

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: P517371

Luminaire Tested: HVL12-2-LD4-2STD-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: P517371
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2STD-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: 3009.0 lumens
Efficiency: N/A
Efficacy: 89.6 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

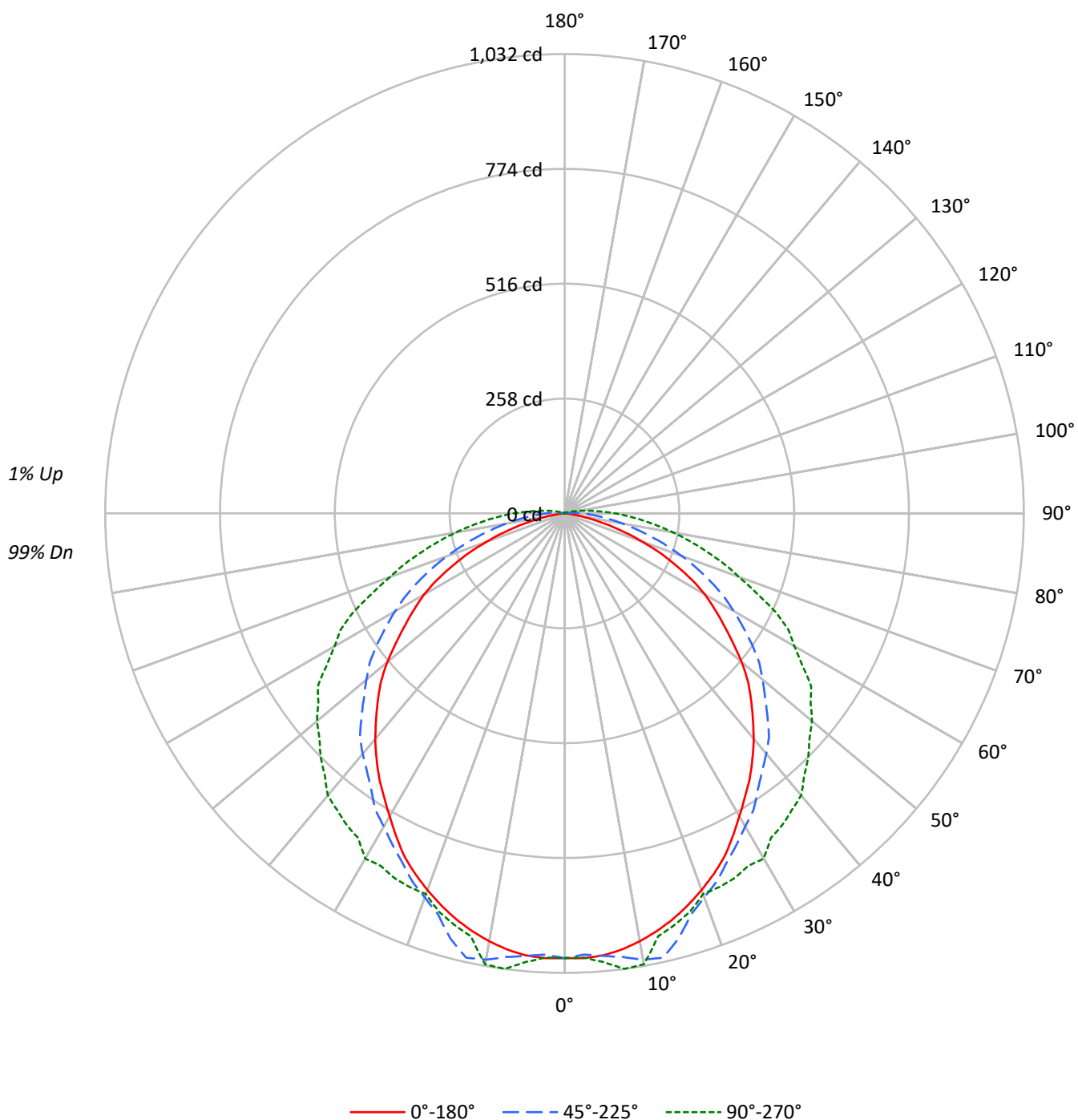
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517371

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

Luminous Intensity Polar Plot



TEST NUMBER: P517371

CATALOG NUMBER: HVL12-2-LD4-2STD-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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5375	5375	5375
5°	5344	5309	5388
10°	5254	5394	5459
15°	5140	5261	5103
20°	5005	4940	4914
25°	4863	4738	4981
30°	4658	4578	5074
35°	4506	4426	5024
40°	4342	4316	5099
45°	4167	4170	5055
50°	3958	4017	5070
55°	3663	3854	5129
60°	3426	3623	4981
65°	2987	3346	4907
70°	2392	2980	4499
75°	1659	2531	4230
80°	886	2078	3961
85°	297	1609	3728

