

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: P517392

Luminaire Tested: HVL12-2-LD4-3HI-35-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: P517392
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3HI-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7395.0 lumens
Efficiency: N/A
Efficacy: 114.3 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

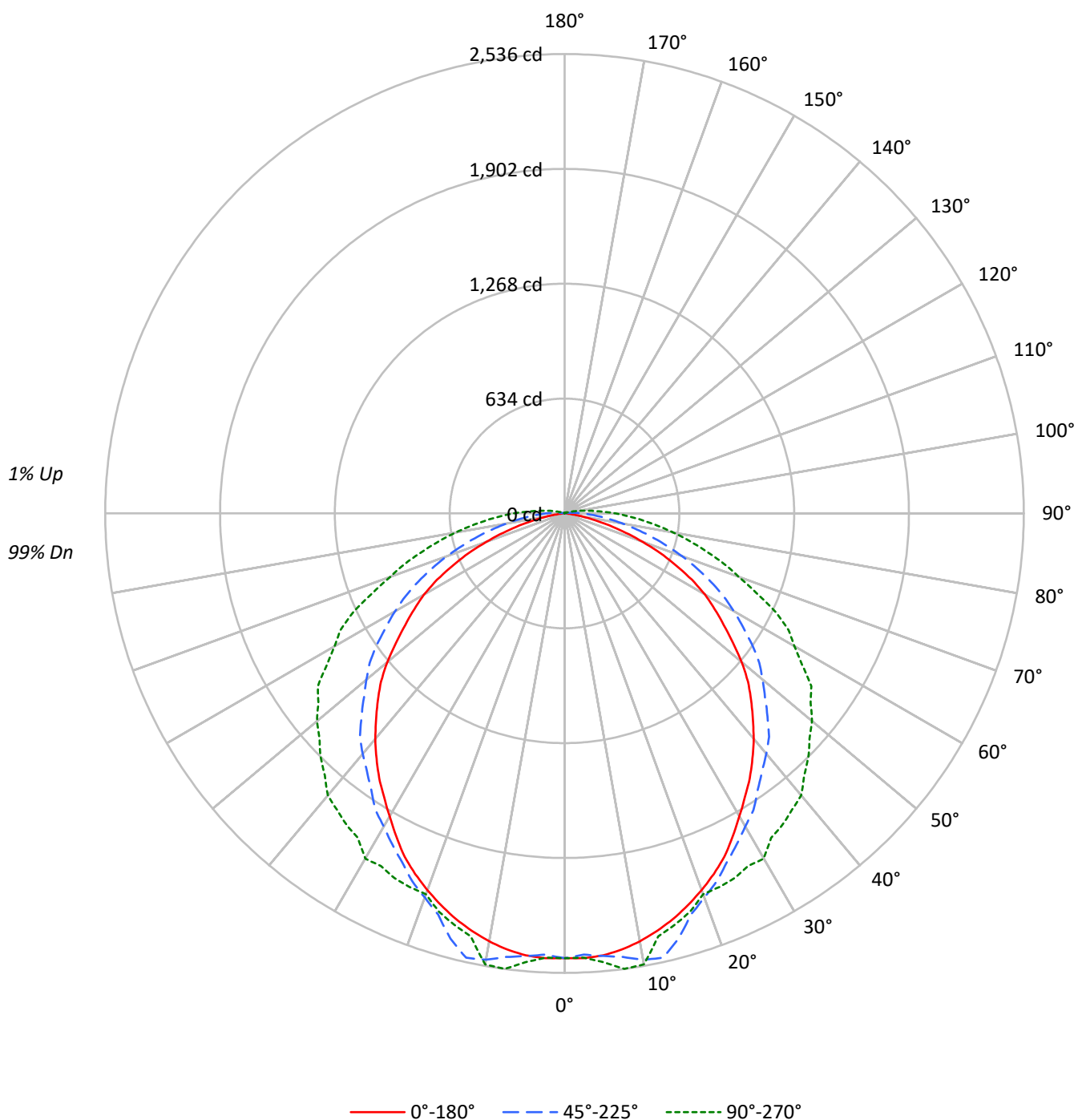
Input Watts (W): 64.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13211	13211	13211
5°	13133	13046	13241
10°	12914	13256	13417
15°	12632	12928	12540
20°	12300	12141	12078
25°	11951	11645	12242
30°	11448	11251	12470
35°	11073	10878	12348
40°	10672	10607	12532
45°	10241	10249	12422
50°	9727	9873	12459
55°	9002	9470	12605
60°	8419	8905	12241
65°	7342	8223	12060
70°	5877	7325	11058
75°	4076	6220	10398
80°	2178	5107	9736
85°	727	3955	9160

