

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: P517319

Luminaire Tested: HVL12-2-LD4-1LO-50-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: P517319
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1LO-50-UNV-C-EDD-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1331.0 lumens
Efficiency: N/A
Efficacy: 112.8 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

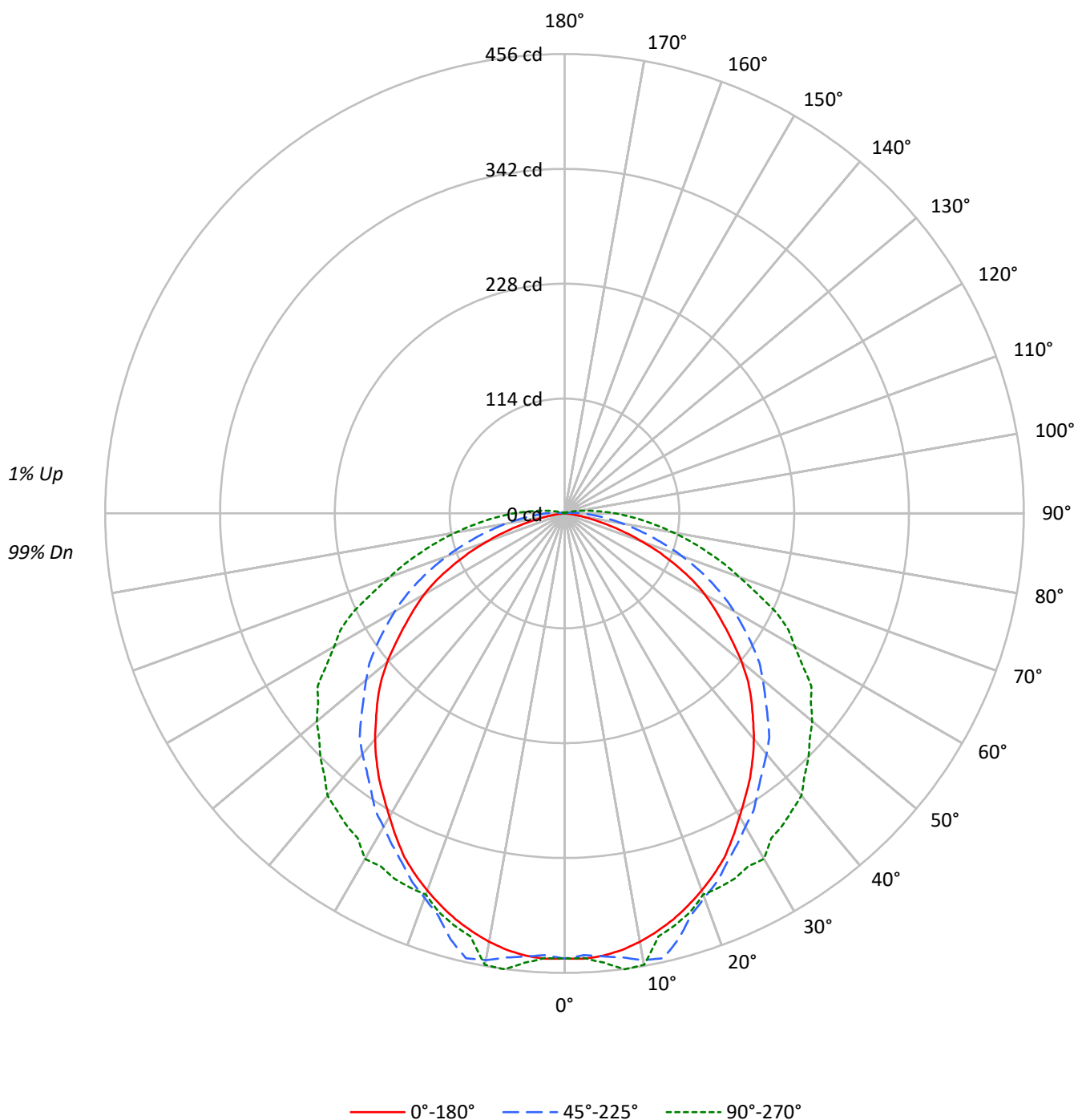
Input Watts (W): 11.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	2378	2378	2378
5°	2364	2348	2383
10°	2325	2386	2415
15°	2274	2327	2257
20°	2214	2185	2174
25°	2151	2096	2203
30°	2060	2025	2244
35°	1993	1958	2222
40°	1921	1909	2255
45°	1844	1845	2236
50°	1751	1777	2242
55°	1620	1704	2268
60°	1515	1603	2203
65°	1321	1480	2171
70°	1058	1319	1990
75°	734	1120	1872
80°	391	919	1752
85°	130	711	1649

