

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: P517847

Luminaire Tested: HVL8-1-LD4-3LO-50-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: P517847
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-50-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1909.0 lumens
Efficiency: N/A
Efficacy: 113.6 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

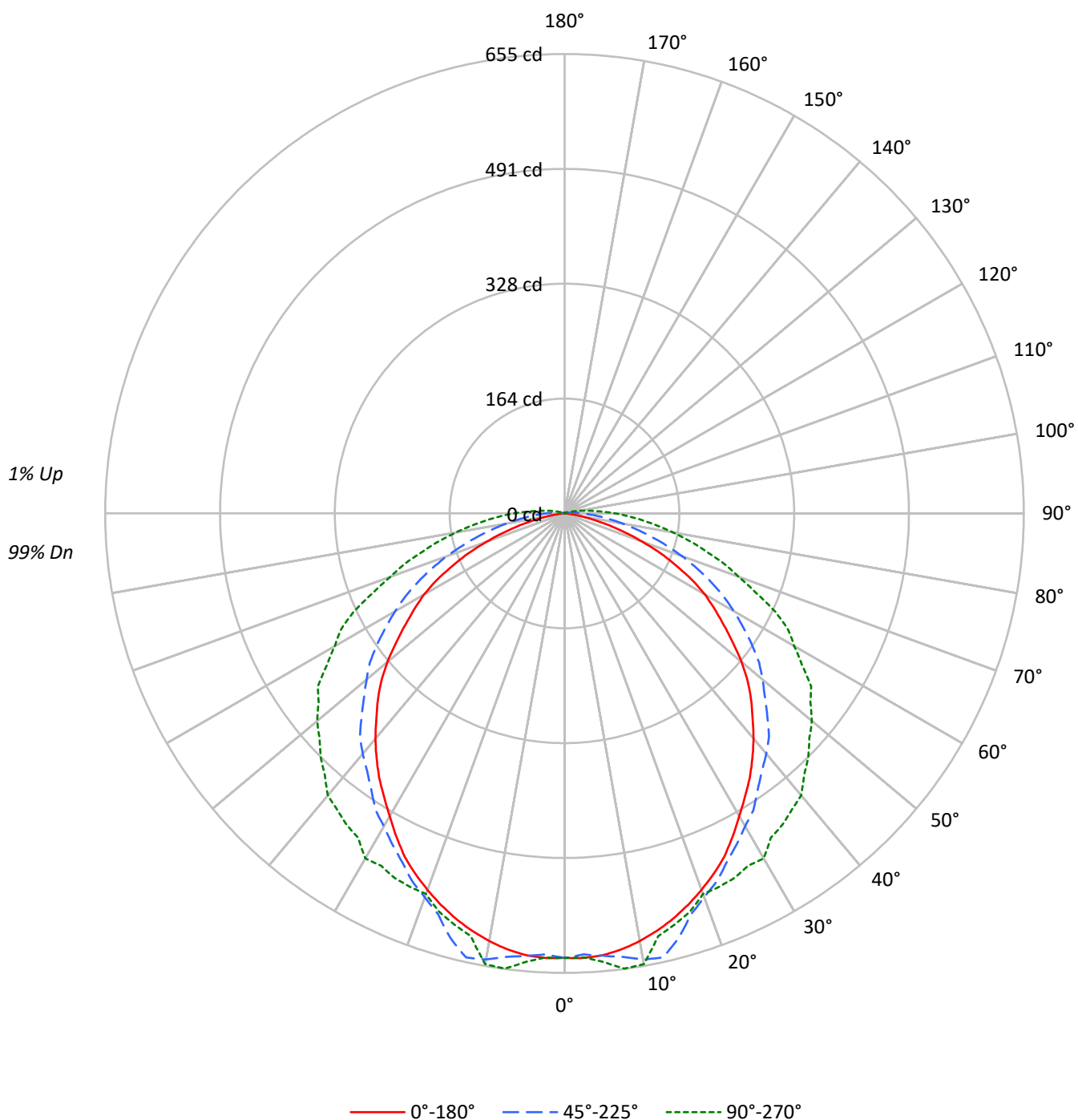
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517847

CATALOG NUMBER: HVL8-1-LD4-3LO-50-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517847

CATALOG NUMBER: HVL8-1-LD4-3LO-50-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°	10232	10232	10232
5°	10098	10002	10181
10°	9859	10063	10244
15°	9573	9720	9509
20°	9253	9038	9093
25°	8921	8583	9150
30°	8476	8207	9252
35°	8128	7848	9088
40°	7757	7562	9145
45°	7365	7215	8980
50°	6909	6850	8911
55°	6300	6465	8905
60°	5791	5965	8526
65°	4936	5382	8254
70°	3837	4656	7401
75°	2554	3809	6757
80°	1276	2966	6064
85°	376	2120	5344

