

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: P561433

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561433  
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-82-88-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

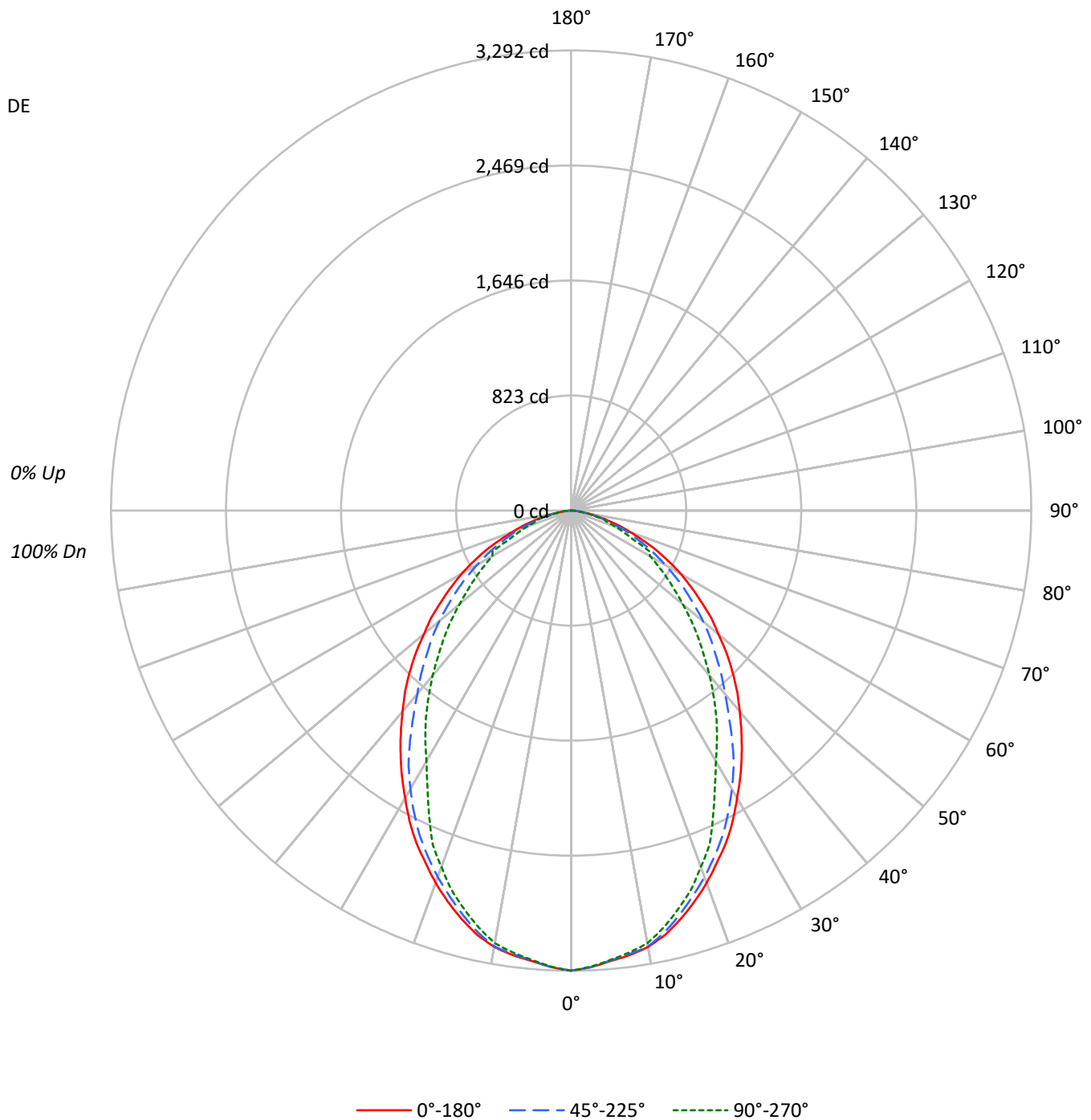
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6462.0 lumens  
Efficiency: N/A  
Efficacy: 74.8 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



