

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: P561892

Luminaire Tested: FSR-12-4-LD4-2STD-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561892  
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-50-UNV-93-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

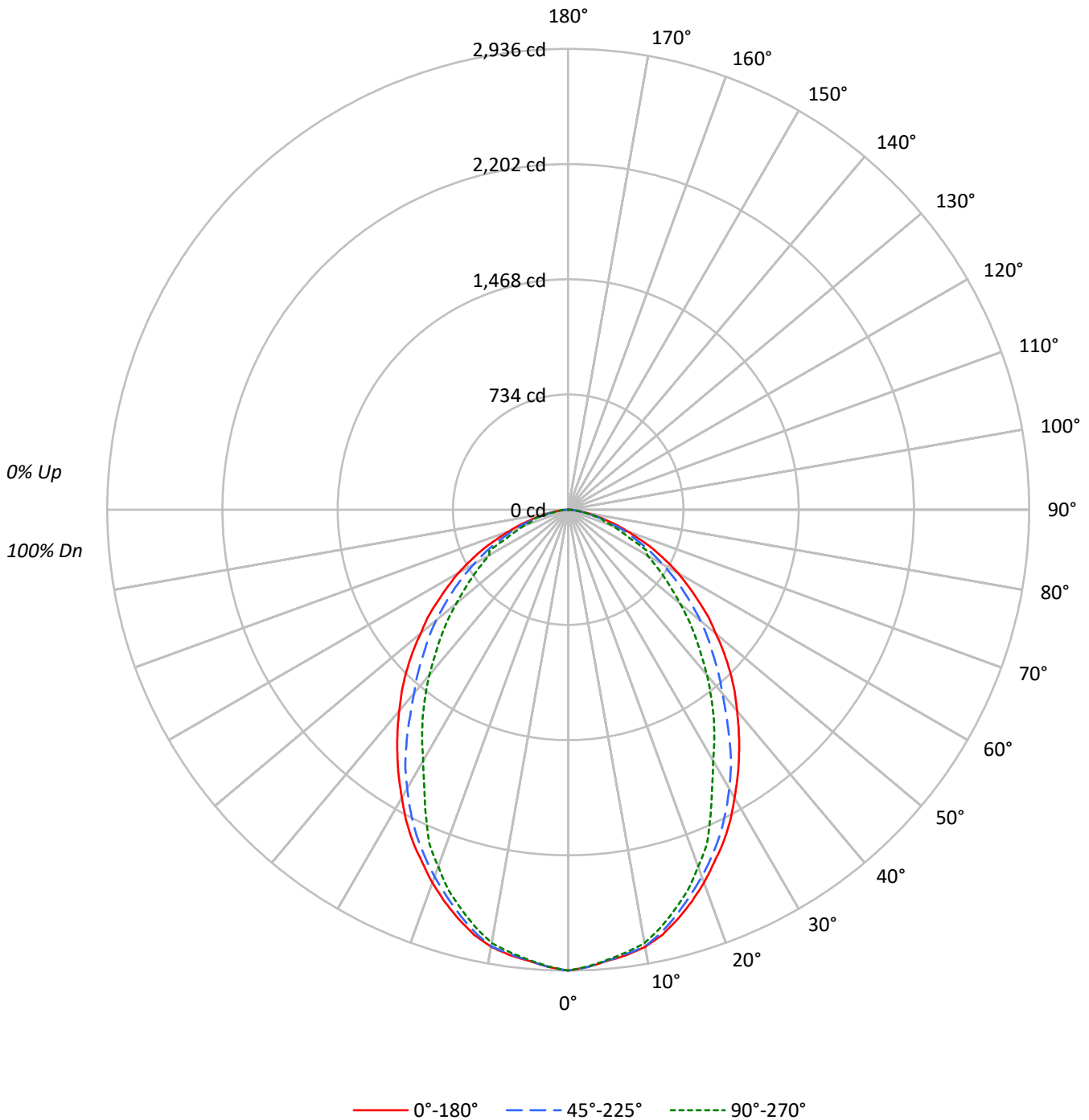
Lumens per Lamp: N/A  
Luminaire Lumens: 5764.0 lumens  
Efficiency: N/A  
Efficacy: 86.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7901	7901	7901
5°	7794	7784	7775
10°	7726	7717	7661
15°	7518	7442	7338
20°	7242	7125	6931
25°	6944	6793	6369
30°	6582	6371	5738
35°	6233	5888	5308
40°	5878	5366	4829
45°	5542	4960	4366
50°	5130	4604	3893
55°	4746	4172	3488
60°	4348	3726	3124
65°	3826	3263	2767
70°	3151	2858	2350
75°	2506	2188	2294
80°	1683	1578	1472
85°	1047	1257	1467

