

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: P590929

Luminaire Tested: FSR-24-2-LD4-4STD-35-UNV-93-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590929  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4STD-35-UNV-93-88-EDD  
Description: 2X2 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**

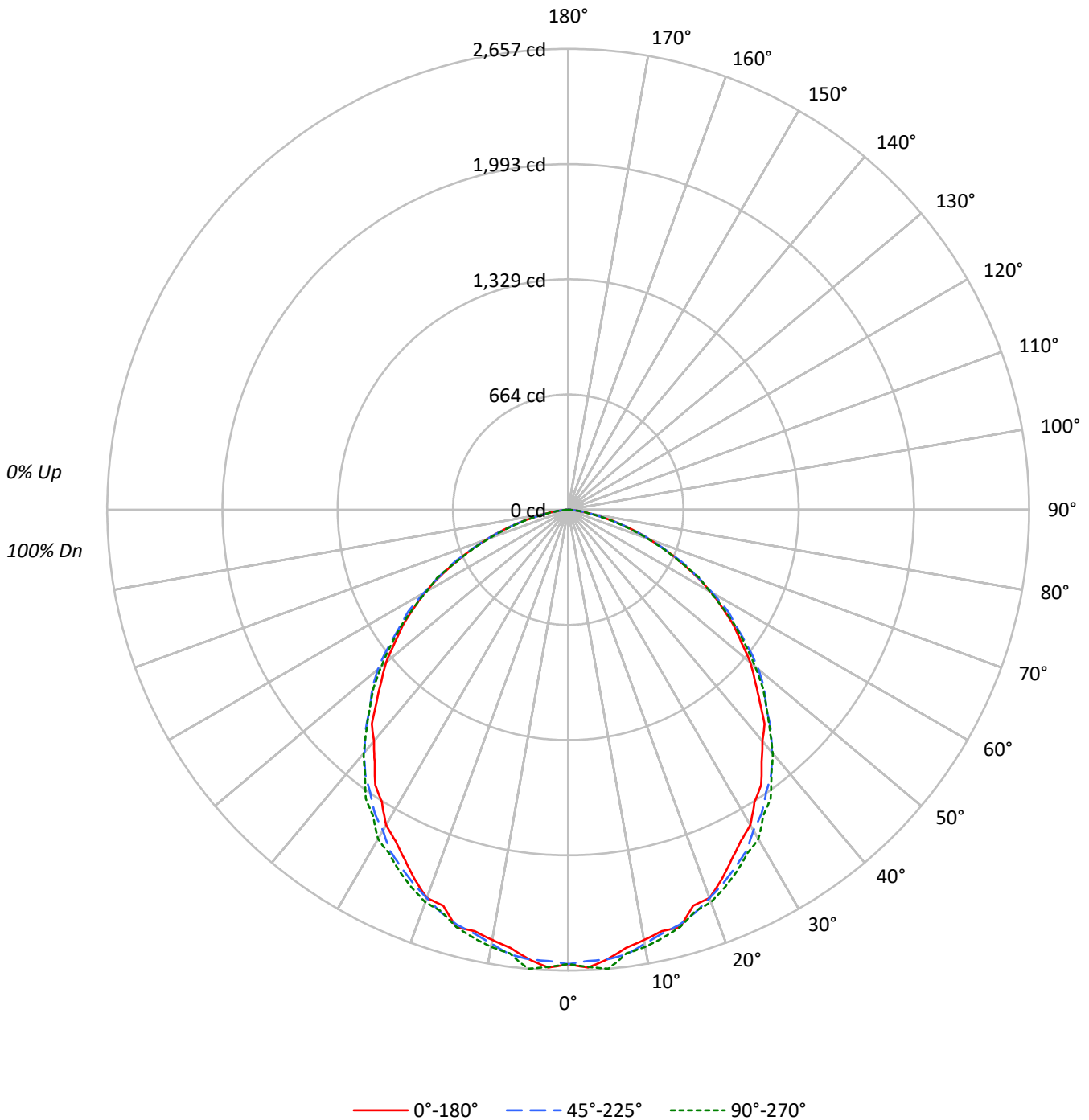
Lumens per Lamp: N/A  
Luminaire Lumens: 6603.0 lumens  
Efficiency: N/A  
Efficacy: 99.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7050	7050	7050
5°	7027	7029	7178
10°	6884	6944	6994
15°	6939	6901	6940
20°	6822	6822	6894
25°	6612	6756	6831
30°	6521	6636	6812
35°	6367	6534	6681
40°	6120	6414	6443
45°	5934	6146	6155
50°	5740	5999	5884
55°	5469	5575	5536
60°	5114	5165	5072
65°	4560	4676	4527
70°	3913	3925	3817
75°	3098	3091	2972
80°	2077	2018	1940
85°	1127	1118	1044

