

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: P517264

Luminaire Tested: HVL12-1-LD4-3LO-35-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: P517264
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3LO-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2230.1 lumens
Efficiency: N/A
Efficacy: 128.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

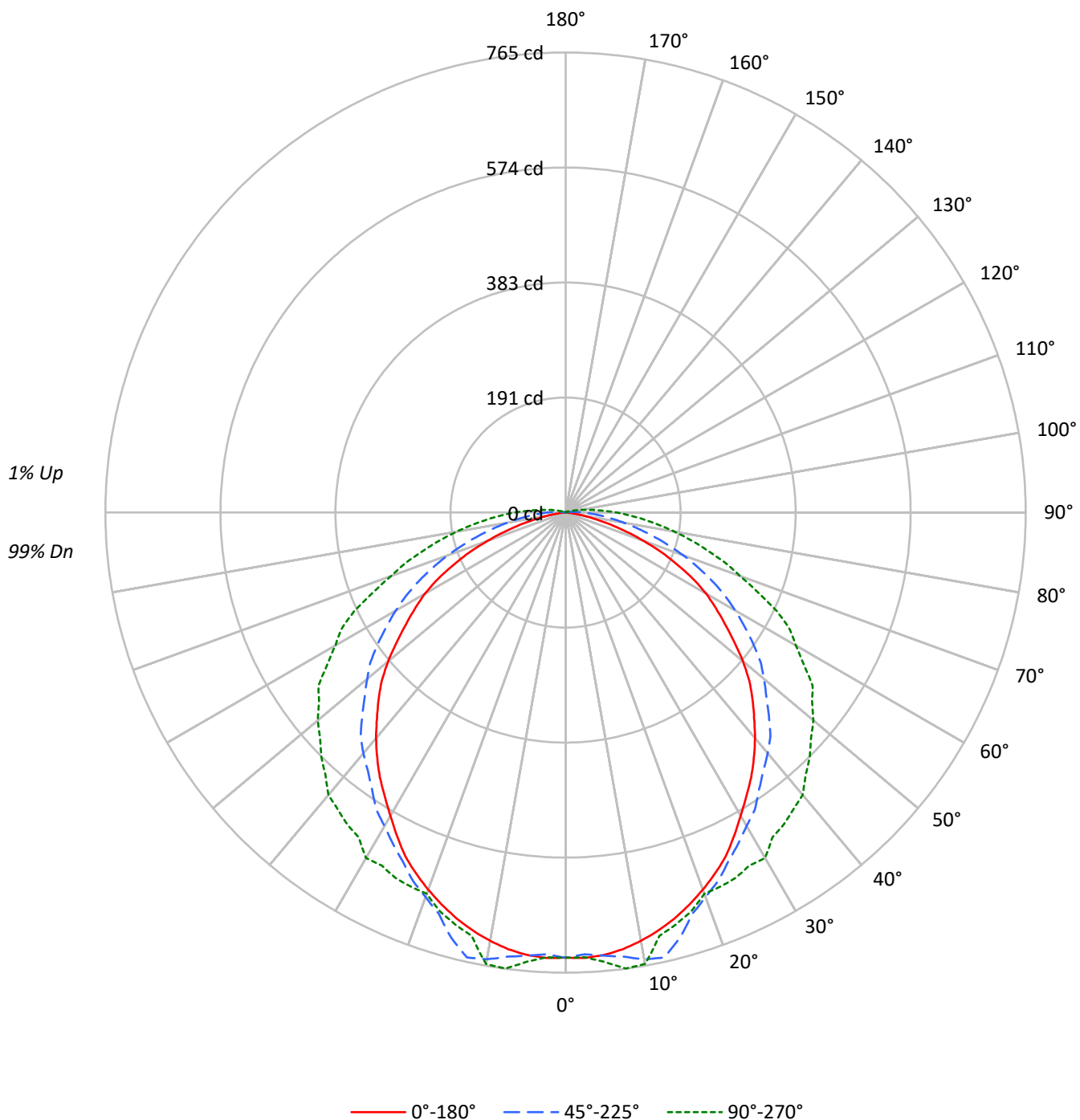
Input Watts (W): 17.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517264

CATALOG NUMBER: HVL12-1-LD4-3LO-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517264

CATALOG NUMBER: HVL12-1-LD4-3LO-35-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	44	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°	7967	7967	7967
5°	7864	7829	7986
10°	7677	7915	8092
15°	7455	7681	7563
20°	7206	7178	7284
25°	6948	6849	7383
30°	6601	6583	7520
35°	6329	6328	7447
40°	6041	6133	7558
45°	5736	5887	7492
50°	5380	5628	7515
55°	4908	5352	7602
60°	4509	4982	7383
65°	3844	4544	7274
70°	2987	3982	6670
75°	1987	3312	6271
80°	994	2639	5872
85°	293	1952	5526