TEST NUMBER: P561433  
CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-82-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P561433

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-82-88-EDD

**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°	8858	8858	8858
5°	8737	8727	8717
10°	8662	8651	8589
15°	8428	8343	8227
20°	8119	7988	7770
25°	7785	7615	7141
30°	7379	7142	6432
35°	6988	6600	5951
40°	6590	6015	5414
45°	6213	5561	4895
50°	5751	5161	4365
55°	5320	4678	3910
60°	4874	4178	3502
65°	4289	3659	3102
70°	3533	3204	2635
75°	2809	2453	2571
80°	1888	1770	1652
85°	1176	1411	1646

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6213 cd/sqm



TEST NUMBER: P561433

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-82-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	306.4	4.7
10°-20°	840.9	13.0
20°-30°	1164.2	18.0
30°-40°	1241.4	19.2
40°-50°	1132.5	17.5
50°-60°	887.2	13.7
60°-70°	578.2	8.9
70°-80°	256.2	4.0
80°-90°	55.0	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°	2311.5	35.8
0°-40°	3552.9	55.0
0°-60°	5572.6	86.2
0°-90°	6462.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6462.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3292	3292	3292	3292	3292	
5°	3235	3231	3231	3227	3227	307
15°	3025	3025	2995	2964	2953	850
25°	2622	2607	2565	2474	2405	1204
35°	2127	2112	2009	1857	1811	1330
45°	1632	1598	1461	1340	1286	1258
55°	1134	1100	997	879	833	1017
65°	674	636	575	586	487	664
75°	270	251	236	224	247	290
85°	38	42	46	50	53	53
90°	0	0	0	0	0	



TEST NUMBER: P561433

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-82-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3291.7	3291.7	3291.7	3291.7	3291.7
2.5°	3268.8	3268.8	3268.8	3265.0	3265.0
5°	3234.6	3230.8	3230.8	3227.0	3227.0
7.5°	3207.9	3204.1	3200.3	3196.5	3188.9
10°	3169.9	3169.9	3166.1	3147.1	3143.2
12.5°	3109.0	3105.2	3090.0	3063.3	3055.7
15°	3025.3	3025.3	2994.8	2964.4	2953.0
17.5°	2934.0	2930.1	2892.1	2861.6	2846.4
20°	2835.0	2827.4	2789.3	2739.9	2713.2
22.5°	2724.7	2724.7	2679.0	2614.3	2587.7
25°	2621.9	2606.7	2564.8	2473.5	2405.0
27.5°	2503.9	2481.1	2435.4	2306.1	2226.1
30°	2374.6	2363.1	2298.5	2131.0	2070.1
32.5°	2252.8	2233.8	2165.3	1990.2	1940.7
35°	2127.2	2112.0	2009.2	1857.0	1811.4
37.5°	2001.6	1982.6	1853.2	1731.4	1674.4
40°	1876.1	1853.2	1712.4	1602.1	1541.2
42.5°	1758.1	1727.6	1590.7	1472.7	1404.2
45°	1632.5	1598.3	1461.3	1339.5	1286.2
47.5°	1506.9	1476.5	1350.9	1225.3	1164.4
50°	1373.7	1347.1	1232.9	1107.4	1042.7
52.5°	1263.4	1221.5	1111.2	985.6	932.3
55°	1134.0	1099.8	997.0	879.0	833.4
57.5°	1016.0	981.8	886.7	776.3	738.2
60°	905.7	856.2	776.3	681.2	650.7
62.5°	783.9	745.9	677.4	597.4	635.5
65°	673.6	635.5	574.6	586.0	487.1
67.5°	551.8	532.8	479.5	426.2	411.0
70°	449.0	426.2	407.2	350.1	334.9
72.5°	357.7	334.9	308.2	277.8	266.4
75°	270.2	251.2	235.9	224.5	247.3
77.5°	186.5	178.9	167.4	156.0	152.2
80°	121.8	118.0	114.2	110.4	106.6
82.5°	72.3	72.3	72.3	72.3	72.3
85°	38.1	41.9	45.7	49.5	53.3
87.5°	22.8	22.8	26.6	30.4	34.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)