

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: P517568

Luminaire Tested: HVL12-4-LD4-3STD-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: P517568
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-3STD-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: 11492.0 lumens
Efficiency: N/A
Efficacy: 117.1 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

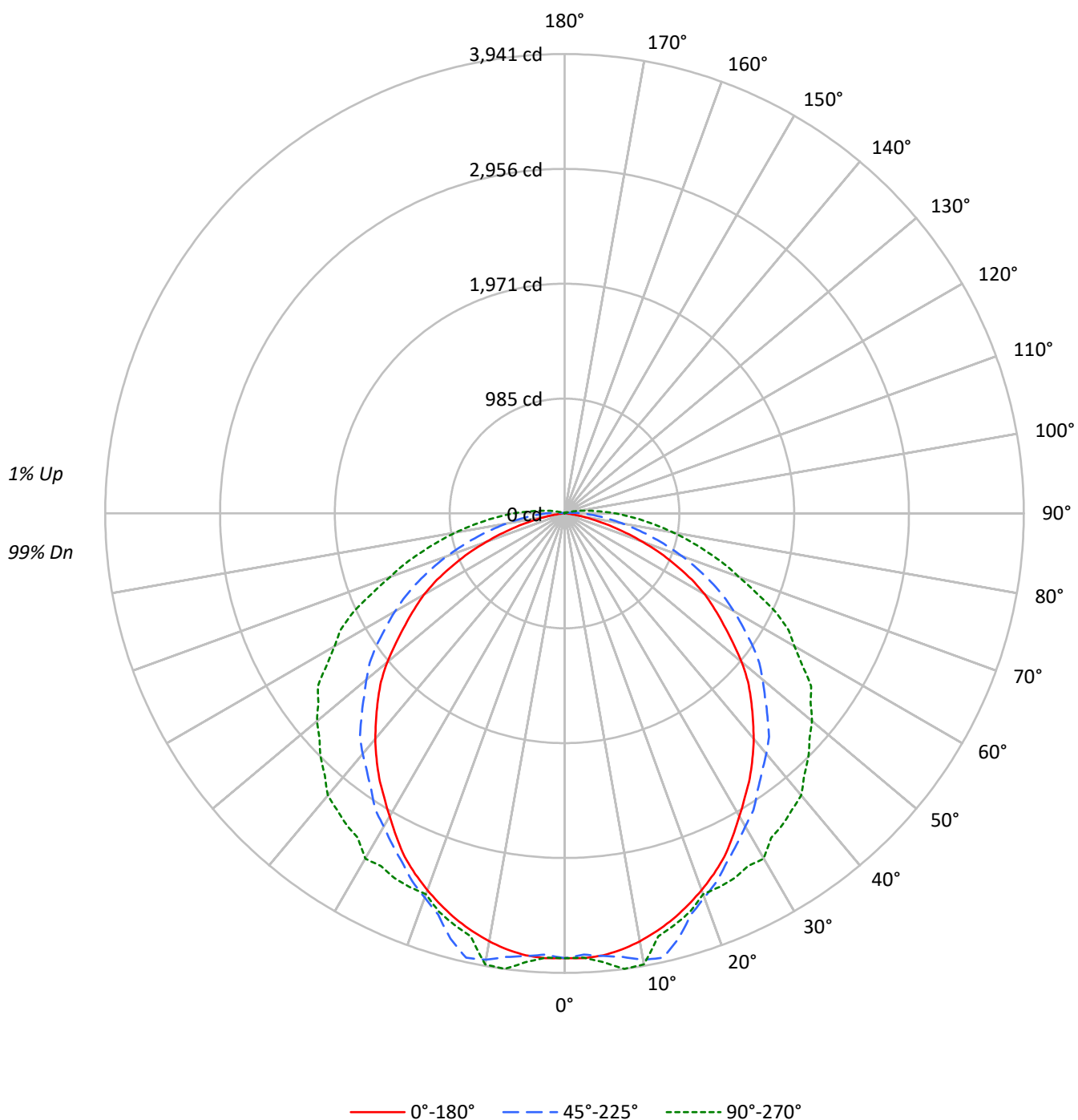
Input Watts (W): 98.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517568

CATALOG NUMBER: HVL12-4-LD4-3STD-35-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517568

CATALOG NUMBER: HVL12-4-LD4-3STD-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°	10265	10265	10265
5°	10242	10163	10289
10°	10107	10352	10425
15°	9923	10122	9744
20°	9700	9530	9384
25°	9463	9165	9512
30°	9104	8879	9689
35°	8848	8610	9594
40°	8572	8423	9737
45°	8276	8168	9652
50°	7916	7901	9681
55°	7388	7614	9794
60°	6982	7200	9512
65°	6173	6697	9371
70°	5036	6019	8593
75°	3594	5176	8079
80°	2017	4330	7564
85°	747	3459	7118

