

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: P561428

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561428  
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-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

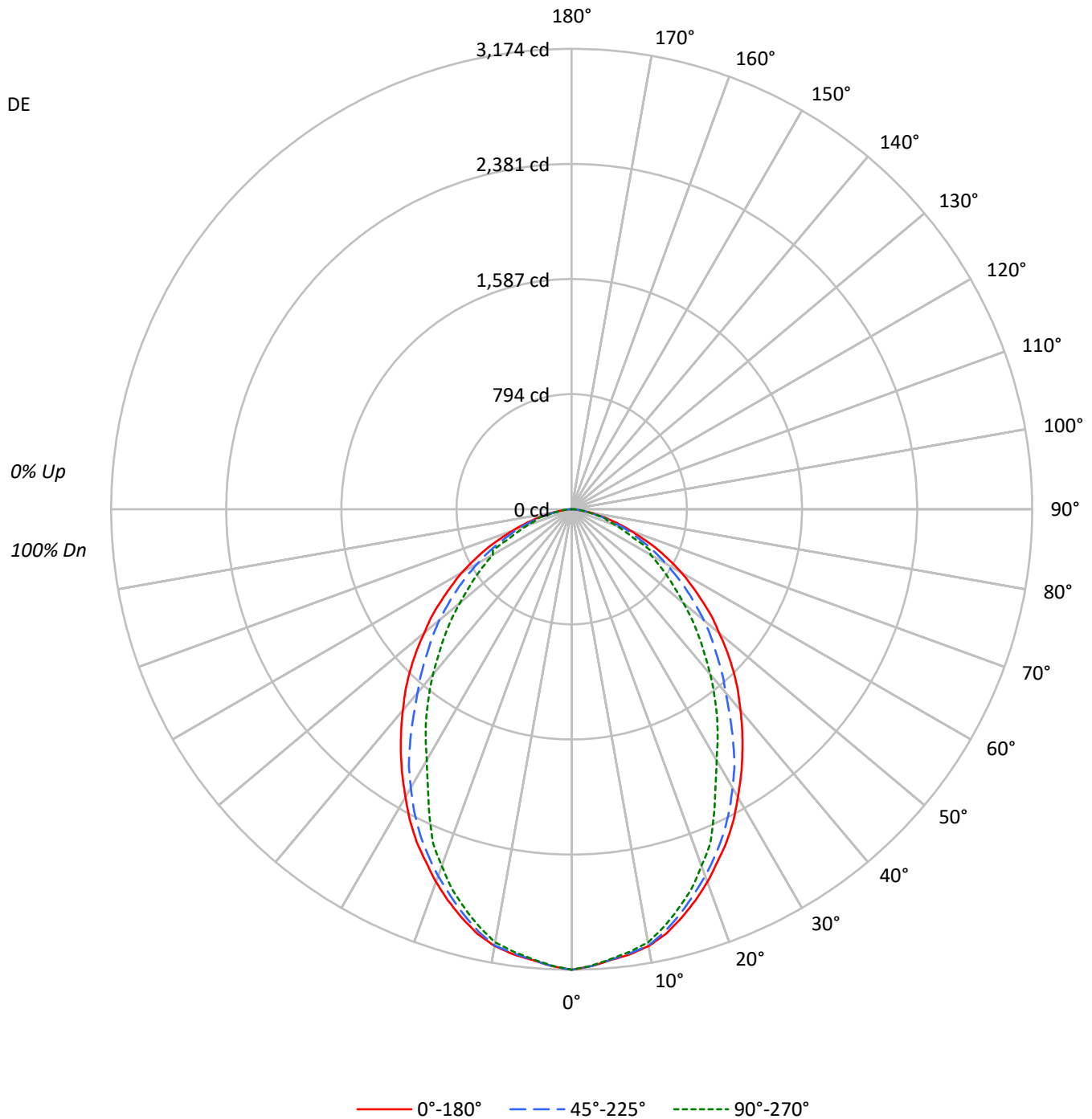
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6232.0 lumens  
Efficiency: N/A  
Efficacy: 72.1 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	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°	8543	8543	8543
5°	8426	8417	8407
10°	8353	8343	8283
15°	8128	8046	7934
20°	7830	7704	7493
25°	7508	7344	6887
30°	7116	6888	6203
35°	6739	6365	5739
40°	6356	5801	5221
45°	5992	5363	4720
50°	5546	4978	4210
55°	5131	4511	3771
60°	4701	4029	3378
65°	4136	3529	2991
70°	3408	3090	2541
75°	2709	2365	2480
80°	1819	1706	1593
85°	1133	1359	1587

