

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: P561364

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561364  
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-82-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

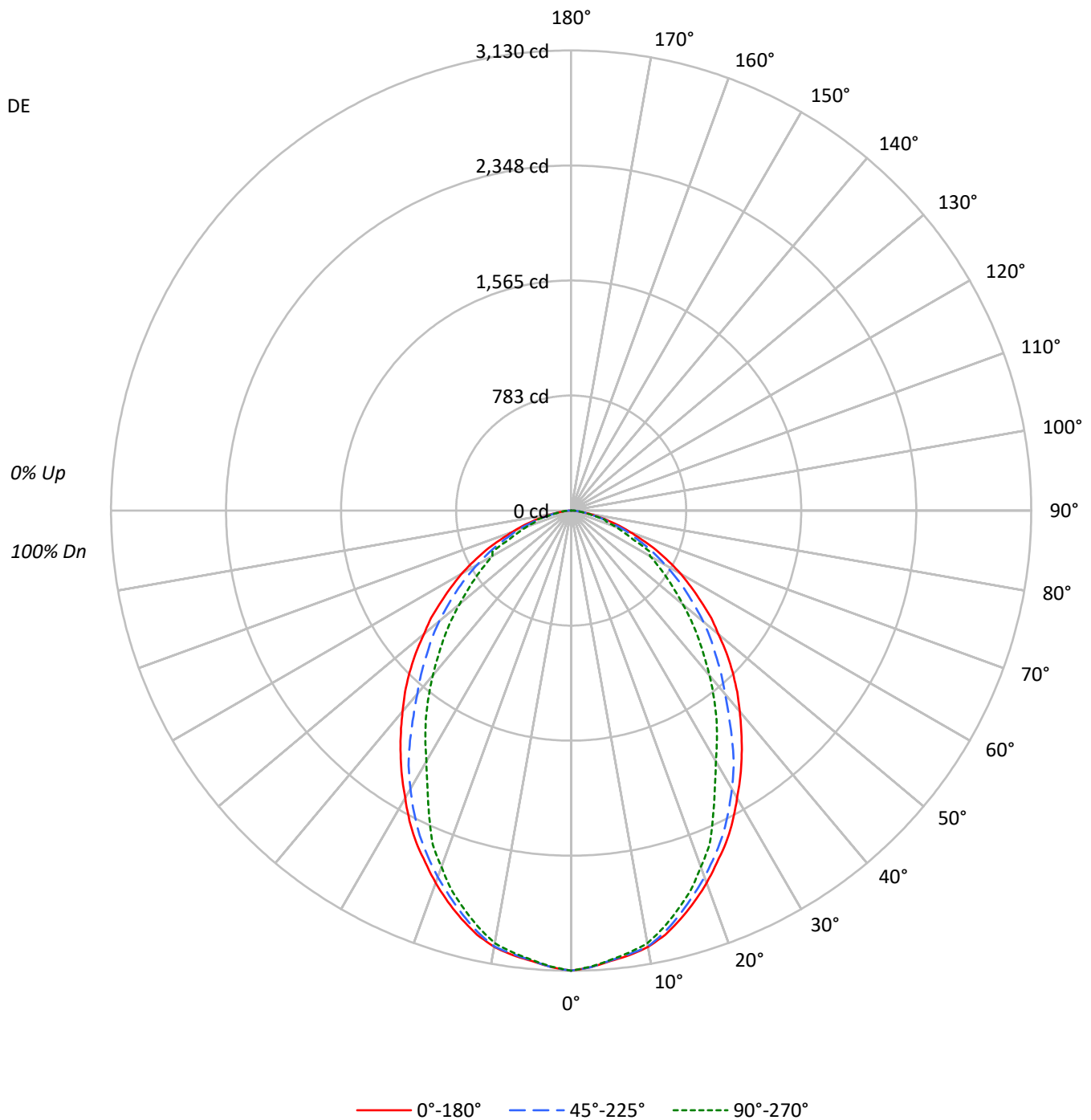
Lumens per Lamp: N/A  
Luminaire Lumens: 6144.0 lumens  
Efficiency: N/A  
Efficacy: 71.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8422	8422	8422
5°	8307	8298	8288
10°	8235	8226	8166
15°	8013	7933	7822
20°	7719	7595	7387
25°	7402	7241	6790
30°	7015	6790	6116
35°	6644	6276	5658
40°	6266	5720	5147
45°	5907	5288	4654
50°	5468	4908	4150
55°	5058	4447	3718
60°	4634	3972	3330
65°	4078	3479	2949
70°	3359	3046	2505
75°	2671	2332	2445
80°	1795	1681	1570
85°	1118	1340	1565

