

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: P517396

Luminaire Tested: HVL12-2-LD4-3HI-40-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: P517396
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3HI-40-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7468.0 lumens
Efficiency: N/A
Efficacy: 115.4 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

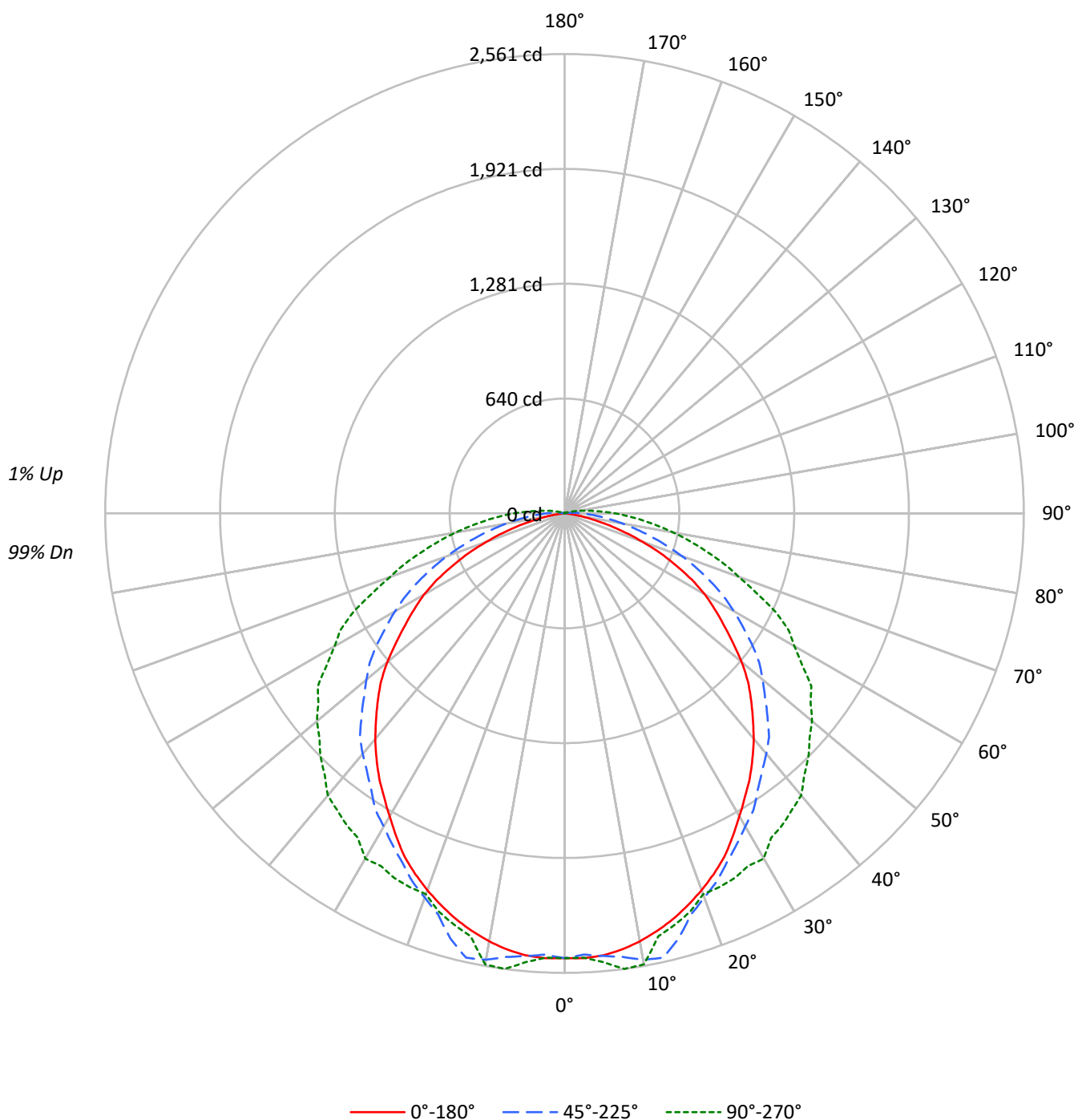
Input Watts (W): 64.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517396

CATALOG NUMBER: HVL12-2-LD4-3HI-40-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517396

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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°	13342	13342	13342
5°	13263	13175	13372
10°	13041	13387	13549
15°	12756	13056	12664
20°	12422	12261	12197
25°	12069	11760	12362
30°	11560	11362	12593
35°	11182	10985	12469
40°	10777	10711	12656
45°	10342	10350	12545
50°	9823	9970	12582
55°	9091	9564	12729
60°	8502	8993	12362
65°	7415	8305	12180
70°	5936	7397	11167
75°	4117	6281	10500
80°	2199	5158	9831
85°	734	3994	9252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12729 cd/sqm

