

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: P561510

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561510  
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-50-UNV-93-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

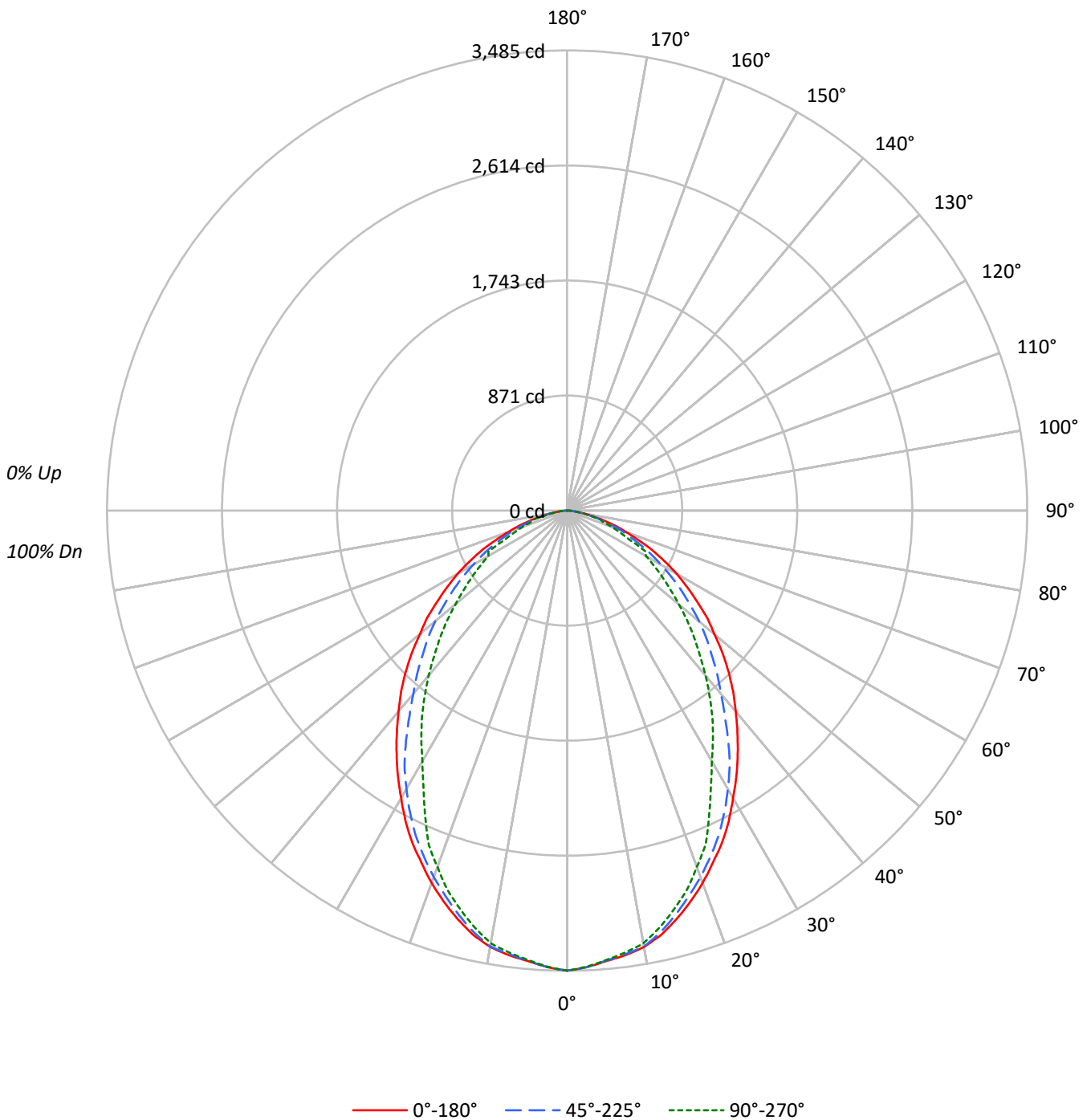
Lumens per Lamp: N/A  
Luminaire Lumens: 6841.0 lumens  
Efficiency: N/A  
Efficacy: 79.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9377	9377	9377
5°	9250	9239	9228
10°	9170	9159	9093
15°	8922	8833	8709
20°	8595	8456	8226
25°	8242	8062	7560
30°	7811	7561	6810
35°	7398	6988	6299
40°	6977	6368	5732
45°	6577	5887	5182
50°	6088	5465	4621
55°	5632	4952	4139
60°	5160	4423	3708
65°	4541	3873	3284
70°	3740	3392	2789
75°	2974	2597	2723
80°	1998	1874	1748
85°	1244	1491	1741

