

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: P563752

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563752  
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-LD4-4HI-40-UNV-93-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

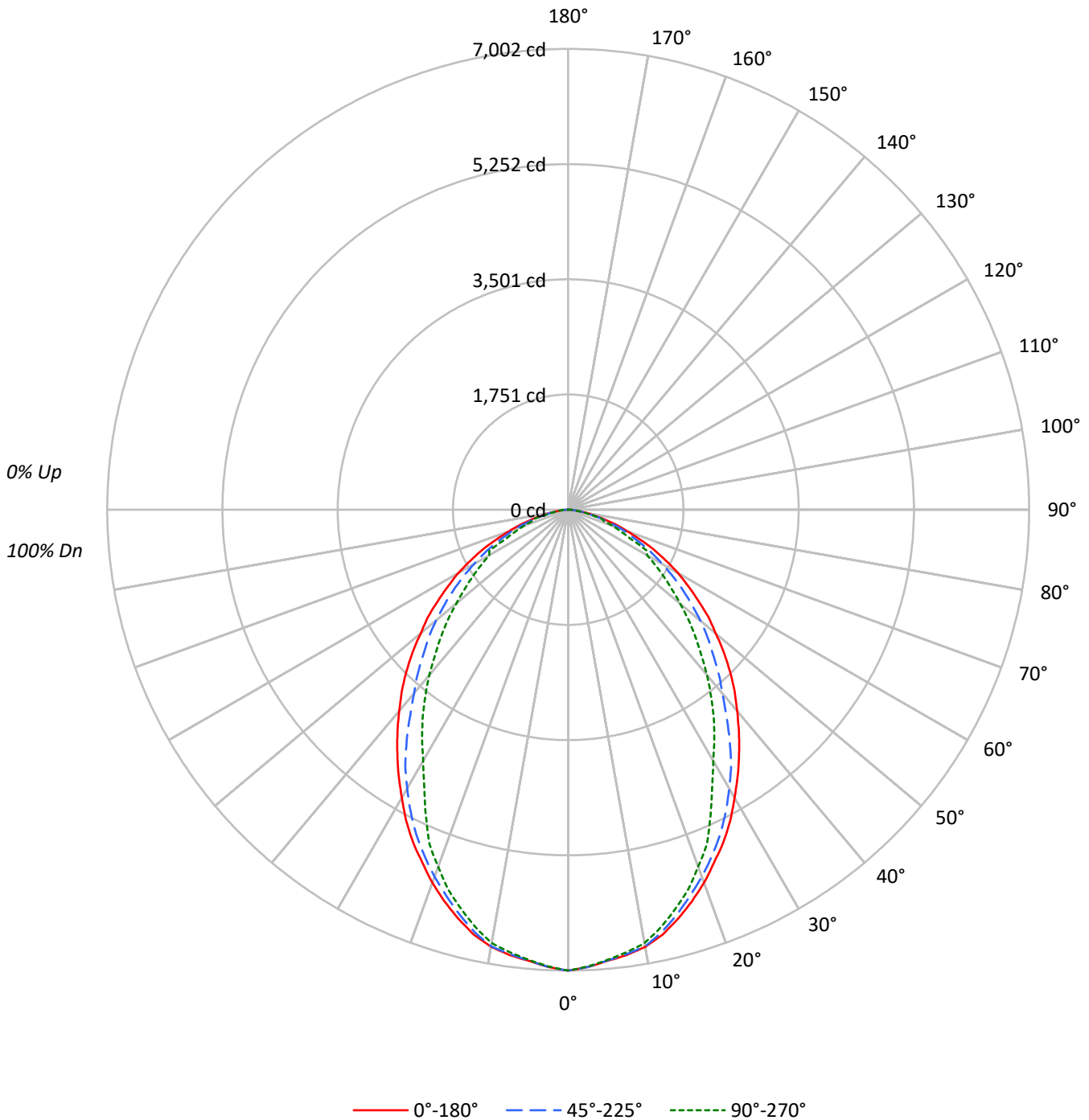
Lumens per Lamp: N/A  
Luminaire Lumens: 13747.0 lumens  
Efficiency: N/A  
Efficacy: 79.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9422	9422	9422
5°	9294	9283	9272
10°	9213	9202	9136
15°	8965	8875	8751
20°	8636	8496	8265
25°	8281	8100	7596
30°	7848	7597	6842
35°	7433	7021	6329
40°	7010	6398	5759
45°	6608	5915	5207
50°	6117	5490	4643
55°	5659	4975	4159
60°	5185	4444	3725
65°	4562	3892	3299
70°	3758	3408	2803
75°	2988	2609	2735
80°	2008	1882	1757
85°	1250	1499	1749

