

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: P561376

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561376  
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-LD4-2HI-35-UNV-93-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

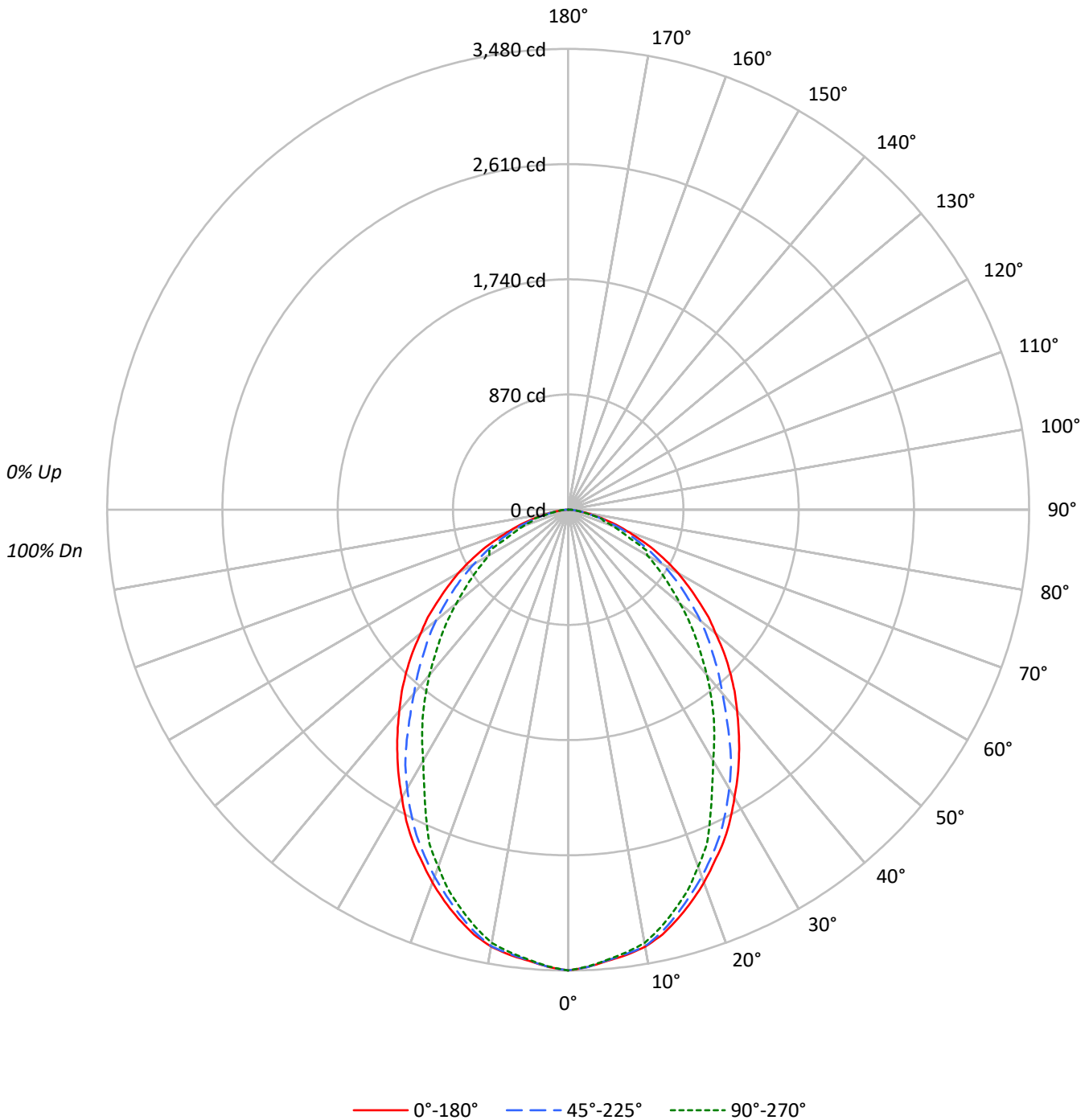
Lumens per Lamp: N/A  
Luminaire Lumens: 6831.0 lumens  
Efficiency: N/A  
Efficacy: 79.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9364	9364	9364
5°	9236	9226	9215
10°	9156	9145	9079
15°	8909	8820	8696
20°	8582	8444	8214
25°	8229	8050	7549
30°	7800	7550	6800
35°	7387	6978	6290
40°	6967	6359	5723
45°	6567	5879	5174
50°	6080	5456	4614
55°	5624	4944	4133
60°	5153	4416	3702
65°	4534	3868	3279
70°	3735	3386	2785
75°	2969	2593	2719
80°	1994	1870	1745
85°	1241	1491	1738