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6304 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	246.4	3.7
10°-20°	698.4	10.6
20°-30°	1046.4	15.8
30°-40°	1240.2	18.8
40°-50°	1242.5	18.8
50°-60°	1054.7	16.0
60°-70°	711.1	10.8
70°-80°	312.4	4.7
80°-90°	50.8	0.8
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°	1991.3	30.2
0°-40°	3231.5	48.9
0°-60°	5528.7	83.7
0°-90°	6603.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6603.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2620	2620	2620	2620	2620	
5°	2601	2595	2602	2594	2657	245
15°	2491	2462	2477	2490	2491	694
25°	2227	2239	2276	2305	2301	1029
35°	1938	1944	1989	2035	2034	1203
45°	1559	1588	1615	1656	1617	1206
55°	1166	1158	1188	1180	1180	1037
65°	716	707	734	706	711	712
75°	298	292	297	276	286	319
85°	36	36	36	35	34	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2619.9	2619.9	2619.9	2619.9	2619.9
2.5°	2642.6	2622.6	2604.0	2625.7	2638.8
5°	2601.3	2595.2	2602.3	2594.5	2657.1
7.5°	2547.9	2571.2	2584.7	2576.3	2580.0
10°	2519.4	2511.3	2541.4	2562.4	2559.4
12.5°	2489.0	2501.2	2502.9	2525.5	2527.6
15°	2490.7	2461.9	2477.2	2490.0	2491.0
17.5°	2393.9	2425.1	2435.5	2465.0	2428.4
20°	2382.1	2359.4	2382.1	2412.2	2407.5
22.5°	2309.4	2284.0	2332.7	2359.4	2357.7
25°	2226.8	2239.0	2275.5	2305.3	2300.6
27.5°	2154.4	2168.7	2220.7	2261.7	2235.3
30°	2098.6	2091.5	2135.5	2172.0	2192.3
32.5°	1998.8	2024.5	2076.0	2112.2	2092.9
35°	1938.3	1944.0	1989.0	2035.0	2033.7
37.5°	1832.4	1859.1	1922.4	1935.2	1923.4
40°	1742.1	1768.8	1826.0	1839.9	1834.1
42.5°	1675.5	1680.2	1729.2	1745.1	1719.8
45°	1559.4	1588.5	1614.9	1656.5	1617.3
47.5°	1460.7	1474.2	1531.0	1542.2	1521.5
50°	1371.0	1375.7	1432.9	1419.0	1405.5
52.5°	1258.4	1278.3	1310.5	1307.8	1291.9
55°	1165.7	1157.9	1188.3	1180.2	1179.9
57.5°	1054.4	1067.9	1093.0	1080.1	1059.5
60°	950.2	950.5	959.7	945.1	942.4
62.5°	834.2	838.2	840.3	822.3	851.4
65°	716.1	706.6	734.4	706.3	711.0
67.5°	607.5	612.3	609.6	592.0	598.7
70°	497.3	503.3	498.9	479.0	485.1
72.5°	396.5	389.0	393.7	368.7	380.2
75°	298.0	291.9	297.3	276.4	285.8
77.5°	203.0	207.7	204.3	193.2	199.6
80°	134.0	130.2	130.2	123.8	125.2
82.5°	78.1	74.4	73.4	71.4	74.4
85°	36.5	35.5	36.2	35.2	33.8
87.5°	13.2	13.5	13.5	12.9	12.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)