

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: P517391

Luminaire Tested: HVL12-2-LD4-3HI-35-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: P517391
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3HI-35-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6186.9 lumens
Efficiency: N/A
Efficacy: 95.6 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

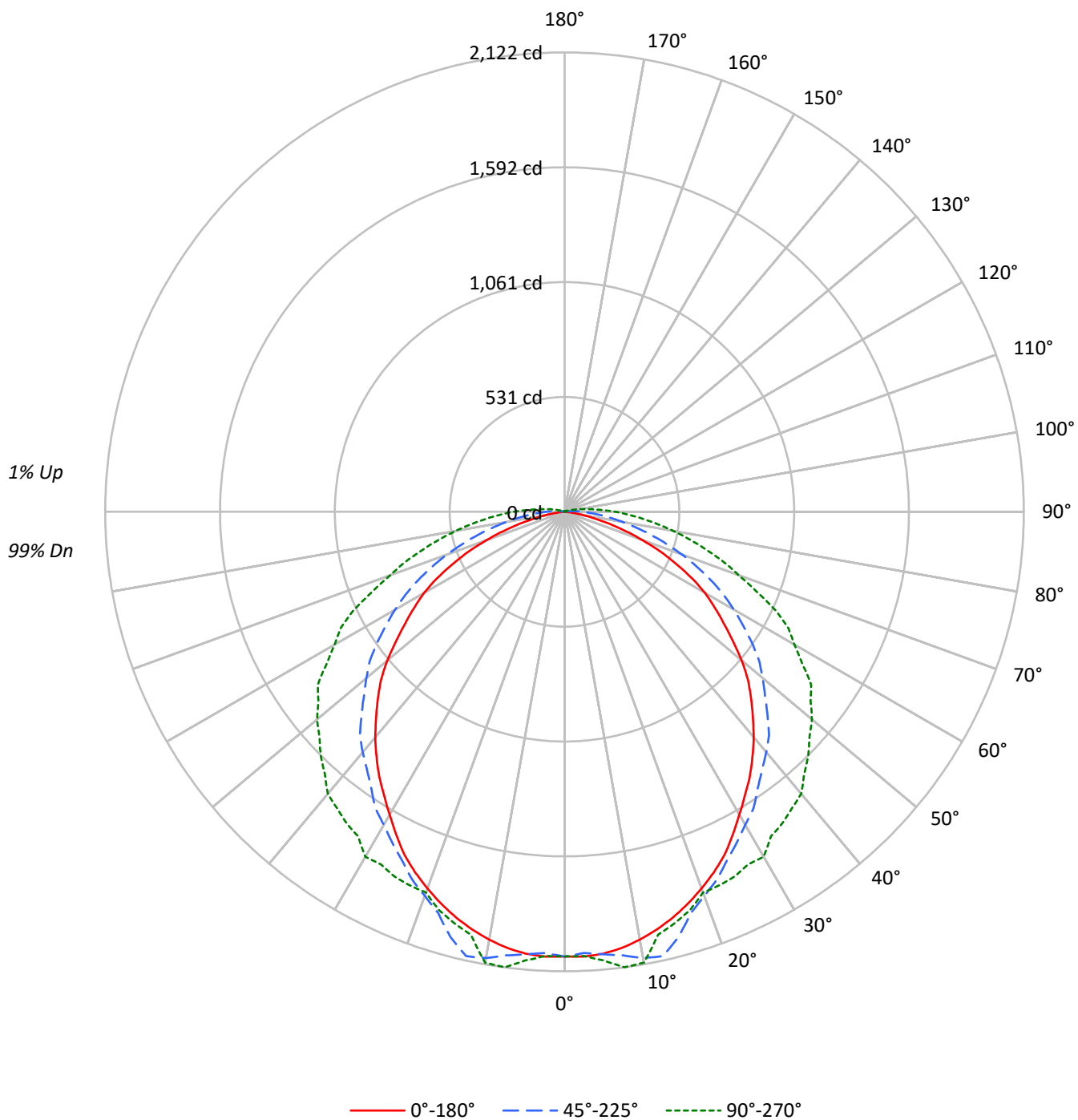
Input Watts (W): 64.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517391

CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517391

CATALOG NUMBER: HVL12-2-LD4-3HI-35-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°	11053	11053	11053
5°	10988	10915	11078
10°	10805	11091	11225
15°	10568	10816	10492
20°	10291	10158	10105
25°	9999	9743	10242
30°	9577	9413	10433
35°	9264	9101	10331
40°	8928	8874	10485
45°	8568	8575	10393
50°	8138	8260	10424
55°	7531	7923	10546
60°	7044	7450	10242
65°	6143	6880	10090
70°	4918	6128	9251
75°	3410	5204	8699
80°	1823	4273	8144
85°	607	3309	7664

