

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: P517268

Luminaire Tested: HVL12-1-LD4-3LO-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: P517268
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3LO-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: 2253.0 lumens
Efficiency: N/A
Efficacy: 130.2 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

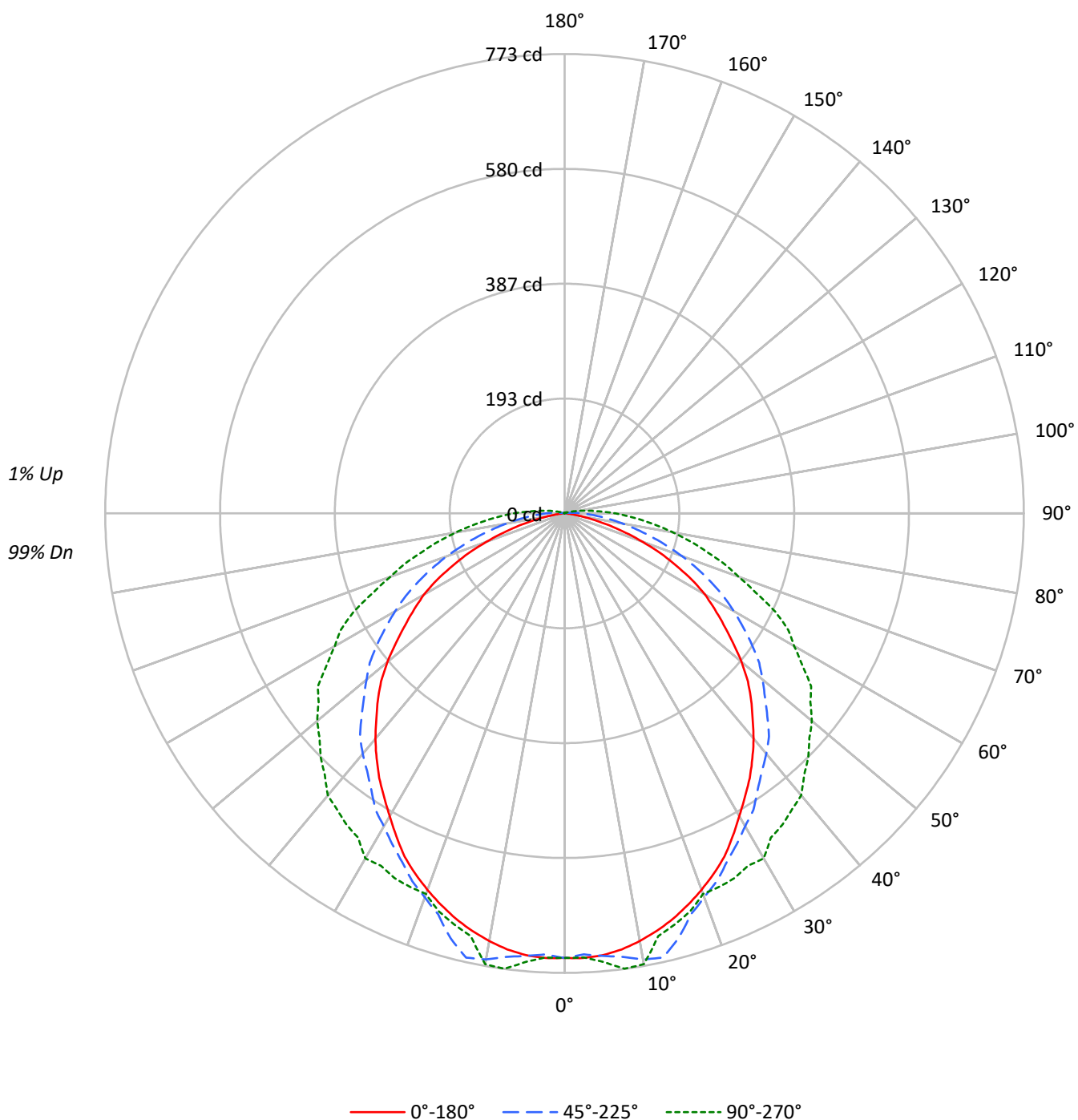
Input Watts (W): 17.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8050	8050	8050
5°	7945	7909	8068
10°	7756	7996	8176
15°	7532	7761	7641
20°	7280	7252	7359
25°	7020	6920	7459
30°	6669	6650	7599
35°	6394	6394	7524
40°	6103	6196	7635
45°	5794	5947	7569
50°	5436	5687	7591
55°	4958	5407	7680
60°	4555	5032	7459
65°	3884	4590	7349
70°	3020	4024	6739
75°	2007	3347	6335
80°	1004	2666	5933
85°	298	1972	5581

