

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: P517272

Luminaire Tested: HVL12-1-LD4-3LO-50-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517272
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3LO-50-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2291.0 lumens
Efficiency: N/A
Efficacy: 132.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

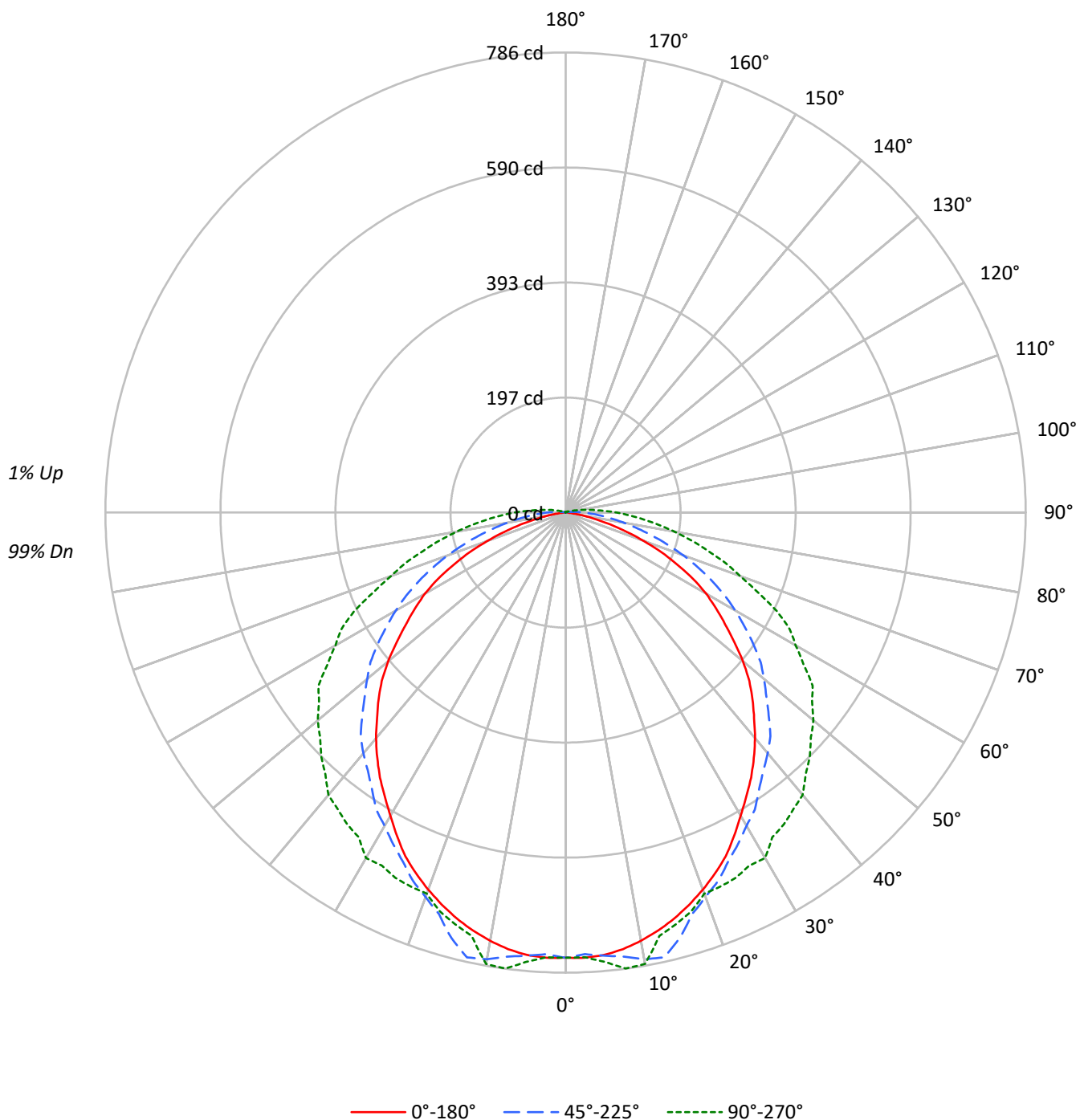
Input Watts (W): 17.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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Luminous Intensity Polar Plot



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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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8186	8186	8186
5°	8079	8043	8205
10°	7887	8132	8314
15°	7659	7892	7770
20°	7403	7374	7483
25°	7138	7037	7585
30°	6781	6762	7727
35°	6502	6501	7651
40°	6207	6301	7765
45°	5892	6047	7697
50°	5528	5782	7720
55°	5041	5498	7811
60°	4632	5118	7586
65°	3949	4667	7473
70°	3069	4093	6851
75°	2041	3403	6443
80°	1023	2711	6032
85°	302	2006	5675

