

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: P517224

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

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517224
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
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1453.0 lumens
Efficiency: N/A
Efficacy: 123.1 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

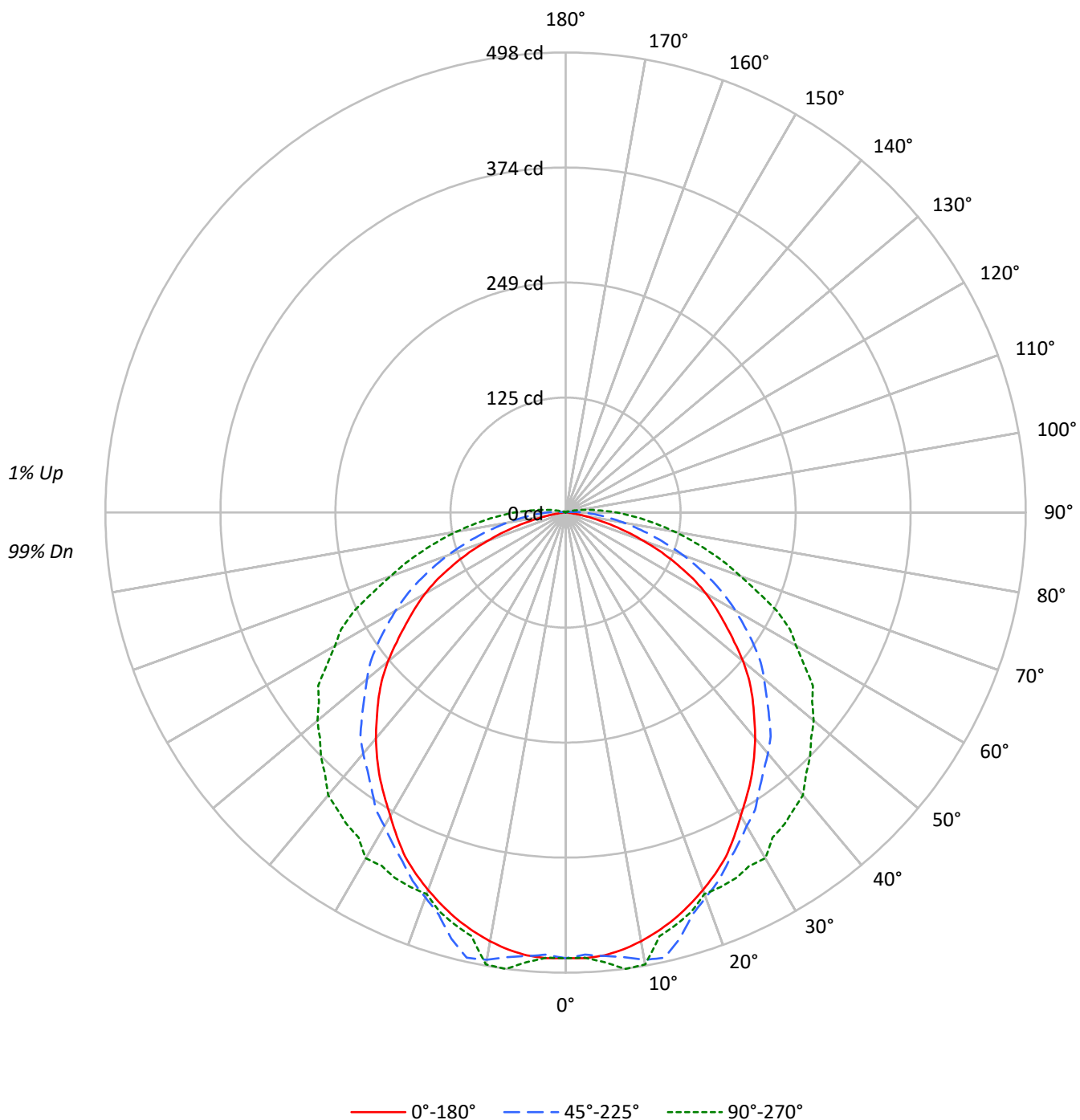
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517224

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

Luminous Intensity Polar Plot



TEST NUMBER: P517224

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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°	5191	5191	5191
5°	5124	5101	5203
10°	5002	5158	5273
15°	4858	5005	4928
20°	4696	4677	4746
25°	4527	4463	4810
30°	4300	4288	4900
35°	4124	4123	4853
40°	3936	3995	4925
45°	3737	3836	4881
50°	3505	3667	4897
55°	3197	3487	4954
60°	2938	3245	4811
65°	2505	2960	4739
70°	1947	2596	4345
75°	1295	2159	4087
80°	647	1719	3827
85°	191	1270	3600

