

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: P561621

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561621  
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-82-86-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

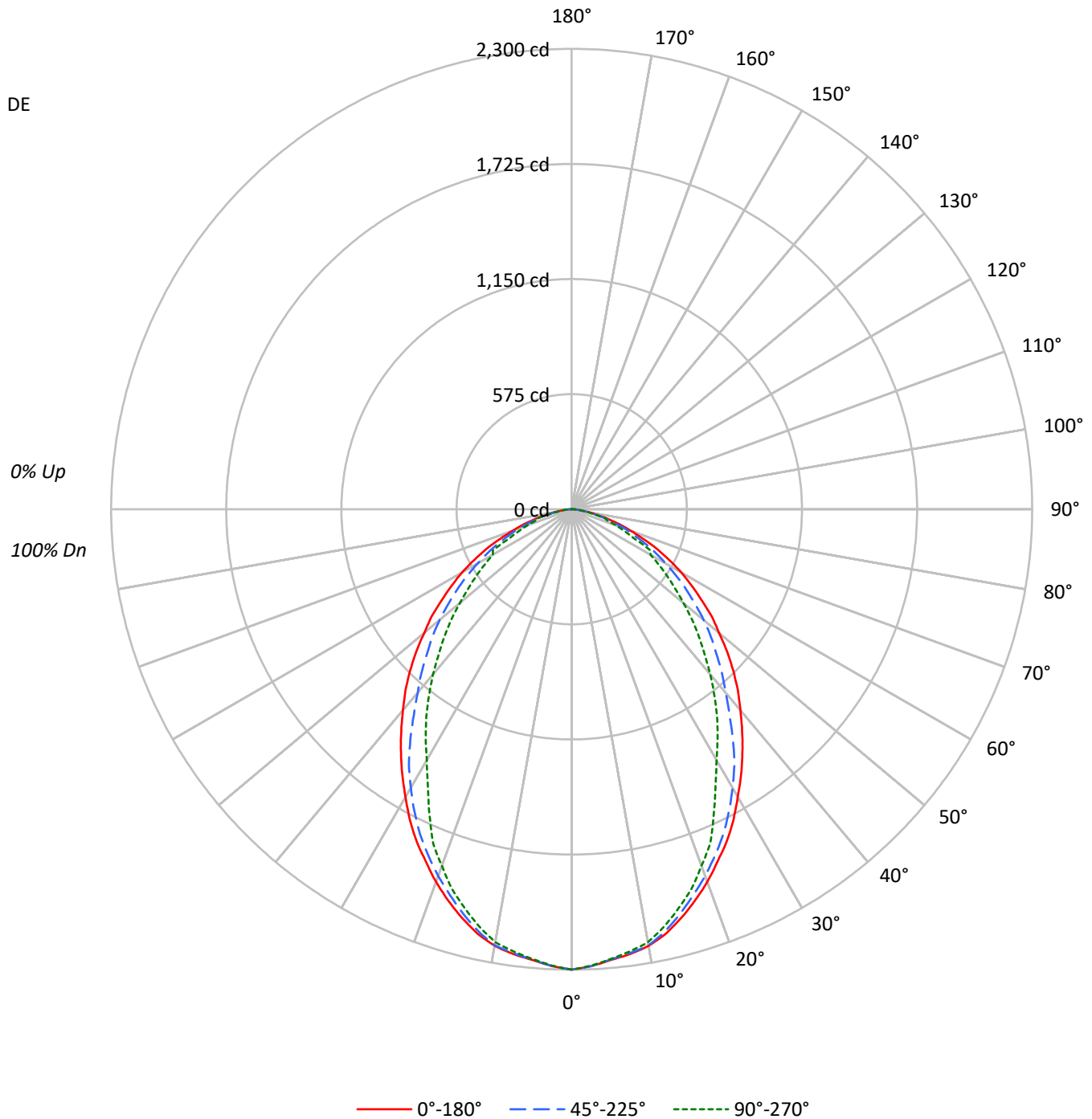
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4515.0 lumens  
Efficiency: N/A  
Efficacy: 96.5 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	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°	6189	6189	6189
5°	6105	6098	6091
10°	6052	6045	6001
15°	5889	5830	5748
20°	5672	5581	5429
25°	5439	5321	4989
30°	5155	4990	4494
35°	4883	4612	4158
40°	4605	4203	3783
45°	4341	3886	3420
50°	4018	3607	3050
55°	3717	3268	2732
60°	3406	2919	2447
65°	2996	2557	2167
70°	2468	2238	1841
75°	1963	1713	1797
80°	1319	1237	1153
85°	821	985	1149