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5992 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	295.5	4.7
10°-20°	811.0	13.0
20°-30°	1122.8	18.0
30°-40°	1197.2	19.2
40°-50°	1092.2	17.5
50°-60°	855.6	13.7
60°-70°	557.7	8.9
70°-80°	247.1	4.0
80°-90°	53.0	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°	2229.2	35.8
0°-40°	3426.4	55.0
0°-60°	5374.2	86.2
0°-90°	6232.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6232.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3174	3174	3174	3174	3174	
5°	3119	3116	3116	3112	3112	296
15°	2918	2918	2888	2859	2848	820
25°	2529	2514	2474	2386	2319	1161
35°	2052	2037	1938	1791	1747	1283
45°	1574	1541	1409	1292	1240	1213
55°	1094	1061	962	848	804	981
65°	650	613	554	565	470	640
75°	261	242	228	216	238	279
85°	37	40	44	48	51	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3174.5	3174.5	3174.5	3174.5	3174.5
2.5°	3152.5	3152.5	3152.5	3148.8	3148.8
5°	3119.4	3115.8	3115.8	3112.1	3112.1
7.5°	3093.8	3090.1	3086.4	3082.7	3075.4
10°	3057.1	3057.1	3053.4	3035.0	3031.4
12.5°	2998.3	2994.7	2980.0	2954.3	2947.0
15°	2917.6	2917.6	2888.2	2858.9	2847.9
17.5°	2829.5	2825.9	2789.2	2759.8	2745.1
20°	2734.1	2726.8	2690.1	2642.4	2616.7
22.5°	2627.7	2627.7	2583.6	2521.2	2495.6
25°	2528.6	2513.9	2473.5	2385.5	2319.4
27.5°	2414.8	2392.8	2348.8	2224.0	2146.9
30°	2290.0	2279.0	2216.6	2055.2	1996.4
32.5°	2172.6	2154.3	2088.2	1919.4	1871.7
35°	2051.5	2036.8	1937.7	1790.9	1746.9
37.5°	1930.4	1912.0	1787.3	1669.8	1614.8
40°	1809.3	1787.3	1651.5	1545.0	1486.3
42.5°	1695.5	1666.2	1534.0	1420.3	1354.2
45°	1574.4	1541.4	1409.3	1291.8	1240.4
47.5°	1453.3	1423.9	1302.8	1181.7	1123.0
50°	1324.8	1299.2	1189.1	1068.0	1005.6
52.5°	1218.4	1178.1	1071.6	950.5	899.1
55°	1093.6	1060.6	961.5	847.8	803.7
57.5°	979.9	946.8	855.1	748.7	712.0
60°	873.4	825.7	748.7	656.9	627.6
62.5°	756.0	719.3	653.2	576.2	612.9
65°	649.6	612.9	554.2	565.2	469.8
67.5°	532.1	513.8	462.4	411.0	396.4
70°	433.1	411.0	392.7	337.6	323.0
72.5°	345.0	323.0	297.3	267.9	256.9
75°	260.6	242.2	227.5	216.5	238.5
77.5°	179.8	172.5	161.5	150.5	146.8
80°	117.4	113.8	110.1	106.4	102.8
82.5°	69.7	69.7	69.7	69.7	69.7
85°	36.7	40.4	44.0	47.7	51.4
87.5°	22.0	22.0	25.7	29.4	33.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)