

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: P517339

Luminaire Tested: HVL12-2-LD4-2HI-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: P517339
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2HI-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: 3872.0 lumens
Efficiency: N/A
Efficacy: 87.6 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

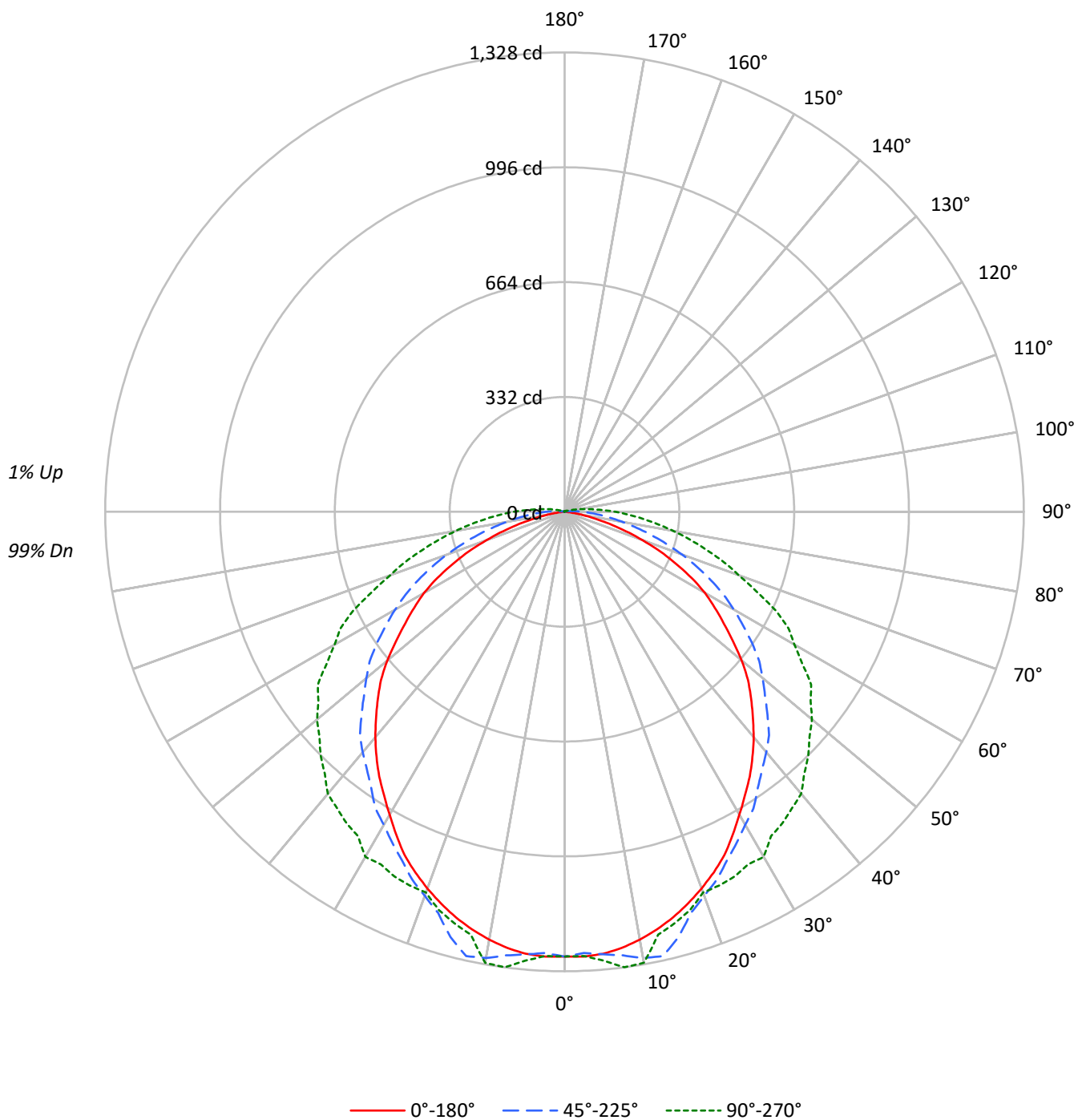
Input Watts (W): 44.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517339

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

Luminous Intensity Polar Plot



TEST NUMBER: P517339

CATALOG NUMBER: HVL12-2-LD4-2HI-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°	6917	6917	6917
5°	6877	6831	6933
10°	6761	6941	7025
15°	6614	6769	6566
20°	6440	6357	6324
25°	6257	6097	6410
30°	5994	5891	6529
35°	5798	5696	6465
40°	5587	5553	6562
45°	5362	5366	6504
50°	5093	5169	6523
55°	4713	4959	6600
60°	4409	4662	6410
65°	3844	4306	6314
70°	3078	3835	5790
75°	2135	3257	5444
80°	1141	2674	5097
85°	379	2071	4797

