

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: P517196

Luminaire Tested: HVL12-1-LD4-2HI-30-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: P517196
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2HI-30-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2234.0 lumens
Efficiency: N/A
Efficacy: 101.1 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

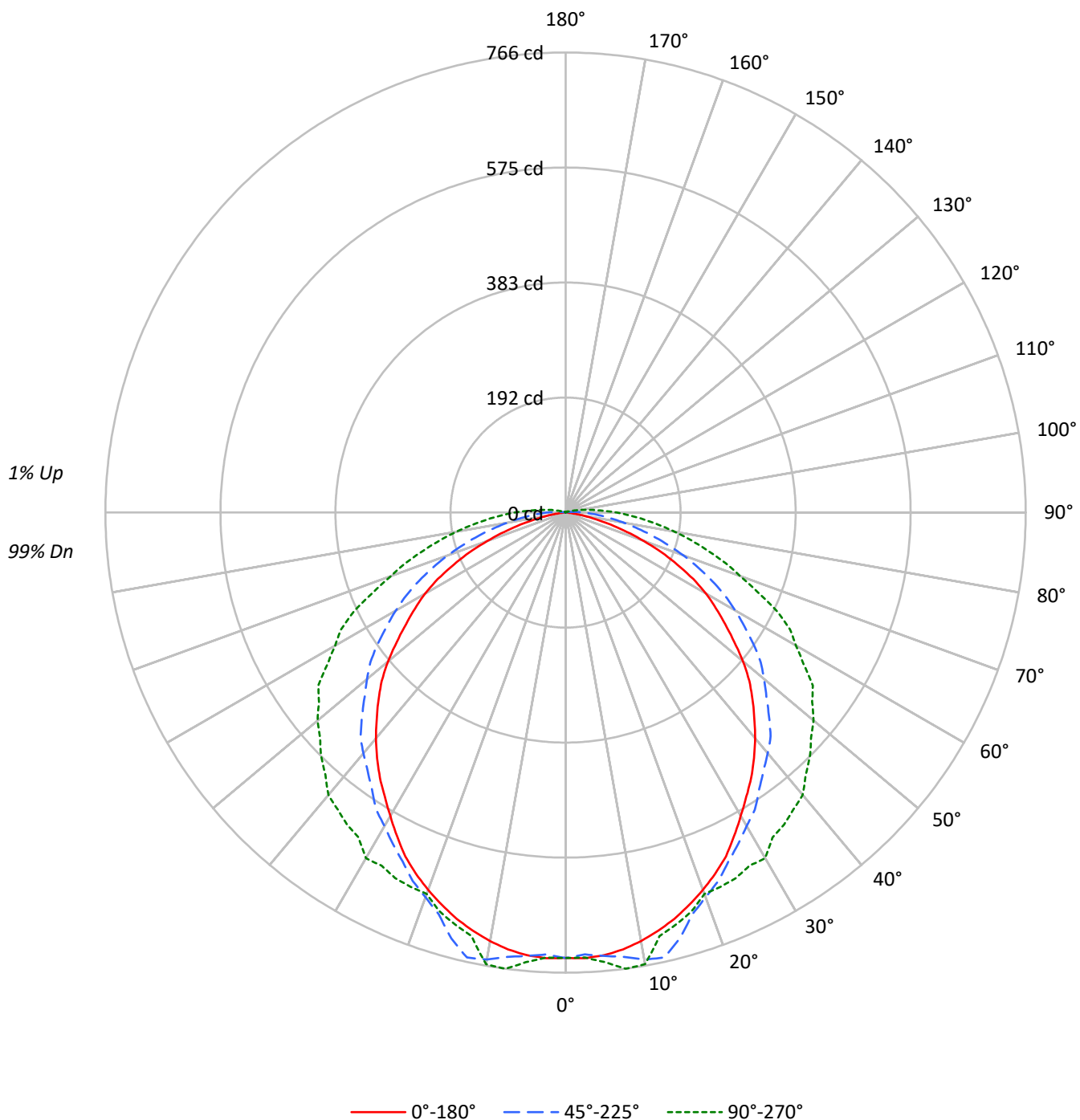
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517196

CATALOG NUMBER: HVL12-1-LD4-2HI-30-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517196

