

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: P517219

Luminaire Tested: HVL12-1-LD4-2LO-40-UNV-C-EDD-90

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: P517219
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2LO-40-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1200.1 lumens
Efficiency: N/A
Efficacy: 101.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

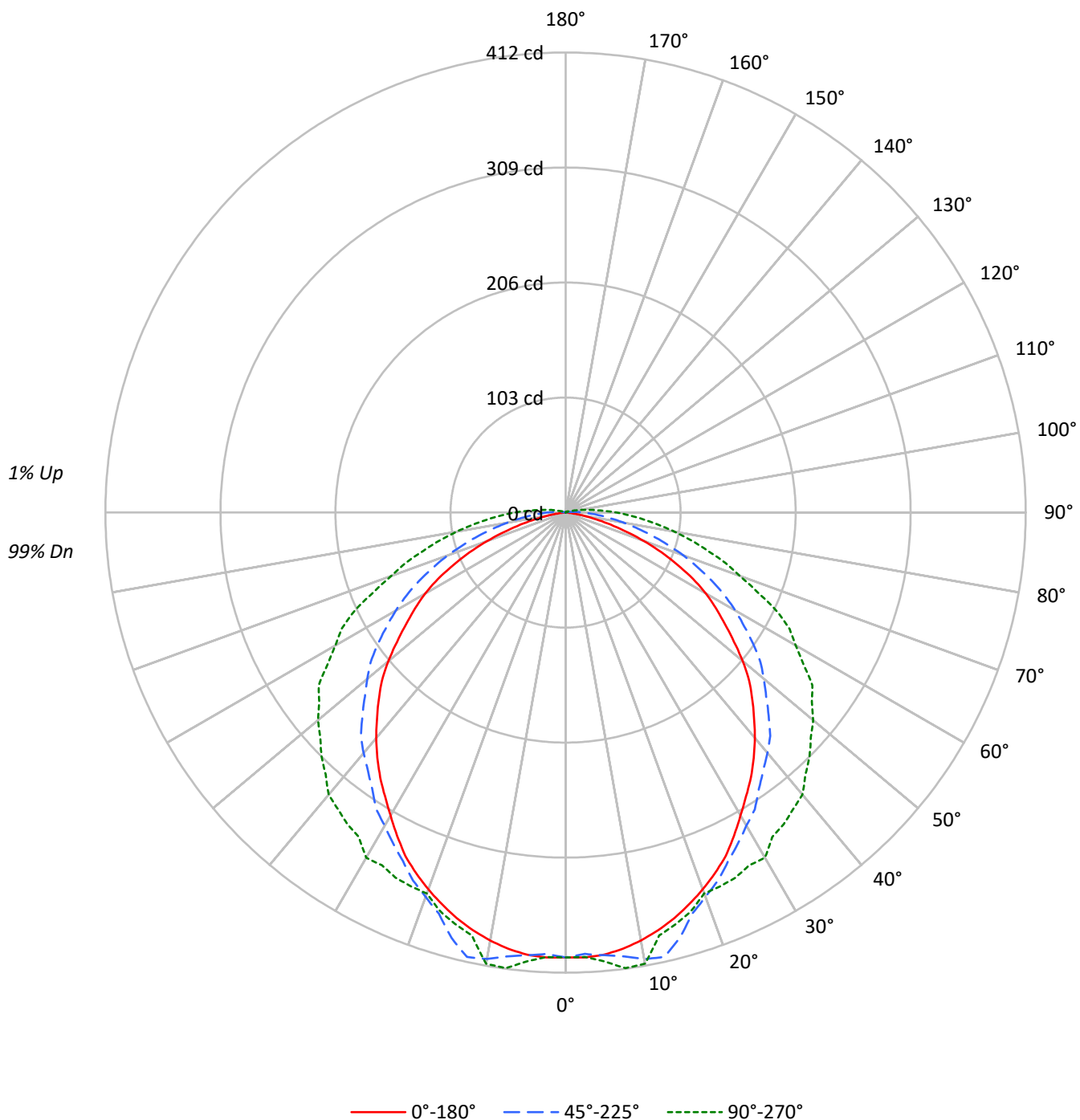
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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	44	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°	4287	4287	4287
5°	4232	4212	4297
10°	4131	4259	4354
15°	4012	4134	4070
20°	3878	3862	3920
25°	3739	3686	3973
30°	3552	3542	4048
35°	3405	3405	4008
40°	3251	3300	4067
45°	3086	3167	4032
50°	2895	3029	4043
55°	2640	2879	4091
60°	2426	2681	3972
65°	2069	2444	3914
70°	1608	2143	3590
75°	1069	1783	3374
80°	535	1422	3161
85°	157	1050	2971