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 5129 cd/sqm

TEST NUMBER: P517371

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.0	3.2
10°-20°	273.4	9.1
20°-30°	406.8	13.5
30°-40°	488.9	16.2
40°-50°	514.6	17.1
50°-60°	477.5	15.9
60°-70°	377.6	12.5
70°-80°	230.6	7.7
80°-90°	100.5	3.3
90°-100°	31.3	1.0
100°-110°	7.0	0.2
110°-120°	2.8	0.1
120°-130°	1.6	0.1
130°-140°	0.4	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°	776.1	25.8
0°-40°	1265.1	42.0
0°-60°	2257.2	75.0
0°-90°	2965.8	98.6
90°-120°	41.1	1.4
90°-150°	43.1	1.4
90°-180°	43.0	1.4
0°-180°	3009.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	999	999	999	999	999	
5°	996	994	998	1009	1012	94
15°	943	979	989	956	957	266
25°	851	905	864	890	904	391
35°	726	746	757	826	854	454
45°	593	596	645	747	775	457
55°	437	444	514	627	677	392
65°	276	285	362	480	523	274
75°	105	139	202	310	330	114
85°	9	33	79	153	175	14
90°	0	10	41	97	114	0
95°	0	2	18	53	65	0
105°	0	1	4	10	15	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	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: P517371

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	998.8	998.8	998.8	998.8	998.8
2.5°	1000.0	997.4	991.9	997.2	998.6
5°	996.4	994.3	997.8	1009.0	1011.8
7.5°	988.0	995.8	1004.9	1025.3	1031.8
10°	975.6	990.3	1017.7	1035.0	1028.3
12.5°	960.6	985.4	1022.2	988.4	972.8
15°	943.1	979.3	988.9	956.1	956.7
17.5°	922.5	974.2	944.7	943.9	938.0
20°	900.3	957.1	918.0	916.4	910.1
22.5°	876.5	934.5	894.4	891.2	908.3
25°	850.7	905.0	863.7	889.6	904.0
27.5°	818.3	866.4	838.1	874.7	892.8
30°	785.6	826.5	811.8	862.9	895.1
32.5°	754.9	784.8	790.3	858.4	863.7
35°	725.8	745.9	757.1	825.9	854.0
37.5°	693.8	699.3	729.0	812.2	839.3
40°	661.3	657.8	705.4	789.9	827.3
42.5°	626.3	625.1	680.4	778.7	797.4
45°	593.1	595.8	644.8	746.9	774.8
47.5°	559.1	562.6	611.0	712.1	746.7
50°	519.7	524.1	580.9	681.2	725.8
52.5°	476.9	485.5	551.6	651.9	696.9
55°	436.8	444.0	514.4	626.9	676.7
57.5°	400.2	404.5	475.9	595.3	633.0
60°	364.2	365.2	439.7	560.4	596.4
62.5°	322.9	324.7	402.5	519.0	567.3
65°	276.5	285.3	362.4	479.6	523.1
67.5°	233.2	248.4	321.5	443.4	466.1
70°	186.8	212.6	281.4	400.8	416.9
72.5°	144.3	174.6	240.3	353.2	375.8
75°	104.6	138.6	202.0	310.5	330.0
77.5°	70.4	105.0	166.2	263.3	289.1
80°	42.1	76.7	134.3	219.5	248.6
82.5°	21.6	51.5	104.2	184.1	210.2
85°	9.4	32.6	78.7	152.8	175.4
87.5°	2.6	18.5	58.0	123.5	142.6
90°	0.2	9.8	41.3	96.9	114.1
92.5°	0.2	4.7	29.1	73.2	86.5
95°	0.2	2.4	18.1	53.1	64.9
97.5°	0.2	1.4	11.0	37.6	47.6
100°	0.2	1.2	6.5	25.0	34.0
102.5°	0.2	1.4	4.5	15.9	22.2
105°	0.2	1.4	3.7	10.4	14.6
107.5°	0.4	1.4	3.3	7.7	10.2
110°	0.2	1.2	3.5	5.9	7.9

TEST NUMBER: P517371

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.3	4.9	5.9
115°	0.2	0.8	2.8	4.7	4.9
117.5°	0.4	0.6	2.2	4.7	4.9
120°	0.4	0.4	1.8	4.5	5.1
122.5°	0.4	0.4	1.4	4.1	4.9
125°	0.2	0.4	1.2	3.1	4.3
127.5°	0.4	0.4	1.0	2.4	3.3
130°	0.4	0.4	0.8	1.8	2.4
132.5°	0.4	0.4	0.6	1.4	1.8
135°	0.4	0.4	0.4	1.0	1.4
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)