

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: P561484

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561484  
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-81-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

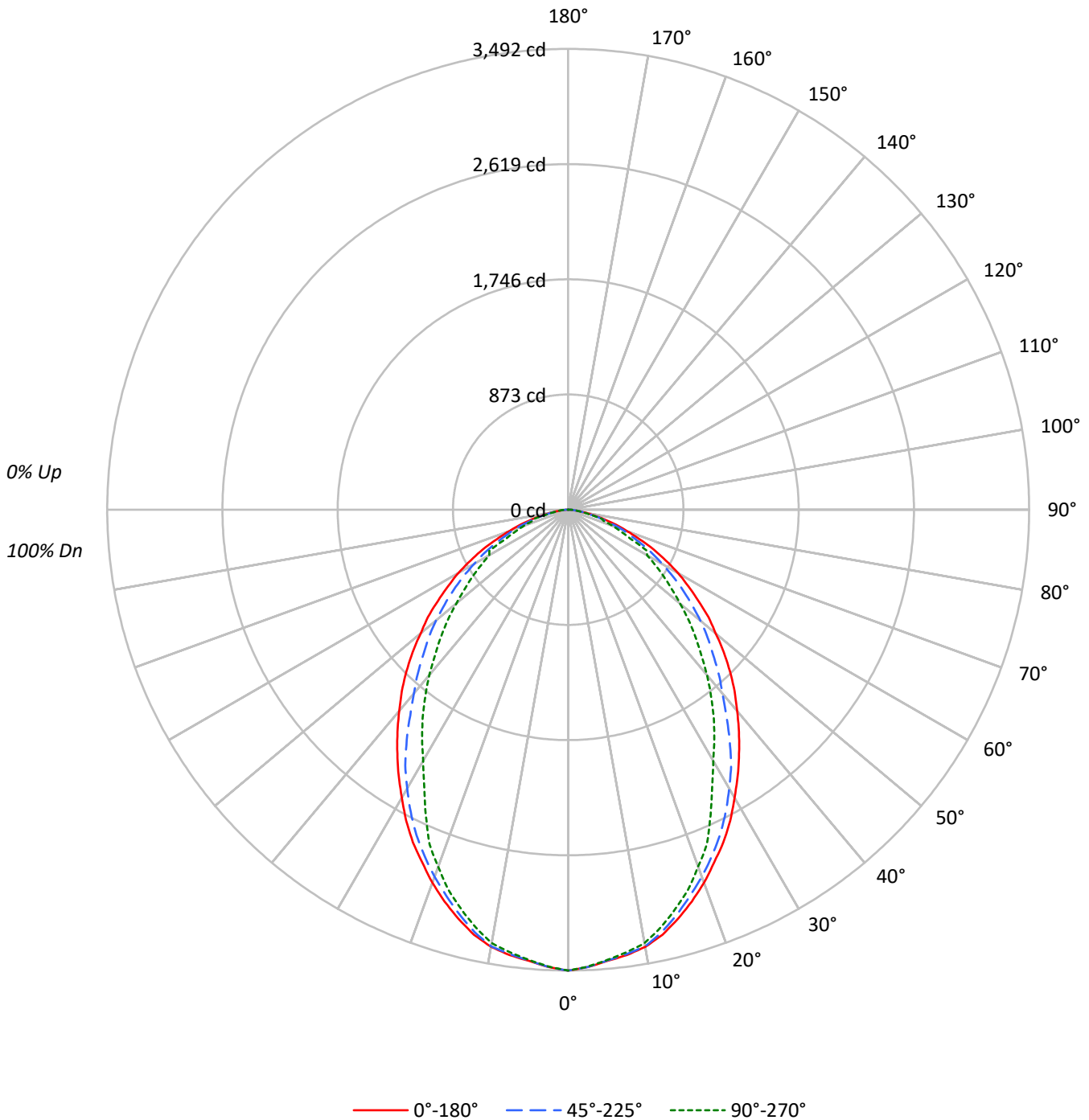
Lumens per Lamp: N/A  
Luminaire Lumens: 6856.0 lumens  
Efficiency: N/A  
Efficacy: 79.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9398	9398	9398
5°	9270	9259	9248
10°	9190	9179	9113
15°	8942	8852	8728
20°	8614	8475	8244
25°	8260	8080	7576
30°	7828	7577	6825
35°	7414	7003	6313
40°	6992	6382	5744
45°	6591	5900	5193
50°	6102	5476	4631
55°	5644	4963	4148
60°	5172	4433	3716
65°	4550	3882	3291
70°	3748	3399	2795
75°	2981	2602	2728
80°	2002	1877	1751
85°	1247	1494	1744

