

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: P561837

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561837  
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-93-96-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

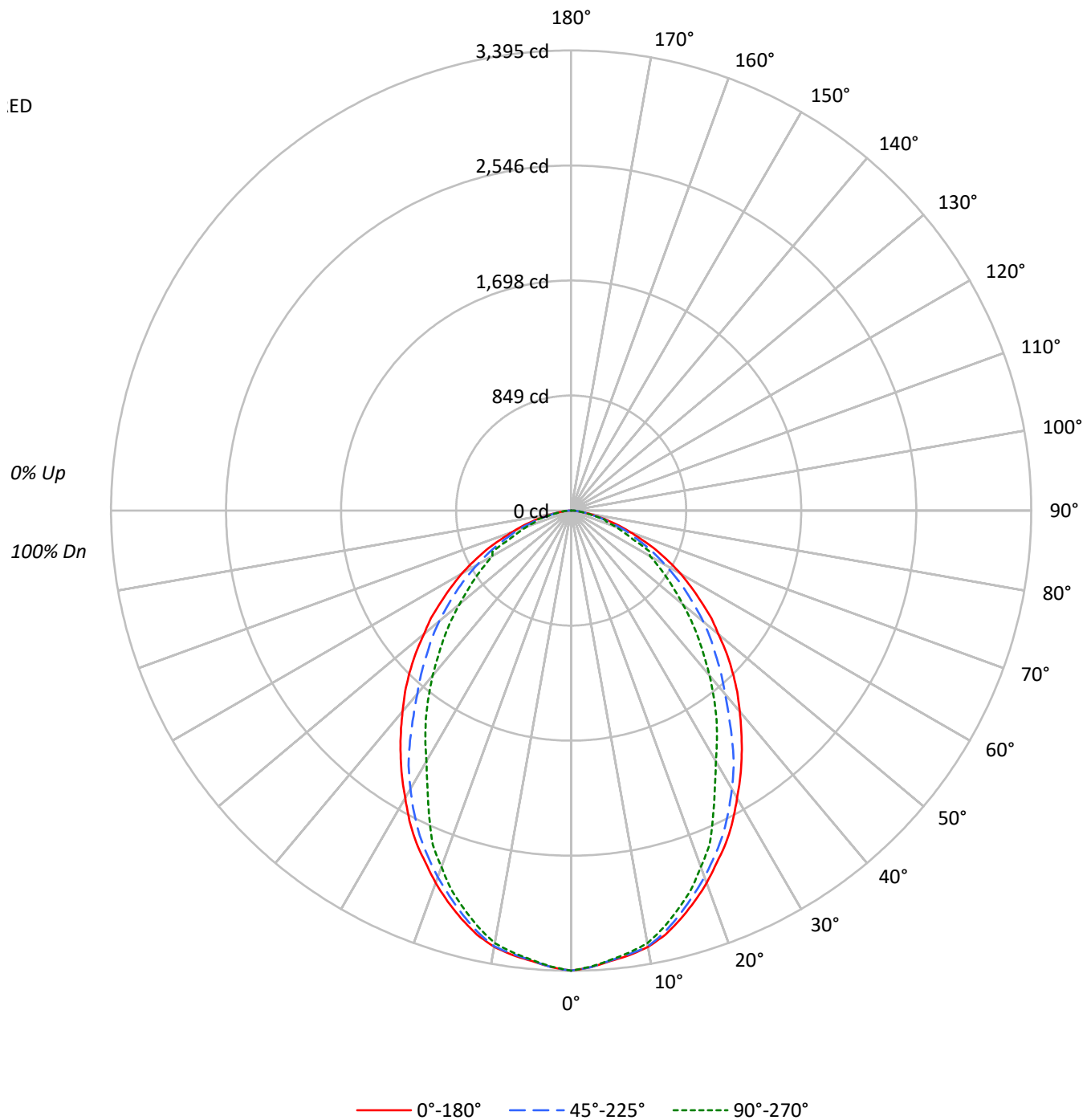
Lumens per Lamp: N/A  
Luminaire Lumens: 6664.0 lumens  
Efficiency: N/A  
Efficacy: 100.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9135	9135	9135
5°	9011	9000	8989
10°	8933	8922	8857
15°	8691	8604	8484
20°	8372	8237	8013
25°	8028	7853	7364
30°	7609	7365	6633
35°	7206	6807	6137
40°	6796	6204	5583
45°	6407	5735	5048
50°	5931	5323	4502
55°	5487	4824	4032
60°	5027	4309	3612
65°	4423	3773	3198
70°	3644	3304	2717
75°	2897	2530	2652
80°	1946	1824	1703
85°	1210	1454	1695