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9794 cd/sqm

TEST NUMBER: P517568

CATALOG NUMBER: HVL12-4-LD4-3STD-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.6	3.2
10°-20°	1044.1	9.1
20°-30°	1553.5	13.5
30°-40°	1867.3	16.2
40°-50°	1965.4	17.1
50°-60°	1823.7	15.9
60°-70°	1442.0	12.5
70°-80°	880.8	7.7
80°-90°	383.8	3.3
90°-100°	119.5	1.0
100°-110°	26.8	0.2
110°-120°	10.8	0.1
120°-130°	6.1	0.1
130°-140°	1.6	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°	2964.2	25.8
0°-40°	4831.5	42.0
0°-60°	8620.7	75.0
0°-90°	11327.2	98.6
90°-120°	157.1	1.4
90°-150°	164.8	1.4
90°-180°	165.0	1.4
0°-180°	11492.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3815	3815	3815	3815	3815	
5°	3805	3798	3811	3854	3864	361
15°	3602	3740	3777	3652	3654	1015
25°	3249	3456	3299	3397	3453	1492
35°	2772	2849	2892	3154	3261	1732
45°	2265	2275	2463	2853	2959	1746
55°	1668	1696	1964	2394	2585	1499
65°	1056	1090	1384	1832	1998	1046
75°	399	529	772	1186	1260	436
85°	36	124	301	584	670	55
90°	1	37	158	370	436	2
95°	1	9	69	203	248	1
105°	1	5	14	40	56	1
115°	1	3	11	18	19	1
125°	1	2	5	12	16	1
135°	2	2	2	4	5	1
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: P517568

CATALOG NUMBER: HVL12-4-LD4-3STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3814.7	3814.7	3814.7	3814.7	3814.7
2.5°	3819.4	3809.3	3788.3	3808.5	3813.9
5°	3805.4	3797.6	3810.8	3853.6	3864.5
7.5°	3773.5	3803.1	3838.0	3915.7	3940.6
10°	3726.1	3782.1	3887.0	3953.0	3927.4
12.5°	3668.6	3763.4	3904.1	3775.1	3715.3
15°	3601.8	3740.1	3776.6	3651.5	3653.9
17.5°	3523.3	3720.7	3608.0	3604.9	3582.4
20°	3438.6	3655.4	3506.2	3500.0	3475.9
22.5°	3347.7	3569.2	3416.1	3403.6	3468.9
25°	3249.0	3456.5	3298.7	3397.4	3452.6
27.5°	3125.4	3308.8	3200.8	3340.7	3409.9
30°	3000.3	3156.5	3100.6	3295.6	3418.4
32.5°	2883.0	2997.2	3018.2	3278.5	3298.7
35°	2771.9	2848.8	2891.5	3154.2	3261.4
37.5°	2649.9	2670.8	2784.3	3102.1	3205.5
40°	2525.5	2512.3	2694.2	3016.7	3159.6
42.5°	2391.9	2387.2	2598.6	2973.9	3045.4
45°	2265.2	2275.3	2462.6	2852.7	2959.1
47.5°	2135.4	2148.6	2333.6	2719.8	2851.9
50°	1984.7	2001.8	2218.6	2601.7	2771.9
52.5°	1821.5	1854.1	2106.7	2489.8	2661.5
55°	1668.4	1695.6	1964.5	2394.2	2584.6
57.5°	1528.5	1544.8	1817.6	2273.8	2417.5
60°	1391.0	1394.9	1679.3	2140.1	2277.6
62.5°	1233.2	1240.2	1537.1	1982.3	2166.5
65°	1056.1	1089.5	1384.0	1831.6	1997.9
67.5°	890.5	948.8	1227.8	1693.3	1780.3
70°	713.4	812.1	1074.7	1530.9	1592.3
72.5°	551.0	666.7	917.7	1349.0	1435.3
75°	399.4	529.2	771.6	1185.8	1260.4
77.5°	268.9	401.0	634.9	1005.6	1104.2
80°	160.9	293.0	512.9	838.5	949.6
82.5°	82.4	196.6	397.9	703.3	802.7
85°	35.7	124.3	300.7	583.6	669.8
87.5°	10.1	70.7	221.5	471.7	544.7
90°	0.8	37.3	157.7	369.9	435.9
92.5°	0.8	17.9	111.1	279.8	330.3
95°	0.8	9.3	69.2	202.8	247.9
97.5°	0.8	5.4	42.0	143.8	181.8
100°	0.8	4.7	24.9	95.6	129.8
102.5°	0.8	5.4	17.1	60.6	84.7
105°	0.8	5.4	14.0	39.6	56.0
107.5°	1.6	5.4	12.4	29.5	38.9
110°	0.8	4.7	13.2	22.5	30.3

TEST NUMBER: P517568

CATALOG NUMBER: HVL12-4-LD4-3STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	3.9	12.4	18.7	22.5
115°	0.8	3.1	10.9	17.9	18.7
117.5°	1.6	2.3	8.5	17.9	18.7
120°	1.6	1.6	7.0	17.1	19.4
122.5°	1.6	1.6	5.4	15.5	18.7
125°	0.8	1.6	4.7	11.7	16.3
127.5°	1.6	1.6	3.9	9.3	12.4
130°	1.6	1.6	3.1	7.0	9.3
132.5°	1.6	1.6	2.3	5.4	7.0
135°	1.6	1.6	1.6	3.9	5.4
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)