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6577 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	324.4	4.7
10°-20°	890.2	13.0
20°-30°	1232.5	18.0
30°-40°	1314.2	19.2
40°-50°	1198.9	17.5
50°-60°	939.2	13.7
60°-70°	612.2	8.9
70°-80°	271.2	4.0
80°-90°	58.2	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°	2447.1	35.8
0°-40°	3761.3	55.0
0°-60°	5899.4	86.2
0°-90°	6841.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6841.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3485	3485	3485	3485	3485	
5°	3424	3420	3420	3416	3416	325
15°	3203	3203	3170	3138	3126	900
25°	2776	2760	2715	2619	2546	1274
35°	2252	2236	2127	1966	1918	1408
45°	1728	1692	1547	1418	1362	1331
55°	1200	1164	1056	931	882	1077
65°	713	673	608	620	516	703
75°	286	266	250	238	262	307
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°	3484.7	3484.7	3484.7	3484.7	3484.7
2.5°	3460.5	3460.5	3460.5	3456.5	3456.5
5°	3424.3	3420.3	3420.3	3416.2	3416.2
7.5°	3396.1	3392.1	3388.0	3384.0	3375.9
10°	3355.8	3355.8	3351.8	3331.6	3327.6
12.5°	3291.3	3287.3	3271.2	3243.0	3234.9
15°	3202.7	3202.7	3170.5	3138.3	3126.2
17.5°	3106.0	3102.0	3061.7	3029.5	3013.4
20°	3001.3	2993.2	2952.9	2900.6	2872.4
22.5°	2884.5	2884.5	2836.1	2767.6	2739.4
25°	2775.7	2759.6	2715.3	2618.6	2546.1
27.5°	2650.8	2626.6	2578.3	2441.3	2356.7
30°	2513.8	2501.7	2433.3	2256.0	2191.5
32.5°	2384.9	2364.8	2292.3	2106.9	2054.6
35°	2252.0	2235.9	2127.1	1965.9	1917.6
37.5°	2119.0	2098.9	1961.9	1833.0	1772.6
40°	1986.1	1961.9	1812.9	1696.0	1631.6
42.5°	1861.2	1829.0	1683.9	1559.1	1486.5
45°	1728.3	1692.0	1547.0	1418.1	1361.7
47.5°	1595.3	1563.1	1430.1	1297.2	1232.7
50°	1454.3	1426.1	1305.3	1172.3	1103.8
52.5°	1337.5	1293.2	1176.3	1043.4	987.0
55°	1200.5	1164.3	1055.5	930.6	882.3
57.5°	1075.6	1039.4	938.7	821.8	781.5
60°	958.8	906.4	821.8	721.1	688.9
62.5°	829.9	789.6	717.1	632.5	672.8
65°	713.1	672.8	608.3	620.4	515.7
67.5°	584.1	564.0	507.6	451.2	435.1
70°	475.4	451.2	431.1	370.6	354.5
72.5°	378.7	354.5	326.3	294.1	282.0
75°	286.0	265.9	249.8	237.7	261.9
77.5°	197.4	189.3	177.3	165.2	161.1
80°	128.9	124.9	120.9	116.8	112.8
82.5°	76.5	76.5	76.5	76.5	76.5
85°	40.3	44.3	48.3	52.4	56.4
87.5°	24.2	24.2	28.2	32.2	36.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)