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7602 cd/sqm

TEST NUMBER: P517264

CATALOG NUMBER: HVL12-1-LD4-3LO-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.1	3.2
10°-20°	202.6	9.1
20°-30°	301.5	13.5
30°-40°	362.4	16.2
40°-50°	381.4	17.1
50°-60°	353.9	15.9
60°-70°	279.8	12.5
70°-80°	170.9	7.7
80°-90°	74.5	3.3
90°-100°	23.2	1.0
100°-110°	5.2	0.2
110°-120°	2.1	0.1
120°-130°	1.2	0.1
130°-140°	0.3	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°	575.2	25.8
0°-40°	937.6	42.0
0°-60°	1672.8	75.0
0°-90°	2198.0	98.6
90°-120°	30.5	1.4
90°-150°	32.0	1.4
90°-180°	32.0	1.4
0°-180°	2230.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	740	740	740	740	740	
5°	738	737	740	748	750	70
15°	699	726	733	709	709	197
25°	630	671	640	659	670	289
35°	538	553	561	612	633	336
45°	440	442	478	554	574	339
55°	324	329	381	465	502	291
65°	205	211	269	355	388	203
75°	78	103	150	230	245	85
85°	7	24	58	113	130	11
90°	0	7	31	72	85	0
95°	0	2	13	39	48	0
105°	0	1	3	8	11	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	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: P517264

CATALOG NUMBER: HVL12-1-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	740.2	740.2	740.2	740.2	740.2
2.5°	741.1	739.2	735.1	739.0	740.1
5°	738.4	736.9	739.5	747.8	749.9
7.5°	732.2	738.0	744.8	759.8	764.7
10°	723.0	733.9	754.3	767.1	762.1
12.5°	711.9	730.3	757.6	732.5	720.9
15°	698.9	725.8	732.8	708.6	709.0
17.5°	683.7	722.0	700.1	699.5	695.2
20°	667.3	709.3	680.4	679.2	674.5
22.5°	649.6	692.6	662.9	660.5	673.1
25°	630.5	670.7	640.1	659.3	670.0
27.5°	606.5	642.1	621.1	648.3	661.7
30°	582.2	612.5	601.7	639.5	663.3
32.5°	559.4	581.6	585.7	636.2	640.1
35°	537.9	552.8	561.1	612.1	632.9
37.5°	514.2	518.3	540.3	602.0	622.0
40°	490.1	487.5	522.8	585.4	613.1
42.5°	464.1	463.2	504.2	577.1	591.0
45°	439.6	441.5	477.9	553.6	574.2
47.5°	414.4	416.9	452.8	527.8	553.4
50°	385.1	388.4	430.5	504.9	537.9
52.5°	353.5	359.8	408.8	483.1	516.5
55°	323.8	329.0	381.2	464.6	501.5
57.5°	296.6	299.8	352.7	441.2	469.1
60°	269.9	270.7	325.9	415.3	442.0
62.5°	239.3	240.7	298.3	384.7	420.4
65°	204.9	211.4	268.6	355.4	387.7
67.5°	172.8	184.1	238.3	328.6	345.5
70°	138.4	157.6	208.5	297.1	309.0
72.5°	106.9	129.4	178.1	261.8	278.5
75°	77.5	102.7	149.7	230.1	244.6
77.5°	52.2	77.8	123.2	195.1	214.3
80°	31.2	56.8	99.5	162.7	184.3
82.5°	16.0	38.2	77.2	136.5	155.8
85°	6.9	24.1	58.4	113.2	130.0
87.5°	2.0	13.7	43.0	91.5	105.7
90°	0.2	7.2	30.6	71.8	84.6
92.5°	0.2	3.5	21.6	54.3	64.1
95°	0.2	1.8	13.4	39.4	48.1
97.5°	0.2	1.1	8.1	27.9	35.3
100°	0.2	0.9	4.8	18.5	25.2
102.5°	0.2	1.1	3.3	11.8	16.4
105°	0.2	1.1	2.7	7.7	10.9
107.5°	0.3	1.1	2.4	5.7	7.5
110°	0.2	0.9	2.6	4.4	5.9

TEST NUMBER: P517264

CATALOG NUMBER: HVL12-1-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.4	3.6	4.4
115°	0.2	0.6	2.1	3.5	3.6
117.5°	0.3	0.5	1.7	3.5	3.6
120°	0.3	0.3	1.4	3.3	3.8
122.5°	0.3	0.3	1.1	3.0	3.6
125°	0.2	0.3	0.9	2.3	3.2
127.5°	0.3	0.3	0.8	1.8	2.4
130°	0.3	0.3	0.6	1.4	1.8
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)