

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: P517400

Luminaire Tested: HVL12-2-LD4-3HI-50-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: P517400
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3HI-50-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7595.0 lumens
Efficiency: N/A
Efficacy: 117.4 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

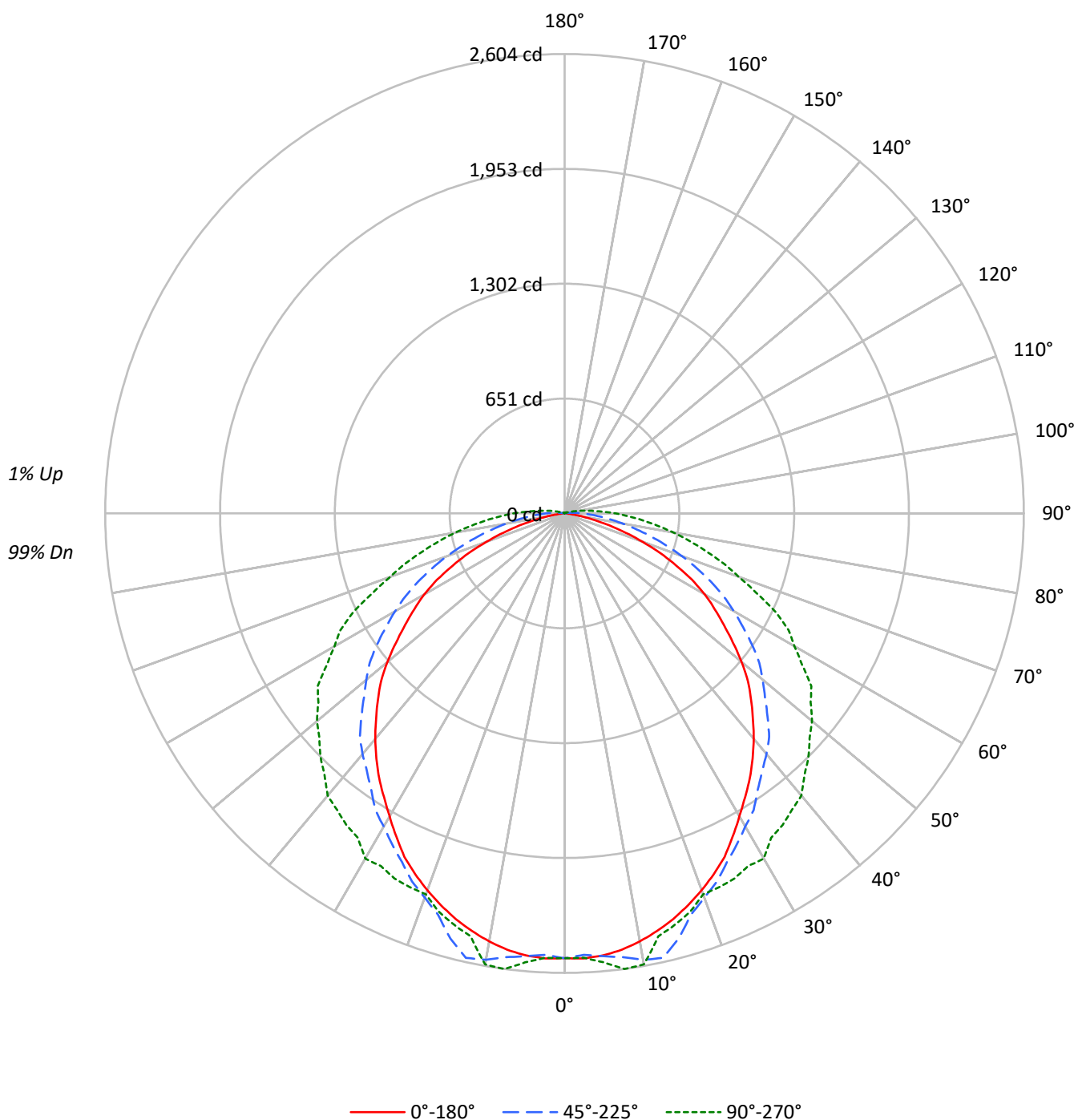
Input Watts (W): 64.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13568	13568	13568
5°	13489	13399	13600
10°	13263	13615	13780
15°	12973	13278	12880
20°	12633	12469	12404
25°	12274	11960	12573
30°	11757	11555	12807
35°	11372	11172	12682
40°	10960	10894	12871
45°	10518	10526	12758
50°	9990	10140	12796
55°	9245	9726	12945
60°	8647	9145	12573
65°	7540	8446	12387
70°	6037	7523	11357
75°	4187	6389	10678
80°	2237	5246	9999
85°	746	4064	9409

