

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: P517204

Luminaire Tested: HVL12-1-LD4-2HI-40-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: P517204
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2HI-40-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2368.0 lumens
Efficiency: N/A
Efficacy: 107.1 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

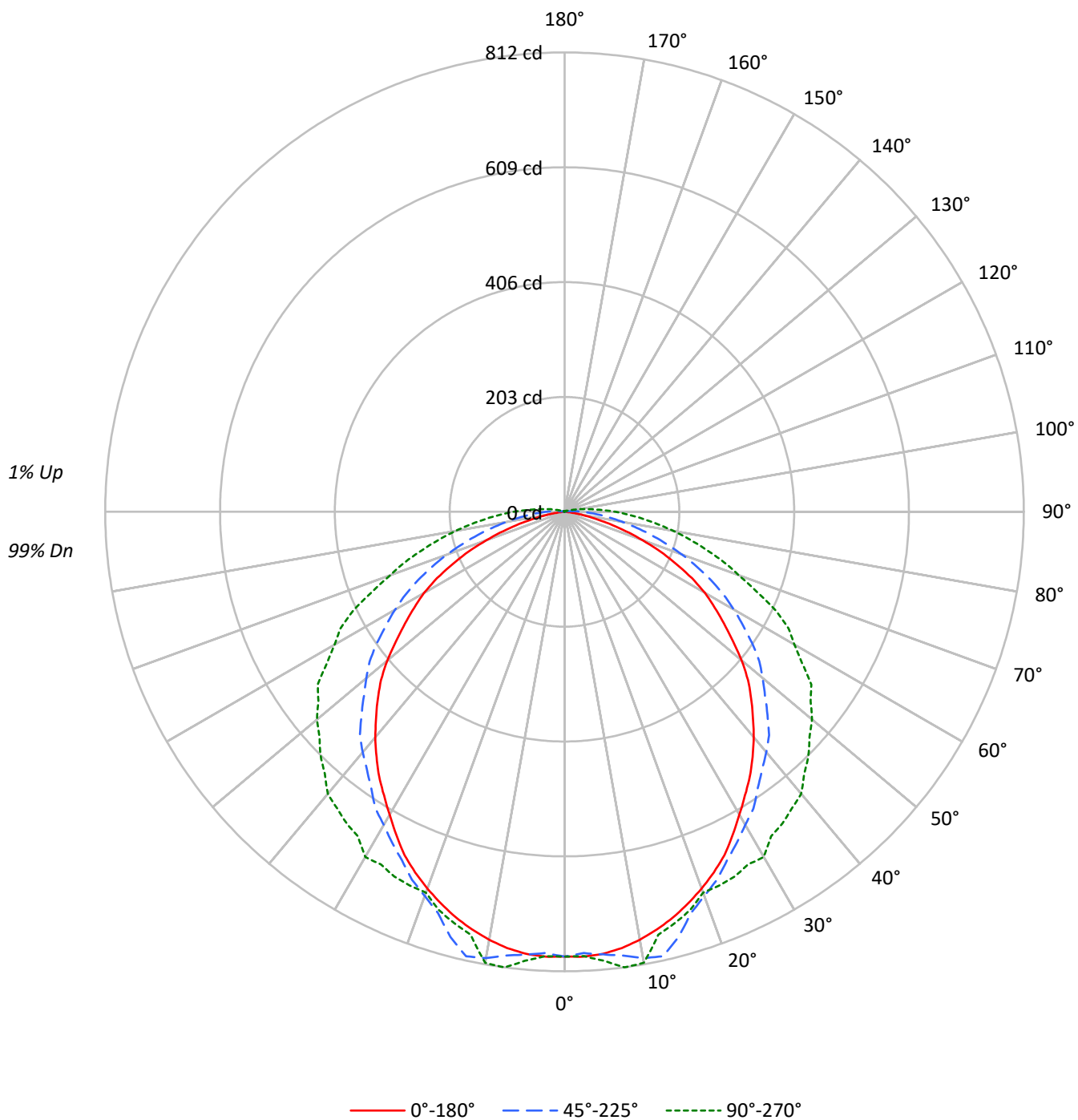
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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°	8460	8460	8460
5°	8350	8313	8480
10°	8152	8404	8593
15°	7917	8157	8031
20°	7651	7622	7735
25°	7378	7273	7840
30°	7009	6990	7986
35°	6721	6720	7907
40°	6415	6512	8026
45°	6091	6250	7956
50°	5714	5977	7980
55°	5211	5683	8073
60°	4788	5289	7839
65°	4083	4825	7724
70°	3173	4231	7082
75°	2110	3518	6658
80°	1055	2804	6236
85°	315	2073	5866

