

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: P517255

Luminaire Tested: HVL12-1-LD4-3HI-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: P517255
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3HI-50-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3304.0 lumens
Efficiency: N/A
Efficacy: 102.3 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

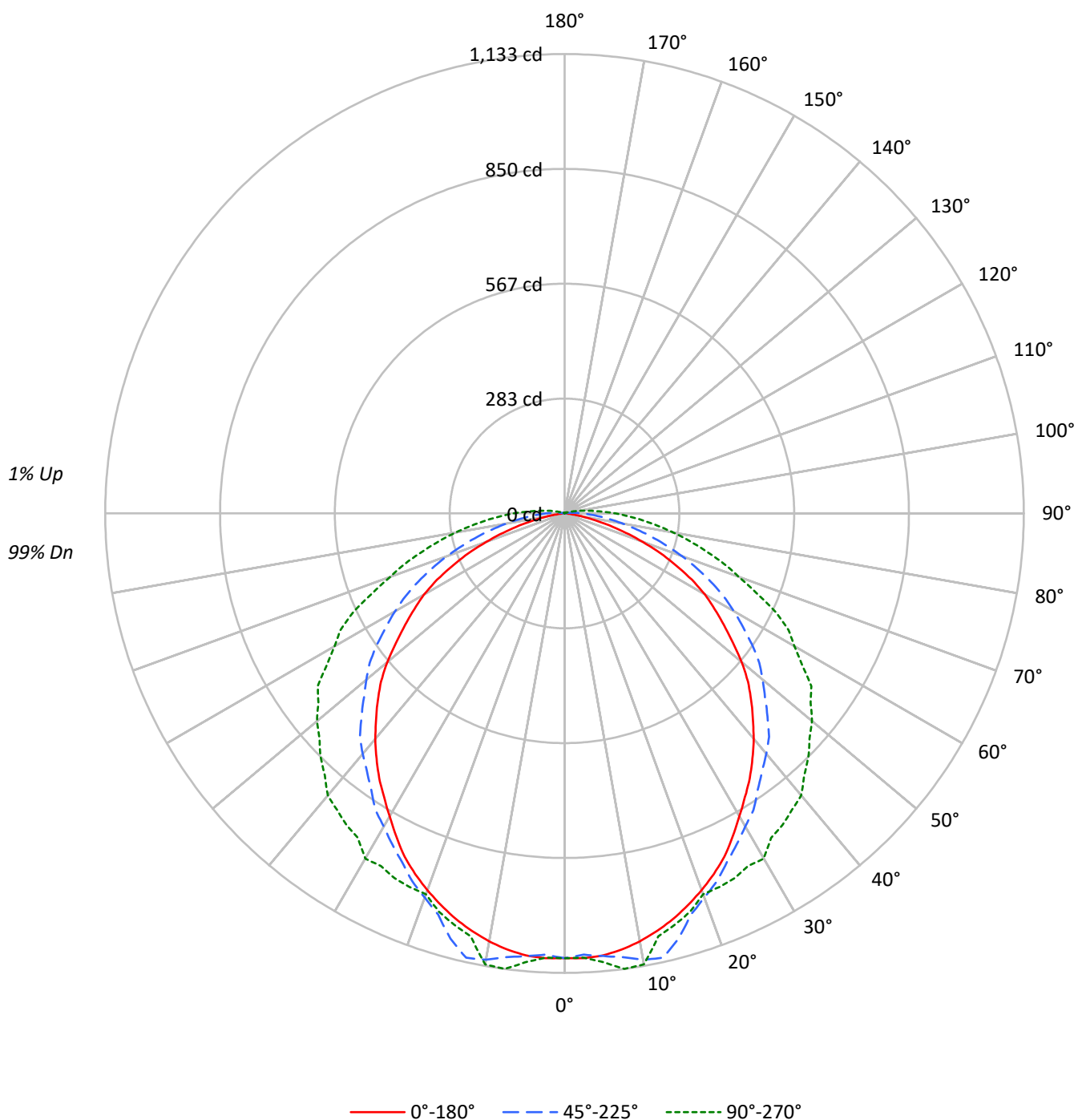
Input Watts (W): 32.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11805	11805	11805
5°	11652	11599	11832
10°	11375	11727	11989
15°	11046	11381	11206
20°	10676	10635	10792
25°	10294	10148	10938
30°	9780	9752	11143
35°	9377	9376	11034
40°	8951	9087	11198
45°	8498	8721	11101
50°	7971	8339	11133
55°	7271	7929	11264
60°	6680	7380	10938
65°	5696	6731	10777
70°	4427	5902	9882
75°	2943	4909	9291
80°	1472	3912	8699
85°	438	2891	8187