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4341 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	214.1	4.7
10°-20°	587.5	13.0
20°-30°	813.4	18.0
30°-40°	867.3	19.2
40°-50°	791.3	17.5
50°-60°	619.9	13.7
60°-70°	404.0	8.9
70°-80°	179.0	4.0
80°-90°	38.4	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°	1615.0	35.8
0°-40°	2482.4	55.0
0°-60°	3893.5	86.2
0°-90°	4515.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4515.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2300	2300	2300	2300	2300	
5°	2260	2257	2257	2255	2255	215
15°	2114	2114	2092	2071	2063	594
25°	1832	1821	1792	1728	1680	841
35°	1486	1476	1404	1298	1266	929
45°	1141	1117	1021	936	899	879
55°	792	768	697	614	582	711
65°	471	444	402	410	340	464
75°	189	176	165	157	173	202
85°	27	29	32	35	37	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2299.9	2299.9	2299.9	2299.9	2299.9
2.5°	2283.9	2283.9	2283.9	2281.3	2281.3
5°	2260.0	2257.3	2257.3	2254.7	2254.7
7.5°	2241.4	2238.7	2236.1	2233.4	2228.1
10°	2214.8	2214.8	2212.1	2198.8	2196.2
12.5°	2172.3	2169.6	2159.0	2140.4	2135.0
15°	2113.8	2113.8	2092.5	2071.2	2063.2
17.5°	2050.0	2047.3	2020.7	1999.4	1988.8
20°	1980.8	1975.5	1948.9	1914.4	1895.7
22.5°	1903.7	1903.7	1871.8	1826.6	1808.0
25°	1831.9	1821.3	1792.0	1728.2	1680.4
27.5°	1749.5	1733.6	1701.6	1611.2	1555.4
30°	1659.1	1651.1	1605.9	1488.9	1446.4
32.5°	1574.0	1560.7	1512.9	1390.6	1356.0
35°	1486.3	1475.6	1403.9	1297.5	1265.6
37.5°	1398.5	1385.2	1294.8	1209.8	1169.9
40°	1310.8	1294.8	1196.5	1119.4	1076.8
42.5°	1228.4	1207.1	1111.4	1029.0	981.1
45°	1140.6	1116.7	1021.0	935.9	898.7
47.5°	1052.9	1031.6	943.9	856.1	813.6
50°	959.8	941.2	861.5	773.7	728.5
52.5°	882.7	853.5	776.4	688.6	651.4
55°	792.3	768.4	696.6	614.2	582.3
57.5°	709.9	686.0	619.5	542.4	515.8
60°	632.8	598.2	542.4	475.9	454.7
62.5°	547.7	521.1	473.3	417.4	444.0
65°	470.6	444.0	401.5	409.5	340.3
67.5°	385.5	372.2	335.0	297.8	287.2
70°	313.7	297.8	284.5	244.6	234.0
72.5°	249.9	234.0	215.4	194.1	186.1
75°	188.8	175.5	164.8	156.9	172.8
77.5°	130.3	125.0	117.0	109.0	106.4
80°	85.1	82.4	79.8	77.1	74.4
82.5°	50.5	50.5	50.5	50.5	50.5
85°	26.6	29.2	31.9	34.6	37.2
87.5°	16.0	16.0	18.6	21.3	23.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)