

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: P517308

Luminaire Tested: HVL12-2-LD4-1LO-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: P517308
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1LO-30-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1419.0 lumens
Efficiency: N/A
Efficacy: 120.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

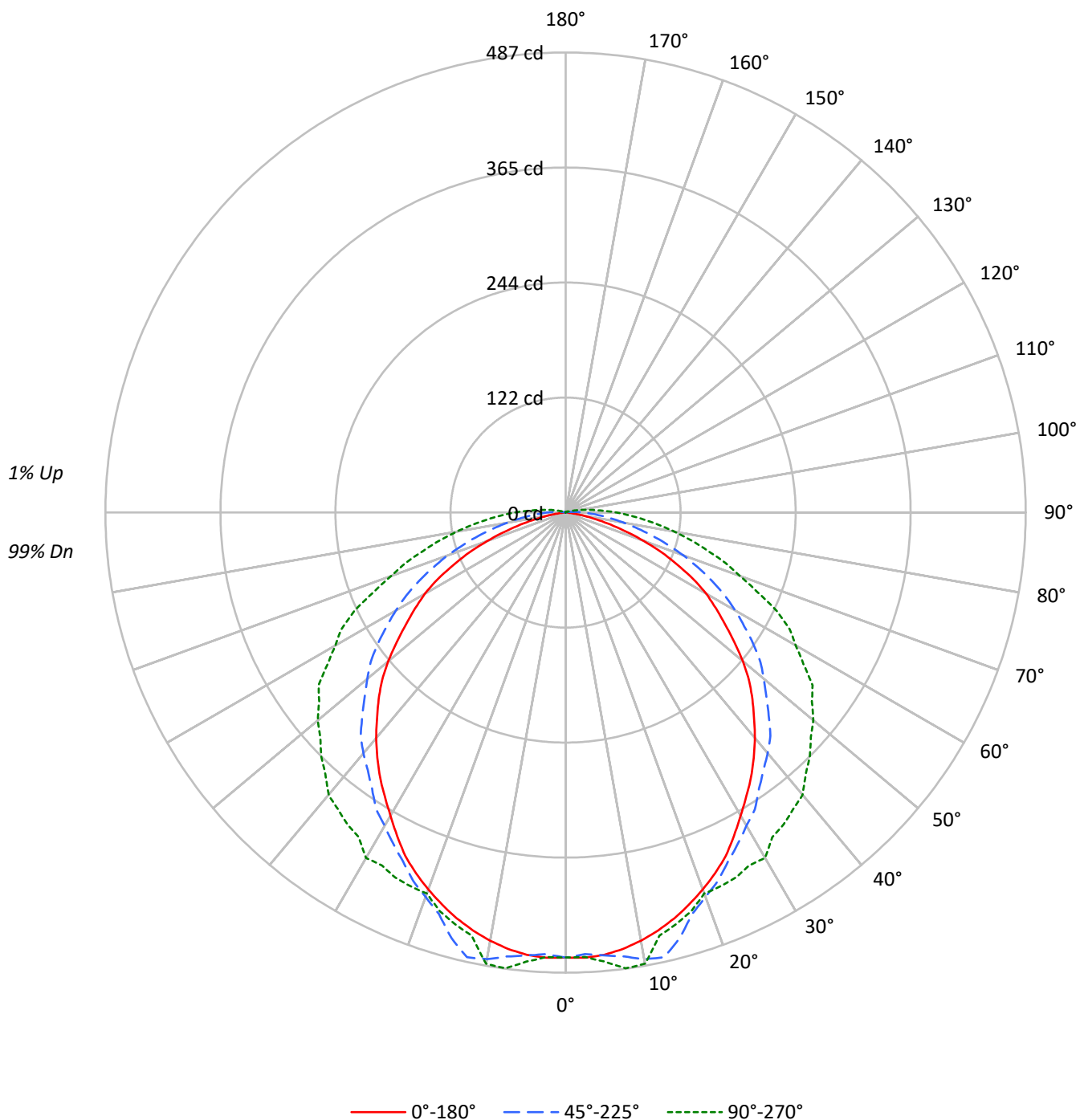
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	2535	2535	2535
5°	2520	2504	2541
10°	2478	2544	2574
15°	2424	2481	2407
20°	2360	2329	2318
25°	2293	2234	2349
30°	2197	2159	2393
35°	2125	2087	2369
40°	2047	2035	2404
45°	1965	1967	2384
50°	1867	1894	2391
55°	1727	1817	2418
60°	1616	1709	2349
65°	1409	1578	2314
70°	1128	1405	2122
75°	782	1194	1995
80°	419	980	1869
85°	139	758	1758

