

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: P517548

Luminaire Tested: HVL12-4-LD4-3LO-30-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: P517548
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-3LO-30-UNV-C-EDD
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8499.9 lumens
Efficiency: N/A
Efficacy: 122.8 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

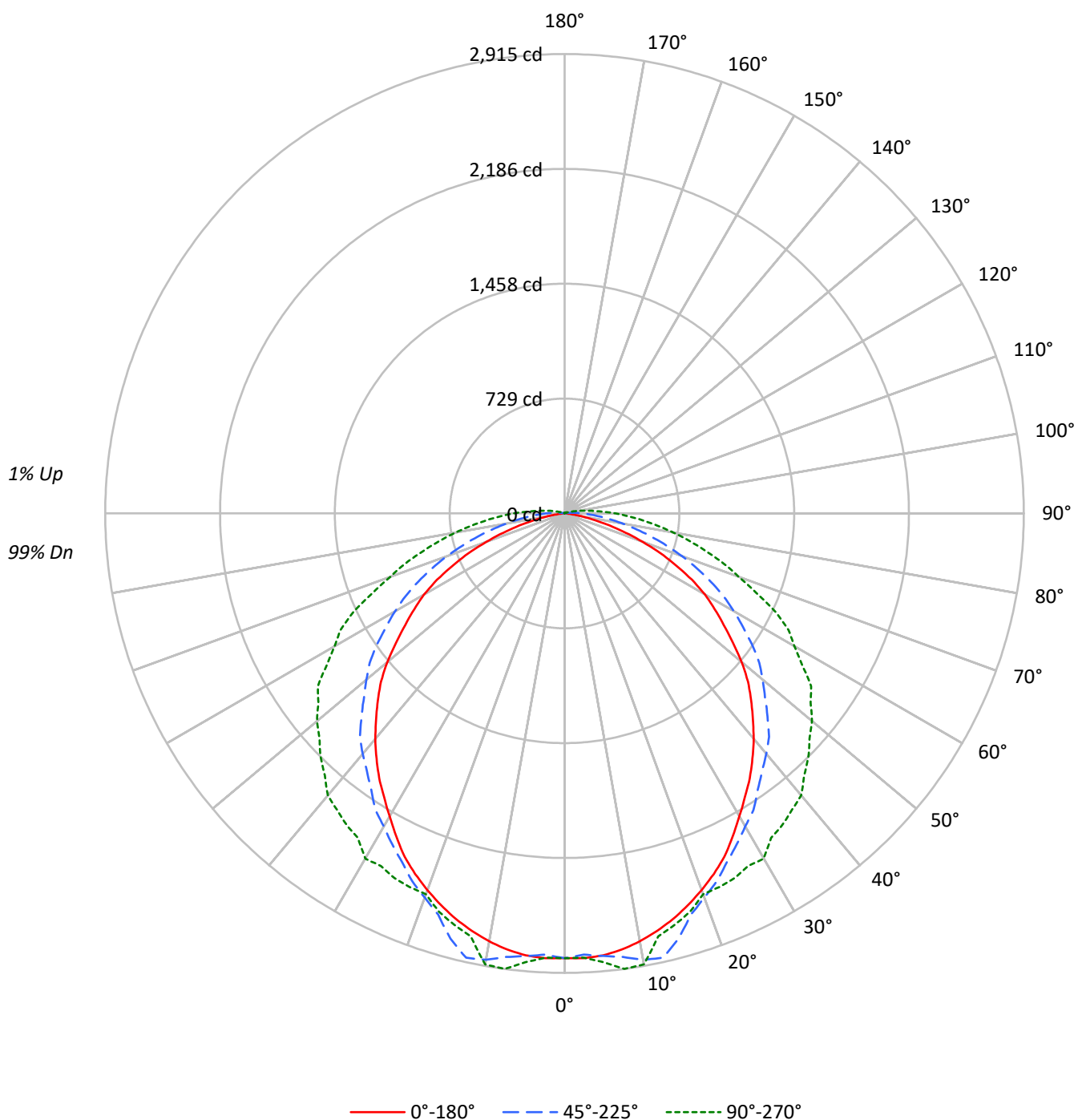
Input Watts (W): 69.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7593	7593	7593
5°	7575	7517	7610
10°	7476	7657	7711
15°	7340	7487	7207
20°	7174	7049	6941
25°	6999	6779	7035
30°	6734	6567	7167
35°	6544	6369	7096
40°	6340	6230	7202
45°	6121	6041	7139
50°	5855	5844	7160
55°	5464	5632	7244
60°	5164	5326	7035
65°	4566	4953	6931
70°	3725	4452	6355
75°	2658	3828	5976
80°	1492	3202	5595
85°	552	2558	5266

