

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: P560998

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560998
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-93-87-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1950.0 lumens
Efficiency: N/A
Efficacy: 83.3 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

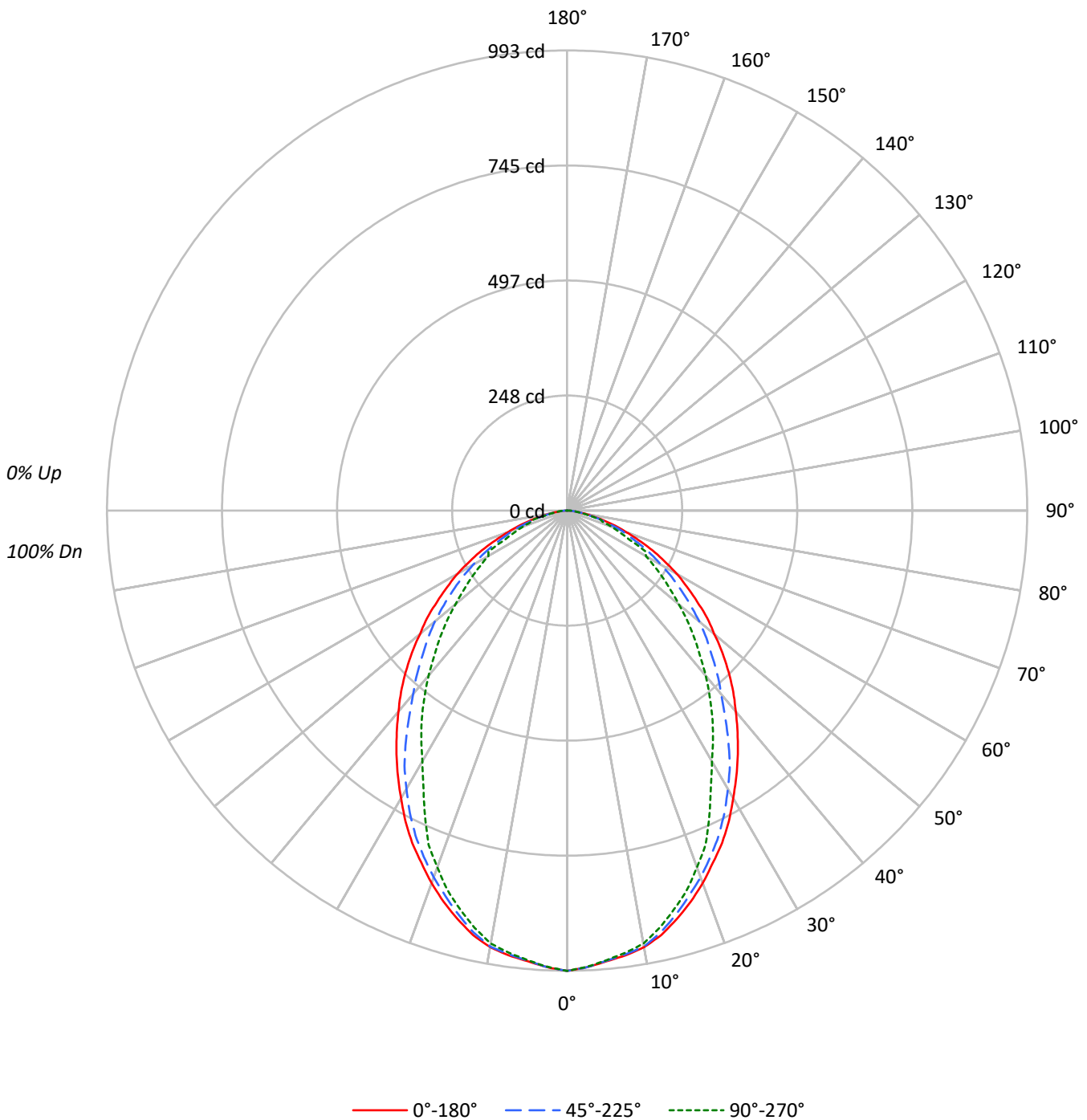
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	2673	2673	2673
5°	2637	2633	2630
10°	2614	2611	2592
15°	2543	2518	2483
20°	2450	2410	2345
25°	2349	2298	2155
30°	2227	2155	1941
35°	2109	1992	1796
40°	1989	1815	1634
45°	1875	1678	1477
50°	1735	1558	1317
55°	1605	1412	1180
60°	1471	1261	1057
65°	1294	1104	936
70°	1066	967	795
75°	847	740	776
80°	569	533	499
85°	355	426	497

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1875 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.5	4.7
10°-20°	253.8	13.0
20°-30°	351.3	18.0
30°-40°	374.6	19.2
40°-50°	341.7	17.5
50°-60°	267.7	13.7
60°-70°	174.5	8.9
70°-80°	77.3	4.0
80°-90°	16.6	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°	697.5	35.8
0°-40°	1072.1	55.0
0°-60°	1681.6	86.2
0°-90°	1950.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1950.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	993	993	993	993	993	
5°	976	975	975	974	974	93
15°	913	913	904	894	891	257
25°	791	787	774	746	726	363
35°	642	637	606	560	547	401
45°	493	482	441	404	388	379
55°	342	332	301	265	252	307
65°	203	192	173	177	147	200
75°	82	76	71	68	75	87
85°	12	13	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°	993.3	993.3	993.3	993.3	993.3
2.5°	986.4	986.4	986.4	985.3	985.3
5°	976.1	974.9	974.9	973.8	973.8
7.5°	968.0	966.9	965.7	964.6	962.3
10°	956.6	956.6	955.4	949.7	948.5
12.5°	938.2	937.0	932.4	924.4	922.1
15°	912.9	912.9	903.7	894.5	891.1
17.5°	885.4	884.2	872.7	863.5	858.9
20°	855.5	853.2	841.7	826.8	818.8
22.5°	822.2	822.2	808.4	788.9	780.9
25°	791.2	786.6	774.0	746.4	725.7
27.5°	755.6	748.7	734.9	695.9	671.8
30°	716.6	713.1	693.6	643.1	624.7
32.5°	679.8	674.1	653.4	600.6	585.6
35°	641.9	637.3	606.3	560.4	546.6
37.5°	604.0	598.3	559.2	522.5	505.3
40°	566.1	559.2	516.7	483.4	465.1
42.5°	530.5	521.3	480.0	444.4	423.7
45°	492.6	482.3	441.0	404.2	388.1
47.5°	454.7	445.6	407.7	369.8	351.4
50°	414.5	406.5	372.1	334.2	314.6
52.5°	381.2	368.6	335.3	297.4	281.3
55°	342.2	331.9	300.9	265.3	251.5
57.5°	306.6	296.3	267.6	234.3	222.8
60°	273.3	258.4	234.3	205.6	196.4
62.5°	236.6	225.1	204.4	180.3	191.8
65°	203.3	191.8	173.4	176.8	147.0
67.5°	166.5	160.8	144.7	128.6	124.0
70°	135.5	128.6	122.9	105.6	101.1
72.5°	107.9	101.1	93.0	83.8	80.4
75°	81.5	75.8	71.2	67.8	74.6
77.5°	56.3	54.0	50.5	47.1	45.9
80°	36.7	35.6	34.4	33.3	32.2
82.5°	21.8	21.8	21.8	21.8	21.8
85°	11.5	12.6	13.8	14.9	16.1
87.5°	6.9	6.9	8.0	9.2	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)