

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: P517288

Luminaire Tested: HVL12-1-LD4-3STD-50-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: P517288
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3STD-50-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2951.0 lumens
Efficiency: N/A
Efficacy: 120.4 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

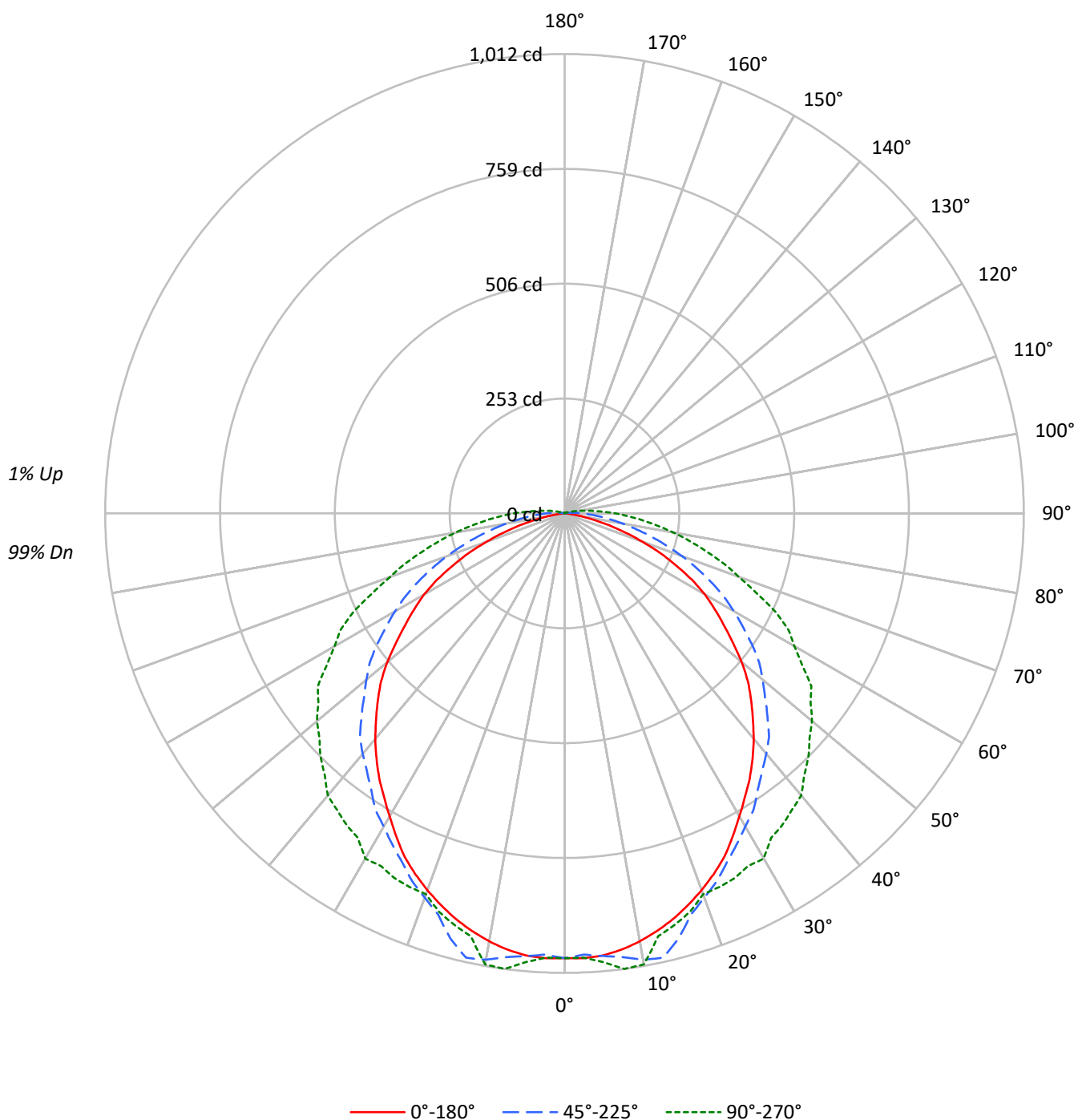
Input Watts (W): 24.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10544	10544	10544
5°	10407	10360	10568
10°	10159	10474	10708
15°	9866	10165	10009
20°	9536	9499	9640
25°	9194	9064	9770
30°	8735	8710	9952
35°	8376	8374	9855
40°	7994	8115	10002
45°	7590	7790	9915
50°	7119	7448	9944
55°	6494	7083	10060
60°	5967	6591	9771
65°	5088	6012	9625
70°	3954	5272	8826
75°	2630	4383	8299
80°	1316	3493	7768
85°	391	2581	7311

