

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: P517547

Luminaire Tested: HVL12-4-LD4-3LO-30-UNV-C-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P517547
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-3LO-30-UNV-C-EDD-90
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8499.9 lumens
Efficiency: N/A
Efficacy: 122.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.17')
CIE Type: Direct

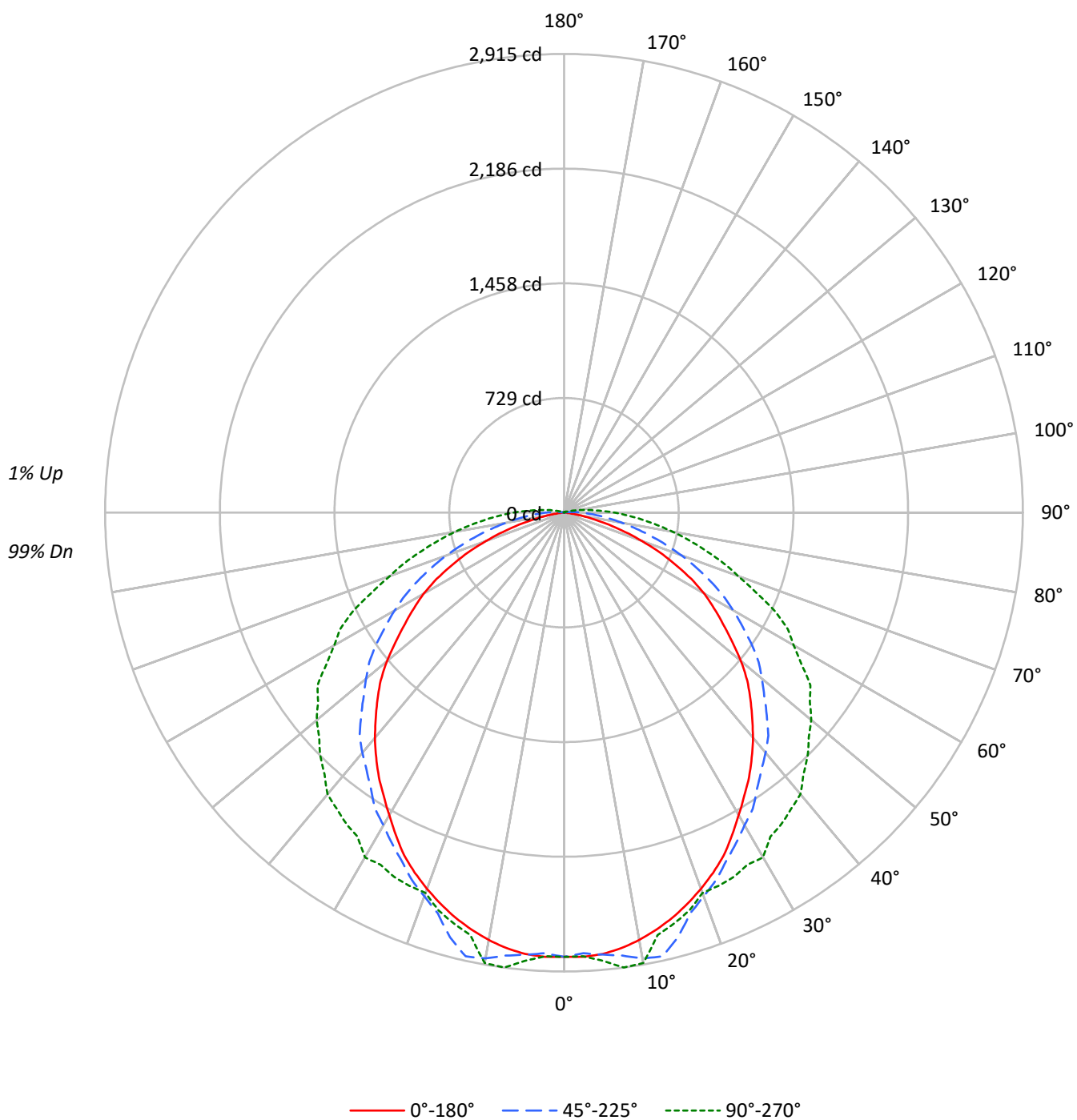
Input Watts (W): 69.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

TEST NUMBER: P517547

CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517547

CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD-90

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7593	7593	7593
5°	7575	7517	7610
10°	7476	7657	7711
15°	7340	7487	7207
20°	7174	7049	6941
25°	6999	6779	7035
30°	6734	6567	7167
35°	6544	6369	7096
40°	6340	6230	7202
45°	6121	6041	7139
50°	5855	5844	7160
55°	5464	5632	7244
60°	5164	5326	7035
65°	4566	4953	6931
70°	3725	4452	6355
75°	2658	3828	5976
80°	1492	3202	5595
85°	552	2558	5266