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6608 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	651.8	4.7
10°-20°	1788.9	13.0
20°-30°	2476.6	18.0
30°-40°	2640.8	19.2
40°-50°	2409.2	17.5
50°-60°	1887.4	13.7
60°-70°	1230.1	8.9
70°-80°	545.0	4.0
80°-90°	117.0	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°	4917.4	35.8
0°-40°	7558.2	55.0
0°-60°	11854.9	86.2
0°-90°	13747.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13747.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7002	7002	7002	7002	7002	
5°	6881	6873	6873	6865	6865	653
15°	6436	6436	6371	6306	6282	1809
25°	5578	5545	5456	5262	5116	2561
35°	4525	4493	4274	3951	3853	2829
45°	3473	3400	3109	2850	2736	2675
55°	2412	2340	2121	1870	1773	2164
65°	1433	1352	1222	1247	1036	1412
75°	575	534	502	478	526	616
85°	81	89	97	105	113	112
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7002.5	7002.5	7002.5	7002.5	7002.5
2.5°	6954.0	6954.0	6954.0	6945.9	6945.9
5°	6881.1	6873.0	6873.0	6864.9	6864.9
7.5°	6824.4	6816.3	6808.2	6800.2	6784.0
10°	6743.5	6743.5	6735.4	6694.9	6686.8
12.5°	6614.0	6605.9	6573.5	6516.8	6500.6
15°	6435.9	6435.9	6371.1	6306.3	6282.0
17.5°	6241.6	6233.5	6152.5	6087.8	6055.4
20°	6031.1	6014.9	5933.9	5828.7	5772.0
22.5°	5796.3	5796.3	5699.2	5561.6	5504.9
25°	5577.7	5545.4	5456.3	5262.0	5116.3
27.5°	5326.8	5278.2	5181.1	4905.8	4735.8
30°	5051.5	5027.3	4889.6	4533.4	4403.9
32.5°	4792.5	4752.0	4606.3	4233.9	4128.7
35°	4525.3	4493.0	4274.4	3950.6	3853.4
37.5°	4258.2	4217.7	3942.5	3683.4	3562.0
40°	3991.0	3942.5	3642.9	3408.2	3278.6
42.5°	3740.1	3675.3	3383.9	3132.9	2987.2
45°	3472.9	3400.1	3108.6	2849.6	2736.3
47.5°	3205.8	3141.0	2873.9	2606.7	2477.2
50°	2922.4	2865.8	2622.9	2355.8	2218.1
52.5°	2687.7	2598.6	2363.9	2096.7	1983.4
55°	2412.4	2339.6	2121.0	1870.0	1772.9
57.5°	2161.5	2088.6	1886.2	1651.5	1570.5
60°	1926.7	1821.5	1651.5	1449.1	1384.3
62.5°	1667.7	1586.7	1441.0	1271.0	1351.9
65°	1432.9	1351.9	1222.4	1246.7	1036.2
67.5°	1173.8	1133.4	1020.0	906.7	874.3
70°	955.3	906.7	866.2	744.8	712.4
72.5°	761.0	712.4	655.7	591.0	566.7
75°	574.8	534.3	501.9	477.6	526.2
77.5°	396.7	380.5	356.2	331.9	323.8
80°	259.1	251.0	242.9	234.8	226.7
82.5°	153.8	153.8	153.8	153.8	153.8
85°	81.0	89.0	97.1	105.2	113.3
87.5°	48.6	48.6	56.7	64.8	72.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)