

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: P517848

Luminaire Tested: HVL8-1-LD4-3LO-50-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: P517848
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
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2193.9 lumens
Efficiency: N/A
Efficacy: 130.6 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

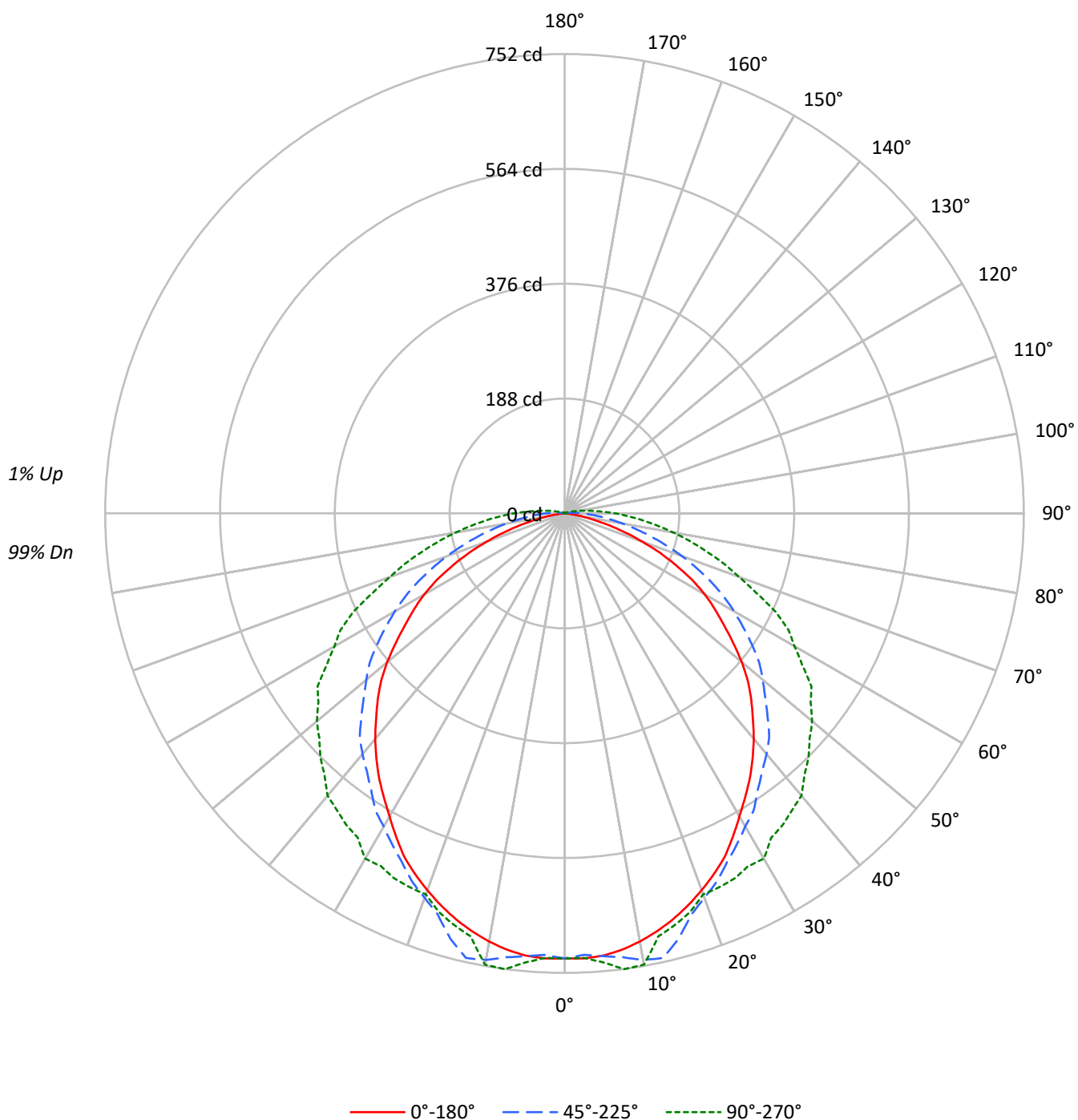
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517848

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

Luminous Intensity Polar Plot



TEST NUMBER: P517848

CATALOG NUMBER: HVL8-1-LD4-3LO-50-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°	11759	11759	11759
5°	11606	11495	11702
10°	11330	11566	11774
15°	11002	11170	10928
20°	10635	10388	10451
25°	10254	9864	10517
30°	9742	9431	10632
35°	9341	9019	10445
40°	8916	8693	10509
45°	8465	8291	10319
50°	7940	7875	10241
55°	7242	7429	10234
60°	6655	6854	9797
65°	5674	6185	9485
70°	4410	5353	8507
75°	2934	4376	7764
80°	1467	3408	6971
85°	434	2434	6141

