

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: P561553

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561553  
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-LD4-2LO-35-UNV-82-84-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

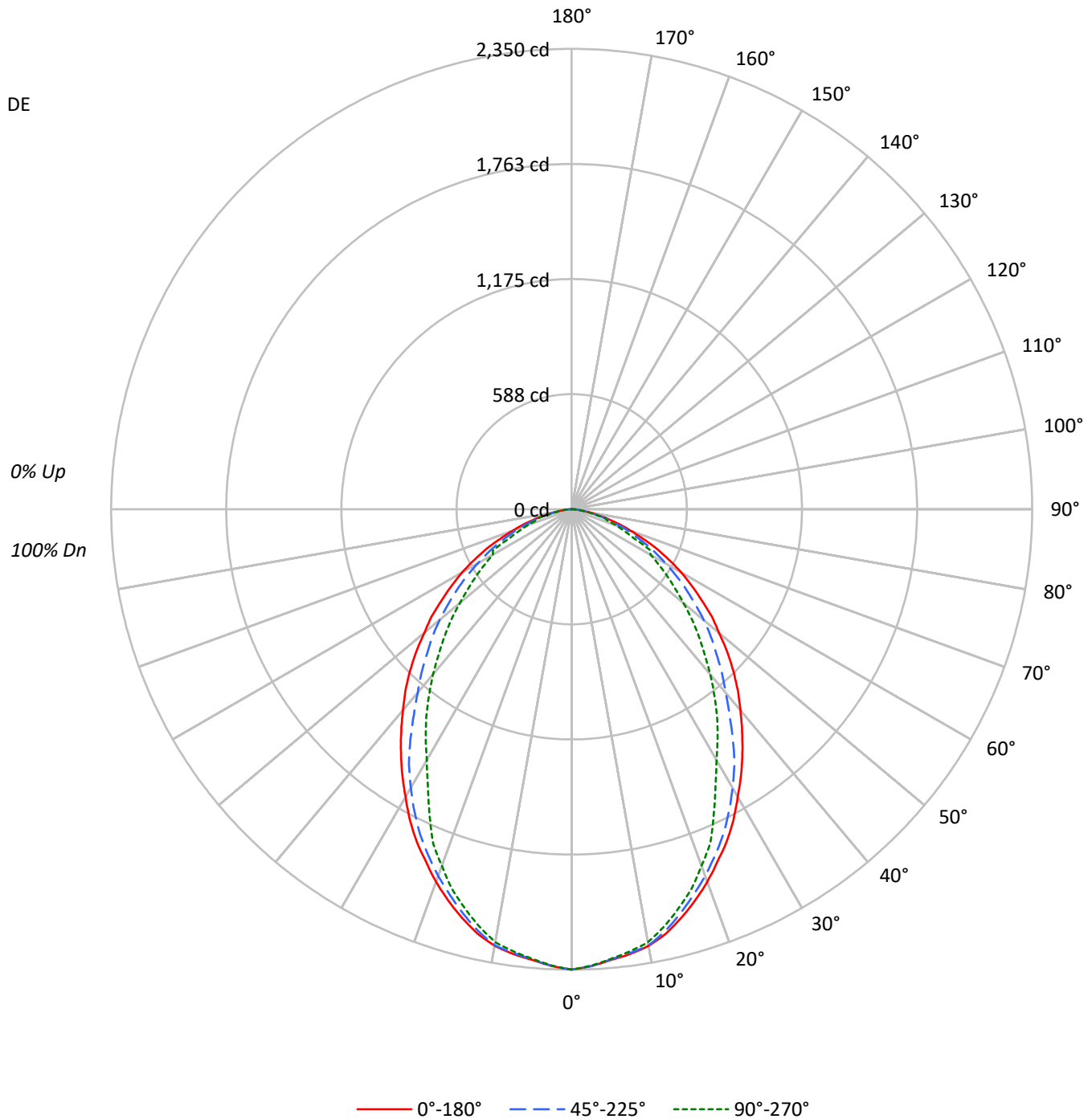
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4613.0 lumens  
Efficiency: N/A  
Efficacy: 98.6 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): 46.8  
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°	6323	6323	6323
5°	6237	6230	6223
10°	6183	6176	6131
15°	6016	5956	5873
20°	5796	5702	5547
25°	5557	5436	5097
30°	5267	5098	4592
35°	4988	4712	4248
40°	4705	4294	3865
45°	4435	3970	3494
50°	4106	3685	3116
55°	3798	3339	2791
60°	3479	2983	2500
65°	3061	2612	2214
70°	2522	2287	1881
75°	2006	1751	1836
80°	1347	1263	1179
85°	840	1007	1173

