

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: P517415

Luminaire Tested: HVL12-2-LD4-3LO-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: P517415
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3LO-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: 3986.0 lumens
Efficiency: N/A
Efficacy: 115.2 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

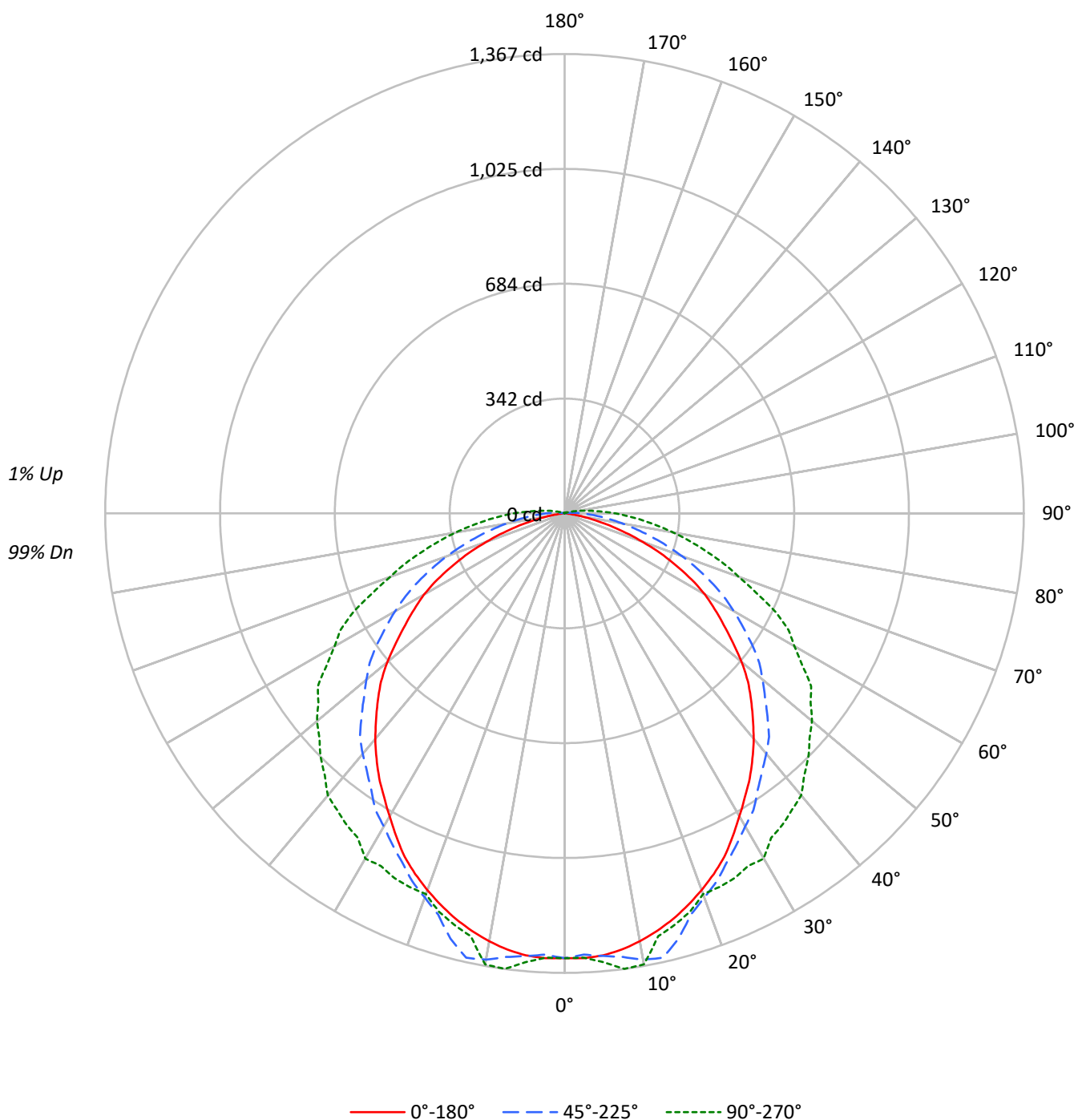
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7121	7121	7121
5°	7079	7032	7137
10°	6961	7145	7232
15°	6809	6968	6759
20°	6630	6544	6510
25°	6442	6277	6598
30°	6171	6064	6722
35°	5968	5863	6655
40°	5752	5717	6755
45°	5520	5524	6696
50°	5243	5322	6716
55°	4852	5105	6794
60°	4538	4800	6598
65°	3957	4432	6501
70°	3168	3948	5961
75°	2197	3352	5605
80°	1174	2753	5248
85°	392	2132	4937

