

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: P517212

Luminaire Tested: HVL12-1-LD4-2LO-30-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: P517212
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2LO-30-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1347.0 lumens
Efficiency: N/A
Efficacy: 114.2 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

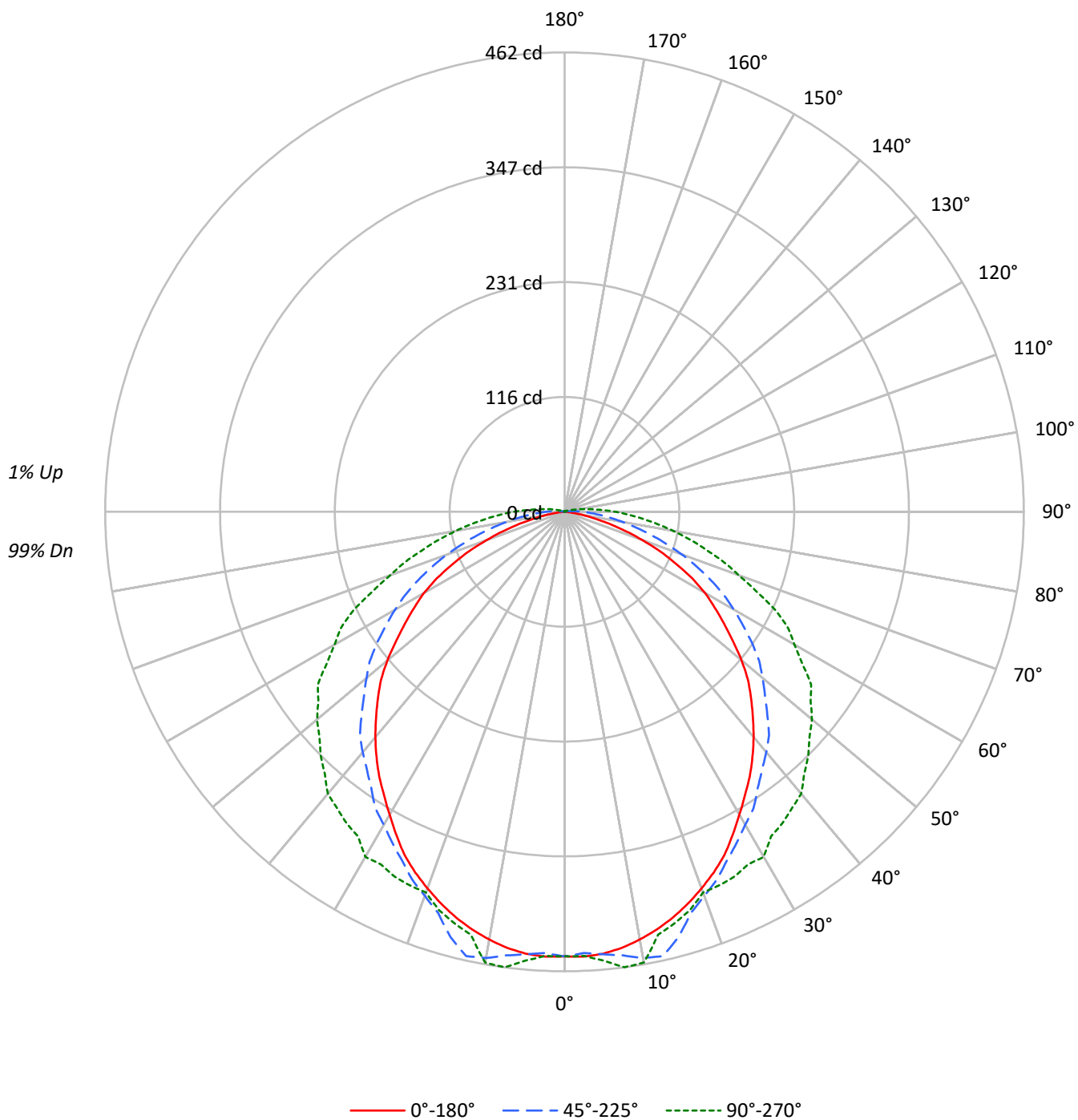
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517212

CATALOG NUMBER: HVL12-1-LD4-2LO-30-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517212

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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°	4813	4813	4813
5°	4750	4729	4824
10°	4637	4781	4887
15°	4504	4640	4569
20°	4352	4336	4400
25°	4196	4138	4460
30°	3988	3976	4543
35°	3823	3822	4498
40°	3649	3705	4565
45°	3464	3555	4525
50°	3249	3399	4539
55°	2965	3233	4591
60°	2723	3008	4460
65°	2323	2744	4394
70°	1805	2407	4028
75°	1200	2000	3787
80°	602	1594	3546
85°	179	1177	3337

