

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: P517412

Luminaire Tested: HVL12-2-LD4-3LO-40-UNV-C-EDD

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: P517412
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3LO-40-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4505.0 lumens
Efficiency: N/A
Efficacy: 130.2 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

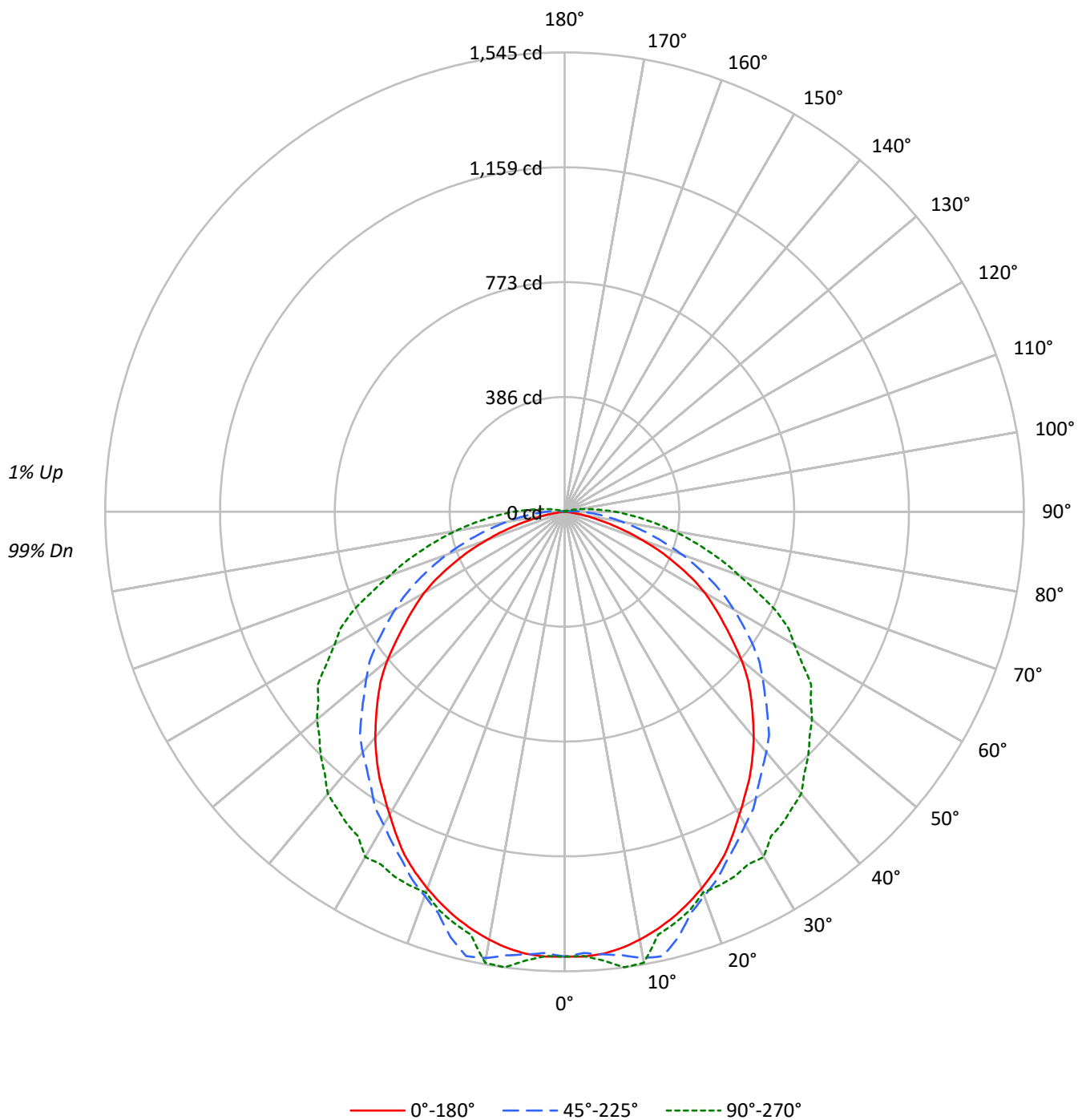
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517412

CATALOG NUMBER: HVL12-2-LD4-3LO-40-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517412

CATALOG NUMBER: HVL12-2-LD4-3LO-40-UNV-C-EDD

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°	8048	8048	8048
5°	8001	7948	8067
10°	7867	8075	8174
15°	7695	7876	7640
20°	7493	7396	7358
25°	7280	7094	7458
30°	6974	6854	7597
35°	6745	6627	7522
40°	6501	6461	7634
45°	6239	6244	7568
50°	5925	6015	7590
55°	5484	5769	7679
60°	5129	5425	7458
65°	4473	5009	7347
70°	3580	4462	6737
75°	2484	3790	6334
80°	1328	3112	5931
85°	443	2410	5581