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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°	7983	7983	7983
5°	7879	7843	8000
10°	7691	7929	8107
15°	7469	7696	7577
20°	7219	7191	7297
25°	6960	6862	7397
30°	6613	6594	7534
35°	6340	6340	7460
40°	6053	6143	7571
45°	5745	5897	7505
50°	5390	5638	7527
55°	4916	5362	7615
60°	4517	4989	7397
65°	3852	4551	7287
70°	2994	3990	6681
75°	1990	3319	6281
80°	997	2644	5882
85°	293	1956	5535

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7615 cd/sqm

TEST NUMBER: P517196

CATALOG NUMBER: HVL12-1-LD4-2HI-30-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.3	3.2
10°-20°	203.0	9.1
20°-30°	302.0	13.5
30°-40°	363.0	16.2
40°-50°	382.1	17.1
50°-60°	354.5	15.9
60°-70°	280.3	12.5
70°-80°	171.2	7.7
80°-90°	74.6	3.3
90°-100°	23.2	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°	576.2	25.8
0°-40°	939.2	42.0
0°-60°	1675.8	75.0
0°-90°	2201.9	98.6
90°-120°	30.6	1.4
90°-150°	32.1	1.4
90°-180°	32.0	1.4
0°-180°	2234.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	742	742	742	742	742	
5°	740	738	741	749	751	70
15°	700	727	734	710	710	197
25°	632	672	641	660	671	290
35°	539	554	562	613	634	337
45°	440	442	479	555	575	339
55°	324	330	382	465	502	291
65°	205	212	269	356	388	203
75°	78	103	150	230	245	85
85°	7	24	58	113	130	11
90°	0	7	31	72	85	0
95°	0	2	13	39	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: P517196

CATALOG NUMBER: HVL12-1-LD4-2HI-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	741.6	741.6	741.6	741.6	741.6
2.5°	742.5	740.5	736.4	740.4	741.4
5°	739.8	738.2	740.8	749.1	751.2
7.5°	733.6	739.3	746.1	761.2	766.0
10°	724.3	735.2	755.6	768.5	763.5
12.5°	713.2	731.6	758.9	733.9	722.2
15°	700.2	727.1	734.2	709.8	710.3
17.5°	684.9	723.3	701.4	700.8	696.4
20°	668.5	710.6	681.6	680.4	675.7
22.5°	650.8	693.8	664.1	661.7	674.3
25°	631.6	671.9	641.3	660.4	671.2
27.5°	607.6	643.2	622.2	649.4	662.9
30°	583.3	613.6	602.7	640.7	664.5
32.5°	560.4	582.6	586.7	637.3	641.3
35°	538.8	553.8	562.1	613.2	634.0
37.5°	515.1	519.2	541.3	603.0	623.1
40°	491.0	488.4	523.7	586.4	614.2
42.5°	465.0	464.1	505.2	578.1	592.0
45°	440.3	442.3	478.7	554.6	575.2
47.5°	415.1	417.7	453.6	528.7	554.4
50°	385.8	389.1	431.3	505.8	538.8
52.5°	354.1	360.4	409.5	484.0	517.4
55°	324.3	329.6	381.9	465.4	502.4
57.5°	297.1	300.3	353.3	442.0	470.0
60°	270.4	271.2	326.4	416.0	442.8
62.5°	239.7	241.1	298.8	385.4	421.2
65°	205.3	211.8	269.0	356.1	388.4
67.5°	173.1	184.4	238.7	329.2	346.1
70°	138.7	157.9	208.9	297.6	309.5
72.5°	107.1	129.6	178.4	262.2	279.0
75°	77.6	102.9	150.0	230.5	245.0
77.5°	52.3	77.9	123.4	195.5	214.7
80°	31.3	57.0	99.7	163.0	184.6
82.5°	16.0	38.2	77.3	136.7	156.0
85°	6.9	24.2	58.5	113.4	130.2
87.5°	2.0	13.7	43.1	91.7	105.9
90°	0.2	7.3	30.7	71.9	84.7
92.5°	0.2	3.5	21.6	54.4	64.2
95°	0.2	1.8	13.4	39.4	48.2
97.5°	0.2	1.1	8.2	27.9	35.3
100°	0.2	0.9	4.8	18.6	25.2
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: P517196

CATALOG NUMBER: HVL12-1-LD4-2HI-30-UNV-C-EDD

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)