

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: P561384

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-93-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561384
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-35-UNV-93-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5768.0 lumens
Efficiency: N/A
Efficacy: 66.8 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

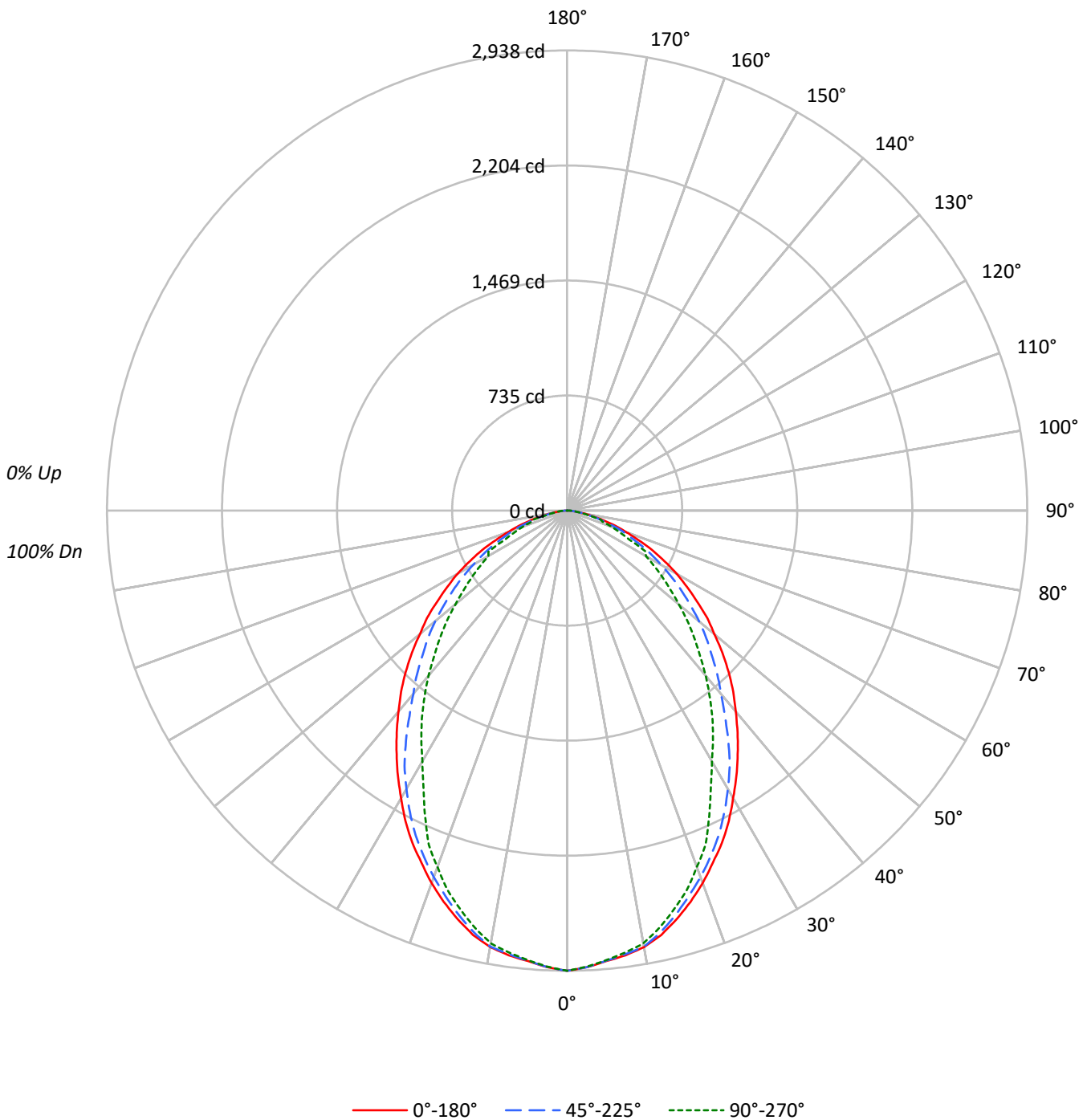
Input Watts (W): 86.4
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	7906	7906	7906
5°	7799	7790	7781
10°	7731	7722	7667
15°	7523	7447	7343
20°	7247	7130	6935
25°	6949	6798	6374
30°	6586	6375	5742
35°	6238	5892	5311
40°	5883	5369	4833
45°	5546	4964	4369
50°	5133	4607	3896
55°	4749	4175	3490
60°	4351	3729	3126
65°	3828	3266	2769
70°	3153	2859	2352
75°	2508	2190	2296
80°	1684	1579	1474
85°	1050	1260	1470

