

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: P517291

Luminaire Tested: HVL12-2-LD4-1HI-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: P517291
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1HI-30-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2039.0 lumens
Efficiency: N/A
Efficacy: 92.3 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

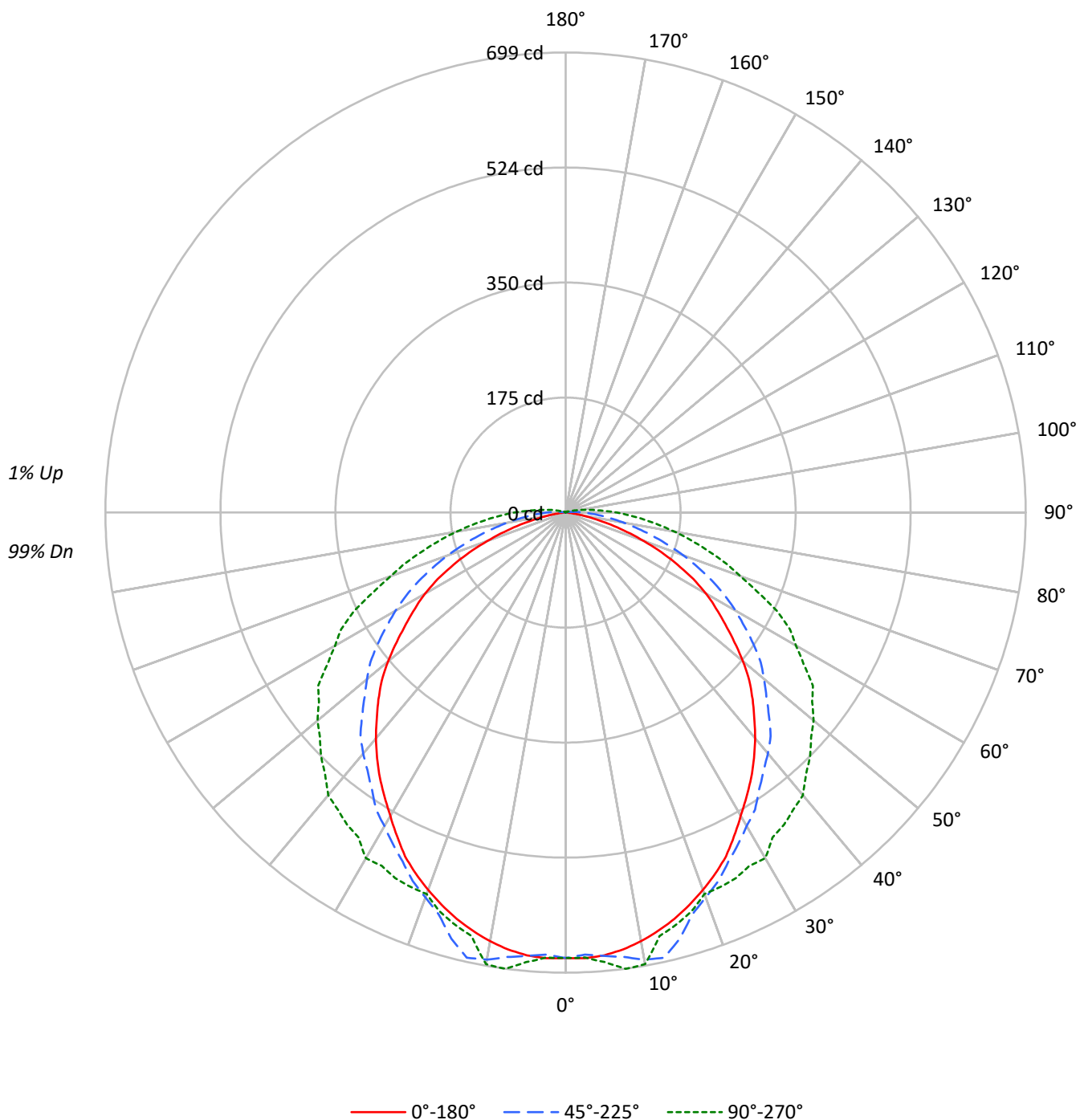
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517291

CATALOG NUMBER: HVL12-2-LD4-1HI-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517291

CATALOG NUMBER: HVL12-2-LD4-1HI-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°	3643	3643	3643
5°	3621	3597	3651
10°	3561	3655	3699
15°	3483	3565	3458
20°	3391	3348	3330
25°	3295	3211	3375
30°	3156	3102	3438
35°	3053	2999	3405
40°	2942	2924	3455
45°	2824	2826	3425
50°	2682	2722	3435
55°	2482	2612	3476
60°	2321	2456	3375
65°	2025	2268	3326
70°	1621	2020	3049
75°	1125	1715	2866
80°	600	1408	2684
85°	199	1092	2525