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2418 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.3	3.2
10°-20°	128.9	9.1
20°-30°	191.8	13.5
30°-40°	230.6	16.2
40°-50°	242.7	17.1
50°-60°	225.2	15.9
60°-70°	178.1	12.5
70°-80°	108.8	7.7
80°-90°	47.4	3.3
90°-100°	14.8	1.0
100°-110°	3.3	0.2
110°-120°	1.3	0.1
120°-130°	0.8	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°	366.0	25.8
0°-40°	596.6	42.0
0°-60°	1064.4	75.0
0°-90°	1398.6	98.6
90°-120°	19.4	1.4
90°-150°	20.4	1.4
90°-180°	20.0	1.4
0°-180°	1419.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	471	471	471	471	471	
5°	470	469	471	476	477	45
15°	445	462	466	451	451	125
25°	401	427	407	420	426	184
35°	342	352	357	390	403	214
45°	280	281	304	352	365	216
55°	206	209	243	296	319	185
65°	130	134	171	226	247	129
75°	49	65	95	146	156	54
85°	4	15	37	72	83	7
90°	0	5	20	46	54	0
95°	0	1	8	25	31	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	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

TEST NUMBER: P517308

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	471.0	471.0	471.0	471.0	471.0
2.5°	471.6	470.4	467.8	470.3	470.9
5°	469.9	468.9	470.6	475.8	477.2
7.5°	465.9	469.6	473.9	483.5	486.6
10°	460.1	467.0	480.0	488.1	484.9
12.5°	453.0	464.7	482.1	466.1	458.7
15°	444.7	461.8	466.3	450.9	451.2
17.5°	435.0	459.4	445.5	445.1	442.3
20°	424.6	451.4	432.9	432.2	429.2
22.5°	413.4	440.7	421.8	420.3	428.3
25°	401.2	426.8	407.3	419.5	426.3
27.5°	385.9	408.6	395.2	412.5	421.0
30°	370.5	389.8	382.9	406.9	422.1
32.5°	356.0	370.1	372.7	404.8	407.3
35°	342.3	351.8	357.0	389.5	402.7
37.5°	327.2	329.8	343.8	383.0	395.8
40°	311.8	310.2	332.7	372.5	390.1
42.5°	295.3	294.8	320.9	367.2	376.0
45°	279.7	280.9	304.1	352.2	365.4
47.5°	263.7	265.3	288.1	335.8	352.1
50°	245.1	247.2	273.9	321.2	342.3
52.5°	224.9	228.9	260.1	307.4	328.6
55°	206.0	209.4	242.6	295.6	319.1
57.5°	188.7	190.8	224.4	280.8	298.5
60°	171.8	172.2	207.4	264.3	281.2
62.5°	152.3	153.1	189.8	244.8	267.5
65°	130.4	134.5	170.9	226.2	246.7
67.5°	110.0	117.2	151.6	209.1	219.8
70°	88.1	100.3	132.7	189.0	196.6
72.5°	68.0	82.3	113.3	166.6	177.2
75°	49.3	65.3	95.3	146.4	155.6
77.5°	33.2	49.5	78.4	124.2	136.3
80°	19.9	36.2	63.3	103.5	117.3
82.5°	10.2	24.3	49.1	86.8	99.1
85°	4.4	15.4	37.1	72.1	82.7
87.5°	1.2	8.7	27.3	58.2	67.3
90°	0.1	4.6	19.5	45.7	53.8
92.5°	0.1	2.2	13.7	34.5	40.8
95°	0.1	1.2	8.5	25.0	30.6
97.5°	0.1	0.7	5.2	17.8	22.5
100°	0.1	0.6	3.1	11.8	16.0
102.5°	0.1	0.7	2.1	7.5	10.5
105°	0.1	0.7	1.7	4.9	6.9
107.5°	0.2	0.7	1.5	3.6	4.8
110°	0.1	0.6	1.6	2.8	3.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.5	2.3	2.8
115°	0.1	0.4	1.3	2.2	2.3
117.5°	0.2	0.3	1.1	2.2	2.3
120°	0.2	0.2	0.9	2.1	2.4
122.5°	0.2	0.2	0.7	1.9	2.3
125°	0.1	0.2	0.6	1.4	2.0
127.5°	0.2	0.2	0.5	1.2	1.5
130°	0.2	0.2	0.4	0.9	1.2
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)