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4954 cd/sqm

TEST NUMBER: P517224

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.4	3.2
10°-20°	132.0	9.1
20°-30°	196.4	13.5
30°-40°	236.1	16.2
40°-50°	248.5	17.1
50°-60°	230.6	15.9
60°-70°	182.3	12.5
70°-80°	111.4	7.7
80°-90°	48.5	3.3
90°-100°	15.1	1.0
100°-110°	3.4	0.2
110°-120°	1.4	0.1
120°-130°	0.8	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°	374.8	25.8
0°-40°	610.9	42.0
0°-60°	1090.0	75.0
0°-90°	1432.2	98.6
90°-120°	19.9	1.4
90°-150°	20.9	1.4
90°-180°	21.0	1.4
0°-180°	1453.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	482	482	482	482	482	
5°	481	480	482	487	489	46
15°	455	473	478	462	462	128
25°	411	437	417	430	436	189
35°	350	360	366	399	412	219
45°	286	288	311	361	374	221
55°	211	214	248	303	327	190
65°	134	138	175	232	253	132
75°	50	67	98	150	159	55
85°	4	16	38	74	85	7
90°	0	5	20	47	55	0
95°	0	1	9	26	31	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	2	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: P517224

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	482.3	482.3	482.3	482.3	482.3
2.5°	482.9	481.6	479.0	481.5	482.2
5°	481.1	480.2	481.8	487.2	488.6
7.5°	477.1	480.8	485.3	495.1	498.2
10°	471.1	478.2	491.5	499.8	496.6
12.5°	463.8	475.8	493.6	477.3	469.7
15°	455.4	472.9	477.5	461.7	462.0
17.5°	445.5	470.4	456.2	455.8	452.9
20°	434.8	462.2	443.3	442.5	439.5
22.5°	423.3	451.3	431.9	430.3	438.6
25°	410.8	437.0	417.1	429.6	436.5
27.5°	395.2	418.4	404.7	422.4	431.1
30°	379.3	399.1	392.0	416.7	432.2
32.5°	364.5	379.0	381.6	414.5	417.1
35°	350.5	360.2	365.6	398.8	412.4
37.5°	335.0	337.7	352.0	392.2	405.3
40°	319.3	317.6	340.6	381.4	399.5
42.5°	302.4	301.8	328.6	376.0	385.0
45°	286.4	287.7	311.4	360.7	374.1
47.5°	270.0	271.7	295.0	343.9	360.6
50°	250.9	253.1	280.5	328.9	350.5
52.5°	230.3	234.4	266.4	314.8	336.5
55°	210.9	214.4	248.4	302.7	326.8
57.5°	193.3	195.3	229.8	287.5	305.7
60°	175.9	176.4	212.3	270.6	288.0
62.5°	155.9	156.8	194.3	250.6	273.9
65°	133.5	137.7	175.0	231.6	252.6
67.5°	112.6	120.0	155.2	214.1	225.1
70°	90.2	102.7	135.9	193.6	201.3
72.5°	69.7	84.3	116.0	170.6	181.5
75°	50.5	66.9	97.6	149.9	159.4
77.5°	34.0	50.7	80.3	127.1	139.6
80°	20.3	37.0	64.8	106.0	120.1
82.5°	10.4	24.9	50.3	88.9	101.5
85°	4.5	15.7	38.0	73.8	84.7
87.5°	1.3	8.9	28.0	59.6	68.9
90°	0.1	4.7	19.9	46.8	55.1
92.5°	0.1	2.3	14.0	35.4	41.8
95°	0.1	1.2	8.7	25.6	31.3
97.5°	0.1	0.7	5.3	18.2	23.0
100°	0.1	0.6	3.1	12.1	16.4
102.5°	0.1	0.7	2.2	7.7	10.7
105°	0.1	0.7	1.8	5.0	7.1
107.5°	0.2	0.7	1.6	3.7	4.9
110°	0.1	0.6	1.7	2.8	3.8

TEST NUMBER: P517224

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.6	2.4	2.8
115°	0.1	0.4	1.4	2.3	2.4
117.5°	0.2	0.3	1.1	2.3	2.4
120°	0.2	0.2	0.9	2.2	2.5
122.5°	0.2	0.2	0.7	2.0	2.4
125°	0.1	0.2	0.6	1.5	2.1
127.5°	0.2	0.2	0.5	1.2	1.6
130°	0.2	0.2	0.4	0.9	1.2
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)