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6407 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	316.0	4.7
10°-20°	867.2	13.0
20°-30°	1200.6	18.0
30°-40°	1280.2	19.2
40°-50°	1167.9	17.5
50°-60°	915.0	13.7
60°-70°	596.3	8.9
70°-80°	264.2	4.0
80°-90°	56.7	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°	2383.8	35.8
0°-40°	3663.9	55.0
0°-60°	5746.8	86.2
0°-90°	6664.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6664.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3395	3395	3395	3395	3395	
5°	3336	3332	3332	3328	3328	317
15°	3120	3120	3088	3057	3045	877
25°	2704	2688	2645	2551	2480	1241
35°	2194	2178	2072	1915	1868	1371
45°	1684	1648	1507	1381	1326	1297
55°	1170	1134	1028	906	859	1049
65°	695	655	593	604	502	685
75°	279	259	243	232	255	299
85°	39	43	47	51	55	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3394.6	3394.6	3394.6	3394.6	3394.6
2.5°	3371.0	3371.0	3371.0	3367.1	3367.1
5°	3335.7	3331.8	3331.8	3327.8	3327.8
7.5°	3308.2	3304.3	3300.4	3296.4	3288.6
10°	3269.0	3269.0	3265.0	3245.4	3241.5
12.5°	3206.2	3202.3	3186.6	3159.1	3151.2
15°	3119.8	3119.8	3088.5	3057.1	3045.3
17.5°	3025.7	3021.7	2982.5	2951.1	2935.4
20°	2923.6	2915.8	2876.5	2825.5	2798.1
22.5°	2809.8	2809.8	2762.7	2696.0	2668.5
25°	2703.9	2688.2	2645.0	2550.8	2480.2
27.5°	2582.2	2558.7	2511.6	2378.1	2295.7
30°	2448.8	2437.0	2370.3	2197.6	2134.8
32.5°	2323.2	2303.6	2232.9	2052.4	2001.4
35°	2193.7	2178.0	2072.1	1915.1	1868.0
37.5°	2064.2	2044.6	1911.2	1785.6	1726.7
40°	1934.7	1911.2	1766.0	1652.1	1589.4
42.5°	1813.0	1781.6	1640.4	1518.7	1448.1
45°	1683.5	1648.2	1506.9	1381.4	1326.4
47.5°	1554.0	1522.6	1393.1	1263.6	1200.8
50°	1416.7	1389.2	1271.5	1142.0	1075.3
52.5°	1302.9	1259.7	1145.9	1016.4	961.5
55°	1169.5	1134.1	1028.2	906.5	859.4
57.5°	1047.8	1012.5	914.4	800.6	761.3
60°	934.0	883.0	800.6	702.5	671.1
62.5°	808.4	769.2	698.5	616.1	655.4
65°	694.6	655.4	592.6	604.3	502.3
67.5°	569.0	549.4	494.5	439.5	423.8
70°	463.1	439.5	419.9	361.0	345.3
72.5°	368.9	345.3	317.9	286.5	274.7
75°	278.6	259.0	243.3	231.5	255.1
77.5°	192.3	184.4	172.7	160.9	157.0
80°	125.6	121.7	117.7	113.8	109.9
82.5°	74.6	74.6	74.6	74.6	74.6
85°	39.2	43.2	47.1	51.0	54.9
87.5°	23.5	23.5	27.5	31.4	35.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)