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8980 cd/sqm

TEST NUMBER: P517847

CATALOG NUMBER: HVL8-1-LD4-3LO-50-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.9	3.2
10°-20°	173.4	9.1
20°-30°	258.1	13.5
30°-40°	310.2	16.2
40°-50°	326.5	17.1
50°-60°	302.9	15.9
60°-70°	239.5	12.5
70°-80°	146.3	7.7
80°-90°	63.8	3.3
90°-100°	19.9	1.0
100°-110°	4.5	0.2
110°-120°	1.8	0.1
120°-130°	1.0	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°	492.4	25.8
0°-40°	802.6	42.0
0°-60°	1432.0	75.0
0°-90°	1881.6	98.6
90°-120°	26.1	1.4
90°-150°	27.4	1.4
90°-180°	27.0	1.4
0°-180°	1909.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	634	634	634	634	634	
5°	632	631	633	640	642	60
15°	598	621	627	607	607	169
25°	540	574	548	564	574	248
35°	460	473	480	524	542	288
45°	376	378	409	474	492	290
55°	277	282	326	398	429	249
65°	175	181	230	304	332	174
75°	66	88	128	197	209	72
85°	6	21	50	97	111	9
90°	0	6	26	61	72	0
95°	0	2	12	34	41	0
105°	0	1	2	7	9	0
115°	0	0	2	3	3	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: P517847

CATALOG NUMBER: HVL8-1-LD4-3LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	633.7	633.7	633.7	633.7	633.7
2.5°	634.5	632.8	629.3	632.7	633.6
5°	632.1	630.8	633.0	640.1	641.9
7.5°	626.8	631.7	637.6	650.5	654.6
10°	619.0	628.3	645.7	656.7	652.4
12.5°	609.4	625.2	648.5	627.1	617.2
15°	598.3	621.3	627.4	606.6	607.0
17.5°	585.3	618.1	599.3	598.8	595.1
20°	571.2	607.2	582.4	581.4	577.4
22.5°	556.1	592.9	567.5	565.4	576.2
25°	539.7	574.2	548.0	564.4	573.5
27.5°	519.2	549.6	531.7	554.9	566.4
30°	498.4	524.3	515.1	547.5	567.9
32.5°	478.9	497.9	501.4	544.6	548.0
35°	460.5	473.2	480.3	524.0	541.8
37.5°	440.2	443.7	462.5	515.3	532.5
40°	419.5	417.3	447.5	501.1	524.9
42.5°	397.3	396.6	431.7	494.0	505.9
45°	376.3	378.0	409.1	473.9	491.6
47.5°	354.7	356.9	387.6	451.8	473.7
50°	329.7	332.5	368.5	432.2	460.5
52.5°	302.6	308.0	350.0	413.6	442.1
55°	277.1	281.7	326.3	397.7	429.3
57.5°	253.9	256.6	301.9	377.7	401.6
60°	231.1	231.7	279.0	355.5	378.4
62.5°	204.9	206.0	255.3	329.3	359.9
65°	175.4	181.0	229.9	304.3	331.9
67.5°	147.9	157.6	204.0	281.3	295.7
70°	118.5	134.9	178.5	254.3	264.5
72.5°	91.5	110.8	152.5	224.1	238.4
75°	66.4	87.9	128.2	197.0	209.4
77.5°	44.7	66.6	105.5	167.0	183.4
80°	26.7	48.7	85.2	139.3	157.7
82.5°	13.7	32.7	66.1	116.8	133.3
85°	5.9	20.7	50.0	96.9	111.3
87.5°	1.7	11.7	36.8	78.4	90.5
90°	0.1	6.2	26.2	61.4	72.4
92.5°	0.1	3.0	18.5	46.5	54.9
95°	0.1	1.5	11.5	33.7	41.2
97.5°	0.1	0.9	7.0	23.9	30.2
100°	0.1	0.8	4.1	15.9	21.6
102.5°	0.1	0.9	2.8	10.1	14.1
105°	0.1	0.9	2.3	6.6	9.3
107.5°	0.3	0.9	2.1	4.9	6.5
110°	0.1	0.8	2.2	3.7	5.0

TEST NUMBER: P517847

CATALOG NUMBER: HVL8-1-LD4-3LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.6	2.1	3.1	3.7
115°	0.1	0.5	1.8	3.0	3.1
117.5°	0.3	0.4	1.4	3.0	3.1
120°	0.3	0.3	1.2	2.8	3.2
122.5°	0.3	0.3	0.9	2.6	3.1
125°	0.1	0.3	0.8	1.9	2.7
127.5°	0.3	0.3	0.6	1.5	2.1
130°	0.3	0.3	0.5	1.2	1.5
132.5°	0.3	0.3	0.4	0.9	1.2
135°	0.3	0.3	0.3	0.6	0.9
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)