

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: P517512

Luminaire Tested: HVL12-4-LD4-2LO-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: P517512
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-4-LD4-2LO-50-UNV-C-EDD
Description: 4 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5811.0 lumens
Efficiency: N/A
Efficacy: 122.6 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

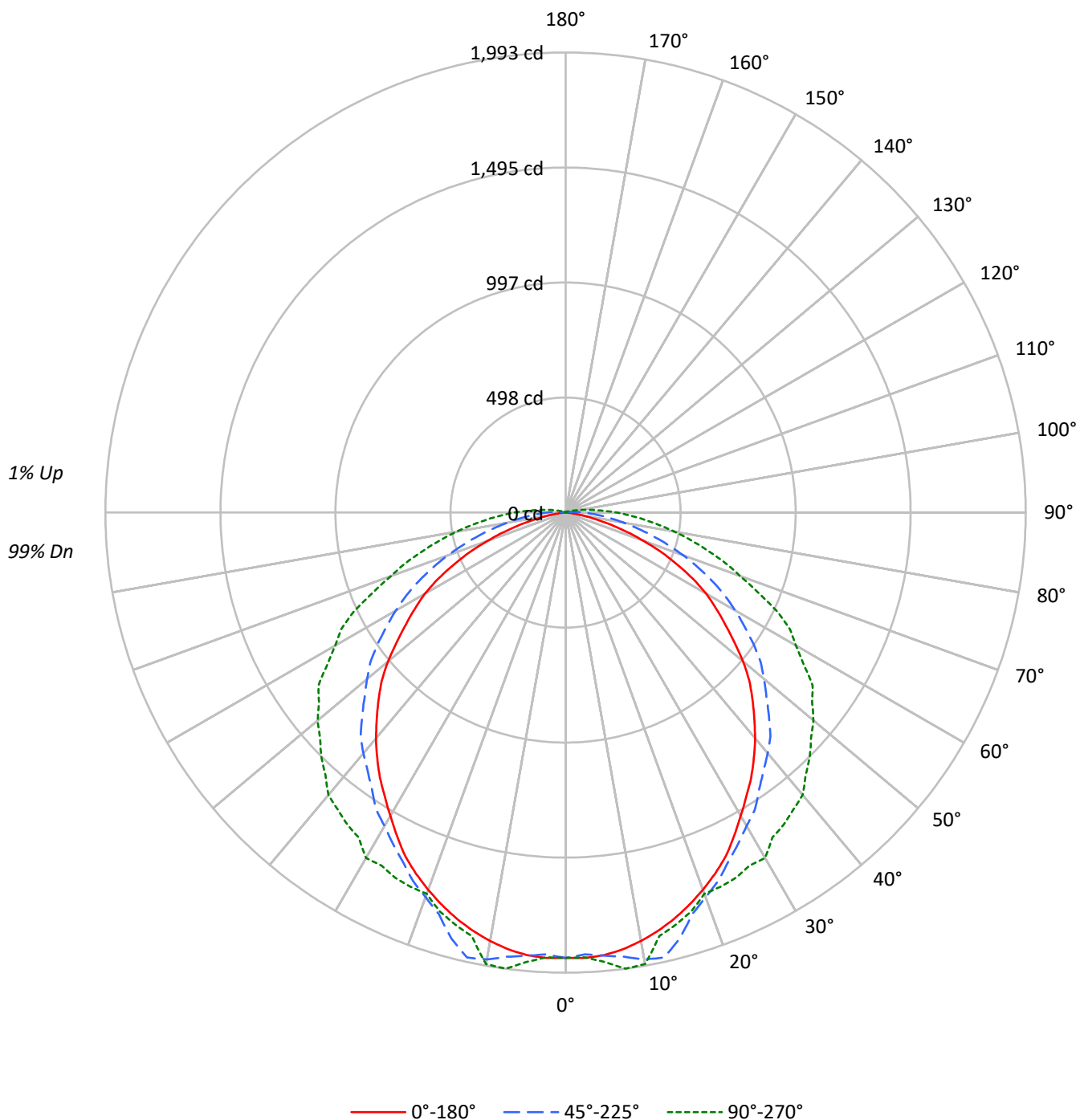
Input Watts (W): 47.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5191	5191	5191
5°	5179	5139	5203
10°	5111	5235	5272
15°	5018	5118	4927
20°	4905	4819	4745
25°	4785	4634	4810
30°	4603	4490	4899
35°	4474	4354	4851
40°	4335	4259	4924
45°	4185	4130	4881
50°	4003	3995	4895
55°	3735	3850	4952
60°	3531	3641	4810
65°	3121	3386	4738
70°	2546	3043	4345
75°	1818	2618	4085
80°	1019	2189	3825
85°	379	1750	3599