TEST NUMBER: P517396

CATALOG NUMBER: HVL12-2-LD4-3HI-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.3	3.2
10°-20°	678.5	9.1
20°-30°	1009.5	13.5
30°-40°	1213.5	16.2
40°-50°	1277.2	17.1
50°-60°	1185.1	15.9
60°-70°	937.1	12.5
70°-80°	572.4	7.7
80°-90°	249.4	3.3
90°-100°	77.6	1.0
100°-110°	17.4	0.2
110°-120°	7.0	0.1
120°-130°	3.9	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°	1926.3	25.8
0°-40°	3139.7	42.0
0°-60°	5602.1	75.0
0°-90°	7360.9	98.6
90°-120°	102.1	1.4
90°-150°	107.1	1.4
90°-180°	107.0	1.4
0°-180°	7468.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2479	2479	2479	2479	2479	
5°	2473	2468	2476	2504	2511	234
15°	2341	2430	2454	2373	2374	659
25°	2111	2246	2144	2208	2244	969
35°	1801	1851	1879	2050	2119	1126
45°	1472	1479	1600	1854	1923	1135
55°	1084	1102	1277	1556	1680	974
65°	686	708	899	1190	1298	680
75°	260	344	501	771	819	283
85°	23	81	195	379	435	36
90°	0	24	102	240	283	1
95°	0	6	45	132	161	0
105°	0	4	9	26	36	1
115°	0	2	7	12	12	1
125°	0	1	3	8	11	1
135°	1	1	1	2	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: P517396

CATALOG NUMBER: HVL12-2-LD4-3HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.0	2479.0	2479.0	2479.0	2479.0
2.5°	2482.0	2475.4	2461.8	2474.9	2478.5
5°	2472.9	2467.9	2476.4	2504.2	2511.3
7.5°	2452.2	2471.4	2494.1	2544.6	2560.8
10°	2421.4	2457.8	2525.9	2568.9	2552.2
12.5°	2384.0	2445.6	2537.0	2453.2	2414.3
15°	2340.6	2430.5	2454.2	2372.9	2374.4
17.5°	2289.6	2417.9	2344.6	2342.6	2328.0
20°	2234.6	2375.4	2278.5	2274.5	2258.8
22.5°	2175.5	2319.4	2219.9	2211.8	2254.3
25°	2111.3	2246.2	2143.7	2207.8	2243.6
27.5°	2031.0	2150.2	2080.0	2170.9	2215.9
30°	1949.7	2051.2	2014.9	2141.6	2221.4
32.5°	1873.5	1947.7	1961.4	2130.5	2143.7
35°	1801.3	1851.3	1879.0	2049.7	2119.4
37.5°	1722.0	1735.6	1809.4	2015.9	2083.1
40°	1641.2	1632.6	1750.8	1960.4	2053.3
42.5°	1554.3	1551.3	1688.7	1932.6	1979.0
45°	1472.0	1478.6	1600.3	1853.8	1923.0
47.5°	1387.7	1396.3	1516.5	1767.4	1853.3
50°	1289.7	1300.8	1441.7	1690.7	1801.3
52.5°	1183.7	1204.9	1369.0	1618.0	1729.6
55°	1084.2	1101.9	1276.6	1555.9	1679.6
57.5°	993.3	1003.9	1181.2	1477.6	1571.0
60°	903.9	906.4	1091.3	1390.7	1480.1
62.5°	801.4	806.0	998.9	1288.2	1407.9
65°	686.3	708.0	899.4	1190.2	1298.3
67.5°	578.7	616.6	797.9	1100.4	1156.9
70°	463.6	527.7	698.4	994.8	1034.7
72.5°	358.0	433.3	596.4	876.7	932.7
75°	259.6	343.9	501.4	770.6	819.1
77.5°	174.7	260.6	412.6	653.5	717.6
80°	104.5	190.4	333.3	544.9	617.1
82.5°	53.5	127.8	258.6	457.0	521.6
85°	23.2	80.8	195.4	379.2	435.3
87.5°	6.6	46.0	143.9	306.5	354.0
90°	0.5	24.2	102.5	240.4	283.3
92.5°	0.5	11.6	72.2	181.8	214.6
95°	0.5	6.1	44.9	131.8	161.1
97.5°	0.5	3.5	27.3	93.4	118.2
100°	0.5	3.0	16.2	62.1	84.3
102.5°	0.5	3.5	11.1	39.4	55.0
105°	0.5	3.5	9.1	25.8	36.4
107.5°	1.0	3.5	8.1	19.2	25.2
110°	0.5	3.0	8.6	14.6	19.7

TEST NUMBER: P517396

CATALOG NUMBER: HVL12-2-LD4-3HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.5	8.1	12.1	14.6
115°	0.5	2.0	7.1	11.6	12.1
117.5°	1.0	1.5	5.6	11.6	12.1
120°	1.0	1.0	4.5	11.1	12.6
122.5°	1.0	1.0	3.5	10.1	12.1
125°	0.5	1.0	3.0	7.6	10.6
127.5°	1.0	1.0	2.5	6.1	8.1
130°	1.0	1.0	2.0	4.5	6.1
132.5°	1.0	1.0	1.5	3.5	4.5
135°	1.0	1.0	1.0	2.5	3.5
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)