

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: P517472

Luminaire Tested: HVL12-4-LD4-1STD-35-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P517472
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-1STD-35-UNV-C-EDD
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3837.0 lumens
Efficiency: N/A
Efficacy: 114.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.17')
CIE Type: Direct

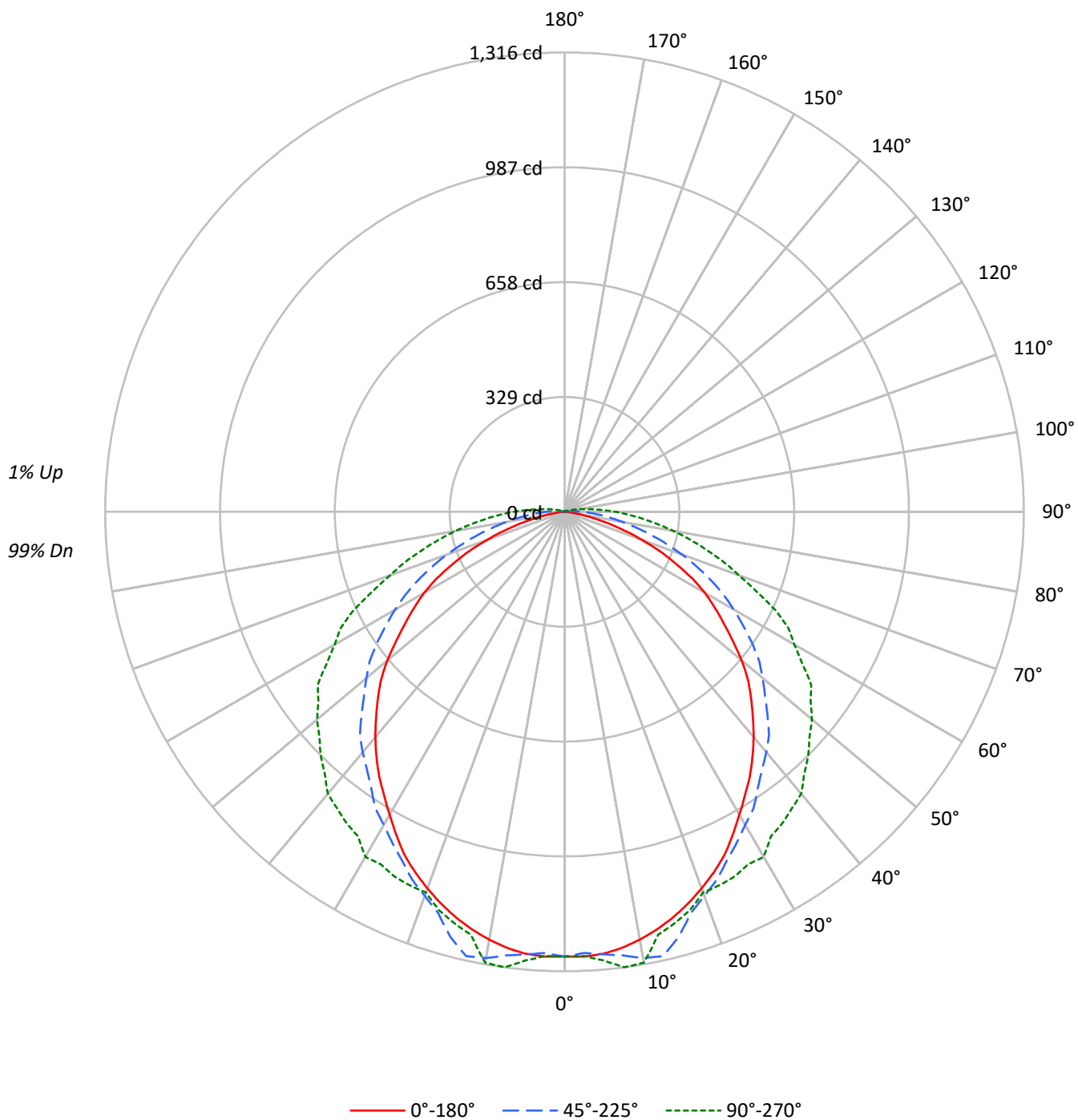
Input Watts (W): 33.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517472

CATALOG NUMBER: HVL12-4-LD4-1STD-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517472

CATALOG NUMBER: HVL12-4-LD4-1STD-35-UNV-C-EDD

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°	3427	3427	3427
5°	3420	3393	3435
10°	3375	3456	3481
15°	3313	3380	3253
20°	3239	3182	3133
25°	3160	3060	3176
30°	3040	2964	3235
35°	2954	2875	3203
40°	2862	2812	3251
45°	2763	2727	3223
50°	2643	2638	3232
55°	2467	2542	3270
60°	2331	2404	3176
65°	2061	2236	3129
70°	1682	2010	2869
75°	1200	1728	2697
80°	673	1445	2526
85°	249	1155	2377