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7679 cd/sqm

TEST NUMBER: P517412

CATALOG NUMBER: HVL12-2-LD4-3LO-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.7	3.2
10°-20°	409.3	9.1
20°-30°	609.0	13.5
30°-40°	732.0	16.2
40°-50°	770.5	17.1
50°-60°	714.9	15.9
60°-70°	565.3	12.5
70°-80°	345.3	7.7
80°-90°	150.4	3.3
90°-100°	46.8	1.0
100°-110°	10.5	0.2
110°-120°	4.2	0.1
120°-130°	2.4	0.1
130°-140°	0.6	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°	1162.0	25.8
0°-40°	1894.0	42.0
0°-60°	3379.4	75.0
0°-90°	4440.4	98.6
90°-120°	61.6	1.4
90°-150°	64.6	1.4
90°-180°	65.0	1.4
0°-180°	4505.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1495	1495	1495	1495	1495	
5°	1492	1489	1494	1511	1515	141
15°	1412	1466	1480	1431	1432	398
25°	1274	1355	1293	1332	1354	585
35°	1087	1117	1134	1236	1278	679
45°	888	892	965	1118	1160	684
55°	654	665	770	939	1013	588
65°	414	427	542	718	783	410
75°	157	208	302	465	494	171
85°	14	49	118	229	263	22
90°	0	15	62	145	171	1
95°	0	4	27	80	97	0
105°	0	2	6	16	22	0
115°	0	1	4	7	7	0
125°	0	1	2	5	6	0
135°	1	1	1	2	2	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: P517412

CATALOG NUMBER: HVL12-2-LD4-3LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1495.4	1495.4	1495.4	1495.4	1495.4
2.5°	1497.2	1493.3	1485.1	1493.0	1495.1
5°	1491.8	1488.7	1493.9	1510.6	1514.9
7.5°	1479.3	1490.8	1504.6	1535.0	1544.8
10°	1460.7	1482.6	1523.7	1549.6	1539.6
12.5°	1438.1	1475.3	1530.4	1479.9	1456.4
15°	1411.9	1466.2	1480.5	1431.4	1432.4
17.5°	1381.2	1458.6	1414.4	1413.2	1404.3
20°	1348.0	1433.0	1374.5	1372.0	1362.6
22.5°	1312.3	1399.2	1339.1	1334.3	1359.9
25°	1273.6	1355.0	1293.1	1331.8	1353.5
27.5°	1225.2	1297.1	1254.8	1309.6	1336.7
30°	1176.2	1237.4	1215.5	1291.9	1340.1
32.5°	1130.2	1174.9	1183.2	1285.2	1293.1
35°	1086.6	1116.8	1133.5	1236.5	1278.5
37.5°	1038.8	1047.0	1091.5	1216.1	1256.6
40°	990.0	984.9	1056.1	1182.6	1238.6
42.5°	937.6	935.8	1018.7	1165.8	1193.8
45°	888.0	891.9	965.4	1118.3	1160.0
47.5°	837.1	842.3	914.8	1066.2	1118.0
50°	778.0	784.7	869.7	1019.9	1086.6
52.5°	714.0	726.8	825.8	976.0	1043.3
55°	654.0	664.7	770.1	938.6	1013.2
57.5°	599.2	605.6	712.5	891.3	947.7
60°	545.3	546.8	658.3	838.9	892.9
62.5°	483.4	486.2	602.6	777.1	849.3
65°	414.0	427.1	542.5	718.0	783.2
67.5°	349.1	371.9	481.3	663.8	697.9
70°	279.6	318.3	421.3	600.1	624.2
72.5°	216.0	261.4	359.8	528.8	562.6
75°	156.6	207.5	302.5	464.9	494.1
77.5°	105.4	157.2	248.9	394.2	432.9
80°	63.1	114.8	201.1	328.7	372.3
82.5°	32.3	77.1	156.0	275.7	314.7
85°	14.0	48.7	117.9	228.8	262.6
87.5°	4.0	27.7	86.8	184.9	213.5
90°	0.3	14.6	61.8	145.0	170.9
92.5°	0.3	7.0	43.6	109.7	129.5
95°	0.3	3.7	27.1	79.5	97.2
97.5°	0.3	2.1	16.4	56.4	71.3
100°	0.3	1.8	9.7	37.5	50.9
102.5°	0.3	2.1	6.7	23.8	33.2
105°	0.3	2.1	5.5	15.5	21.9
107.5°	0.6	2.1	4.9	11.6	15.2
110°	0.3	1.8	5.2	8.8	11.9

TEST NUMBER: P517412

CATALOG NUMBER: HVL12-2-LD4-3LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.5	4.9	7.3	8.8
115°	0.3	1.2	4.3	7.0	7.3
117.5°	0.6	0.9	3.4	7.0	7.3
120°	0.6	0.6	2.7	6.7	7.6
122.5°	0.6	0.6	2.1	6.1	7.3
125°	0.3	0.6	1.8	4.6	6.4
127.5°	0.6	0.6	1.5	3.7	4.9
130°	0.6	0.6	1.2	2.7	3.7
132.5°	0.6	0.6	0.9	2.1	2.7
135°	0.6	0.6	0.6	1.5	2.1
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)