

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: P517336

Luminaire Tested: HVL12-2-LD4-1STD-50-UNV-C-EDD

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: P517336
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1STD-50-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1971.0 lumens
Efficiency: N/A
Efficacy: 118.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

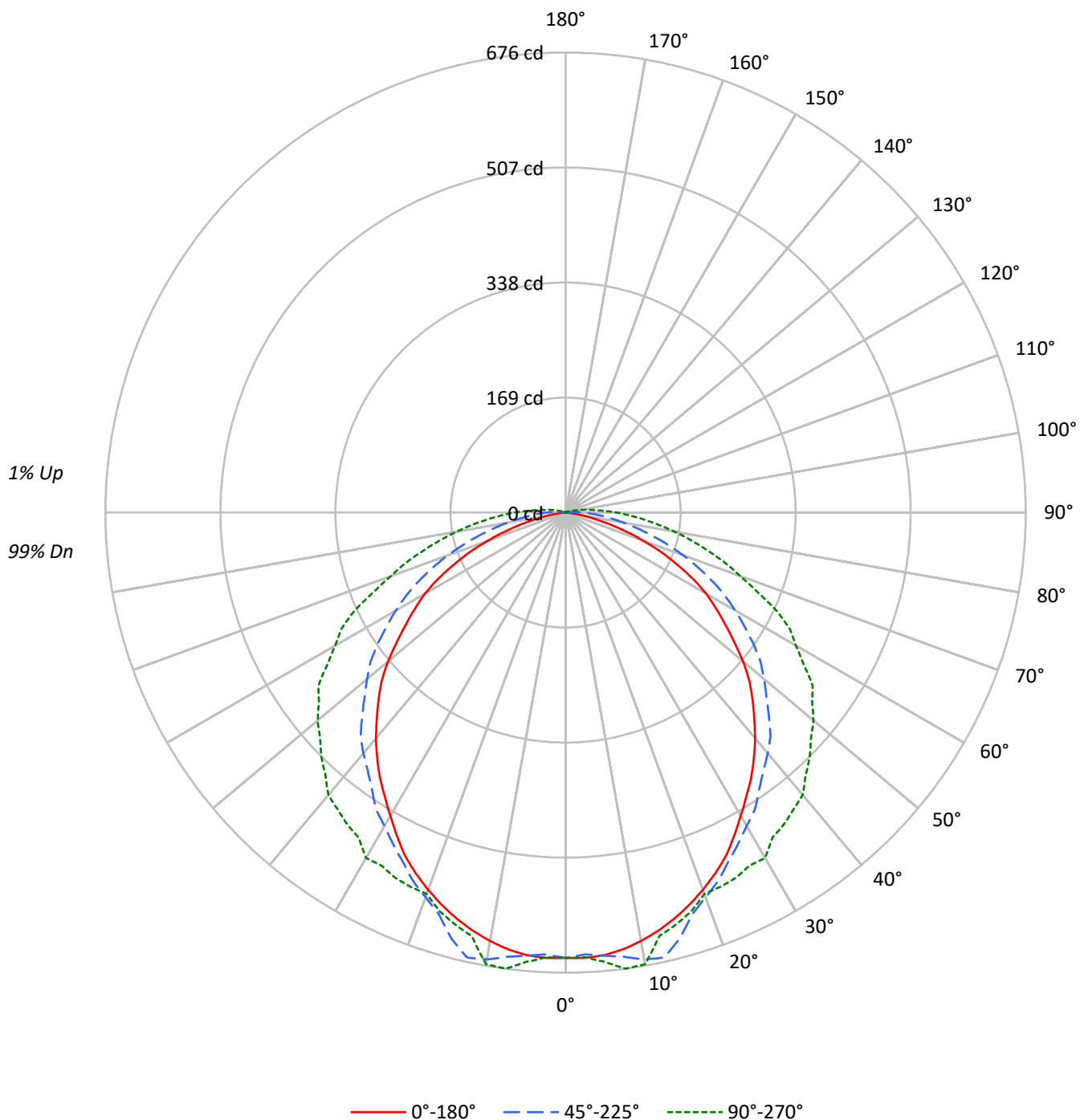
Input Watts (W): 16.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517336

CATALOG NUMBER: HVL12-2-LD4-1STD-50-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517336

CATALOG NUMBER: HVL12-2-LD4-1STD-50-UNV-C-EDD

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°	3521	3521	3521
5°	3501	3477	3529
10°	3442	3533	3576
15°	3367	3446	3343
20°	3279	3236	3219
25°	3185	3104	3263
30°	3051	2999	3324
35°	2951	2899	3291
40°	2845	2827	3340
45°	2729	2732	3311
50°	2593	2631	3321
55°	2399	2524	3360
60°	2244	2373	3262
65°	1957	2192	3215
70°	1566	1952	2947
75°	1086	1657	2771
80°	581	1362	2595
85°	193	1055	2442

