

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: P561769

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561769  
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-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

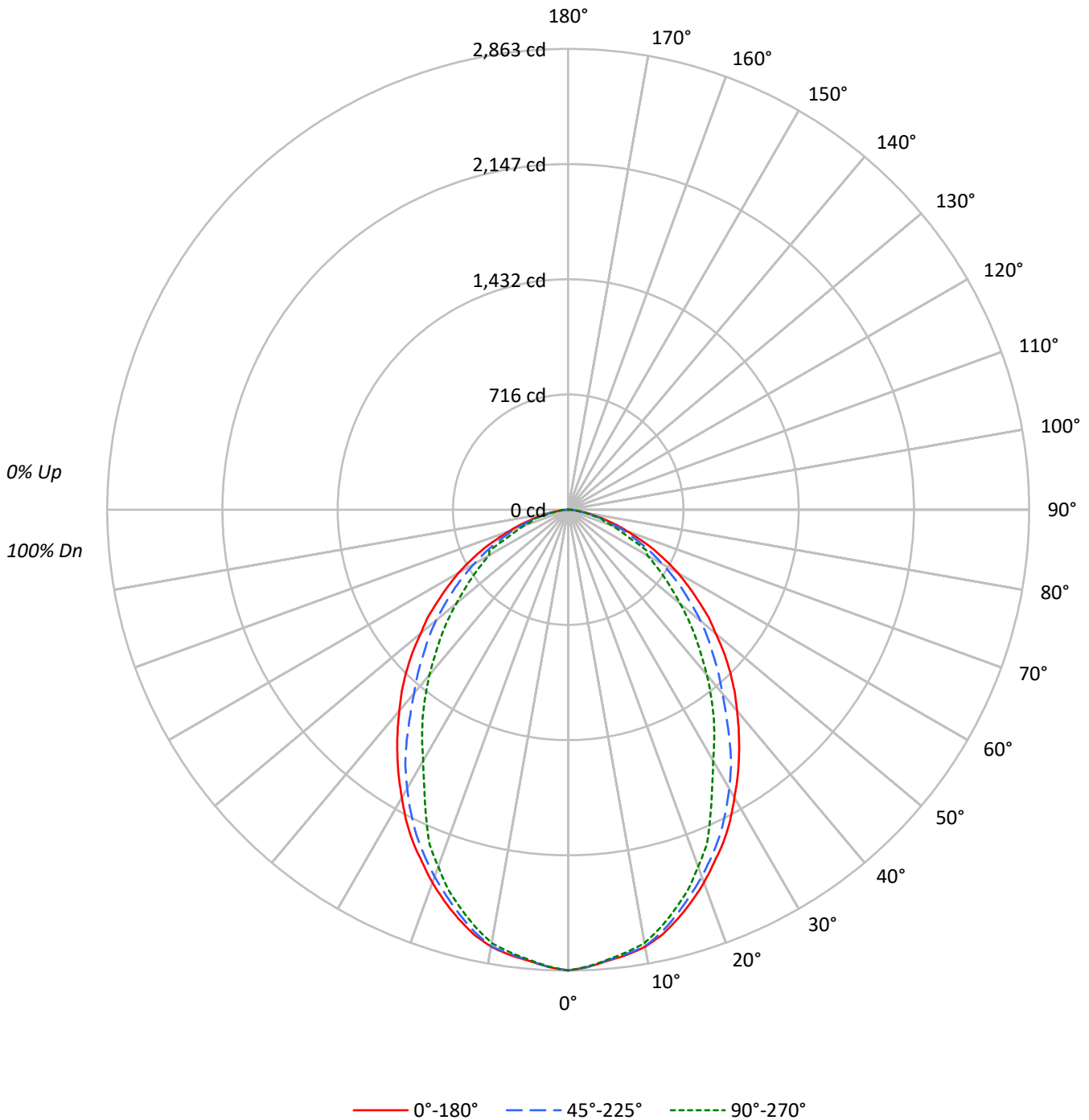
Lumens per Lamp: N/A  
Luminaire Lumens: 5620.0 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7704	7704	7704
5°	7599	7590	7581
10°	7533	7524	7470
15°	7330	7256	7155
20°	7061	6947	6757
25°	6771	6623	6210
30°	6417	6211	5594
35°	6077	5740	5175
40°	5732	5232	4709
45°	5403	4837	4257
50°	5002	4489	3796
55°	4627	4068	3400
60°	4239	3633	3046
65°	3730	3182	2697
70°	3072	2786	2291
75°	2443	2133	2236
80°	1641	1539	1437
85°	1022	1226	1430