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4591 cd/sqm

TEST NUMBER: P517212

CATALOG NUMBER: HVL12-1-LD4-2LO-30-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.0	3.2
10°-20°	122.4	9.1
20°-30°	182.1	13.5
30°-40°	218.9	16.2
40°-50°	230.4	17.1
50°-60°	213.7	15.9
60°-70°	169.0	12.5
70°-80°	103.2	7.7
80°-90°	45.0	3.3
90°-100°	14.0	1.0
100°-110°	3.1	0.2
110°-120°	1.3	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°	347.4	25.8
0°-40°	566.3	42.0
0°-60°	1010.4	75.0
0°-90°	1327.7	98.6
90°-120°	18.4	1.4
90°-150°	19.3	1.4
90°-180°	19.0	1.4
0°-180°	1347.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	447	447	447	447	447	
5°	446	445	447	452	453	42
15°	422	438	443	428	428	119
25°	381	405	387	398	405	175
35°	325	334	339	370	382	203
45°	266	267	289	334	347	205
55°	196	199	230	281	303	176
65°	124	128	162	215	234	123
75°	47	62	90	139	148	51
85°	4	15	35	68	78	7
90°	0	4	18	43	51	0
95°	0	1	8	24	29	0
105°	0	1	2	5	7	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: P517212

CATALOG NUMBER: HVL12-1-LD4-2LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	447.1	447.1	447.1	447.1	447.1
2.5°	447.7	446.5	444.0	446.4	447.0
5°	446.0	445.1	446.7	451.7	453.0
7.5°	442.3	445.8	449.9	459.0	461.9
10°	436.7	443.3	455.6	463.3	460.3
12.5°	430.0	441.1	457.6	442.5	435.5
15°	422.2	438.4	442.7	428.0	428.3
17.5°	413.0	436.1	422.9	422.5	419.9
20°	403.0	428.5	411.0	410.2	407.4
22.5°	392.4	418.3	400.4	398.9	406.6
25°	380.8	405.1	386.7	398.2	404.7
27.5°	366.3	387.8	375.2	391.6	399.7
30°	351.7	370.0	363.4	386.3	400.7
32.5°	337.9	351.3	353.8	384.3	386.7
35°	324.9	333.9	338.9	369.7	382.3
37.5°	310.6	313.1	326.4	363.6	375.7
40°	296.0	294.5	315.8	353.6	370.3
42.5°	280.4	279.8	304.6	348.6	357.0
45°	265.5	266.7	288.6	334.4	346.8
47.5°	250.3	251.8	273.5	318.8	334.3
50°	232.6	234.6	260.0	304.9	324.9
52.5°	213.5	217.3	246.9	291.8	312.0
55°	195.6	198.7	230.3	280.6	302.9
57.5°	179.2	181.1	213.0	266.5	283.4
60°	163.0	163.5	196.8	250.8	267.0
62.5°	144.6	145.4	180.2	232.4	253.9
65°	123.8	127.7	162.2	214.7	234.2
67.5°	104.4	111.2	143.9	198.5	208.7
70°	83.6	95.2	126.0	179.4	186.6
72.5°	64.6	78.1	107.6	158.1	168.2
75°	46.8	62.0	90.4	139.0	147.7
77.5°	31.5	47.0	74.4	117.9	129.4
80°	18.9	34.3	60.1	98.3	111.3
82.5°	9.7	23.0	46.6	82.4	94.1
85°	4.2	14.6	35.2	68.4	78.5
87.5°	1.2	8.3	26.0	55.3	63.8
90°	0.1	4.4	18.5	43.4	51.1
92.5°	0.1	2.1	13.0	32.8	38.7
95°	0.1	1.1	8.1	23.8	29.1
97.5°	0.1	0.6	4.9	16.9	21.3
100°	0.1	0.5	2.9	11.2	15.2
102.5°	0.1	0.6	2.0	7.1	9.9
105°	0.1	0.6	1.6	4.6	6.6
107.5°	0.2	0.6	1.5	3.5	4.6
110°	0.1	0.5	1.5	2.6	3.6

TEST NUMBER: P517212

CATALOG NUMBER: HVL12-1-LD4-2LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.5	2.2	2.6
115°	0.1	0.4	1.3	2.1	2.2
117.5°	0.2	0.3	1.0	2.1	2.2
120°	0.2	0.2	0.8	2.0	2.3
122.5°	0.2	0.2	0.6	1.8	2.2
125°	0.1	0.2	0.5	1.4	1.9
127.5°	0.2	0.2	0.5	1.1	1.5
130°	0.2	0.2	0.4	0.8	1.1
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.5	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)