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3476 cd/sqm

TEST NUMBER: P517291

CATALOG NUMBER: HVL12-2-LD4-1HI-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.1	3.2
10°-20°	185.3	9.1
20°-30°	275.6	13.5
30°-40°	331.3	16.2
40°-50°	348.7	17.1
50°-60°	323.6	15.9
60°-70°	255.8	12.5
70°-80°	156.3	7.7
80°-90°	68.1	3.3
90°-100°	21.2	1.0
100°-110°	4.8	0.2
110°-120°	1.9	0.1
120°-130°	1.1	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°	525.9	25.8
0°-40°	857.2	42.0
0°-60°	1529.5	75.0
0°-90°	2009.8	98.6
90°-120°	27.9	1.4
90°-150°	29.3	1.4
90°-180°	29.0	1.4
0°-180°	2039.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	677	677	677	677	677	
5°	675	674	676	684	686	64
15°	639	664	670	648	648	180
25°	576	613	585	603	613	265
35°	492	506	513	560	579	307
45°	402	404	437	506	525	310
55°	296	301	349	425	459	266
65°	187	193	246	325	354	186
75°	71	94	137	210	224	77
85°	6	22	53	104	119	10
90°	0	7	28	66	77	0
95°	0	2	12	36	44	0
105°	0	1	2	7	10	0
115°	0	1	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: P517291

CATALOG NUMBER: HVL12-2-LD4-1HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	676.8	676.8	676.8	676.8	676.8
2.5°	677.7	675.9	672.1	675.7	676.7
5°	675.2	673.8	676.1	683.7	685.7
7.5°	669.5	674.8	681.0	694.8	699.2
10°	661.1	671.0	689.7	701.4	696.8
12.5°	650.9	667.7	692.7	669.8	659.2
15°	639.1	663.6	670.1	647.9	648.3
17.5°	625.1	660.2	640.2	639.6	635.6
20°	610.1	648.6	622.1	621.0	616.7
22.5°	594.0	633.3	606.1	603.9	615.5
25°	576.5	613.3	585.3	602.8	612.6
27.5°	554.5	587.1	567.9	592.7	605.0
30°	532.3	560.1	550.1	584.7	606.5
32.5°	511.5	531.8	535.5	581.7	585.3
35°	491.8	505.5	513.0	559.6	578.7
37.5°	470.2	473.9	494.0	550.4	568.7
40°	448.1	445.8	478.0	535.2	560.6
42.5°	424.4	423.6	461.1	527.7	540.3
45°	401.9	403.7	436.9	506.1	525.0
47.5°	378.9	381.2	414.0	482.6	506.0
50°	352.1	355.2	393.6	461.6	491.8
52.5°	323.2	329.0	373.8	441.8	472.2
55°	296.0	300.8	348.6	424.8	458.6
57.5°	271.2	274.1	322.5	403.4	428.9
60°	246.8	247.5	298.0	379.7	404.1
62.5°	218.8	220.1	272.7	351.7	384.4
65°	187.4	193.3	245.6	325.0	354.5
67.5°	158.0	168.3	217.8	300.4	315.9
70°	126.6	144.1	190.7	271.6	282.5
72.5°	97.8	118.3	162.8	239.4	254.7
75°	70.9	93.9	136.9	210.4	223.6
77.5°	47.7	71.1	112.6	178.4	195.9
80°	28.5	52.0	91.0	148.8	168.5
82.5°	14.6	34.9	70.6	124.8	142.4
85°	6.3	22.1	53.4	103.5	118.8
87.5°	1.8	12.5	39.3	83.7	96.7
90°	0.1	6.6	28.0	65.6	77.3
92.5°	0.1	3.2	19.7	49.6	58.6
95°	0.1	1.7	12.3	36.0	44.0
97.5°	0.1	1.0	7.4	25.5	32.3
100°	0.1	0.8	4.4	17.0	23.0
102.5°	0.1	1.0	3.0	10.8	15.0
105°	0.1	1.0	2.5	7.0	9.9
107.5°	0.3	1.0	2.2	5.2	6.9
110°	0.1	0.8	2.3	4.0	5.4

TEST NUMBER: P517291

CATALOG NUMBER: HVL12-2-LD4-1HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.2	3.3	4.0
115°	0.1	0.6	1.9	3.2	3.3
117.5°	0.3	0.4	1.5	3.2	3.3
120°	0.3	0.3	1.2	3.0	3.4
122.5°	0.3	0.3	1.0	2.8	3.3
125°	0.1	0.3	0.8	2.1	2.9
127.5°	0.3	0.3	0.7	1.7	2.2
130°	0.3	0.3	0.6	1.2	1.7
132.5°	0.3	0.3	0.4	1.0	1.2
135°	0.3	0.3	0.3	0.7	1.0
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)