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10319 cd/sqm

TEST NUMBER: P517848

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.0	3.2
10°-20°	199.3	9.1
20°-30°	296.6	13.5
30°-40°	356.5	16.2
40°-50°	375.2	17.1
50°-60°	348.2	15.9
60°-70°	275.3	12.5
70°-80°	168.2	7.7
80°-90°	73.3	3.3
90°-100°	22.8	1.0
100°-110°	5.1	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°	565.9	25.8
0°-40°	922.4	42.0
0°-60°	1645.8	75.0
0°-90°	2162.5	98.6
90°-120°	30.0	1.4
90°-150°	31.4	1.4
90°-180°	31.0	1.4
0°-180°	2193.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	728	728	728	728	728	
5°	726	725	728	736	738	69
15°	688	714	721	697	698	194
25°	620	660	630	649	659	285
35°	529	544	552	602	623	331
45°	432	434	470	545	565	333
55°	318	324	375	457	493	286
65°	202	208	264	350	381	200
75°	76	101	147	226	241	83
85°	7	24	57	111	128	11
90°	0	7	30	71	83	0
95°	0	2	13	39	47	0
105°	0	1	3	8	11	0
115°	0	1	2	3	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: P517848

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	728.3	728.3	728.3	728.3	728.3
2.5°	729.2	727.3	723.2	727.1	728.1
5°	726.5	725.0	727.5	735.7	737.8
7.5°	720.4	726.1	732.7	747.6	752.3
10°	711.4	722.1	742.1	754.7	749.8
12.5°	700.4	718.5	745.3	720.7	709.3
15°	687.6	714.0	721.0	697.1	697.6
17.5°	672.7	710.3	688.8	688.2	683.9
20°	656.5	697.9	669.4	668.2	663.6
22.5°	639.1	681.4	652.2	649.8	662.3
25°	620.3	659.9	629.8	648.6	659.2
27.5°	596.7	631.7	611.1	637.8	651.0
30°	572.8	602.6	591.9	629.2	652.6
32.5°	550.4	572.2	576.2	625.9	629.8
35°	529.2	543.9	552.0	602.2	622.7
37.5°	505.9	509.9	531.6	592.2	612.0
40°	482.2	479.6	514.4	575.9	603.2
42.5°	456.6	455.8	496.1	567.8	581.4
45°	432.5	434.4	470.1	544.6	564.9
47.5°	407.7	410.2	445.5	519.3	544.5
50°	378.9	382.2	423.6	496.7	529.2
52.5°	347.8	354.0	402.2	475.3	508.1
55°	318.5	323.7	375.0	457.1	493.4
57.5°	291.8	294.9	347.0	434.1	461.5
60°	265.6	266.3	320.6	408.6	434.8
62.5°	235.4	236.8	293.5	378.5	413.6
65°	201.6	208.0	264.2	349.7	381.4
67.5°	170.0	181.1	234.4	323.3	339.9
70°	136.2	155.0	205.2	292.3	304.0
72.5°	105.2	127.3	175.2	257.5	274.0
75°	76.3	101.0	147.3	226.4	240.6
77.5°	51.3	76.6	121.2	192.0	210.8
80°	30.7	55.9	97.9	160.1	181.3
82.5°	15.7	37.5	76.0	134.3	153.3
85°	6.8	23.7	57.4	111.4	127.9
87.5°	1.9	13.5	42.3	90.1	104.0
90°	0.1	7.1	30.1	70.6	83.2
92.5°	0.1	3.4	21.2	53.4	63.1
95°	0.1	1.8	13.2	38.7	47.3
97.5°	0.1	1.0	8.0	27.4	34.7
100°	0.1	0.9	4.7	18.2	24.8
102.5°	0.1	1.0	3.3	11.6	16.2
105°	0.1	1.0	2.7	7.6	10.7
107.5°	0.3	1.0	2.4	5.6	7.4
110°	0.1	0.9	2.5	4.3	5.8

TEST NUMBER: P517848

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.4	3.6	4.3
115°	0.1	0.6	2.1	3.4	3.6
117.5°	0.3	0.4	1.6	3.4	3.6
120°	0.3	0.3	1.3	3.3	3.7
122.5°	0.3	0.3	1.0	3.0	3.6
125°	0.1	0.3	0.9	2.2	3.1
127.5°	0.3	0.3	0.7	1.8	2.4
130°	0.3	0.3	0.6	1.3	1.8
132.5°	0.3	0.3	0.4	1.0	1.3
135°	0.3	0.3	0.3	0.7	1.0
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)