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10060 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.1	3.2
10°-20°	268.1	9.1
20°-30°	398.9	13.5
30°-40°	479.5	16.2
40°-50°	504.7	17.1
50°-60°	468.3	15.9
60°-70°	370.3	12.5
70°-80°	226.2	7.7
80°-90°	98.5	3.3
90°-100°	30.7	1.0
100°-110°	6.9	0.2
110°-120°	2.8	0.1
120°-130°	1.6	0.1
130°-140°	0.4	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°	761.2	25.8
0°-40°	1240.7	42.0
0°-60°	2213.7	75.0
0°-90°	2908.7	98.6
90°-120°	40.4	1.4
90°-150°	42.3	1.4
90°-180°	42.0	1.4
0°-180°	2951.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	980	980	980	980	980	
5°	977	975	979	990	992	93
15°	925	960	970	938	938	261
25°	834	888	847	872	887	383
35°	712	732	742	810	838	445
45°	582	584	632	732	760	448
55°	428	435	504	615	664	385
65°	271	280	355	470	513	269
75°	103	136	198	304	324	112
85°	9	32	77	150	172	14
90°	0	10	40	95	112	0
95°	0	2	18	52	64	0
105°	0	1	4	10	14	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	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-LD4-3STD-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	979.6	979.6	979.6	979.6	979.6
2.5°	980.8	978.2	972.8	978.0	979.4
5°	977.2	975.2	978.6	989.5	992.3
7.5°	969.0	976.6	985.6	1005.5	1011.9
10°	956.8	971.2	998.1	1015.1	1008.5
12.5°	942.1	966.4	1002.5	969.4	954.0
15°	924.9	960.4	969.8	937.7	938.3
17.5°	904.7	955.4	926.5	925.7	919.9
20°	883.0	938.7	900.4	898.8	892.6
22.5°	859.6	916.5	877.2	874.0	890.8
25°	834.3	887.6	847.1	872.4	886.6
27.5°	802.6	849.7	821.9	857.8	875.6
30°	770.4	810.6	796.2	846.3	877.8
32.5°	740.3	769.6	775.0	841.9	847.1
35°	711.8	731.5	742.5	810.0	837.5
37.5°	680.5	685.8	715.0	796.6	823.1
40°	648.5	645.1	691.8	774.6	811.4
42.5°	614.2	613.0	667.3	763.7	782.0
45°	581.7	584.3	632.4	732.5	759.9
47.5°	548.4	551.7	599.2	698.4	732.3
50°	509.6	514.0	569.7	668.1	711.8
52.5°	467.7	476.1	541.0	639.3	683.4
55°	428.4	435.4	504.5	614.8	663.7
57.5°	392.5	396.7	466.7	583.9	620.8
60°	357.2	358.2	431.2	549.5	584.9
62.5°	316.7	318.5	394.7	509.0	556.3
65°	271.2	279.8	355.4	470.3	513.0
67.5°	228.7	243.6	315.3	434.8	457.2
70°	183.2	208.5	276.0	393.1	408.9
72.5°	141.5	171.2	235.7	346.4	368.6
75°	102.6	135.9	198.1	304.5	323.7
77.5°	69.0	103.0	163.0	258.2	283.6
80°	41.3	75.2	131.7	215.3	243.8
82.5°	21.2	50.5	102.2	180.6	206.1
85°	9.2	31.9	77.2	149.9	172.0
87.5°	2.6	18.2	56.9	121.1	139.9
90°	0.2	9.6	40.5	95.0	111.9
92.5°	0.2	4.6	28.5	71.8	84.8
95°	0.2	2.4	17.8	52.1	63.7
97.5°	0.2	1.4	10.8	36.9	46.7
100°	0.2	1.2	6.4	24.5	33.3
102.5°	0.2	1.4	4.4	15.6	21.8
105°	0.2	1.4	3.6	10.2	14.4
107.5°	0.4	1.4	3.2	7.6	10.0
110°	0.2	1.2	3.4	5.8	7.8

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CATALOG NUMBER: HVL12-1-LD4-3STD-50-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.2	4.8	5.8
115°	0.2	0.8	2.8	4.6	4.8
117.5°	0.4	0.6	2.2	4.6	4.8
120°	0.4	0.4	1.8	4.4	5.0
122.5°	0.4	0.4	1.4	4.0	4.8
125°	0.2	0.4	1.2	3.0	4.2
127.5°	0.4	0.4	1.0	2.4	3.2
130°	0.4	0.4	0.8	1.8	2.4
132.5°	0.4	0.4	0.6	1.4	1.8
135°	0.4	0.4	0.4	1.0	1.4
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)