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5403 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	266.5	4.7
10°-20°	731.3	13.0
20°-30°	1012.5	18.0
30°-40°	1079.6	19.2
40°-50°	984.9	17.5
50°-60°	771.6	13.7
60°-70°	502.9	8.9
70°-80°	222.8	4.0
80°-90°	47.8	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°	2010.3	35.8
0°-40°	3089.9	55.0
0°-60°	4846.5	86.2
0°-90°	5620.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5620.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2863	2863	2863	2863	2863	
5°	2813	2810	2810	2806	2806	267
15°	2631	2631	2605	2578	2568	740
25°	2280	2267	2231	2151	2092	1047
35°	1850	1837	1747	1615	1575	1157
45°	1420	1390	1271	1165	1119	1094
55°	986	956	867	764	725	885
65°	586	553	500	510	424	577
75°	235	218	205	195	215	252
85°	33	36	40	43	46	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2862.8	2862.8	2862.8	2862.8	2862.8
2.5°	2842.9	2842.9	2842.9	2839.6	2839.6
5°	2813.1	2809.8	2809.8	2806.5	2806.5
7.5°	2789.9	2786.6	2783.3	2780.0	2773.4
10°	2756.8	2756.8	2753.5	2737.0	2733.7
12.5°	2703.9	2700.6	2687.3	2664.2	2657.6
15°	2631.1	2631.1	2604.6	2578.1	2568.2
17.5°	2551.7	2548.3	2515.3	2488.8	2475.5
20°	2465.6	2459.0	2425.9	2382.9	2359.7
22.5°	2369.6	2369.6	2329.9	2273.7	2250.5
25°	2280.3	2267.0	2230.6	2151.2	2091.6
27.5°	2177.7	2157.8	2118.1	2005.6	1936.1
30°	2065.2	2055.2	1999.0	1853.3	1800.4
32.5°	1959.2	1942.7	1883.1	1730.9	1687.9
35°	1850.0	1836.8	1747.4	1615.1	1575.3
37.5°	1740.8	1724.3	1611.7	1505.8	1456.2
40°	1631.6	1611.7	1489.3	1393.3	1340.4
42.5°	1529.0	1502.5	1383.4	1280.8	1221.2
45°	1419.8	1390.0	1270.9	1165.0	1118.6
47.5°	1310.6	1284.1	1174.9	1065.7	1012.7
50°	1194.7	1171.6	1072.3	963.1	906.8
52.5°	1098.8	1062.4	966.4	857.2	810.8
55°	986.2	956.5	867.1	764.5	724.8
57.5°	883.6	853.9	771.1	675.1	642.1
60°	787.7	744.6	675.1	592.4	565.9
62.5°	681.8	648.7	589.1	519.6	552.7
65°	585.8	552.7	499.7	509.7	423.6
67.5°	479.9	463.3	417.0	370.7	357.4
70°	390.5	370.7	354.1	304.5	291.2
72.5°	311.1	291.2	268.1	241.6	231.7
75°	235.0	218.4	205.2	195.3	215.1
77.5°	162.2	155.5	145.6	135.7	132.4
80°	105.9	102.6	99.3	96.0	92.7
82.5°	62.9	62.9	62.9	62.9	62.9
85°	33.1	36.4	39.7	43.0	46.3
87.5°	19.9	19.9	23.2	26.5	29.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)