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10546 cd/sqm

TEST NUMBER: P517391

CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.4	3.2
10°-20°	562.1	9.1
20°-30°	836.4	13.5
30°-40°	1005.3	16.2
40°-50°	1058.1	17.1
50°-60°	981.8	15.9
60°-70°	776.3	12.5
70°-80°	474.2	7.7
80°-90°	206.6	3.3
90°-100°	64.3	1.0
100°-110°	14.4	0.2
110°-120°	5.8	0.1
120°-130°	3.3	0.1
130°-140°	0.9	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°	1595.9	25.8
0°-40°	2601.2	42.0
0°-60°	4641.2	75.0
0°-90°	6098.3	98.6
90°-120°	84.5	1.4
90°-150°	88.7	1.4
90°-180°	89.0	1.4
0°-180°	6186.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2054	2054	2054	2054	2054	
5°	2049	2044	2052	2075	2080	194
15°	1939	2014	2033	1966	1967	546
25°	1749	1861	1776	1829	1859	803
35°	1492	1534	1557	1698	1756	933
45°	1220	1225	1326	1536	1593	940
55°	898	913	1058	1289	1392	807
65°	569	586	745	986	1076	563
75°	215	285	415	638	679	235
85°	19	67	162	314	361	30
90°	0	20	85	199	235	1
95°	0	5	37	109	134	0
105°	0	3	8	21	30	1
115°	0	2	6	10	10	1
125°	0	1	2	6	9	1
135°	1	1	1	2	3	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: P517391

CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2053.7	2053.7	2053.7	2053.7	2053.7
2.5°	2056.3	2050.8	2039.5	2050.4	2053.3
5°	2048.7	2044.5	2051.7	2074.7	2080.5
7.5°	2031.6	2047.5	2066.3	2108.1	2121.5
10°	2006.1	2036.2	2092.7	2128.2	2114.4
12.5°	1975.1	2026.1	2101.9	2032.4	2000.2
15°	1939.1	2013.6	2033.2	1965.9	1967.1
17.5°	1896.9	2003.1	1942.5	1940.8	1928.7
20°	1851.3	1968.0	1887.7	1884.3	1871.3
22.5°	1802.3	1921.5	1839.1	1832.4	1867.6
25°	1749.2	1860.9	1776.0	1829.1	1858.8
27.5°	1682.7	1781.4	1723.2	1798.5	1835.8
30°	1615.3	1699.4	1669.3	1774.3	1840.4
32.5°	1552.1	1613.6	1624.9	1765.1	1776.0
35°	1492.3	1533.7	1556.7	1698.1	1755.9
37.5°	1426.6	1437.9	1499.0	1670.1	1725.8
40°	1359.7	1352.6	1450.5	1624.1	1701.1
42.5°	1287.7	1285.2	1399.0	1601.1	1639.6
45°	1219.5	1225.0	1325.8	1535.8	1593.1
47.5°	1149.7	1156.8	1256.3	1464.3	1535.4
50°	1068.5	1077.7	1194.4	1400.7	1492.3
52.5°	980.6	998.2	1134.2	1340.4	1432.9
55°	898.2	912.9	1057.6	1289.0	1391.5
57.5°	822.9	831.7	978.6	1224.1	1301.5
60°	748.9	751.0	904.1	1152.2	1226.2
62.5°	663.9	667.7	827.5	1067.2	1166.4
65°	568.6	586.5	745.1	986.1	1075.6
67.5°	479.4	510.8	661.0	911.6	958.5
70°	384.1	437.2	578.6	824.2	857.2
72.5°	296.6	359.0	494.1	726.3	772.7
75°	215.0	284.9	415.4	638.4	678.6
77.5°	144.8	215.9	341.8	541.4	594.5
80°	86.6	157.7	276.1	451.4	511.2
82.5°	44.3	105.8	214.2	378.6	432.2
85°	19.2	66.9	161.9	314.2	360.6
87.5°	5.4	38.1	119.2	253.9	293.3
90°	0.4	20.1	84.9	199.1	234.7
92.5°	0.4	9.6	59.8	150.6	177.8
95°	0.4	5.0	37.2	109.2	133.5
97.5°	0.4	2.9	22.6	77.4	97.9
100°	0.4	2.5	13.4	51.5	69.9
102.5°	0.4	2.9	9.2	32.6	45.6
105°	0.4	2.9	7.5	21.3	30.1
107.5°	0.8	2.9	6.7	15.9	20.9
110°	0.4	2.5	7.1	12.1	16.3

TEST NUMBER: P517391

CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.1	6.7	10.0	12.1
115°	0.4	1.7	5.9	9.6	10.0
117.5°	0.8	1.3	4.6	9.6	10.0
120°	0.8	0.8	3.8	9.2	10.5
122.5°	0.8	0.8	2.9	8.4	10.0
125°	0.4	0.8	2.5	6.3	8.8
127.5°	0.8	0.8	2.1	5.0	6.7
130°	0.8	0.8	1.7	3.8	5.0
132.5°	0.8	0.8	1.3	2.9	3.8
135°	0.8	0.8	0.8	2.1	2.9
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)