

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: P561605

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561605  
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-40-UNV-81-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

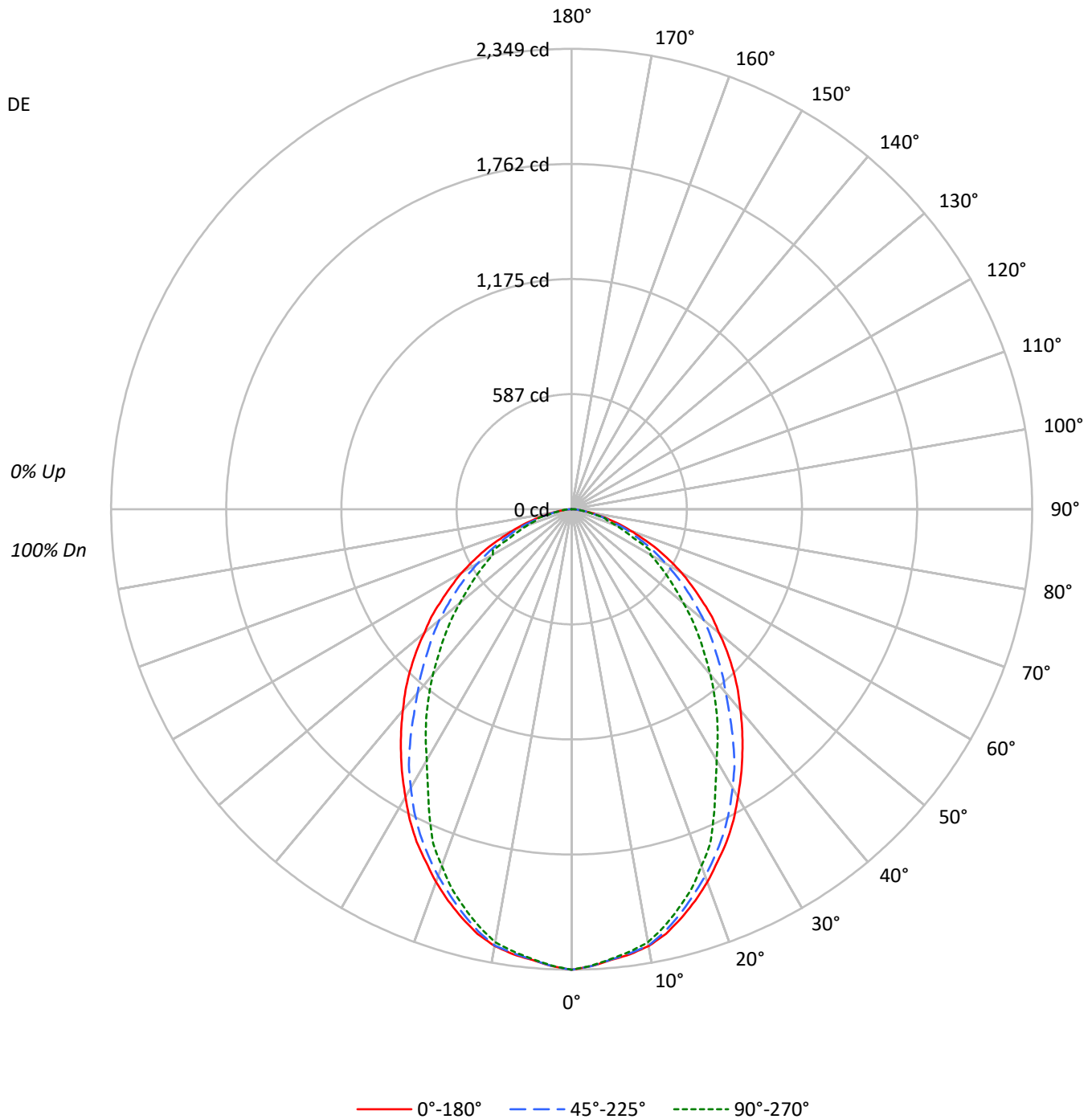
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4612.0 lumens  
Efficiency: N/A  
Efficacy: 98.5 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	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°	6322	6322	6322
5°	6236	6229	6221
10°	6182	6175	6130
15°	6015	5955	5872
20°	5794	5701	5546
25°	5556	5435	5097
30°	5266	5097	4591
35°	4987	4711	4247
40°	4704	4293	3864
45°	4434	3969	3494
50°	4105	3684	3116
55°	3797	3339	2791
60°	3479	2982	2499
65°	3061	2611	2213
70°	2522	2286	1880
75°	2005	1751	1835
80°	1347	1263	1178
85°	840	1007	1173

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4434 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.7	4.7
10°-20°	600.2	13.0
20°-30°	830.9	18.0
30°-40°	886.0	19.2
40°-50°	808.3	17.5
50°-60°	633.2	13.7
60°-70°	412.7	8.9
70°-80°	182.8	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°	1649.7	35.8
0°-40°	2535.7	55.0
0°-60°	3977.2	86.2
0°-90°	4612.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4612.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2349	2349	2349	2349	2349	
5°	2309	2306	2306	2303	2303	219
15°	2159	2159	2137	2116	2108	607
25°	1871	1860	1830	1765	1716	859
35°	1518	1507	1434	1325	1293	949
45°	1165	1141	1043	956	918	898
55°	809	785	712	627	595	726
65°	481	454	410	418	348	474
75°	193	179	168	160	176	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°	2349.3	2349.3	2349.3	2349.3	2349.3
2.5°	2333.0	2333.0	2333.0	2330.3	2330.3
5°	2308.6	2305.8	2305.8	2303.1	2303.1
7.5°	2289.5	2286.8	2284.1	2281.4	2276.0
10°	2262.4	2262.4	2259.7	2246.1	2243.4
12.5°	2218.9	2216.2	2205.3	2186.3	2180.9
15°	2159.2	2159.2	2137.4	2115.7	2107.6
17.5°	2094.0	2091.3	2064.1	2042.4	2031.5
20°	2023.4	2017.9	1990.8	1955.5	1936.5
22.5°	1944.6	1944.6	1912.0	1865.9	1846.8
25°	1871.3	1860.4	1830.5	1765.4	1716.5
27.5°	1787.1	1770.8	1738.2	1645.9	1588.8
30°	1694.7	1686.6	1640.4	1520.9	1477.5
32.5°	1607.8	1594.3	1545.4	1420.4	1385.1
35°	1518.2	1507.3	1434.0	1325.4	1292.8
37.5°	1428.6	1415.0	1322.7	1235.8	1195.0
40°	1339.0	1322.7	1222.2	1143.4	1100.0
42.5°	1254.8	1233.0	1135.3	1051.1	1002.2
45°	1165.1	1140.7	1042.9	956.0	918.0
47.5°	1075.5	1053.8	964.2	874.5	831.1
50°	980.5	961.4	880.0	790.3	744.2
52.5°	901.7	871.8	793.1	703.4	665.4
55°	809.4	784.9	711.6	627.4	594.8
57.5°	725.2	700.7	632.8	554.1	526.9
60°	646.4	611.1	554.1	486.2	464.4
62.5°	559.5	532.3	483.4	426.4	453.6
65°	480.7	453.6	410.1	418.3	347.6
67.5°	393.8	380.2	342.2	304.2	293.3
70°	320.5	304.2	290.6	249.9	239.0
72.5°	255.3	239.0	220.0	198.3	190.1
75°	192.8	179.3	168.4	160.2	176.5
77.5°	133.1	127.6	119.5	111.4	108.6
80°	86.9	84.2	81.5	78.8	76.0
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)