

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: P517223

Luminaire Tested: HVL12-1-LD4-2LO-50-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: P517223
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2LO-50-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1264.0 lumens
Efficiency: N/A
Efficacy: 107.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

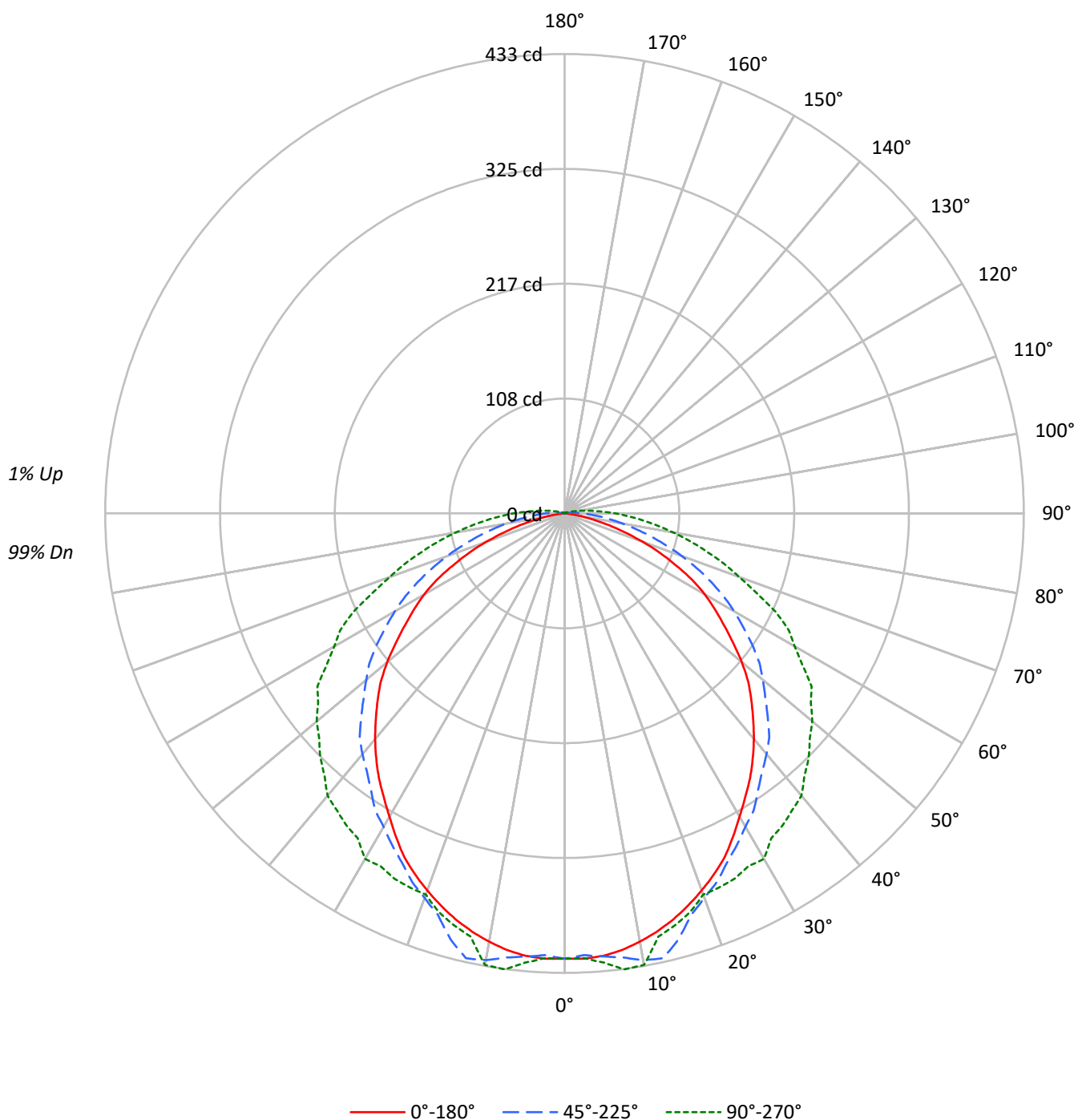
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517223

CATALOG NUMBER: HVL12-1-LD4-2LO-50-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517223

CATALOG NUMBER: HVL12-1-LD4-2LO-50-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	44	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°	4517	4517	4517
5°	4458	4438	4526
10°	4351	4486	4587
15°	4226	4354	4287
20°	4084	4068	4129
25°	3939	3882	4184
30°	3742	3731	4263
35°	3588	3587	4221
40°	3424	3476	4284
45°	3250	3337	4247
50°	3050	3190	4260
55°	2781	3034	4309
60°	2556	2823	4185
65°	2180	2575	4122
70°	1694	2258	3780
75°	1126	1878	3553
80°	564	1496	3327
85°	166	1106	3133

