

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: P517931

Luminaire Tested: HVL8-2-LD4-2LO-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: P517931
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-30-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2237.0 lumens
Efficiency: N/A
Efficacy: 96.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

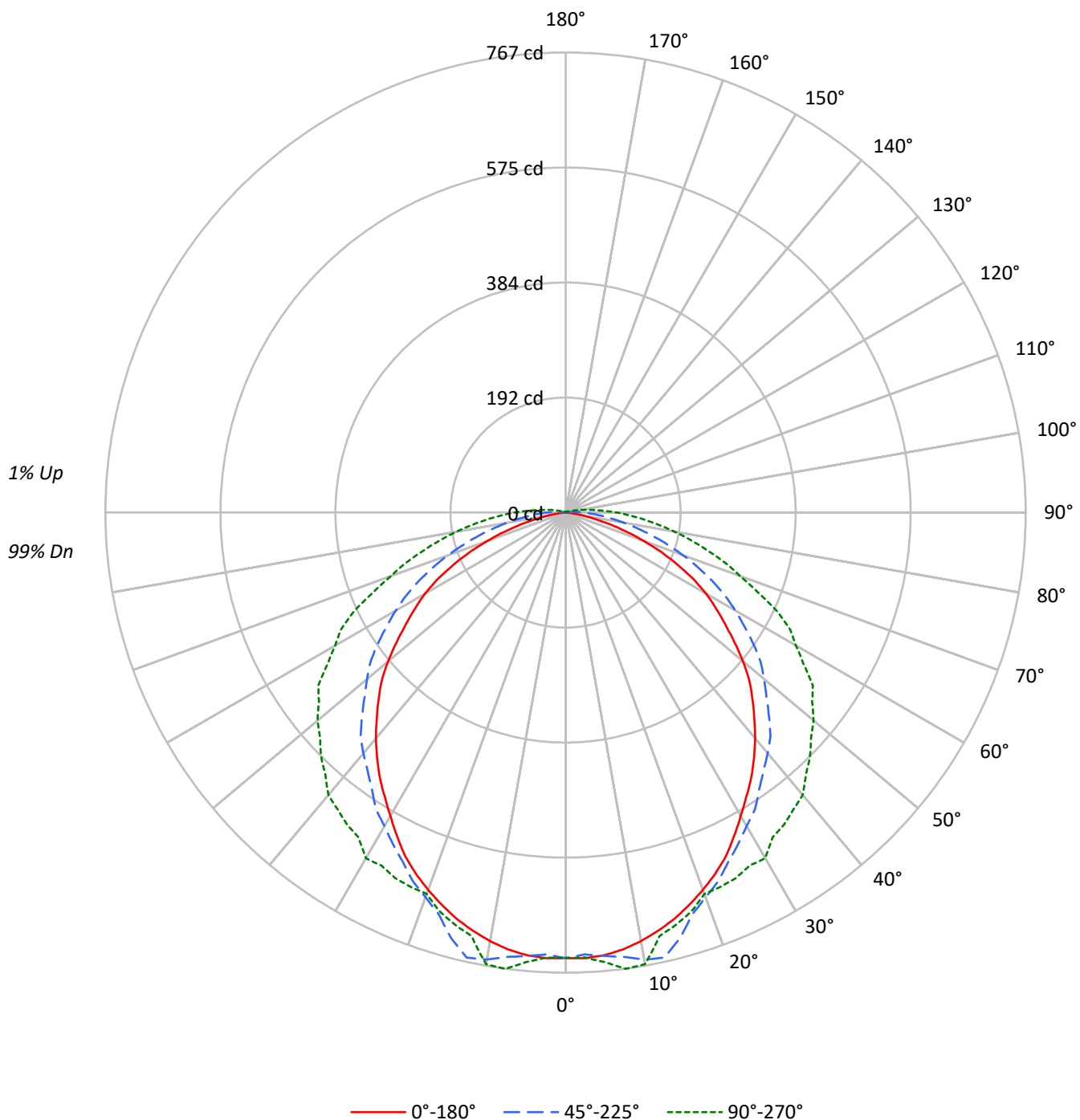
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517931

CATALOG NUMBER: HVL8-2-LD4-2LO-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517931