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5546 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.5	4.7
10°-20°	750.6	13.0
20°-30°	1039.2	18.0
30°-40°	1108.0	19.2
40°-50°	1010.8	17.5
50°-60°	791.9	13.7
60°-70°	516.1	8.9
70°-80°	228.7	4.0
80°-90°	49.1	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
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0°-30°	2063.3	35.8
0°-40°	3171.3	55.0
0°-60°	4974.1	86.2
0°-90°	5768.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5768.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2938	2938	2938	2938	2938	
5°	2887	2884	2884	2880	2880	274
15°	2700	2700	2673	2646	2636	759
25°	2340	2327	2289	2208	2147	1074
35°	1899	1885	1794	1658	1617	1187
45°	1457	1427	1304	1196	1148	1122
55°	1012	982	890	785	744	908
65°	601	567	513	523	435	592
75°	241	224	211	200	221	258
85°	34	37	41	44	48	47
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2938.1	2938.1	2938.1	2938.1	2938.1
2.5°	2917.8	2917.8	2917.8	2914.4	2914.4
5°	2887.2	2883.8	2883.8	2880.4	2880.4
7.5°	2863.4	2860.0	2856.6	2853.2	2846.4
10°	2829.4	2829.4	2826.1	2809.1	2805.7
12.5°	2775.1	2771.7	2758.1	2734.3	2727.5
15°	2700.4	2700.4	2673.2	2646.0	2635.8
17.5°	2618.9	2615.5	2581.5	2554.3	2540.7
20°	2530.5	2523.7	2489.8	2445.6	2421.8
22.5°	2432.0	2432.0	2391.3	2333.5	2309.8
25°	2340.3	2326.7	2289.4	2207.9	2146.7
27.5°	2235.0	2214.6	2173.9	2058.4	1987.1
30°	2119.5	2109.3	2051.6	1902.1	1847.8
32.5°	2010.8	1993.9	1932.7	1776.5	1732.3
35°	1898.8	1885.2	1793.5	1657.6	1616.8
37.5°	1786.7	1769.7	1654.2	1545.5	1494.5
40°	1674.6	1654.2	1528.5	1430.0	1375.7
42.5°	1569.3	1542.1	1419.8	1314.5	1253.4
45°	1457.2	1426.6	1304.3	1195.6	1148.1
47.5°	1345.1	1317.9	1205.8	1093.7	1039.4
50°	1226.2	1202.4	1100.5	988.4	930.7
52.5°	1127.7	1090.3	991.8	879.7	832.2
55°	1012.2	981.6	889.9	784.6	743.9
57.5°	906.9	876.3	791.4	692.9	659.0
60°	808.4	764.3	692.9	608.0	580.8
62.5°	699.7	665.8	604.6	533.3	567.2
65°	601.2	567.2	512.9	523.1	434.8
67.5°	492.5	475.5	428.0	380.4	366.8
70°	400.8	380.4	363.4	312.5	298.9
72.5°	319.3	298.9	275.1	248.0	237.8
75°	241.2	224.2	210.6	200.4	220.8
77.5°	166.4	159.6	149.5	139.3	135.9
80°	108.7	105.3	101.9	98.5	95.1
82.5°	64.5	64.5	64.5	64.5	64.5
85°	34.0	37.4	40.8	44.2	47.6
87.5°	20.4	20.4	23.8	27.2	30.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)