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4309 cd/sqm

TEST NUMBER: P517223

CATALOG NUMBER: HVL12-1-LD4-2LO-50-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.3	3.2
10°-20°	114.8	9.1
20°-30°	170.9	13.5
30°-40°	205.4	16.2
40°-50°	216.2	17.1
50°-60°	200.6	15.9
60°-70°	158.6	12.5
70°-80°	96.9	7.7
80°-90°	42.2	3.3
90°-100°	13.1	1.0
100°-110°	3.0	0.2
110°-120°	1.2	0.1
120°-130°	0.7	0.1
130°-140°	0.2	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°	326.0	25.8
0°-40°	531.4	42.0
0°-60°	948.2	75.0
0°-90°	1245.9	98.6
90°-120°	17.3	1.4
90°-150°	18.2	1.4
90°-180°	18.0	1.4
0°-180°	1264.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	420	420	420	420	420	
5°	419	418	419	424	425	40
15°	396	411	415	402	402	112
25°	357	380	363	374	380	164
35°	305	313	318	347	359	191
45°	249	250	271	314	326	192
55°	184	186	216	263	284	165
65°	116	120	152	202	220	115
75°	44	58	85	130	139	48
85°	4	14	33	64	74	6
90°	0	4	17	41	48	0
95°	0	1	8	22	27	0
105°	0	1	2	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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: P517223

CATALOG NUMBER: HVL12-1-LD4-2LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	419.6	419.6	419.6	419.6	419.6
2.5°	420.1	419.0	416.7	418.9	419.5
5°	418.6	417.7	419.2	423.9	425.0
7.5°	415.0	418.3	422.1	430.7	433.4
10°	409.8	416.0	427.5	434.8	432.0
12.5°	403.5	413.9	429.4	415.2	408.6
15°	396.2	411.4	415.4	401.6	401.9
17.5°	387.5	409.2	396.8	396.5	394.0
20°	378.2	402.1	385.6	385.0	382.3
22.5°	368.2	392.6	375.7	374.4	381.5
25°	357.4	380.2	362.8	373.7	379.7
27.5°	343.8	363.9	352.1	367.4	375.0
30°	330.0	347.2	341.0	362.5	376.0
32.5°	317.1	329.7	332.0	360.6	362.8
35°	304.9	313.3	318.0	346.9	358.7
37.5°	291.5	293.8	306.2	341.2	352.6
40°	277.8	276.3	296.3	331.8	347.5
42.5°	263.1	262.6	285.8	327.1	335.0
45°	249.1	250.3	270.9	313.8	325.5
47.5°	234.9	236.3	256.7	299.2	313.7
50°	218.3	220.2	244.0	286.2	304.9
52.5°	200.3	203.9	231.7	273.9	292.7
55°	183.5	186.5	216.1	263.3	284.3
57.5°	168.1	169.9	199.9	250.1	265.9
60°	153.0	153.4	184.7	235.4	250.5
62.5°	135.6	136.4	169.1	218.0	238.3
65°	116.2	119.8	152.2	201.5	219.7
67.5°	98.0	104.4	135.0	186.2	195.8
70°	78.5	89.3	118.2	168.4	175.1
72.5°	60.6	73.3	100.9	148.4	157.9
75°	43.9	58.2	84.9	130.4	138.6
77.5°	29.6	44.1	69.8	110.6	121.5
80°	17.7	32.2	56.4	92.2	104.4
82.5°	9.1	21.6	43.8	77.4	88.3
85°	3.9	13.7	33.1	64.2	73.7
87.5°	1.1	7.8	24.4	51.9	59.9
90°	0.1	4.1	17.4	40.7	47.9
92.5°	0.1	2.0	12.2	30.8	36.3
95°	0.1	1.0	7.6	22.3	27.3
97.5°	0.1	0.6	4.6	15.8	20.0
100°	0.1	0.5	2.7	10.5	14.3
102.5°	0.1	0.6	1.9	6.7	9.3
105°	0.1	0.6	1.5	4.4	6.2
107.5°	0.2	0.6	1.4	3.2	4.3
110°	0.1	0.5	1.5	2.5	3.3

TEST NUMBER: P517223

CATALOG NUMBER: HVL12-1-LD4-2LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.4	2.1	2.5
115°	0.1	0.3	1.2	2.0	2.1
117.5°	0.2	0.3	0.9	2.0	2.1
120°	0.2	0.2	0.8	1.9	2.1
122.5°	0.2	0.2	0.6	1.7	2.1
125°	0.1	0.2	0.5	1.3	1.8
127.5°	0.2	0.2	0.4	1.0	1.4
130°	0.2	0.2	0.3	0.8	1.0
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.4	0.6
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)