CATALOG NUMBER: HVL8-2-LD4-2LO-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	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°	5995	5995	5995
5°	5959	5890	5965
10°	5860	5955	6002
15°	5732	5780	5572
20°	5581	5400	5328
25°	5422	5153	5362
30°	5194	4952	5420
35°	5025	4762	5325
40°	4842	4614	5357
45°	4646	4429	5261
50°	4413	4235	5221
55°	4085	4027	5218
60°	3821	3748	4996
65°	3332	3418	4836
70°	2668	2997	4336
75°	1851	2492	3959
80°	988	1985	3553
85°	332	1467	3131

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5261 cd/sqm

TEST NUMBER: P517931

CATALOG NUMBER: HVL8-2-LD4-2LO-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.4	3.2
10°-20°	203.2	9.1
20°-30°	302.4	13.5
30°-40°	363.5	16.2
40°-50°	382.6	17.1
50°-60°	355.0	15.9
60°-70°	280.7	12.5
70°-80°	171.4	7.7
80°-90°	74.7	3.3
90°-100°	23.3	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°	577.0	25.8
0°-40°	940.5	42.0
0°-60°	1678.1	75.0
0°-90°	2204.9	98.6
90°-120°	30.6	1.4
90°-150°	32.1	1.4
90°-180°	32.0	1.4
0°-180°	2237.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	743	743	743	743	743	
5°	741	739	742	750	752	70
15°	701	728	735	711	711	197
25°	632	673	642	661	672	290
35°	540	554	563	614	635	337
45°	441	443	479	555	576	340
55°	325	330	382	466	503	292
65°	206	212	269	356	389	204
75°	78	103	150	231	245	85
85°	7	24	58	114	130	11
90°	0	7	31	72	85	0
95°	0	2	14	40	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: P517931

CATALOG NUMBER: HVL8-2-LD4-2LO-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	742.6	742.6	742.6	742.6	742.6
2.5°	743.5	741.5	737.4	741.4	742.4
5°	740.7	739.2	741.8	750.1	752.2
7.5°	734.5	740.3	747.1	762.2	767.1
10°	725.3	736.2	756.6	769.5	764.5
12.5°	714.1	732.6	760.0	734.8	723.2
15°	701.1	728.0	735.2	710.8	711.3
17.5°	685.8	724.3	702.3	701.7	697.3
20°	669.3	711.6	682.5	681.3	676.6
22.5°	651.7	694.8	665.0	662.5	675.2
25°	632.4	672.8	642.1	661.3	672.1
27.5°	608.4	644.1	623.1	650.3	663.8
30°	584.0	614.4	603.5	641.5	665.4
32.5°	561.2	583.4	587.5	638.2	642.1
35°	539.6	554.5	562.9	614.0	634.9
37.5°	515.8	519.9	542.0	603.9	624.0
40°	491.6	489.0	524.4	587.2	615.0
42.5°	465.6	464.7	505.8	578.9	592.8
45°	440.9	442.9	479.4	555.3	576.0
47.5°	415.7	418.2	454.3	529.4	555.1
50°	386.3	389.7	431.9	506.4	539.6
52.5°	354.6	360.9	410.1	484.7	518.1
55°	324.8	330.1	382.4	466.0	503.1
57.5°	297.5	300.7	353.8	442.6	470.6
60°	270.8	271.5	326.9	416.6	443.4
62.5°	240.1	241.4	299.2	385.9	421.7
65°	205.6	212.1	269.4	356.5	388.9
67.5°	173.4	184.7	239.0	329.6	346.5
70°	138.9	158.1	209.2	298.0	309.9
72.5°	107.2	129.8	178.6	262.6	279.4
75°	77.8	103.0	150.2	230.8	245.4
77.5°	52.3	78.1	123.6	195.7	214.9
80°	31.3	57.0	99.8	163.2	184.8
82.5°	16.0	38.3	77.4	136.9	156.3
85°	7.0	24.2	58.5	113.6	130.4
87.5°	2.0	13.8	43.1	91.8	106.0
90°	0.2	7.3	30.7	72.0	84.9
92.5°	0.2	3.5	21.6	54.5	64.3
95°	0.2	1.8	13.5	39.5	48.3
97.5°	0.2	1.1	8.2	28.0	35.4
100°	0.2	0.9	4.8	18.6	25.3
102.5°	0.2	1.1	3.3	11.8	16.5
105°	0.2	1.1	2.7	7.7	10.9
107.5°	0.3	1.1	2.4	5.7	7.6
110°	0.2	0.9	2.6	4.4	5.9

TEST NUMBER: P517931

CATALOG NUMBER: HVL8-2-LD4-2LO-30-UNV-C-EDD-90

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)