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6591 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	325.1	4.7
10°-20°	892.2	13.0
20°-30°	1235.2	18.0
30°-40°	1317.1	19.2
40°-50°	1201.5	17.5
50°-60°	941.3	13.7
60°-70°	613.5	8.9
70°-80°	271.8	4.0
80°-90°	58.4	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°	2452.4	35.8
0°-40°	3769.5	55.0
0°-60°	5912.3	86.2
0°-90°	6856.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6856.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3492	3492	3492	3492	3492	
5°	3432	3428	3428	3424	3424	326
15°	3210	3210	3177	3145	3133	902
25°	2782	2766	2721	2624	2552	1277
35°	2257	2241	2132	1970	1922	1411
45°	1732	1696	1550	1421	1365	1334
55°	1203	1167	1058	933	884	1079
65°	715	674	610	622	517	704
75°	287	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°	3492.4	3492.4	3492.4	3492.4	3492.4
2.5°	3468.1	3468.1	3468.1	3464.1	3464.1
5°	3431.8	3427.8	3427.8	3423.7	3423.7
7.5°	3403.5	3399.5	3395.5	3391.4	3383.3
10°	3363.2	3363.2	3359.1	3338.9	3334.9
12.5°	3298.6	3294.5	3278.4	3250.1	3242.0
15°	3209.7	3209.7	3177.4	3145.1	3133.0
17.5°	3112.8	3108.8	3068.4	3036.1	3020.0
20°	3007.9	2999.8	2959.4	2906.9	2878.7
22.5°	2890.8	2890.8	2842.3	2773.7	2745.4
25°	2781.8	2765.6	2721.2	2624.3	2551.6
27.5°	2656.6	2632.4	2583.9	2446.7	2361.9
30°	2519.3	2507.2	2438.6	2260.9	2196.3
32.5°	2390.1	2370.0	2297.3	2111.6	2059.1
35°	2256.9	2240.8	2131.7	1970.3	1921.8
37.5°	2123.7	2103.5	1966.2	1837.0	1776.5
40°	1990.4	1966.2	1816.8	1699.7	1635.1
42.5°	1865.3	1833.0	1687.6	1562.5	1489.8
45°	1732.0	1695.7	1550.4	1421.2	1364.6
47.5°	1598.8	1566.5	1433.3	1300.0	1235.4
50°	1457.5	1429.2	1308.1	1174.9	1106.2
52.5°	1340.4	1296.0	1178.9	1045.7	989.2
55°	1203.1	1166.8	1057.8	932.6	884.2
57.5°	1078.0	1041.7	940.7	823.6	783.3
60°	960.9	908.4	823.6	722.7	690.4
62.5°	831.7	791.3	718.7	633.9	674.2
65°	714.6	674.2	609.6	621.8	516.8
67.5°	585.4	565.2	508.7	452.2	436.0
70°	476.4	452.2	432.0	371.4	355.3
72.5°	379.5	355.3	327.0	294.7	282.6
75°	286.7	266.5	250.3	238.2	262.4
77.5°	197.8	189.8	177.6	165.5	161.5
80°	129.2	125.2	121.1	117.1	113.0
82.5°	76.7	76.7	76.7	76.7	76.7
85°	40.4	44.4	48.4	52.5	56.5
87.5°	24.2	24.2	28.3	32.3	36.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)