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2268 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.5	3.2
10°-20°	120.9	9.1
20°-30°	179.9	13.5
30°-40°	216.3	16.2
40°-50°	227.6	17.1
50°-60°	211.2	15.9
60°-70°	167.0	12.5
70°-80°	102.0	7.7
80°-90°	44.5	3.3
90°-100°	13.8	1.0
100°-110°	3.1	0.2
110°-120°	1.3	0.1
120°-130°	0.7	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°	343.3	25.8
0°-40°	559.6	42.0
0°-60°	998.4	75.0
0°-90°	1311.9	98.6
90°-120°	18.2	1.4
90°-150°	19.1	1.4
90°-180°	19.0	1.4
0°-180°	1331.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	442	442	442	442	442	
5°	441	440	441	446	448	42
15°	417	433	437	423	423	118
25°	376	400	382	394	400	173
35°	321	330	335	365	378	201
45°	262	264	285	330	343	202
55°	193	196	228	277	299	174
65°	122	126	160	212	231	121
75°	46	61	89	137	146	50
85°	4	14	35	68	78	6
90°	0	4	18	43	50	0
95°	0	1	8	24	29	0
105°	0	1	2	5	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	441.8	441.8	441.8	441.8	441.8
2.5°	442.4	441.2	438.8	441.1	441.7
5°	440.7	439.8	441.4	446.3	447.6
7.5°	437.0	440.5	444.5	453.5	456.4
10°	431.6	438.0	450.2	457.8	454.9
12.5°	424.9	435.9	452.2	437.2	430.3
15°	417.2	433.2	437.4	422.9	423.2
17.5°	408.1	430.9	417.9	417.5	414.9
20°	398.3	423.4	406.1	405.4	402.6
22.5°	387.7	413.4	395.6	394.2	401.8
25°	376.3	400.3	382.1	393.5	399.9
27.5°	362.0	383.2	370.7	386.9	394.9
30°	347.5	365.6	359.1	381.7	395.9
32.5°	333.9	347.1	349.6	379.7	382.1
35°	321.0	329.9	334.9	365.3	377.7
37.5°	306.9	309.3	322.5	359.3	371.3
40°	292.5	291.0	312.0	349.4	365.9
42.5°	277.0	276.5	301.0	344.4	352.7
45°	262.4	263.5	285.2	330.4	342.7
47.5°	247.3	248.9	270.3	315.0	330.3
50°	229.9	231.8	257.0	301.3	321.0
52.5°	211.0	214.7	244.0	288.4	308.3
55°	193.2	196.4	227.5	277.3	299.3
57.5°	177.0	178.9	210.5	263.3	280.0
60°	161.1	161.6	194.5	247.9	263.8
62.5°	142.8	143.6	178.0	229.6	250.9
65°	122.3	126.2	160.3	212.1	231.4
67.5°	103.1	109.9	142.2	196.1	206.2
70°	82.6	94.1	124.5	177.3	184.4
72.5°	63.8	77.2	106.3	156.2	166.2
75°	46.3	61.3	89.4	137.3	146.0
77.5°	31.1	46.4	73.5	116.5	127.9
80°	18.6	33.9	59.4	97.1	110.0
82.5°	9.5	22.8	46.1	81.5	93.0
85°	4.1	14.4	34.8	67.6	77.6
87.5°	1.2	8.2	25.7	54.6	63.1
90°	0.1	4.3	18.3	42.8	50.5
92.5°	0.1	2.1	12.9	32.4	38.3
95°	0.1	1.1	8.0	23.5	28.7
97.5°	0.1	0.6	4.9	16.7	21.1
100°	0.1	0.5	2.9	11.1	15.0
102.5°	0.1	0.6	2.0	7.0	9.8
105°	0.1	0.6	1.6	4.6	6.5
107.5°	0.2	0.6	1.4	3.4	4.5
110°	0.1	0.5	1.5	2.6	3.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.4	2.2	2.6
115°	0.1	0.4	1.3	2.1	2.2
117.5°	0.2	0.3	1.0	2.1	2.2
120°	0.2	0.2	0.8	2.0	2.3
122.5°	0.2	0.2	0.6	1.8	2.2
125°	0.1	0.2	0.5	1.4	1.9
127.5°	0.2	0.2	0.5	1.1	1.4
130°	0.2	0.2	0.4	0.8	1.1
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.5	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)