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7680 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.9	3.2
10°-20°	204.7	9.1
20°-30°	304.6	13.5
30°-40°	366.1	16.2
40°-50°	385.3	17.1
50°-60°	357.5	15.9
60°-70°	282.7	12.5
70°-80°	172.7	7.7
80°-90°	75.2	3.3
90°-100°	23.4	1.0
100°-110°	5.3	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°	581.1	25.8
0°-40°	947.2	42.0
0°-60°	1690.1	75.0
0°-90°	2220.7	98.6
90°-120°	30.8	1.4
90°-150°	32.3	1.4
90°-180°	32.0	1.4
0°-180°	2253.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	748	748	748	748	748	
5°	746	744	747	756	758	71
15°	706	733	740	716	716	199
25°	637	678	647	666	677	292
35°	543	558	567	618	639	340
45°	444	446	483	559	580	342
55°	327	332	385	469	507	294
65°	207	214	271	359	392	205
75°	78	104	151	232	247	85
85°	7	24	59	114	131	11
90°	0	7	31	72	86	0
95°	0	2	14	40	49	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

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CATALOG NUMBER: HVL12-1-LD4-3LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	747.9	747.9	747.9	747.9	747.9
2.5°	748.8	746.8	742.7	746.7	747.7
5°	746.0	744.5	747.1	755.5	757.6
7.5°	739.8	745.6	752.4	767.7	772.6
10°	730.5	741.5	762.0	775.0	770.0
12.5°	719.2	737.8	765.4	740.1	728.4
15°	706.1	733.2	740.4	715.9	716.3
17.5°	690.7	729.4	707.3	706.7	702.3
20°	674.1	716.6	687.4	686.2	681.4
22.5°	656.3	699.7	669.7	667.3	680.1
25°	637.0	677.6	646.7	666.1	676.9
27.5°	612.7	648.7	627.5	654.9	668.5
30°	588.2	618.8	607.9	646.1	670.2
32.5°	565.2	587.6	591.7	642.8	646.7
35°	543.4	558.5	566.9	618.4	639.4
37.5°	519.5	523.6	545.9	608.2	628.4
40°	495.1	492.5	528.2	591.4	619.4
42.5°	468.9	468.0	509.4	583.0	597.0
45°	444.1	446.1	482.8	559.3	580.1
47.5°	418.7	421.2	457.5	533.2	559.1
50°	389.1	392.4	435.0	510.1	543.4
52.5°	357.1	363.5	413.0	488.1	521.8
55°	327.1	332.4	385.1	469.4	506.7
57.5°	299.7	302.9	356.3	445.8	474.0
60°	272.7	273.5	329.2	419.6	446.5
62.5°	241.8	243.1	301.3	388.6	424.7
65°	207.0	213.6	271.3	359.1	391.7
67.5°	174.6	186.0	240.7	332.0	349.0
70°	139.9	159.2	210.7	300.1	312.2
72.5°	108.0	130.7	179.9	264.5	281.4
75°	78.3	103.7	151.3	232.5	247.1
77.5°	52.7	78.6	124.5	197.1	216.5
80°	31.5	57.4	100.5	164.4	186.2
82.5°	16.1	38.5	78.0	137.9	157.4
85°	7.0	24.4	59.0	114.4	131.3
87.5°	2.0	13.9	43.4	92.5	106.8
90°	0.2	7.3	30.9	72.5	85.5
92.5°	0.2	3.5	21.8	54.8	64.7
95°	0.2	1.8	13.6	39.8	48.6
97.5°	0.2	1.1	8.2	28.2	35.6
100°	0.2	0.9	4.9	18.7	25.4
102.5°	0.2	1.1	3.4	11.9	16.6
105°	0.2	1.1	2.7	7.8	11.0
107.5°	0.3	1.1	2.4	5.8	7.6
110°	0.2	0.9	2.6	4.4	5.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.4	3.7	4.4
115°	0.2	0.6	2.1	3.5	3.7
117.5°	0.3	0.5	1.7	3.5	3.7
120°	0.3	0.3	1.4	3.4	3.8
122.5°	0.3	0.3	1.1	3.0	3.7
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)