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3270 cd/sqm

TEST NUMBER: P517472

CATALOG NUMBER: HVL12-4-LD4-1STD-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.4	3.2
10°-20°	348.6	9.1
20°-30°	518.7	13.5
30°-40°	623.5	16.2
40°-50°	656.2	17.1
50°-60°	608.9	15.9
60°-70°	481.4	12.5
70°-80°	294.1	7.7
80°-90°	128.1	3.3
90°-100°	39.9	1.0
100°-110°	9.0	0.2
110°-120°	3.6	0.1
120°-130°	2.0	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°	989.7	25.8
0°-40°	1613.2	42.0
0°-60°	2878.3	75.0
0°-90°	3782.0	98.6
90°-120°	52.5	1.4
90°-150°	55.0	1.4
90°-180°	55.0	1.4
0°-180°	3837.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1274	1274	1274	1274	1274	
5°	1271	1268	1272	1287	1290	120
15°	1203	1249	1261	1219	1220	339
25°	1085	1154	1101	1134	1153	498
35°	926	951	965	1053	1089	578
45°	756	760	822	952	988	583
55°	557	566	656	799	863	501
65°	353	364	462	612	667	349
75°	133	177	258	396	421	146
85°	12	42	100	195	224	18
90°	0	12	53	124	146	1
95°	0	3	23	68	83	0
105°	0	2	5	13	19	0
115°	0	1	4	6	6	0
125°	0	0	2	4	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

TEST NUMBER: P517472

CATALOG NUMBER: HVL12-4-LD4-1STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1273.7	1273.7	1273.7	1273.7	1273.7
2.5°	1275.2	1271.9	1264.9	1271.6	1273.4
5°	1270.6	1268.0	1272.4	1286.6	1290.3
7.5°	1259.9	1269.8	1281.5	1307.4	1315.7
10°	1244.1	1262.8	1297.8	1319.9	1311.3
12.5°	1224.9	1256.6	1303.5	1260.4	1240.5
15°	1202.6	1248.8	1261.0	1219.2	1220.0
17.5°	1176.4	1242.3	1204.7	1203.6	1196.1
20°	1148.1	1220.5	1170.7	1168.6	1160.6
22.5°	1117.7	1191.7	1140.6	1136.4	1158.2
25°	1084.8	1154.1	1101.4	1134.3	1152.8
27.5°	1043.5	1104.8	1068.7	1115.4	1138.5
30°	1001.8	1053.9	1035.2	1100.4	1141.4
32.5°	962.6	1000.7	1007.7	1094.6	1101.4
35°	925.5	951.2	965.4	1053.1	1088.9
37.5°	884.7	891.8	929.6	1035.8	1070.3
40°	843.2	838.8	899.5	1007.2	1055.0
42.5°	798.6	797.1	867.6	992.9	1016.8
45°	756.3	759.7	822.2	952.5	988.0
47.5°	713.0	717.4	779.1	908.1	952.2
50°	662.7	668.4	740.8	868.7	925.5
52.5°	608.2	619.1	703.4	831.3	888.6
55°	557.1	566.1	655.9	799.4	863.0
57.5°	510.4	515.8	606.9	759.2	807.2
60°	464.4	465.7	560.7	714.5	760.5
62.5°	411.8	414.1	513.2	661.9	723.4
65°	352.6	363.8	462.1	611.5	667.1
67.5°	297.3	316.8	409.9	565.4	594.4
70°	238.2	271.1	358.8	511.1	531.6
72.5°	184.0	222.6	306.4	450.4	479.2
75°	133.4	176.7	257.6	395.9	420.8
77.5°	89.8	133.9	212.0	335.7	368.7
80°	53.7	97.8	171.2	280.0	317.1
82.5°	27.5	65.6	132.8	234.8	268.0
85°	11.9	41.5	100.4	194.9	223.7
87.5°	3.4	23.6	73.9	157.5	181.9
90°	0.3	12.5	52.7	123.5	145.6
92.5°	0.3	6.0	37.1	93.4	110.3
95°	0.3	3.1	23.1	67.7	82.8
97.5°	0.3	1.8	14.0	48.0	60.7
100°	0.3	1.6	8.3	31.9	43.3
102.5°	0.3	1.8	5.7	20.2	28.3
105°	0.3	1.8	4.7	13.2	18.7
107.5°	0.5	1.8	4.2	9.9	13.0
110°	0.3	1.6	4.4	7.5	10.1

TEST NUMBER: P517472

CATALOG NUMBER: HVL12-4-LD4-1STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.2	6.2	7.5
115°	0.3	1.0	3.6	6.0	6.2
117.5°	0.5	0.8	2.9	6.0	6.2
120°	0.5	0.5	2.3	5.7	6.5
122.5°	0.5	0.5	1.8	5.2	6.2
125°	0.3	0.5	1.6	3.9	5.4
127.5°	0.5	0.5	1.3	3.1	4.2
130°	0.5	0.5	1.0	2.3	3.1
132.5°	0.5	0.5	0.8	1.8	2.3
135°	0.5	0.5	0.5	1.3	1.8
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)