

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: P561402

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-80-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561402  
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-40-UNV-80-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

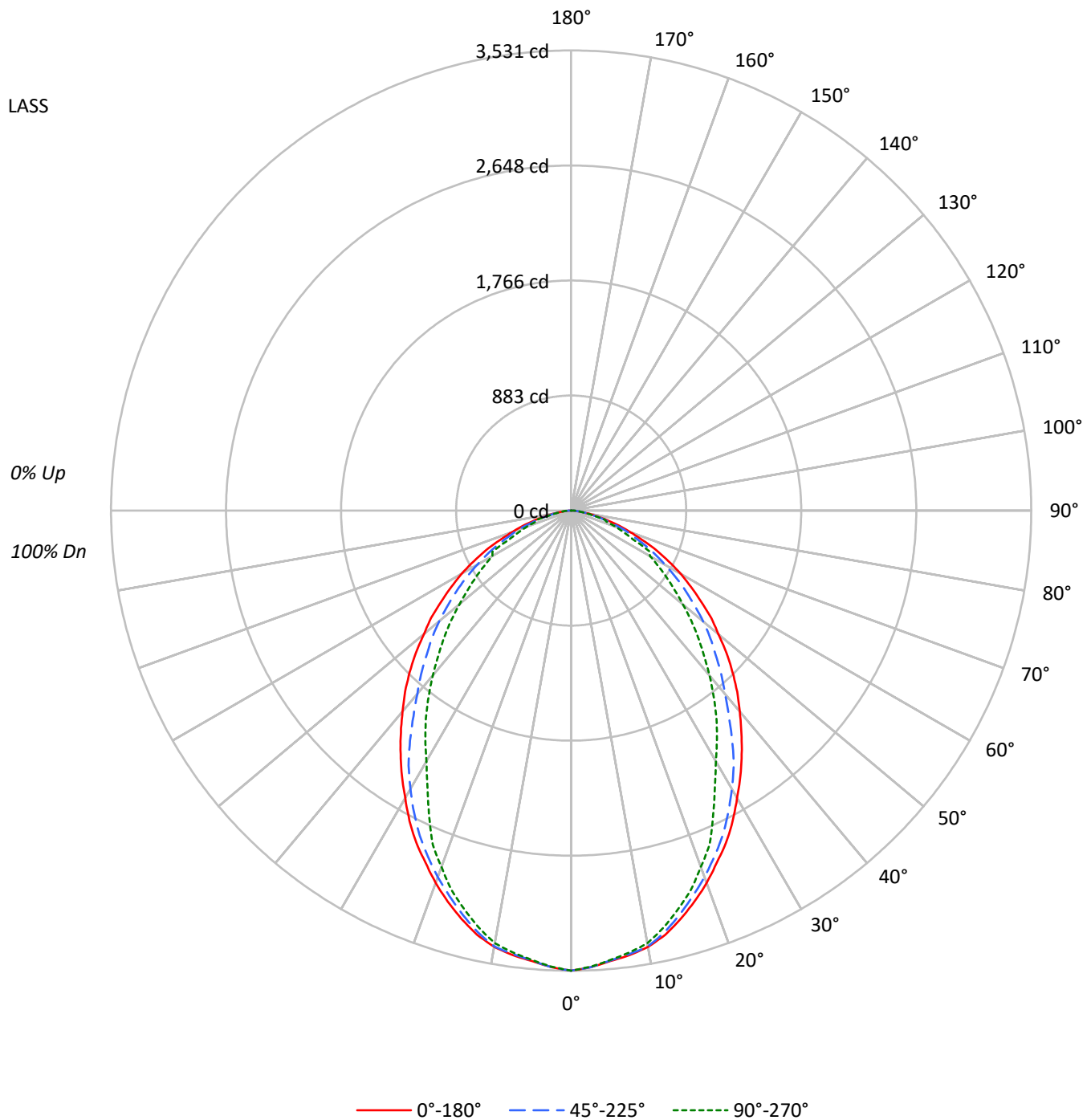
Lumens per Lamp: N/A  
Luminaire Lumens: 6931.0 lumens  
Efficiency: N/A  
Efficacy: 80.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	9501	9501	9501
5°	9371	9361	9350
10°	9290	9279	9212
15°	9040	8949	8824
20°	8708	8568	8334
25°	8350	8168	7659
30°	7914	7660	6899
35°	7495	7080	6382
40°	7069	6452	5807
45°	6664	5965	5250
50°	6168	5536	4682
55°	5706	5017	4194
60°	5228	4481	3756
65°	4600	3924	3326
70°	3789	3436	2826
75°	3013	2632	2758
80°	2024	1897	1771
85°	1260	1513	1763