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4435 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.7	4.7
10°-20°	600.3	13.0
20°-30°	831.1	18.0
30°-40°	886.2	19.2
40°-50°	808.4	17.5
50°-60°	633.4	13.7
60°-70°	412.8	8.9
70°-80°	182.9	4.0
80°-90°	39.3	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°	1650.1	35.8
0°-40°	2536.3	55.0
0°-60°	3978.1	86.2
0°-90°	4613.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4613.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2350	2350	2350	2350	2350	
5°	2309	2306	2306	2304	2304	219
15°	2160	2160	2138	2116	2108	607
25°	1872	1861	1831	1766	1717	859
35°	1518	1508	1434	1326	1293	949
45°	1165	1141	1043	956	918	898
55°	810	785	712	628	595	726
65°	481	454	410	418	348	474
75°	193	179	168	160	177	207
85°	27	30	33	35	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2349.8	2349.8	2349.8	2349.8	2349.8
2.5°	2333.5	2333.5	2333.5	2330.8	2330.8
5°	2309.1	2306.3	2306.3	2303.6	2303.6
7.5°	2290.0	2287.3	2284.6	2281.9	2276.5
10°	2262.9	2262.9	2260.2	2246.6	2243.9
12.5°	2219.4	2216.7	2205.8	2186.8	2181.4
15°	2159.6	2159.6	2137.9	2116.2	2108.0
17.5°	2094.4	2091.7	2064.6	2042.8	2032.0
20°	2023.8	2018.4	1991.2	1955.9	1936.9
22.5°	1945.0	1945.0	1912.4	1866.3	1847.2
25°	1871.7	1860.8	1830.9	1765.7	1716.8
27.5°	1787.5	1771.2	1738.6	1646.2	1589.2
30°	1695.1	1687.0	1640.8	1521.3	1477.8
32.5°	1608.2	1594.6	1545.7	1420.7	1385.4
35°	1518.5	1507.7	1434.3	1325.7	1293.1
37.5°	1428.9	1415.3	1323.0	1236.0	1195.3
40°	1339.3	1323.0	1222.4	1143.7	1100.2
42.5°	1255.0	1233.3	1135.5	1051.3	1002.4
45°	1165.4	1140.9	1043.1	956.2	918.2
47.5°	1075.7	1054.0	964.4	874.7	831.3
50°	980.7	961.7	880.2	790.5	744.3
52.5°	901.9	872.0	793.2	703.6	665.6
55°	809.5	785.1	711.7	627.5	594.9
57.5°	725.3	700.9	633.0	554.2	527.0
60°	646.5	611.2	554.2	486.3	464.5
62.5°	559.6	532.4	483.5	426.5	453.7
65°	480.8	453.7	410.2	418.3	347.7
67.5°	393.9	380.3	342.3	304.3	293.4
70°	320.6	304.3	290.7	249.9	239.1
72.5°	255.4	239.1	220.0	198.3	190.2
75°	192.9	179.3	168.4	160.3	176.6
77.5°	133.1	127.7	119.5	111.4	108.7
80°	86.9	84.2	81.5	78.8	76.1
82.5°	51.6	51.6	51.6	51.6	51.6
85°	27.2	29.9	32.6	35.3	38.0
87.5°	16.3	16.3	19.0	21.7	24.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)