

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: P517360

Luminaire Tested: HVL12-2-LD4-2LO-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: P517360
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2LO-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2829.0 lumens
Efficiency: N/A
Efficacy: 119.4 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

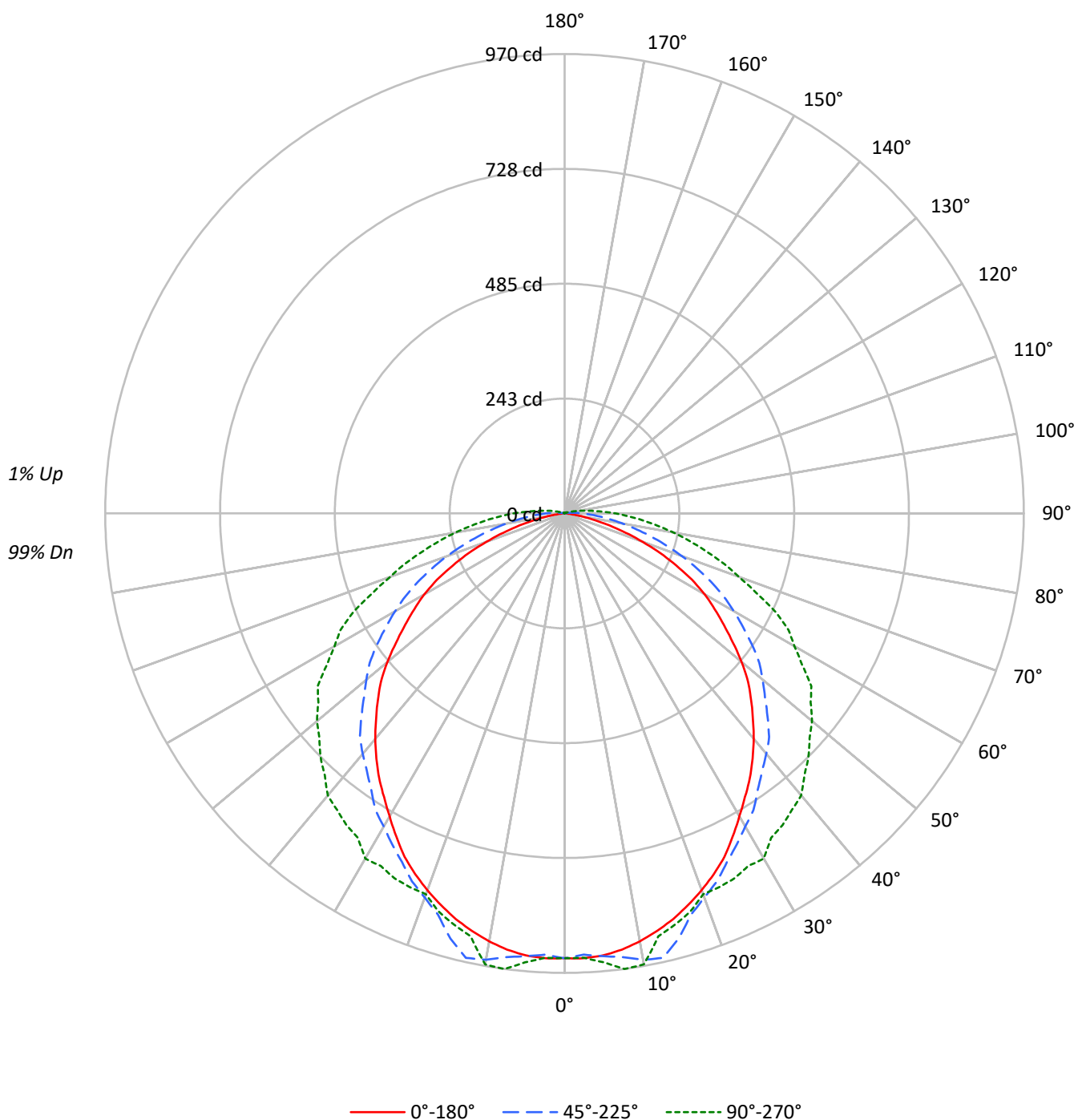
Input Watts (W): 23.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517360

CATALOG NUMBER: HVL12-2-LD4-2LO-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517360

CATALOG NUMBER: HVL12-2-LD4-2LO-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	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°	5054	5054	5054
5°	5024	4991	5066
10°	4940	5071	5133
15°	4833	4946	4798
20°	4705	4644	4621
25°	4572	4455	4683
30°	4379	4304	4770
35°	4236	4161	4724
40°	4082	4057	4794
45°	3918	3921	4753
50°	3721	3777	4767
55°	3444	3623	4822
60°	3221	3407	4683
65°	2809	3146	4614
70°	2248	2802	4231
75°	1559	2380	3978
80°	833	1955	3725
85°	278	1513	3505