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7811 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.1	3.2
10°-20°	208.1	9.1
20°-30°	309.7	13.5
30°-40°	372.3	16.2
40°-50°	391.8	17.1
50°-60°	363.6	15.9
60°-70°	287.5	12.5
70°-80°	175.6	7.7
80°-90°	76.5	3.3
90°-100°	23.8	1.0
100°-110°	5.4	0.2
110°-120°	2.2	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°	590.9	25.8
0°-40°	963.2	42.0
0°-60°	1718.6	75.0
0°-90°	2258.1	98.6
90°-120°	31.4	1.4
90°-150°	32.9	1.4
90°-180°	33.0	1.4
0°-180°	2291.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	760	760	760	760	760	
5°	759	757	760	768	770	72
15°	718	746	753	728	728	202
25°	648	689	658	677	688	297
35°	553	568	576	629	650	345
45°	452	454	491	569	590	348
55°	333	338	392	477	515	299
65°	210	217	276	365	398	208
75°	80	106	154	236	251	87
85°	7	25	60	116	134	11
90°	0	7	31	74	87	0
95°	0	2	14	40	49	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

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CATALOG NUMBER: HVL12-1-LD4-3LO-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	760.5	760.5	760.5	760.5	760.5
2.5°	761.4	759.4	755.2	759.2	760.3
5°	758.6	757.1	759.7	768.2	770.4
7.5°	752.3	758.2	765.1	780.6	785.6
10°	742.8	754.0	774.9	788.1	783.0
12.5°	731.4	750.3	778.3	752.6	740.7
15°	718.0	745.6	752.9	728.0	728.4
17.5°	702.4	741.7	719.3	718.7	714.2
20°	685.5	728.7	699.0	697.7	692.9
22.5°	667.4	711.5	681.0	678.5	691.5
25°	647.7	689.1	657.6	677.3	688.3
27.5°	623.1	659.6	638.1	666.0	679.8
30°	598.1	629.3	618.1	657.0	681.5
32.5°	574.7	597.5	601.7	653.6	657.6
35°	552.6	567.9	576.4	628.8	650.2
37.5°	528.3	532.4	555.1	618.4	639.0
40°	503.5	500.8	537.1	601.4	629.9
42.5°	476.8	475.9	518.0	592.9	607.1
45°	451.6	453.6	490.9	568.7	589.9
47.5°	425.7	428.3	465.2	542.2	568.5
50°	395.7	399.1	442.3	518.7	552.6
52.5°	363.1	369.6	420.0	496.4	530.6
55°	332.6	338.0	391.6	477.3	515.3
57.5°	304.7	308.0	362.4	453.3	481.9
60°	277.3	278.1	334.8	426.6	454.1
62.5°	245.9	247.2	306.4	395.2	431.9
65°	210.5	217.2	275.9	365.1	398.3
67.5°	177.5	189.2	244.8	337.6	354.9
70°	142.2	161.9	214.3	305.2	317.4
72.5°	109.8	132.9	183.0	268.9	286.1
75°	79.6	105.5	153.8	236.4	251.3
77.5°	53.6	79.9	126.6	200.5	220.1
80°	32.1	58.4	102.2	167.2	189.3
82.5°	16.4	39.2	79.3	140.2	160.0
85°	7.1	24.8	60.0	116.3	133.5
87.5°	2.0	14.1	44.2	94.0	108.6
90°	0.2	7.4	31.4	73.7	86.9
92.5°	0.2	3.6	22.2	55.8	65.8
95°	0.2	1.9	13.8	40.4	49.4
97.5°	0.2	1.1	8.4	28.7	36.3
100°	0.2	0.9	5.0	19.1	25.9
102.5°	0.2	1.1	3.4	12.1	16.9
105°	0.2	1.1	2.8	7.9	11.2
107.5°	0.3	1.1	2.5	5.9	7.7
110°	0.2	0.9	2.6	4.5	6.0

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CATALOG NUMBER: HVL12-1-LD4-3LO-50-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.7	4.5
115°	0.2	0.6	2.2	3.6	3.7
117.5°	0.3	0.5	1.7	3.6	3.7
120°	0.3	0.3	1.4	3.4	3.9
122.5°	0.3	0.3	1.1	3.1	3.7
125°	0.2	0.3	0.9	2.3	3.3
127.5°	0.3	0.3	0.8	1.9	2.5
130°	0.3	0.3	0.6	1.4	1.9
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)