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7244 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	271.2	3.2
10°-20°	772.3	9.1
20°-30°	1149.0	13.5
30°-40°	1381.1	16.2
40°-50°	1453.7	17.1
50°-60°	1348.9	15.9
60°-70°	1066.5	12.5
70°-80°	651.5	7.7
80°-90°	283.8	3.3
90°-100°	88.4	1.0
100°-110°	19.8	0.2
110°-120°	8.0	0.1
120°-130°	4.5	0.1
130°-140°	1.2	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°	2192.5	25.8
0°-40°	3573.6	42.0
0°-60°	6376.2	75.0
0°-90°	8378.1	98.6
90°-120°	116.2	1.4
90°-150°	121.8	1.4
90°-180°	122.0	1.4
0°-180°	8499.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2822	2822	2822	2822	2822	
5°	2815	2809	2819	2850	2858	267
15°	2664	2766	2793	2701	2703	750
25°	2403	2557	2440	2513	2554	1103
35°	2050	2107	2139	2333	2412	1281
45°	1675	1683	1821	2110	2189	1292
55°	1234	1254	1453	1771	1912	1109
65°	781	806	1024	1355	1478	774
75°	295	391	571	877	932	322
85°	26	92	222	432	496	41
90°	1	28	117	274	322	1
95°	1	7	51	150	183	0
105°	1	4	10	29	41	1
115°	1	2	8	13	14	1
125°	1	1	3	9	12	1
135°	1	1	1	3	4	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

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CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2821.5	2821.5	2821.5	2821.5	2821.5
2.5°	2825.0	2817.5	2802.0	2816.9	2821.0
5°	2814.6	2808.9	2818.7	2850.3	2858.3
7.5°	2791.1	2812.9	2838.8	2896.3	2914.7
10°	2756.0	2797.4	2875.0	2923.8	2904.9
12.5°	2713.5	2783.6	2887.6	2792.2	2748.0
15°	2664.1	2766.4	2793.4	2700.8	2702.6
17.5°	2606.0	2752.0	2668.6	2666.4	2649.7
20°	2543.3	2703.7	2593.4	2588.8	2570.9
22.5°	2476.1	2639.9	2526.7	2517.5	2565.8
25°	2403.1	2556.6	2439.9	2512.9	2553.7
27.5°	2311.7	2447.4	2367.5	2470.9	2522.1
30°	2219.2	2334.7	2293.3	2437.6	2528.4
32.5°	2132.4	2216.9	2232.4	2424.9	2439.9
35°	2050.2	2107.1	2138.7	2333.0	2412.3
37.5°	1960.0	1975.5	2059.4	2294.5	2370.9
40°	1868.0	1858.2	1992.7	2231.3	2337.0
42.5°	1769.1	1765.7	1922.0	2199.6	2252.5
45°	1675.4	1682.9	1821.4	2110.0	2188.7
47.5°	1579.5	1589.2	1726.0	2011.7	2109.4
50°	1468.0	1480.6	1641.0	1924.3	2050.2
52.5°	1347.3	1371.4	1558.2	1841.6	1968.6
55°	1234.0	1254.1	1453.0	1770.9	1911.7
57.5°	1130.6	1142.6	1344.4	1681.8	1788.1
60°	1028.8	1031.7	1242.1	1582.9	1684.6
62.5°	912.2	917.3	1136.9	1466.2	1602.5
65°	781.1	805.8	1023.7	1354.7	1477.7
67.5°	658.7	701.8	908.1	1252.4	1316.8
70°	527.6	600.6	794.9	1132.3	1177.7
72.5°	407.5	493.2	678.8	997.8	1061.6
75°	295.4	391.4	570.7	877.1	932.3
77.5°	198.9	296.6	469.6	743.8	816.7
80°	119.0	216.7	379.3	620.2	702.4
82.5°	60.9	145.4	294.3	520.2	593.7
85°	26.4	92.0	222.4	431.7	495.5
87.5°	7.5	52.3	163.8	348.9	402.9
90°	0.6	27.6	116.7	273.6	322.4
92.5°	0.6	13.2	82.2	206.9	244.3
95°	0.6	6.9	51.2	150.0	183.4
97.5°	0.6	4.0	31.0	106.3	134.5
100°	0.6	3.4	18.4	70.7	96.0
102.5°	0.6	4.0	12.6	44.8	62.6
105°	0.6	4.0	10.3	29.3	41.4
107.5°	1.1	4.0	9.2	21.8	28.7
110°	0.6	3.4	9.8	16.7	22.4

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CATALOG NUMBER: HVL12-4-LD4-3LO-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	2.9	9.2	13.8	16.7
115°	0.6	2.3	8.0	13.2	13.8
117.5°	1.1	1.7	6.3	13.2	13.8
120°	1.1	1.1	5.2	12.6	14.4
122.5°	1.1	1.1	4.0	11.5	13.8
125°	0.6	1.1	3.4	8.6	12.1
127.5°	1.1	1.1	2.9	6.9	9.2
130°	1.1	1.1	2.3	5.2	6.9
132.5°	1.1	1.1	1.7	4.0	5.2
135°	1.1	1.1	1.1	2.9	4.0
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)