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4822 cd/sqm

TEST NUMBER: P517360

CATALOG NUMBER: HVL12-2-LD4-2LO-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.3	3.2
10°-20°	257.0	9.1
20°-30°	382.4	13.5
30°-40°	459.7	16.2
40°-50°	483.8	17.1
50°-60°	448.9	15.9
60°-70°	355.0	12.5
70°-80°	216.8	7.7
80°-90°	94.5	3.3
90°-100°	29.4	1.0
100°-110°	6.6	0.2
110°-120°	2.7	0.1
120°-130°	1.5	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°	729.7	25.8
0°-40°	1189.4	42.0
0°-60°	2122.2	75.0
0°-90°	2788.4	98.6
90°-120°	38.7	1.4
90°-150°	40.6	1.4
90°-180°	41.0	1.4
0°-180°	2829.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	939	939	939	939	939	
5°	937	935	938	949	951	89
15°	887	921	930	899	900	250
25°	800	851	812	836	850	367
35°	682	701	712	776	803	426
45°	558	560	606	702	728	430
55°	411	417	484	589	636	369
65°	260	268	341	451	492	257
75°	98	130	190	292	310	107
85°	9	31	74	144	165	14
90°	0	9	39	91	107	0
95°	0	2	17	50	61	0
105°	0	1	3	10	14	0
115°	0	1	3	4	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: P517360

CATALOG NUMBER: HVL12-2-LD4-2LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	939.1	939.1	939.1	939.1	939.1
2.5°	940.2	937.7	932.6	937.5	938.9
5°	936.8	934.9	938.1	948.6	951.3
7.5°	928.9	936.2	944.8	963.9	970.1
10°	917.3	931.0	956.9	973.1	966.8
12.5°	903.1	926.4	961.1	929.3	914.6
15°	886.7	920.7	929.7	898.9	899.5
17.5°	867.3	915.9	888.2	887.4	881.9
20°	846.5	899.9	863.1	861.6	855.7
22.5°	824.1	878.6	840.9	837.9	853.9
25°	799.8	850.9	812.1	836.3	849.9
27.5°	769.4	814.5	787.9	822.4	839.4
30°	738.6	777.0	763.3	811.3	841.5
32.5°	709.7	737.8	743.0	807.1	812.1
35°	682.4	701.3	711.8	776.5	802.9
37.5°	652.3	657.5	685.4	763.7	789.1
40°	621.7	618.5	663.2	742.6	777.8
42.5°	588.8	587.7	639.7	732.1	749.7
45°	557.6	560.1	606.2	702.2	728.5
47.5°	525.7	528.9	574.5	669.5	702.1
50°	488.6	492.8	546.2	640.5	682.4
52.5°	448.4	456.4	518.6	612.9	655.2
55°	410.7	417.4	483.6	589.4	636.3
57.5°	376.3	380.3	447.4	559.7	595.1
60°	342.4	343.4	413.4	526.8	560.7
62.5°	303.6	305.3	378.4	488.0	533.3
65°	260.0	268.2	340.7	450.9	491.8
67.5°	219.2	233.6	302.2	416.8	438.3
70°	175.6	199.9	264.6	376.9	392.0
72.5°	135.6	164.1	225.9	332.1	353.3
75°	98.3	130.3	190.0	291.9	310.3
77.5°	66.2	98.7	156.3	247.5	271.8
80°	39.6	72.1	126.3	206.4	233.8
82.5°	20.3	48.4	97.9	173.1	197.6
85°	8.8	30.6	74.0	143.7	164.9
87.5°	2.5	17.4	54.5	116.1	134.1
90°	0.2	9.2	38.8	91.1	107.3
92.5°	0.2	4.4	27.4	68.9	81.3
95°	0.2	2.3	17.0	49.9	61.0
97.5°	0.2	1.3	10.3	35.4	44.8
100°	0.2	1.1	6.1	23.5	31.9
102.5°	0.2	1.3	4.2	14.9	20.9
105°	0.2	1.3	3.4	9.8	13.8
107.5°	0.4	1.3	3.1	7.3	9.6
110°	0.2	1.1	3.3	5.5	7.5

TEST NUMBER: P517360

CATALOG NUMBER: HVL12-2-LD4-2LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.1	4.6	5.5
115°	0.2	0.8	2.7	4.4	4.6
117.5°	0.4	0.6	2.1	4.4	4.6
120°	0.4	0.4	1.7	4.2	4.8
122.5°	0.4	0.4	1.3	3.8	4.6
125°	0.2	0.4	1.1	2.9	4.0
127.5°	0.4	0.4	1.0	2.3	3.1
130°	0.4	0.4	0.8	1.7	2.3
132.5°	0.4	0.4	0.6	1.3	1.7
135°	0.4	0.4	0.4	1.0	1.3
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)