225	3137
25°	3143	3075	2883
30°	2979	2884	2597
35°	2821	2665	2403
40°	2661	2429	2186
45°	2508	2245	1976
50°	2322	2084	1762
55°	2148	1889	1578
60°	1968	1687	1414
65°	1732	1477	1252
70°	1426	1293	1064
75°	1134	990	1038
80°	762	714	666
85°	474	570	664

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2508 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	247.4	4.7
10°-20°	679.0	13.0
20°-30°	940.1	18.0
30°-40°	1002.4	19.2
40°-50°	914.5	17.5
50°-60°	716.4	13.7
60°-70°	466.9	8.9
70°-80°	206.9	4.0
80°-90°	44.4	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°	1866.5	35.8
0°-40°	2868.9	55.0
0°-60°	4499.8	86.2
0°-90°	5218.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5218.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2658	2658	2658	2658	2658	
5°	2612	2609	2609	2606	2606	248
15°	2443	2443	2418	2394	2384	687
25°	2117	2105	2071	1997	1942	972
35°	1718	1705	1622	1500	1463	1074
45°	1318	1291	1180	1082	1039	1015
55°	916	888	805	710	673	821
65°	544	513	464	473	393	536
75°	218	203	190	181	200	234
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°	2658.0	2658.0	2658.0	2658.0	2658.0
2.5°	2639.5	2639.5	2639.5	2636.5	2636.5
5°	2611.9	2608.8	2608.8	2605.7	2605.7
7.5°	2590.4	2587.3	2584.2	2581.2	2575.0
10°	2559.6	2559.6	2556.6	2541.2	2538.1
12.5°	2510.5	2507.4	2495.1	2473.6	2467.5
15°	2442.9	2442.9	2418.3	2393.7	2384.5
17.5°	2369.1	2366.1	2335.3	2310.8	2298.5
20°	2289.2	2283.1	2252.4	2212.4	2190.9
22.5°	2200.1	2200.1	2163.3	2111.0	2089.5
25°	2117.2	2104.9	2071.1	1997.3	1942.0
27.5°	2021.9	2003.5	1966.6	1862.1	1797.6
30°	1917.4	1908.2	1856.0	1720.8	1671.6
32.5°	1819.1	1803.7	1748.4	1607.1	1567.1
35°	1717.7	1705.4	1622.4	1499.5	1462.7
37.5°	1616.3	1600.9	1496.5	1398.1	1352.0
40°	1514.9	1496.5	1382.8	1293.7	1244.5
42.5°	1419.6	1395.1	1284.4	1189.2	1133.9
45°	1318.2	1290.6	1180.0	1081.6	1038.6
47.5°	1216.8	1192.2	1090.8	989.4	940.3
50°	1109.3	1087.8	995.6	894.2	841.9
52.5°	1020.2	986.4	897.3	795.9	752.8
55°	915.7	888.0	805.1	709.8	672.9
57.5°	820.4	792.8	716.0	626.9	596.1
60°	731.3	691.4	626.9	550.0	525.5
62.5°	633.0	602.3	547.0	482.4	513.2
65°	543.9	513.2	464.0	473.2	393.3
67.5°	445.6	430.2	387.2	344.2	331.9
70°	362.6	344.2	328.8	282.7	270.4
72.5°	288.8	270.4	248.9	224.3	215.1
75°	218.2	202.8	190.5	181.3	199.7
77.5°	150.6	144.4	135.2	126.0	122.9
80°	98.3	95.3	92.2	89.1	86.0
82.5°	58.4	58.4	58.4	58.4	58.4
85°	30.7	33.8	36.9	39.9	43.0
87.5°	18.4	18.4	21.5	24.6	27.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)