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6664 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	328.6	4.7
10°-20°	901.9	13.0
20°-30°	1248.7	18.0
30°-40°	1331.5	19.2
40°-50°	1214.7	17.5
50°-60°	951.6	13.7
60°-70°	620.2	8.9
70°-80°	274.8	4.0
80°-90°	59.0	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°	2479.3	35.8
0°-40°	3810.7	55.0
0°-60°	5977.0	86.2
0°-90°	6931.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6931.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3531	3531	3531	3531	3531	
5°	3469	3465	3465	3461	3461	329
15°	3245	3245	3212	3180	3167	912
25°	2812	2796	2751	2653	2580	1291
35°	2282	2265	2155	1992	1943	1426
45°	1751	1714	1567	1437	1380	1349
55°	1216	1180	1069	943	894	1091
65°	722	682	616	629	522	712
75°	290	269	253	241	265	311
85°	41	45	49	53	57	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3530.6	3530.6	3530.6	3530.6	3530.6
2.5°	3506.1	3506.1	3506.1	3502.0	3502.0
5°	3469.3	3465.3	3465.3	3461.2	3461.2
7.5°	3440.8	3436.7	3432.6	3428.5	3420.4
10°	3399.9	3399.9	3395.9	3375.5	3371.4
12.5°	3334.6	3330.6	3314.2	3285.7	3277.5
15°	3244.8	3244.8	3212.2	3179.5	3167.3
17.5°	3146.9	3142.8	3102.0	3069.3	3053.0
20°	3040.8	3032.6	2991.8	2938.7	2910.2
22.5°	2922.4	2922.4	2873.4	2804.0	2775.5
25°	2812.2	2795.9	2751.0	2653.0	2579.6
27.5°	2685.7	2661.2	2612.2	2473.4	2387.7
30°	2546.9	2534.7	2465.3	2285.7	2220.4
32.5°	2416.3	2395.9	2322.4	2134.7	2081.6
35°	2281.6	2265.3	2155.1	1991.8	1942.8
37.5°	2146.9	2126.5	1987.7	1857.1	1795.9
40°	2012.2	1987.7	1836.7	1718.3	1653.0
42.5°	1885.7	1853.0	1706.1	1579.6	1506.1
45°	1751.0	1714.3	1567.3	1436.7	1379.6
47.5°	1616.3	1583.6	1449.0	1314.3	1249.0
50°	1473.4	1444.9	1322.4	1187.7	1118.4
52.5°	1355.1	1310.2	1191.8	1057.1	1000.0
55°	1216.3	1179.6	1069.4	942.8	893.9
57.5°	1089.8	1053.0	951.0	832.6	791.8
60°	971.4	918.4	832.6	730.6	697.9
62.5°	840.8	800.0	726.5	640.8	681.6
65°	722.4	681.6	616.3	628.6	522.4
67.5°	591.8	571.4	514.3	457.1	440.8
70°	481.6	457.1	436.7	375.5	359.2
72.5°	383.7	359.2	330.6	298.0	285.7
75°	289.8	269.4	253.1	240.8	265.3
77.5°	200.0	191.8	179.6	167.3	163.3
80°	130.6	126.5	122.4	118.4	114.3
82.5°	77.5	77.5	77.5	77.5	77.5
85°	40.8	44.9	49.0	53.1	57.1
87.5°	24.5	24.5	28.6	32.7	36.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)