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12605 cd/sqm

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CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	235.9	3.2
10°-20°	671.9	9.1
20°-30°	999.7	13.5
30°-40°	1201.6	16.2
40°-50°	1264.7	17.1
50°-60°	1173.5	15.9
60°-70°	927.9	12.5
70°-80°	566.8	7.7
80°-90°	246.9	3.3
90°-100°	76.9	1.0
100°-110°	17.3	0.2
110°-120°	6.9	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°	1907.4	25.8
0°-40°	3109.0	42.0
0°-60°	5547.3	75.0
0°-90°	7288.9	98.6
90°-120°	101.1	1.4
90°-150°	106.0	1.4
90°-180°	106.0	1.4
0°-180°	7395.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2455	2455	2455	2455	2455	
5°	2449	2444	2452	2480	2487	232
15°	2318	2407	2430	2350	2351	653
25°	2091	2224	2123	2186	2222	960
35°	1784	1833	1861	2030	2099	1115
45°	1458	1464	1585	1836	1904	1124
55°	1074	1091	1264	1541	1663	965
65°	680	701	891	1179	1286	673
75°	257	340	496	763	811	280
85°	23	80	194	376	431	36
90°	0	24	102	238	280	1
95°	0	6	44	130	160	0
105°	0	4	9	26	36	1
115°	0	2	7	12	12	1
125°	0	1	3	8	10	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: P517392

CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2454.7	2454.7	2454.7	2454.7	2454.7
2.5°	2457.7	2451.2	2437.7	2450.7	2454.2
5°	2448.7	2443.7	2452.2	2479.7	2486.7
7.5°	2428.2	2447.2	2469.7	2519.7	2535.7
10°	2397.7	2433.7	2501.2	2543.7	2527.2
12.5°	2360.7	2421.7	2512.2	2429.2	2390.7
15°	2317.7	2406.7	2430.2	2349.7	2351.2
17.5°	2267.2	2394.2	2321.7	2319.7	2305.2
20°	2212.7	2352.2	2256.2	2252.2	2236.7
22.5°	2154.2	2296.7	2198.2	2190.2	2232.2
25°	2090.7	2224.2	2122.7	2186.2	2221.7
27.5°	2011.2	2129.2	2059.7	2149.7	2194.2
30°	1930.7	2031.2	1995.2	2120.7	2199.7
32.5°	1855.2	1928.7	1942.2	2109.7	2122.7
35°	1783.7	1833.2	1860.7	2029.7	2098.7
37.5°	1705.2	1718.7	1791.7	1996.2	2062.7
40°	1625.2	1616.7	1733.7	1941.2	2033.2
42.5°	1539.1	1536.1	1672.2	1913.7	1959.7
45°	1457.6	1464.1	1584.7	1835.7	1904.2
47.5°	1374.1	1382.6	1501.6	1750.2	1835.2
50°	1277.1	1288.1	1427.6	1674.2	1783.7
52.5°	1172.1	1193.1	1355.6	1602.2	1712.7
55°	1073.6	1091.1	1264.1	1540.6	1663.2
57.5°	983.6	994.1	1169.6	1463.1	1555.7
60°	895.1	897.6	1080.6	1377.1	1465.6
62.5°	793.6	798.1	989.1	1275.6	1394.1
65°	679.6	701.1	890.6	1178.6	1285.6
67.5°	573.1	610.6	790.1	1089.6	1145.6
70°	459.0	522.6	691.6	985.1	1024.6
72.5°	354.5	429.0	590.6	868.1	923.6
75°	257.0	340.5	496.5	763.1	811.1
77.5°	173.0	258.0	408.5	647.1	710.6
80°	103.5	188.5	330.0	539.6	611.1
82.5°	53.0	126.5	256.0	452.5	516.6
85°	23.0	80.0	193.5	375.5	431.0
87.5°	6.5	45.5	142.5	303.5	350.5
90°	0.5	24.0	101.5	238.0	280.5
92.5°	0.5	11.5	71.5	180.0	212.5
95°	0.5	6.0	44.5	130.5	159.5
97.5°	0.5	3.5	27.0	92.5	117.0
100°	0.5	3.0	16.0	61.5	83.5
102.5°	0.5	3.5	11.0	39.0	54.5
105°	0.5	3.5	9.0	25.5	36.0
107.5°	1.0	3.5	8.0	19.0	25.0
110°	0.5	3.0	8.5	14.5	19.5

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CATALOG NUMBER: HVL12-2-LD4-3HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.5	8.0	12.0	14.5
115°	0.5	2.0	7.0	11.5	12.0
117.5°	1.0	1.5	5.5	11.5	12.0
120°	1.0	1.0	4.5	11.0	12.5
122.5°	1.0	1.0	3.5	10.0	12.0
125°	0.5	1.0	3.0	7.5	10.5
127.5°	1.0	1.0	2.5	6.0	8.0
130°	1.0	1.0	2.0	4.5	6.0
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)