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8073 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	75.5	3.2
10°-20°	215.1	9.1
20°-30°	320.1	13.5
30°-40°	384.8	16.2
40°-50°	405.0	17.1
50°-60°	375.8	15.9
60°-70°	297.1	12.5
70°-80°	181.5	7.7
80°-90°	79.1	3.3
90°-100°	24.6	1.0
100°-110°	5.5	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°	610.8	25.8
0°-40°	995.6	42.0
0°-60°	1776.3	75.0
0°-90°	2334.0	98.6
90°-120°	32.4	1.4
90°-150°	33.9	1.4
90°-180°	34.0	1.4
0°-180°	2368.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	786	786	786	786	786	
5°	784	782	785	794	796	74
15°	742	771	778	752	753	209
25°	670	712	680	700	711	307
35°	571	587	596	650	672	357
45°	467	469	507	588	610	360
55°	344	349	405	493	533	309
65°	218	224	285	377	412	216
75°	82	109	159	244	260	90
85°	7	26	62	120	138	11
90°	0	8	32	76	90	0
95°	0	2	14	42	51	0
105°	0	1	3	8	12	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-LD4-2HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	786.0	786.0	786.0	786.0	786.0
2.5°	787.0	784.9	780.6	784.8	785.9
5°	784.1	782.5	785.2	794.1	796.3
7.5°	777.6	783.6	790.9	806.9	812.0
10°	767.8	779.3	800.9	814.5	809.3
12.5°	755.9	775.5	804.5	777.9	765.6
15°	742.2	770.7	778.2	752.4	752.9
17.5°	726.0	766.7	743.5	742.8	738.2
20°	708.5	753.2	722.5	721.2	716.2
22.5°	689.8	735.4	703.9	701.3	714.8
25°	669.5	712.2	679.7	700.1	711.4
27.5°	644.0	681.8	659.5	688.4	702.6
30°	618.2	650.4	638.9	679.1	704.4
32.5°	594.1	617.6	621.9	675.6	679.7
35°	571.2	587.0	595.8	649.9	672.0
37.5°	546.0	550.3	573.7	639.2	660.5
40°	520.4	517.7	555.1	621.6	651.1
42.5°	492.9	491.9	535.5	612.8	627.5
45°	466.8	468.8	507.4	587.8	609.8
47.5°	440.0	442.7	480.9	560.4	587.7
50°	409.0	412.5	457.2	536.1	571.2
52.5°	375.3	382.1	434.1	513.0	548.4
55°	343.8	349.4	404.8	493.3	532.6
57.5°	315.0	318.3	374.5	468.5	498.1
60°	286.6	287.4	346.0	441.0	469.3
62.5°	254.1	255.6	316.7	408.5	446.4
65°	217.6	224.5	285.2	377.4	411.7
67.5°	183.5	195.5	253.0	348.9	366.8
70°	147.0	167.3	221.5	315.4	328.1
72.5°	113.5	137.4	189.1	278.0	295.7
75°	82.3	109.0	159.0	244.3	259.7
77.5°	55.4	82.6	130.8	207.2	227.5
80°	33.1	60.4	105.7	172.8	195.7
82.5°	17.0	40.5	82.0	144.9	165.4
85°	7.4	25.6	62.0	120.3	138.0
87.5°	2.1	14.6	45.6	97.2	112.2
90°	0.2	7.7	32.5	76.2	89.8
92.5°	0.2	3.7	22.9	57.6	68.1
95°	0.2	1.9	14.3	41.8	51.1
97.5°	0.2	1.1	8.6	29.6	37.5
100°	0.2	1.0	5.1	19.7	26.7
102.5°	0.2	1.1	3.5	12.5	17.5
105°	0.2	1.1	2.9	8.2	11.5
107.5°	0.3	1.1	2.6	6.1	8.0
110°	0.2	1.0	2.7	4.6	6.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.6	3.8	4.6
115°	0.2	0.6	2.2	3.7	3.8
117.5°	0.3	0.5	1.8	3.7	3.8
120°	0.3	0.3	1.4	3.5	4.0
122.5°	0.3	0.3	1.1	3.2	3.8
125°	0.2	0.3	1.0	2.4	3.4
127.5°	0.3	0.3	0.8	1.9	2.6
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)