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6794 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.2	3.2
10°-20°	362.1	9.1
20°-30°	538.8	13.5
30°-40°	647.7	16.2
40°-50°	681.7	17.1
50°-60°	632.6	15.9
60°-70°	500.2	12.5
70°-80°	305.5	7.7
80°-90°	133.1	3.3
90°-100°	41.4	1.0
100°-110°	9.3	0.2
110°-120°	3.7	0.1
120°-130°	2.1	0.1
130°-140°	0.6	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°	1028.1	25.8
0°-40°	1675.8	42.0
0°-60°	2990.1	75.0
0°-90°	3928.8	98.6
90°-120°	54.5	1.4
90°-150°	57.1	1.4
90°-180°	57.0	1.4
0°-180°	3986.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1323	1323	1323	1323	1323	
5°	1320	1317	1322	1337	1340	125
15°	1249	1297	1310	1266	1267	352
25°	1127	1199	1144	1178	1198	517
35°	961	988	1003	1094	1131	601
45°	786	789	854	990	1026	606
55°	579	588	681	830	896	520
65°	366	378	480	635	693	363
75°	138	184	268	411	437	151
85°	12	43	104	202	232	19
90°	0	13	55	128	151	1
95°	0	3	24	70	86	0
105°	0	2	5	14	19	0
115°	0	1	4	6	6	0
125°	0	0	2	4	6	0
135°	0	0	0	1	2	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: P517415

CATALOG NUMBER: HVL12-2-LD4-3LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1323.1	1323.1	1323.1	1323.1	1323.1
2.5°	1324.8	1321.2	1314.0	1321.0	1322.9
5°	1319.9	1317.2	1321.8	1336.6	1340.4
7.5°	1308.8	1319.1	1331.2	1358.2	1366.8
10°	1292.4	1311.8	1348.2	1371.1	1362.2
12.5°	1272.5	1305.3	1354.1	1309.4	1288.6
15°	1249.3	1297.3	1309.9	1266.5	1267.3
17.5°	1222.1	1290.5	1251.4	1250.4	1242.5
20°	1192.7	1267.9	1216.1	1214.0	1205.6
22.5°	1161.1	1238.0	1184.9	1180.6	1203.2
25°	1126.9	1198.9	1144.2	1178.4	1197.5
27.5°	1084.1	1147.7	1110.2	1158.7	1182.7
30°	1040.7	1094.8	1075.4	1143.1	1185.7
32.5°	1000.0	1039.6	1046.9	1137.2	1144.2
35°	961.4	988.1	1002.9	1094.0	1131.2
37.5°	919.1	926.4	965.7	1076.0	1111.8
40°	876.0	871.4	934.5	1046.3	1095.9
42.5°	829.6	828.0	901.3	1031.5	1056.3
45°	785.7	789.2	854.1	989.5	1026.4
47.5°	740.7	745.3	809.4	943.4	989.2
50°	688.4	694.3	769.5	902.4	961.4
52.5°	631.8	643.1	730.7	863.6	923.1
55°	578.7	588.1	681.4	830.4	896.5
57.5°	530.2	535.8	630.4	788.7	838.5
60°	482.5	483.8	582.5	742.3	790.0
62.5°	427.7	430.2	533.1	687.6	751.5
65°	366.3	377.9	480.0	635.3	693.0
67.5°	308.9	329.1	425.9	587.3	617.5
70°	247.4	281.7	372.8	531.0	552.3
72.5°	191.1	231.3	318.3	467.9	497.8
75°	138.5	183.6	267.6	411.3	437.2
77.5°	93.3	139.1	220.2	348.8	383.0
80°	55.8	101.6	177.9	290.8	329.4
82.5°	28.6	68.2	138.0	243.9	278.4
85°	12.4	43.1	104.3	202.4	232.3
87.5°	3.5	24.5	76.8	163.6	188.9
90°	0.3	12.9	54.7	128.3	151.2
92.5°	0.3	6.2	38.5	97.0	114.6
95°	0.3	3.2	24.0	70.3	86.0
97.5°	0.3	1.9	14.6	49.9	63.1
100°	0.3	1.6	8.6	33.2	45.0
102.5°	0.3	1.9	5.9	21.0	29.4
105°	0.3	1.9	4.9	13.7	19.4
107.5°	0.5	1.9	4.3	10.2	13.5
110°	0.3	1.6	4.6	7.8	10.5

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CATALOG NUMBER: HVL12-2-LD4-3LO-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.3	6.5	7.8
115°	0.3	1.1	3.8	6.2	6.5
117.5°	0.5	0.8	3.0	6.2	6.5
120°	0.5	0.5	2.4	5.9	6.7
122.5°	0.5	0.5	1.9	5.4	6.5
125°	0.3	0.5	1.6	4.0	5.7
127.5°	0.5	0.5	1.3	3.2	4.3
130°	0.5	0.5	1.1	2.4	3.2
132.5°	0.5	0.5	0.8	1.9	2.4
135°	0.5	0.5	0.5	1.3	1.9
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)