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5907 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	291.3	4.7
10°-20°	799.5	13.0
20°-30°	1106.9	18.0
30°-40°	1180.3	19.2
40°-50°	1076.8	17.5
50°-60°	843.5	13.7
60°-70°	549.8	8.9
70°-80°	243.6	4.0
80°-90°	52.3	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°	2197.8	35.8
0°-40°	3378.0	55.0
0°-60°	5298.3	86.2
0°-90°	6144.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6144.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3130	3130	3130	3130	3130	
5°	3075	3072	3072	3068	3068	292
15°	2876	2876	2848	2818	2808	809
25°	2493	2478	2439	2352	2287	1144
35°	2022	2008	1910	1766	1722	1264
45°	1552	1520	1389	1274	1223	1196
55°	1078	1046	948	836	792	967
65°	640	604	546	557	463	631
75°	257	239	224	214	235	275
85°	36	40	43	47	51	50
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3129.7	3129.7	3129.7	3129.7	3129.7
2.5°	3108.0	3108.0	3108.0	3104.3	3104.3
5°	3075.4	3071.8	3071.8	3068.2	3068.2
7.5°	3050.1	3046.5	3042.8	3039.2	3032.0
10°	3013.9	3013.9	3010.3	2992.2	2988.6
12.5°	2956.0	2952.4	2937.9	2912.6	2905.3
15°	2876.4	2876.4	2847.5	2818.5	2807.7
17.5°	2789.6	2786.0	2749.8	2720.8	2706.4
20°	2695.5	2688.3	2652.1	2605.0	2579.7
22.5°	2590.6	2590.6	2547.2	2485.6	2460.3
25°	2492.9	2478.4	2438.6	2351.8	2286.7
27.5°	2380.7	2359.0	2315.6	2192.6	2116.6
30°	2257.7	2246.9	2185.3	2026.1	1968.3
32.5°	2141.9	2123.8	2058.7	1892.3	1845.2
35°	2022.5	2008.1	1910.4	1765.6	1722.2
37.5°	1903.1	1885.0	1762.0	1646.2	1592.0
40°	1783.7	1762.0	1628.2	1523.2	1465.3
42.5°	1671.6	1642.6	1512.4	1400.2	1335.1
45°	1552.2	1519.6	1389.4	1273.6	1222.9
47.5°	1432.8	1403.8	1284.4	1165.0	1107.1
50°	1306.1	1280.8	1172.3	1052.9	991.4
52.5°	1201.2	1161.4	1056.5	937.1	886.4
55°	1078.2	1045.6	947.9	835.8	792.4
57.5°	966.0	933.5	843.0	738.1	701.9
60°	861.1	814.1	738.1	647.6	618.7
62.5°	745.3	709.2	644.0	568.0	604.2
65°	640.4	604.2	546.3	557.2	463.1
67.5°	524.6	506.5	455.9	405.2	390.8
70°	426.9	405.2	387.1	332.9	318.4
72.5°	340.1	318.4	293.1	264.1	253.3
75°	256.9	238.8	224.3	213.5	235.2
77.5°	177.3	170.1	159.2	148.3	144.7
80°	115.8	112.2	108.5	104.9	101.3
82.5°	68.7	68.7	68.7	68.7	68.7
85°	36.2	39.8	43.4	47.0	50.7
87.5°	21.7	21.7	25.3	28.9	32.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)