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6600 cd/sqm

TEST NUMBER: P517339

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.5	3.2
10°-20°	351.8	9.1
20°-30°	523.4	13.5
30°-40°	629.1	16.2
40°-50°	662.2	17.1
50°-60°	614.5	15.9
60°-70°	485.8	12.5
70°-80°	296.8	7.7
80°-90°	129.3	3.3
90°-100°	40.2	1.0
100°-110°	9.0	0.2
110°-120°	3.6	0.1
120°-130°	2.0	0.1
130°-140°	0.5	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°	998.7	25.8
0°-40°	1627.9	42.0
0°-60°	2904.6	75.0
0°-90°	3816.5	98.6
90°-120°	52.9	1.4
90°-150°	55.5	1.4
90°-180°	56.0	1.4
0°-180°	3872.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1285	1285	1285	1285	1285	
5°	1282	1280	1284	1298	1302	122
15°	1214	1260	1272	1230	1231	342
25°	1095	1165	1111	1145	1163	503
35°	934	960	974	1063	1099	584
45°	763	767	830	961	997	588
55°	562	571	662	807	871	505
65°	356	367	466	617	673	352
75°	135	178	260	400	425	147
85°	12	42	101	197	226	19
90°	0	13	53	125	147	1
95°	0	3	23	68	84	0
105°	0	2	5	13	19	0
115°	0	1	4	6	6	0
125°	0	0	2	4	6	0
135°	0	0	0	1	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: P517339

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1285.3	1285.3	1285.3	1285.3	1285.3
2.5°	1286.9	1283.5	1276.4	1283.2	1285.0
5°	1282.2	1279.5	1284.0	1298.4	1302.1
7.5°	1271.4	1281.4	1293.1	1319.3	1327.7
10°	1255.4	1274.3	1309.6	1331.9	1323.3
12.5°	1236.1	1268.0	1315.4	1271.9	1251.8
15°	1213.6	1260.2	1272.5	1230.3	1231.1
17.5°	1187.1	1253.6	1215.6	1214.6	1207.0
20°	1158.6	1231.6	1181.3	1179.3	1171.1
22.5°	1127.9	1202.6	1151.0	1146.8	1168.8
25°	1094.7	1164.6	1111.4	1144.7	1163.3
27.5°	1053.1	1114.8	1078.5	1125.6	1148.9
30°	1010.9	1063.5	1044.7	1110.4	1151.8
32.5°	971.4	1009.9	1016.9	1104.6	1111.4
35°	933.9	959.8	974.2	1062.7	1098.9
37.5°	892.8	899.9	938.1	1045.2	1080.0
40°	850.9	846.5	907.7	1016.4	1064.6
42.5°	805.9	804.3	875.5	1002.0	1026.1
45°	763.2	766.6	829.7	961.2	997.0
47.5°	719.5	723.9	786.3	916.4	960.9
50°	668.7	674.5	747.5	876.6	933.9
52.5°	613.7	624.7	709.8	838.9	896.7
55°	562.1	571.3	661.9	806.7	870.8
57.5°	515.0	520.5	612.4	766.1	814.5
60°	468.7	470.0	565.8	721.1	767.4
62.5°	415.5	417.9	517.9	667.9	730.0
65°	355.8	367.1	466.3	617.1	673.1
67.5°	300.1	319.7	413.7	570.5	599.8
70°	240.4	273.6	362.1	515.8	536.5
72.5°	185.6	224.6	309.2	454.5	483.6
75°	134.6	178.3	260.0	399.5	424.7
77.5°	90.6	135.1	213.9	338.8	372.1
80°	54.2	98.7	172.8	282.5	319.9
82.5°	27.8	66.2	134.1	237.0	270.5
85°	12.0	41.9	101.3	196.6	225.7
87.5°	3.4	23.8	74.6	158.9	183.5
90°	0.3	12.6	53.2	124.6	146.9
92.5°	0.3	6.0	37.4	94.3	111.3
95°	0.3	3.1	23.3	68.3	83.5
97.5°	0.3	1.8	14.1	48.4	61.3
100°	0.3	1.6	8.4	32.2	43.7
102.5°	0.3	1.8	5.8	20.4	28.5
105°	0.3	1.8	4.7	13.4	18.9
107.5°	0.5	1.8	4.2	9.9	13.1
110°	0.3	1.6	4.5	7.6	10.2

TEST NUMBER: P517339

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.2	6.3	7.6
115°	0.3	1.0	3.7	6.0	6.3
117.5°	0.5	0.8	2.9	6.0	6.3
120°	0.5	0.5	2.4	5.8	6.5
122.5°	0.5	0.5	1.8	5.2	6.3
125°	0.3	0.5	1.6	3.9	5.5
127.5°	0.5	0.5	1.3	3.1	4.2
130°	0.5	0.5	1.0	2.4	3.1
132.5°	0.5	0.5	0.8	1.8	2.4
135°	0.5	0.5	0.5	1.3	1.8
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)