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 11264 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.4	3.2
10°-20°	300.2	9.1
20°-30°	446.6	13.5
30°-40°	536.9	16.2
40°-50°	565.1	17.1
50°-60°	524.3	15.9
60°-70°	414.6	12.5
70°-80°	253.2	7.7
80°-90°	110.3	3.3
90°-100°	34.3	1.0
100°-110°	7.7	0.2
110°-120°	3.1	0.1
120°-130°	1.7	0.1
130°-140°	0.5	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°	852.2	25.8
0°-40°	1389.1	42.0
0°-60°	2478.5	75.0
0°-90°	3256.6	98.6
90°-120°	45.2	1.4
90°-150°	47.4	1.4
90°-180°	47.0	1.4
0°-180°	3304.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1097	1097	1097	1097	1097	
5°	1094	1092	1096	1108	1111	104
15°	1036	1075	1086	1050	1050	292
25°	934	994	948	977	993	429
35°	797	819	831	907	938	498
45°	651	654	708	820	851	502
55°	480	488	565	688	743	431
65°	304	313	398	527	574	301
75°	115	152	222	341	362	125
85°	10	36	86	168	193	16
90°	0	11	45	106	125	0
95°	0	3	20	58	71	0
105°	0	2	4	11	16	0
115°	0	1	3	5	5	0
125°	0	0	1	3	5	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1096.7	1096.7	1096.7	1096.7	1096.7
2.5°	1098.1	1095.2	1089.2	1095.0	1096.5
5°	1094.1	1091.8	1095.6	1107.9	1111.0
7.5°	1084.9	1093.4	1103.5	1125.8	1132.9
10°	1071.3	1087.4	1117.5	1136.5	1129.1
12.5°	1054.7	1082.0	1122.4	1085.4	1068.2
15°	1035.5	1075.3	1085.8	1049.8	1050.5
17.5°	1013.0	1069.7	1037.3	1036.4	1029.9
20°	988.6	1050.9	1008.1	1006.3	999.3
22.5°	962.5	1026.1	982.1	978.6	997.3
25°	934.1	993.8	948.4	976.8	992.6
27.5°	898.6	951.3	920.2	960.5	980.3
30°	862.6	907.5	891.4	947.5	982.8
32.5°	828.9	861.7	867.7	942.6	948.4
35°	796.9	819.0	831.3	906.8	937.7
37.5°	761.8	767.9	800.5	891.9	921.6
40°	726.1	722.3	774.6	867.3	908.4
42.5°	687.7	686.3	747.1	855.0	875.6
45°	651.3	654.2	708.0	820.2	850.8
47.5°	613.9	617.7	670.9	782.0	819.9
50°	570.6	575.5	637.9	748.0	796.9
52.5°	523.7	533.1	605.7	715.8	765.2
55°	479.7	487.5	564.8	688.3	743.1
57.5°	439.5	444.2	522.6	653.7	695.0
60°	399.9	401.0	482.8	615.3	654.8
62.5°	354.6	356.6	441.9	569.9	622.9
65°	303.6	313.2	397.9	526.6	574.4
67.5°	256.0	272.8	353.0	486.8	511.8
70°	205.1	233.5	309.0	440.1	457.8
72.5°	158.4	191.7	263.9	387.8	412.6
75°	114.8	152.1	221.9	340.9	362.4
77.5°	77.3	115.3	182.5	289.1	317.5
80°	46.2	84.2	147.5	241.1	273.0
82.5°	23.7	56.5	114.4	202.2	230.8
85°	10.3	35.7	86.5	167.8	192.6
87.5°	2.9	20.3	63.7	135.6	156.6
90°	0.2	10.7	45.4	106.3	125.3
92.5°	0.2	5.1	31.9	80.4	95.0
95°	0.2	2.7	19.9	58.3	71.3
97.5°	0.2	1.6	12.1	41.3	52.3
100°	0.2	1.3	7.1	27.5	37.3
102.5°	0.2	1.6	4.9	17.4	24.4
105°	0.2	1.6	4.0	11.4	16.1
107.5°	0.4	1.6	3.6	8.5	11.2
110°	0.2	1.3	3.8	6.5	8.7

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CATALOG NUMBER: HVL12-1-LD4-3HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.1	3.6	5.4	6.5
115°	0.2	0.9	3.1	5.1	5.4
117.5°	0.4	0.7	2.5	5.1	5.4
120°	0.4	0.4	2.0	4.9	5.6
122.5°	0.4	0.4	1.6	4.5	5.4
125°	0.2	0.4	1.3	3.4	4.7
127.5°	0.4	0.4	1.1	2.7	3.6
130°	0.4	0.4	0.9	2.0	2.7
132.5°	0.4	0.4	0.7	1.6	2.0
135°	0.4	0.4	0.4	1.1	1.6
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)