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6567 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	323.9	4.7
10°-20°	888.9	13.0
20°-30°	1230.7	18.0
30°-40°	1312.2	19.2
40°-50°	1197.2	17.5
50°-60°	937.9	13.7
60°-70°	611.3	8.9
70°-80°	270.8	4.0
80°-90°	58.1	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°	2443.5	35.8
0°-40°	3755.8	55.0
0°-60°	5890.8	86.2
0°-90°	6831.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6831.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3480	3480	3480	3480	3480	
5°	3419	3415	3415	3411	3411	325
15°	3198	3198	3166	3134	3122	899
25°	2772	2756	2711	2615	2542	1272
35°	2249	2233	2124	1963	1915	1406
45°	1726	1690	1545	1416	1360	1329
55°	1199	1163	1054	929	881	1075
65°	712	672	607	620	515	702
75°	286	266	249	237	262	306
85°	40	44	48	52	56	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3479.6	3479.6	3479.6	3479.6	3479.6
2.5°	3455.5	3455.5	3455.5	3451.5	3451.5
5°	3419.3	3415.3	3415.3	3411.2	3411.2
7.5°	3391.1	3387.1	3383.1	3379.1	3371.0
10°	3350.9	3350.9	3346.9	3326.8	3322.7
12.5°	3286.5	3282.5	3266.4	3238.3	3230.2
15°	3198.0	3198.0	3165.9	3133.7	3121.6
17.5°	3101.5	3097.5	3057.2	3025.1	3009.0
20°	2996.9	2988.9	2948.6	2896.3	2868.2
22.5°	2880.2	2880.2	2832.0	2763.6	2735.4
25°	2771.6	2755.5	2711.3	2614.7	2542.3
27.5°	2646.9	2622.8	2574.5	2437.7	2353.3
30°	2510.2	2498.1	2429.7	2252.7	2188.3
32.5°	2381.4	2361.3	2288.9	2103.9	2051.6
35°	2248.7	2232.6	2124.0	1963.1	1914.8
37.5°	2115.9	2095.8	1959.0	1830.3	1770.0
40°	1983.2	1959.0	1810.2	1693.5	1629.2
42.5°	1858.5	1826.3	1681.5	1556.8	1484.4
45°	1725.7	1689.5	1544.7	1416.0	1359.7
47.5°	1593.0	1560.8	1428.1	1295.3	1230.9
50°	1452.2	1424.0	1303.3	1170.6	1102.2
52.5°	1335.5	1291.3	1174.6	1041.9	985.6
55°	1198.8	1162.6	1053.9	929.2	881.0
57.5°	1074.1	1037.9	937.3	820.6	780.4
60°	957.4	905.1	820.6	720.1	687.9
62.5°	828.7	788.4	716.0	631.6	671.8
65°	712.0	671.8	607.4	619.5	514.9
67.5°	583.3	563.2	506.9	450.5	434.4
70°	474.7	450.5	430.4	370.1	354.0
72.5°	378.1	354.0	325.8	293.7	281.6
75°	285.6	265.5	249.4	237.3	261.5
77.5°	197.1	189.1	177.0	164.9	160.9
80°	128.7	124.7	120.7	116.7	112.6
82.5°	76.4	76.4	76.4	76.4	76.4
85°	40.2	44.2	48.3	52.3	56.3
87.5°	24.1	24.1	28.2	32.2	36.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)