

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: P517460

Luminaire Tested: HVL12-4-LD4-1LO-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: P517460
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-1LO-40-UNV-C-EDD
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3009.0 lumens
Efficiency: N/A
Efficacy: 127.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.17')
CIE Type: Direct

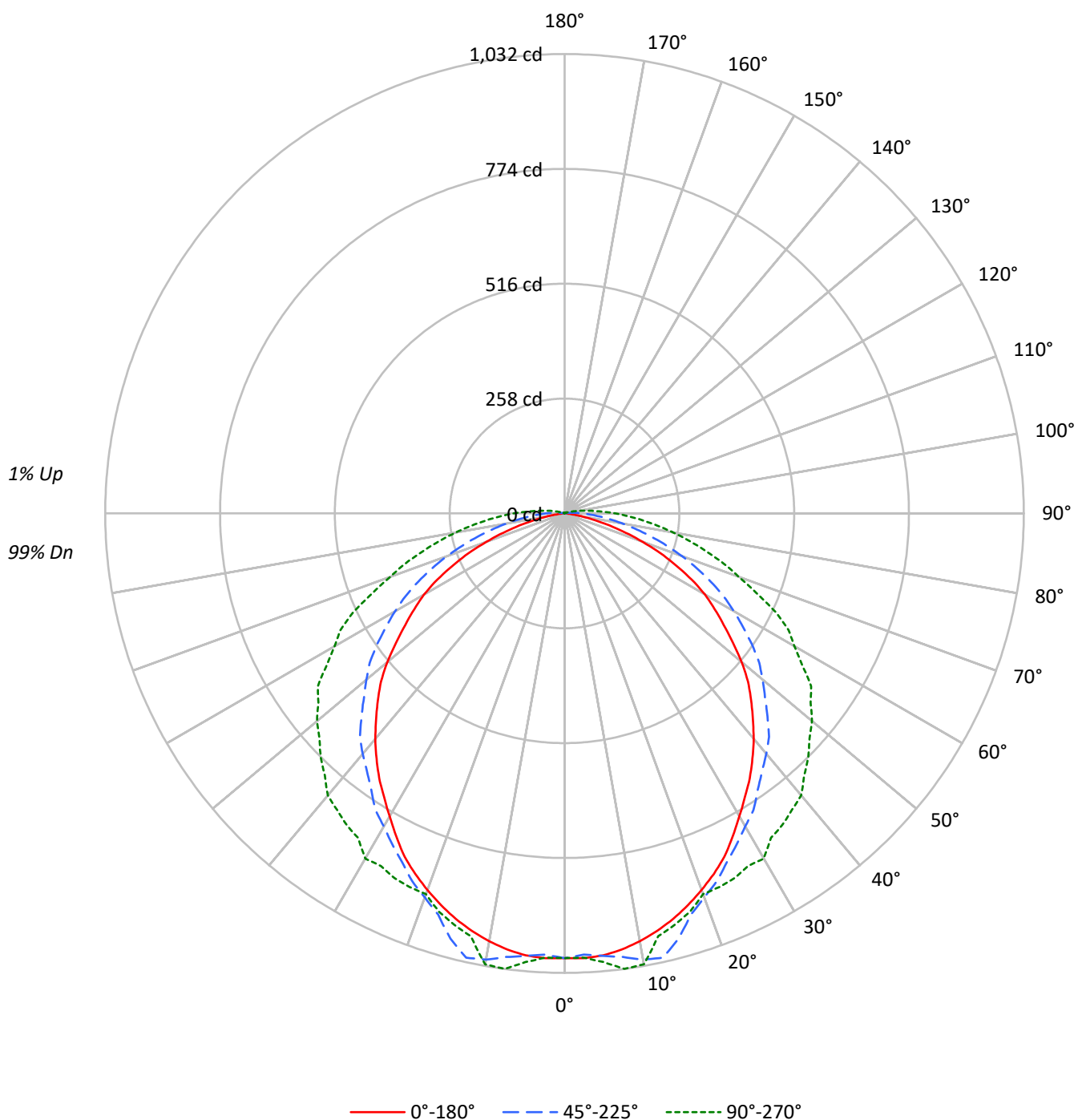
Input Watts (W): 23.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517460

CATALOG NUMBER: HVL12-4-LD4-1LO-40-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517460

CATALOG NUMBER: HVL12-4-LD4-1LO-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°	2688	2688	2688
5°	2682	2661	2694
10°	2646	2710	2730
15°	2598	2650	2551
20°	2540	2495	2457
25°	2478	2400	2491
30°	2384	2325	2537
35°	2317	2255	2512
40°	2245	2205	2550
45°	2167	2139	2527
50°	2073	2069	2535
55°	1934	1994	2564
60°	1828	1885	2491
65°	1616	1753	2454
70°	1319	1576	2250
75°	941	1355	2115
80°	528	1134	1980
85°	197	905	1864

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2564 cd/sqm

TEST NUMBER: P517460

CATALOG NUMBER: HVL12-4-LD4-1LO-40-UNV-C-EDD

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: P517460

CATALOG NUMBER: HVL12-4-LD4-1LO-40-UNV-C-EDD

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: P517460

CATALOG NUMBER: HVL12-4-LD4-1LO-40-UNV-C-EDD

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)