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5542 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	273.3	4.7
10°-20°	750.1	13.0
20°-30°	1038.4	18.0
30°-40°	1107.3	19.2
40°-50°	1010.2	17.5
50°-60°	791.4	13.7
60°-70°	515.8	8.9
70°-80°	228.5	4.0
80°-90°	49.1	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°	2061.8	35.8
0°-40°	3169.1	55.0
0°-60°	4970.6	86.2
0°-90°	5764.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5764.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2936	2936	2936	2936	2936	
5°	2885	2882	2882	2878	2878	274
15°	2698	2698	2671	2644	2634	759
25°	2339	2325	2288	2206	2145	1074
35°	1897	1884	1792	1656	1616	1186
45°	1456	1426	1303	1195	1147	1122
55°	1012	981	889	784	743	907
65°	601	567	512	523	434	592
75°	241	224	210	200	221	258
85°	34	37	41	44	48	47
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2936.1	2936.1	2936.1	2936.1	2936.1
2.5°	2915.7	2915.7	2915.7	2912.3	2912.3
5°	2885.2	2881.8	2881.8	2878.4	2878.4
7.5°	2861.4	2858.0	2854.6	2851.2	2844.5
10°	2827.5	2827.5	2824.1	2807.1	2803.7
12.5°	2773.2	2769.8	2756.2	2732.4	2725.7
15°	2698.5	2698.5	2671.3	2644.2	2634.0
17.5°	2617.0	2613.6	2579.7	2552.5	2539.0
20°	2528.8	2522.0	2488.1	2443.9	2420.2
22.5°	2430.3	2430.3	2389.6	2331.9	2308.2
25°	2338.7	2325.1	2287.8	2206.3	2145.2
27.5°	2233.5	2213.1	2172.4	2057.0	1985.7
30°	2118.1	2107.9	2050.2	1900.8	1846.5
32.5°	2009.4	1992.5	1931.4	1775.2	1731.1
35°	1897.4	1883.9	1792.2	1656.4	1615.7
37.5°	1785.4	1768.5	1653.0	1544.4	1493.5
40°	1673.4	1653.0	1527.5	1429.0	1374.7
42.5°	1568.2	1541.0	1418.8	1313.6	1252.5
45°	1456.2	1425.6	1303.4	1194.8	1147.3
47.5°	1344.2	1317.0	1205.0	1093.0	1038.7
50°	1225.4	1201.6	1099.8	987.8	930.0
52.5°	1126.9	1089.6	991.1	879.1	831.6
55°	1011.5	981.0	889.3	784.1	743.4
57.5°	906.3	875.7	790.9	692.4	658.5
60°	807.9	763.7	692.4	607.6	580.4
62.5°	699.2	665.3	604.2	532.9	566.9
65°	600.8	566.9	512.5	522.7	434.5
67.5°	492.2	475.2	427.7	380.2	366.6
70°	400.5	380.2	363.2	312.3	298.7
72.5°	319.1	298.7	274.9	247.8	237.6
75°	241.0	224.0	210.4	200.3	220.6
77.5°	166.3	159.5	149.4	139.2	135.8
80°	108.6	105.2	101.8	98.4	95.0
82.5°	64.5	64.5	64.5	64.5	64.5
85°	33.9	37.3	40.7	44.1	47.5
87.5°	20.4	20.4	23.8	27.2	30.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)