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4091 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	3.2
10°-20°	109.0	9.1
20°-30°	162.2	13.5
30°-40°	195.0	16.2
40°-50°	205.2	17.1
50°-60°	190.4	15.9
60°-70°	150.6	12.5
70°-80°	92.0	7.7
80°-90°	40.1	3.3
90°-100°	12.5	1.0
100°-110°	2.8	0.2
110°-120°	1.1	0.1
120°-130°	0.6	0.1
130°-140°	0.2	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°	309.5	25.8
0°-40°	504.5	42.0
0°-60°	900.2	75.0
0°-90°	1182.8	98.6
90°-120°	16.4	1.4
90°-150°	17.3	1.4
90°-180°	17.0	1.4
0°-180°	1200.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	397	396	398	402	404	38
15°	376	390	394	381	382	106
25°	339	361	344	355	360	156
35°	289	298	302	329	341	181
45°	236	238	257	298	309	182
55°	174	177	205	250	270	157
65°	110	114	144	191	209	109
75°	42	55	81	124	132	46
85°	4	13	31	61	70	6
90°	0	4	16	39	46	0
95°	0	1	7	21	26	0
105°	0	1	2	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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-LD4-2LO-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	398.3	398.3	398.3	398.3	398.3
2.5°	398.8	397.8	395.6	397.7	398.3
5°	397.4	396.5	397.9	402.4	403.5
7.5°	394.0	397.1	400.8	408.9	411.5
10°	389.1	394.9	405.9	412.8	410.1
12.5°	383.1	393.0	407.7	394.2	387.9
15°	376.1	390.5	394.4	381.3	381.5
17.5°	367.9	388.5	376.8	376.4	374.1
20°	359.1	381.7	366.1	365.5	363.0
22.5°	349.6	372.7	356.7	355.4	362.2
25°	339.3	360.9	344.5	354.8	360.5
27.5°	326.4	345.5	334.2	348.8	356.1
30°	313.3	329.6	323.8	344.1	357.0
32.5°	301.0	313.0	315.2	342.3	344.5
35°	289.4	297.5	301.9	329.4	340.6
37.5°	276.7	278.9	290.7	323.9	334.7
40°	263.7	262.3	281.3	315.0	329.9
42.5°	249.8	249.3	271.3	310.5	318.0
45°	236.5	237.6	257.1	297.9	309.0
47.5°	223.0	224.4	243.7	284.0	297.8
50°	207.2	209.0	231.7	271.7	289.4
52.5°	190.2	193.6	220.0	260.0	277.9
55°	174.2	177.1	205.1	250.0	269.9
57.5°	159.6	161.3	189.8	237.4	252.4
60°	145.2	145.7	175.4	223.5	237.8
62.5°	128.8	129.5	160.5	207.0	226.2
65°	110.3	113.8	144.5	191.3	208.6
67.5°	93.0	99.1	128.2	176.8	185.9
70°	74.5	84.8	112.2	159.9	166.3
72.5°	57.5	69.6	95.8	140.9	149.9
75°	41.7	55.3	80.6	123.8	131.6
77.5°	28.1	41.9	66.3	105.0	115.3
80°	16.8	30.6	53.6	87.6	99.2
82.5°	8.6	20.5	41.5	73.4	83.8
85°	3.7	13.0	31.4	60.9	69.9
87.5°	1.1	7.4	23.1	49.3	56.9
90°	0.1	3.9	16.5	38.6	45.5
92.5°	0.1	1.9	11.6	29.2	34.5
95°	0.1	1.0	7.2	21.2	25.9
97.5°	0.1	0.6	4.4	15.0	19.0
100°	0.1	0.5	2.6	10.0	13.6
102.5°	0.1	0.6	1.8	6.3	8.8
105°	0.1	0.6	1.5	4.1	5.8
107.5°	0.2	0.6	1.3	3.1	4.1
110°	0.1	0.5	1.4	2.4	3.2

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CATALOG NUMBER: HVL12-1-LD4-2LO-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	1.9	2.4
115°	0.1	0.3	1.1	1.9	1.9
117.5°	0.2	0.2	0.9	1.9	1.9
120°	0.2	0.2	0.7	1.8	2.0
122.5°	0.2	0.2	0.6	1.6	1.9
125°	0.1	0.2	0.5	1.2	1.7
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.7	1.0
132.5°	0.2	0.2	0.2	0.6	0.7
135°	0.2	0.2	0.2	0.4	0.6
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)