

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: P560988

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-82-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560988
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-LD4-1LO-35-UNV-82-96-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1913.0 lumens
Efficiency: N/A
Efficacy: 81.8 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

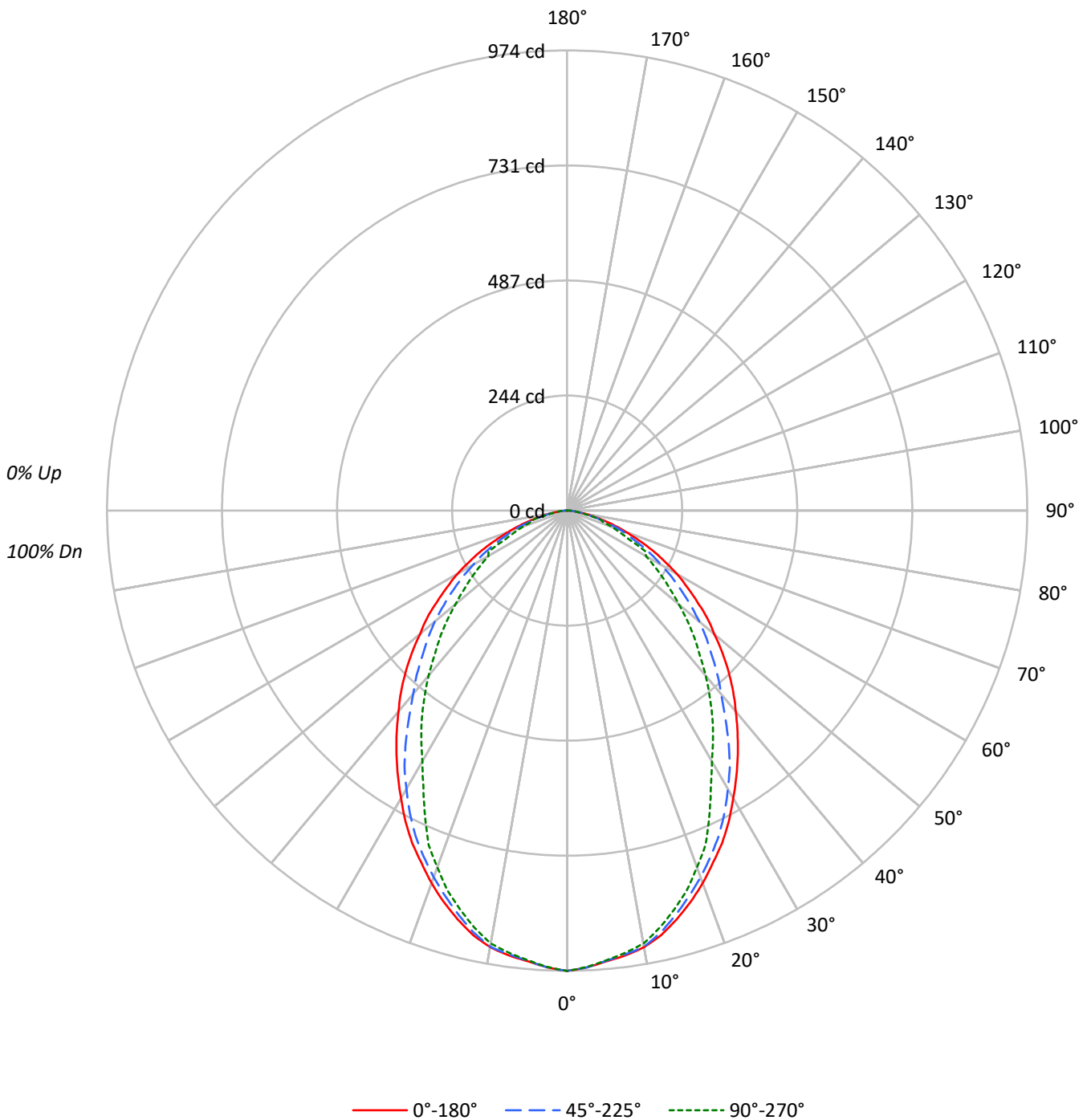
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	2622	2622	2622
5°	2587	2583	2581
10°	2564	2561	2543
15°	2495	2470	2435
20°	2403	2365	2300
25°	2305	2254	2114
30°	2184	2114	1904
35°	2069	1954	1761
40°	1951	1781	1603
45°	1839	1646	1449
50°	1703	1528	1292
55°	1575	1385	1157
60°	1443	1237	1037
65°	1270	1083	918
70°	1046	948	780
75°	832	726	761
80°	558	524	488
85°	349	417	488

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1839 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.7	4.7
10°-20°	248.9	13.0
20°-30°	344.6	18.0
30°-40°	367.5	19.2
40°-50°	335.3	17.5
50°-60°	262.6	13.7
60°-70°	171.2	8.9
70°-80°	75.8	4.0
80°-90°	16.3	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°	684.3	35.8
0°-40°	1051.8	55.0
0°-60°	1649.7	86.2
0°-90°	1913.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1913.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	974	974	974	974	974	
5°	958	956	956	955	955	91
15°	896	896	887	878	874	252
25°	776	772	759	732	712	356
35°	630	625	595	550	536	394
45°	483	473	433	396	381	372
55°	336	326	295	260	247	301
65°	199	188	170	174	144	196
75°	80	74	70	66	73	86
85°	11	12	14	15	16	16
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	974.5	974.5	974.5	974.5	974.5
2.5°	967.7	967.7	967.7	966.6	966.6
5°	957.6	956.4	956.4	955.3	955.3
7.5°	949.7	948.5	947.4	946.3	944.0
10°	938.4	938.4	937.3	931.6	930.5
12.5°	920.4	919.3	914.8	906.9	904.6
15°	895.6	895.6	886.6	877.6	874.2
17.5°	868.6	867.4	856.2	847.2	842.7
20°	839.3	837.0	825.8	811.1	803.2
22.5°	806.6	806.6	793.1	773.9	766.0
25°	776.2	771.7	759.3	732.3	712.0
27.5°	741.3	734.5	721.0	682.7	659.0
30°	703.0	699.6	680.4	630.9	612.8
32.5°	666.9	661.3	641.0	589.2	574.5
35°	629.7	625.2	594.8	549.8	536.2
37.5°	592.6	586.9	548.6	512.6	495.7
40°	555.4	548.6	506.9	474.3	456.2
42.5°	520.5	511.4	470.9	436.0	415.7
45°	483.3	473.1	432.6	396.5	380.8
47.5°	446.1	437.1	399.9	362.7	344.7
50°	406.7	398.8	365.0	327.8	308.7
52.5°	374.0	361.6	328.9	291.8	276.0
55°	335.7	325.6	295.2	260.2	246.7
57.5°	300.8	290.6	262.5	229.8	218.5
60°	268.1	253.5	229.8	201.7	192.6
62.5°	232.1	220.8	200.5	176.9	188.1
65°	199.4	188.1	170.1	173.5	144.2
67.5°	163.3	157.7	141.9	126.2	121.7
70°	132.9	126.2	120.5	103.6	99.1
72.5°	105.9	99.1	91.2	82.2	78.9
75°	80.0	74.4	69.8	66.5	73.2
77.5°	55.2	52.9	49.6	46.2	45.1
80°	36.0	34.9	33.8	32.7	31.5
82.5°	21.4	21.4	21.4	21.4	21.4
85°	11.3	12.4	13.5	14.6	15.8
87.5°	6.8	6.8	7.9	9.0	10.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)