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7244 cd/sqm

TEST NUMBER: P517547

CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	271.2	3.2
10°-20°	772.3	9.1
20°-30°	1149.0	13.5
30°-40°	1381.1	16.2
40°-50°	1453.7	17.1
50°-60°	1348.9	15.9
60°-70°	1066.5	12.5
70°-80°	651.5	7.7
80°-90°	283.8	3.3
90°-100°	88.4	1.0
100°-110°	19.8	0.2
110°-120°	8.0	0.1
120°-130°	4.5	0.1
130°-140°	1.2	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°	2192.5	25.8
0°-40°	3573.6	42.0
0°-60°	6376.2	75.0
0°-90°	8378.1	98.6
90°-120°	116.2	1.4
90°-150°	121.8	1.4
90°-180°	122.0	1.4
0°-180°	8499.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2822	2822	2822	2822	2822	
5°	2815	2809	2819	2850	2858	267
15°	2664	2766	2793	2701	2703	750
25°	2403	2557	2440	2513	2554	1103
35°	2050	2107	2139	2333	2412	1281
45°	1675	1683	1821	2110	2189	1292
55°	1234	1254	1453	1771	1912	1109
65°	781	806	1024	1355	1478	774
75°	295	391	571	877	932	322
85°	26	92	222	432	496	41
90°	1	28	117	274	322	1
95°	1	7	51	150	183	0
105°	1	4	10	29	41	1
115°	1	2	8	13	14	1
125°	1	1	3	9	12	1
135°	1	1	1	3	4	1
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

TEST NUMBER: P517547

CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2821.5	2821.5	2821.5	2821.5	2821.5
2.5°	2825.0	2817.5	2802.0	2816.9	2821.0
5°	2814.6	2808.9	2818.7	2850.3	2858.3
7.5°	2791.1	2812.9	2838.8	2896.3	2914.7
10°	2756.0	2797.4	2875.0	2923.8	2904.9
12.5°	2713.5	2783.6	2887.6	2792.2	2748.0
15°	2664.1	2766.4	2793.4	2700.8	2702.6
17.5°	2606.0	2752.0	2668.6	2666.4	2649.7
20°	2543.3	2703.7	2593.4	2588.8	2570.9
22.5°	2476.1	2639.9	2526.7	2517.5	2565.8
25°	2403.1	2556.6	2439.9	2512.9	2553.7
27.5°	2311.7	2447.4	2367.5	2470.9	2522.1
30°	2219.2	2334.7	2293.3	2437.6	2528.4
32.5°	2132.4	2216.9	2232.4	2424.9	2439.9
35°	2050.2	2107.1	2138.7	2333.0	2412.3
37.5°	1960.0	1975.5	2059.4	2294.5	2370.9
40°	1868.0	1858.2	1992.7	2231.3	2337.0
42.5°	1769.1	1765.7	1922.0	2199.6	2252.5
45°	1675.4	1682.9	1821.4	2110.0	2188.7
47.5°	1579.5	1589.2	1726.0	2011.7	2109.4
50°	1468.0	1480.6	1641.0	1924.3	2050.2
52.5°	1347.3	1371.4	1558.2	1841.6	1968.6
55°	1234.0	1254.1	1453.0	1770.9	1911.7
57.5°	1130.6	1142.6	1344.4	1681.8	1788.1
60°	1028.8	1031.7	1242.1	1582.9	1684.6
62.5°	912.2	917.3	1136.9	1466.2	1602.5
65°	781.1	805.8	1023.7	1354.7	1477.7
67.5°	658.7	701.8	908.1	1252.4	1316.8
70°	527.6	600.6	794.9	1132.3	1177.7
72.5°	407.5	493.2	678.8	997.8	1061.6
75°	295.4	391.4	570.7	877.1	932.3
77.5°	198.9	296.6	469.6	743.8	816.7
80°	119.0	216.7	379.3	620.2	702.4
82.5°	60.9	145.4	294.3	520.2	593.7
85°	26.4	92.0	222.4	431.7	495.5
87.5°	7.5	52.3	163.8	348.9	402.9
90°	0.6	27.6	116.7	273.6	322.4
92.5°	0.6	13.2	82.2	206.9	244.3
95°	0.6	6.9	51.2	150.0	183.4
97.5°	0.6	4.0	31.0	106.3	134.5
100°	0.6	3.4	18.4	70.7	96.0
102.5°	0.6	4.0	12.6	44.8	62.6
105°	0.6	4.0	10.3	29.3	41.4
107.5°	1.1	4.0	9.2	21.8	28.7
110°	0.6	3.4	9.8	16.7	22.4

TEST NUMBER: P517547

CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	2.9	9.2	13.8	16.7
115°	0.6	2.3	8.0	13.2	13.8
117.5°	1.1	1.7	6.3	13.2	13.8
120°	1.1	1.1	5.2	12.6	14.4
122.5°	1.1	1.1	4.0	11.5	13.8
125°	0.6	1.1	3.4	8.6	12.1
127.5°	1.1	1.1	2.9	6.9	9.2
130°	1.1	1.1	2.3	5.2	6.9
132.5°	1.1	1.1	1.7	4.0	5.2
135°	1.1	1.1	1.1	2.9	4.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)