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3360 cd/sqm

TEST NUMBER: P517336

CATALOG NUMBER: HVL12-2-LD4-1STD-50-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.9	3.2
10°-20°	179.1	9.1
20°-30°	266.4	13.5
30°-40°	320.3	16.2
40°-50°	337.1	17.1
50°-60°	312.8	15.9
60°-70°	247.3	12.5
70°-80°	151.1	7.7
80°-90°	65.8	3.3
90°-100°	20.5	1.0
100°-110°	4.6	0.2
110°-120°	1.9	0.1
120°-130°	1.0	0.1
130°-140°	0.3	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°	508.4	25.8
0°-40°	828.7	42.0
0°-60°	1478.5	75.0
0°-90°	1942.7	98.6
90°-120°	27.0	1.4
90°-150°	28.3	1.4
90°-180°	28.0	1.4
0°-180°	1971.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	654	654	654	654	654	
5°	653	651	654	661	663	62
15°	618	642	648	626	627	174
25°	557	593	566	583	592	256
35°	475	489	496	541	559	297
45°	388	390	422	489	508	299
55°	286	291	337	411	443	257
65°	181	187	237	314	343	179
75°	68	91	132	203	216	75
85°	6	21	52	100	115	9
90°	0	6	27	63	75	0
95°	0	2	12	35	42	0
105°	0	1	2	7	10	0
115°	0	0	2	3	3	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	0
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: P517336

CATALOG NUMBER: HVL12-2-LD4-1STD-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	654.3	654.3	654.3	654.3	654.3
2.5°	655.1	653.3	649.7	653.2	654.1
5°	652.7	651.3	653.6	660.9	662.8
7.5°	647.2	652.3	658.3	671.6	675.9
10°	639.1	648.7	666.7	678.0	673.6
12.5°	629.2	645.5	669.6	647.5	637.2
15°	617.7	641.5	647.7	626.3	626.7
17.5°	604.3	638.1	618.8	618.3	614.4
20°	589.8	626.9	601.4	600.3	596.2
22.5°	574.2	612.1	585.9	583.8	595.0
25°	557.2	592.8	565.8	582.7	592.2
27.5°	536.0	567.5	549.0	573.0	584.8
30°	514.6	541.4	531.8	565.2	586.3
32.5°	494.5	514.1	517.7	562.3	565.8
35°	475.4	488.6	495.9	541.0	559.4
37.5°	454.5	458.1	477.5	532.0	549.8
40°	433.2	430.9	462.1	517.4	541.9
42.5°	410.2	409.4	445.7	510.1	522.3
45°	388.5	390.2	422.4	489.3	507.5
47.5°	366.2	368.5	400.2	466.5	489.1
50°	340.4	343.3	380.5	446.2	475.4
52.5°	312.4	318.0	361.3	427.0	456.5
55°	286.1	290.8	336.9	410.6	443.3
57.5°	262.2	265.0	311.7	390.0	414.6
60°	238.6	239.2	288.0	367.0	390.6
62.5°	211.5	212.7	263.6	340.0	371.6
65°	181.1	186.9	237.4	314.1	342.7
67.5°	152.7	162.7	210.6	290.4	305.3
70°	122.3	139.3	184.3	262.6	273.1
72.5°	94.5	114.4	157.4	231.4	246.2
75°	68.5	90.8	132.3	203.4	216.2
77.5°	46.1	68.8	108.9	172.5	189.4
80°	27.6	50.2	88.0	143.8	162.9
82.5°	14.1	33.7	68.2	120.6	137.7
85°	6.1	21.3	51.6	100.1	114.9
87.5°	1.7	12.1	38.0	80.9	93.4
90°	0.1	6.4	27.1	63.4	74.8
92.5°	0.1	3.1	19.1	48.0	56.6
95°	0.1	1.6	11.9	34.8	42.5
97.5°	0.1	0.9	7.2	24.7	31.2
100°	0.1	0.8	4.3	16.4	22.3
102.5°	0.1	0.9	2.9	10.4	14.5
105°	0.1	0.9	2.4	6.8	9.6
107.5°	0.3	0.9	2.1	5.1	6.7
110°	0.1	0.8	2.3	3.9	5.2

TEST NUMBER: P517336

CATALOG NUMBER: HVL12-2-LD4-1STD-50-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.1	3.2	3.9
115°	0.1	0.5	1.9	3.1	3.2
117.5°	0.3	0.4	1.5	3.1	3.2
120°	0.3	0.3	1.2	2.9	3.3
122.5°	0.3	0.3	0.9	2.7	3.2
125°	0.1	0.3	0.8	2.0	2.8
127.5°	0.3	0.3	0.7	1.6	2.1
130°	0.3	0.3	0.5	1.2	1.6
132.5°	0.3	0.3	0.4	0.9	1.2
135°	0.3	0.3	0.3	0.7	0.9
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)