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4952 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.4	3.2
10°-20°	528.0	9.1
20°-30°	785.5	13.5
30°-40°	944.2	16.2
40°-50°	993.8	17.1
50°-60°	922.2	15.9
60°-70°	729.1	12.5
70°-80°	445.4	7.7
80°-90°	194.1	3.3
90°-100°	60.4	1.0
100°-110°	13.6	0.2
110°-120°	5.5	0.1
120°-130°	3.1	0.1
130°-140°	0.8	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°	1498.9	25.8
0°-40°	2443.1	42.0
0°-60°	4359.1	75.0
0°-90°	5727.7	98.6
90°-120°	79.4	1.4
90°-150°	83.4	1.4
90°-180°	83.0	1.4
0°-180°	5811.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1929	1929	1929	1929	1929	
5°	1924	1920	1927	1949	1954	182
15°	1821	1891	1910	1846	1848	513
25°	1643	1748	1668	1718	1746	754
35°	1402	1440	1462	1595	1649	876
45°	1145	1150	1245	1442	1496	883
55°	844	857	993	1211	1307	758
65°	534	551	700	926	1010	529
75°	202	268	390	600	637	220
85°	18	63	152	295	339	28
90°	0	19	80	187	220	1
95°	0	5	35	103	125	0
105°	0	3	7	20	28	1
115°	0	2	6	9	9	1
125°	0	1	2	6	8	1
135°	1	1	1	2	3	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

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CATALOG NUMBER: HVL12-4-LD4-2LO-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1928.9	1928.9	1928.9	1928.9	1928.9
2.5°	1931.3	1926.2	1915.6	1925.8	1928.5
5°	1924.2	1920.3	1927.0	1948.6	1954.1
7.5°	1908.1	1923.0	1940.7	1980.0	1992.6
10°	1884.1	1912.4	1965.5	1998.9	1985.9
12.5°	1855.1	1903.0	1974.1	1908.9	1878.6
15°	1821.3	1891.2	1909.7	1846.4	1847.6
17.5°	1781.6	1881.4	1824.4	1822.8	1811.4
20°	1738.8	1848.4	1772.9	1769.8	1757.6
22.5°	1692.8	1804.8	1727.4	1721.1	1754.1
25°	1642.9	1747.8	1668.0	1717.9	1745.8
27.5°	1580.4	1673.1	1618.5	1689.2	1724.2
30°	1517.1	1596.1	1567.8	1666.5	1728.5
32.5°	1457.8	1515.6	1526.2	1657.8	1668.0
35°	1401.6	1440.5	1462.1	1594.9	1649.2
37.5°	1339.9	1350.5	1407.9	1568.6	1620.9
40°	1277.1	1270.4	1362.3	1525.4	1597.7
42.5°	1209.5	1207.1	1314.0	1503.8	1539.9
45°	1145.4	1150.5	1245.2	1442.5	1496.3
47.5°	1079.8	1086.5	1180.0	1375.3	1442.1
50°	1003.6	1012.2	1121.8	1315.6	1401.6
52.5°	921.0	937.6	1065.3	1259.0	1345.8
55°	843.6	857.4	993.3	1210.6	1306.9
57.5°	772.9	781.2	919.1	1149.7	1222.4
60°	703.4	705.3	849.1	1082.2	1151.7
62.5°	623.6	627.1	777.2	1002.4	1095.5
65°	534.0	550.9	699.8	926.2	1010.2
67.5°	450.3	479.8	620.8	856.2	900.2
70°	360.7	410.6	543.4	774.1	805.1
72.5°	278.6	337.1	464.1	682.1	725.8
75°	202.0	267.6	390.2	599.6	637.3
77.5°	136.0	202.8	321.0	508.5	558.4
80°	81.3	148.1	259.3	424.0	480.2
82.5°	41.7	99.4	201.2	355.6	405.9
85°	18.1	62.9	152.1	295.1	338.7
87.5°	5.1	35.8	112.0	238.5	275.5
90°	0.4	18.9	79.8	187.0	220.4
92.5°	0.4	9.0	56.2	141.5	167.0
95°	0.4	4.7	35.0	102.6	125.3
97.5°	0.4	2.8	21.2	72.7	91.9
100°	0.4	2.4	12.6	48.3	65.6
102.5°	0.4	2.8	8.6	30.6	42.8
105°	0.4	2.8	7.1	20.0	28.3
107.5°	0.8	2.8	6.3	14.9	19.6
110°	0.4	2.4	6.7	11.4	15.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.0	6.3	9.4	11.4
115°	0.4	1.6	5.5	9.0	9.4
117.5°	0.8	1.2	4.3	9.0	9.4
120°	0.8	0.8	3.5	8.6	9.8
122.5°	0.8	0.8	2.8	7.9	9.4
125°	0.4	0.8	2.4	5.9	8.3
127.5°	0.8	0.8	2.0	4.7	6.3
130°	0.8	0.8	1.6	3.5	4.7
132.5°	0.8	0.8	1.2	2.8	3.5
135°	0.8	0.8	0.8	2.0	2.8
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)