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12945 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	242.3	3.2
10°-20°	690.0	9.1
20°-30°	1026.7	13.5
30°-40°	1234.1	16.2
40°-50°	1298.9	17.1
50°-60°	1205.3	15.9
60°-70°	953.0	12.5
70°-80°	582.1	7.7
80°-90°	253.6	3.3
90°-100°	79.0	1.0
100°-110°	17.7	0.2
110°-120°	7.1	0.1
120°-130°	4.0	0.1
130°-140°	1.1	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°	1959.0	25.8
0°-40°	3193.1	42.0
0°-60°	5697.4	75.0
0°-90°	7486.1	98.6
90°-120°	103.8	1.4
90°-150°	108.9	1.4
90°-180°	109.0	1.4
0°-180°	7595.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2521	2521	2521	2521	2521	
5°	2515	2510	2519	2547	2554	238
15°	2380	2472	2496	2413	2415	671
25°	2147	2284	2180	2245	2282	986
35°	1832	1883	1911	2085	2156	1145
45°	1497	1504	1628	1885	1956	1154
55°	1103	1121	1298	1582	1708	991
65°	698	720	915	1210	1320	691
75°	264	350	510	784	833	288
85°	24	82	199	386	443	37
90°	0	25	104	244	288	1
95°	0	6	46	134	164	0
105°	0	4	9	26	37	1
115°	0	2	7	12	12	1
125°	0	1	3	8	11	1
135°	1	1	1	3	4	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: P517400

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2521.1	2521.1	2521.1	2521.1	2521.1
2.5°	2524.2	2517.5	2503.7	2517.0	2520.6
5°	2515.0	2509.8	2518.6	2546.8	2554.0
7.5°	2493.9	2513.4	2536.5	2587.9	2604.3
10°	2462.6	2499.6	2568.9	2612.5	2595.6
12.5°	2424.6	2487.2	2580.2	2494.9	2455.4
15°	2380.4	2471.8	2496.0	2413.3	2414.8
17.5°	2328.5	2459.0	2384.5	2382.5	2367.6
20°	2272.6	2415.8	2317.2	2313.1	2297.2
22.5°	2212.5	2358.8	2257.7	2249.4	2292.6
25°	2147.2	2284.4	2180.1	2245.3	2281.8
27.5°	2065.6	2186.8	2115.4	2207.8	2253.6
30°	1982.9	2086.1	2049.2	2178.1	2259.2
32.5°	1905.4	1980.8	1994.7	2166.8	2180.1
35°	1831.9	1882.8	1911.0	2084.6	2155.5
37.5°	1751.3	1765.1	1840.1	2050.2	2118.5
40°	1669.1	1660.4	1780.6	1993.7	2088.2
42.5°	1580.8	1577.7	1717.4	1965.4	2012.7
45°	1497.1	1503.7	1627.5	1885.3	1955.7
47.5°	1411.3	1420.0	1542.3	1797.5	1884.8
50°	1311.7	1323.0	1466.2	1719.4	1831.9
52.5°	1203.8	1225.4	1392.3	1645.5	1759.0
55°	1102.6	1120.6	1298.3	1582.3	1708.1
57.5°	1010.2	1021.0	1201.2	1502.7	1597.7
60°	919.3	921.9	1109.8	1414.4	1505.3
62.5°	815.0	819.7	1015.8	1310.1	1431.8
65°	697.9	720.0	914.7	1210.5	1320.4
67.5°	588.6	627.1	811.4	1119.1	1176.6
70°	471.5	536.7	710.3	1011.7	1052.3
72.5°	364.1	440.6	606.5	891.6	948.6
75°	264.0	349.7	510.0	783.7	833.0
77.5°	177.7	265.0	419.6	664.6	729.8
80°	106.3	193.6	339.0	554.1	627.6
82.5°	54.4	129.9	262.9	464.8	530.5
85°	23.6	82.2	198.8	385.7	442.7
87.5°	6.7	46.7	146.4	311.7	360.0
90°	0.5	24.7	104.3	244.5	288.1
92.5°	0.5	11.8	73.4	184.9	218.3
95°	0.5	6.2	45.7	134.0	163.8
97.5°	0.5	3.6	27.7	95.0	120.2
100°	0.5	3.1	16.4	63.2	85.8
102.5°	0.5	3.6	11.3	40.1	56.0
105°	0.5	3.6	9.2	26.2	37.0
107.5°	1.0	3.6	8.2	19.5	25.7
110°	0.5	3.1	8.7	14.9	20.0

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.6	8.2	12.3	14.9
115°	0.5	2.1	7.2	11.8	12.3
117.5°	1.0	1.5	5.6	11.8	12.3
120°	1.0	1.0	4.6	11.3	12.8
122.5°	1.0	1.0	3.6	10.3	12.3
125°	0.5	1.0	3.1	7.7	10.8
127.5°	1.0	1.0	2.6	6.2	8.2
130°	1.0	1.0	2.1	4.6	6.2
132.5°	1.0	1.0	1.5	3.6	4.6
135°	1.0	1.0	1.0	2.6	3.6
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)