

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: P517424

Luminaire Tested: HVL12-2-LD4-3STD-35-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P517424
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3STD-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: 5746.0 lumens
Efficiency: N/A
Efficacy: 117.0 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

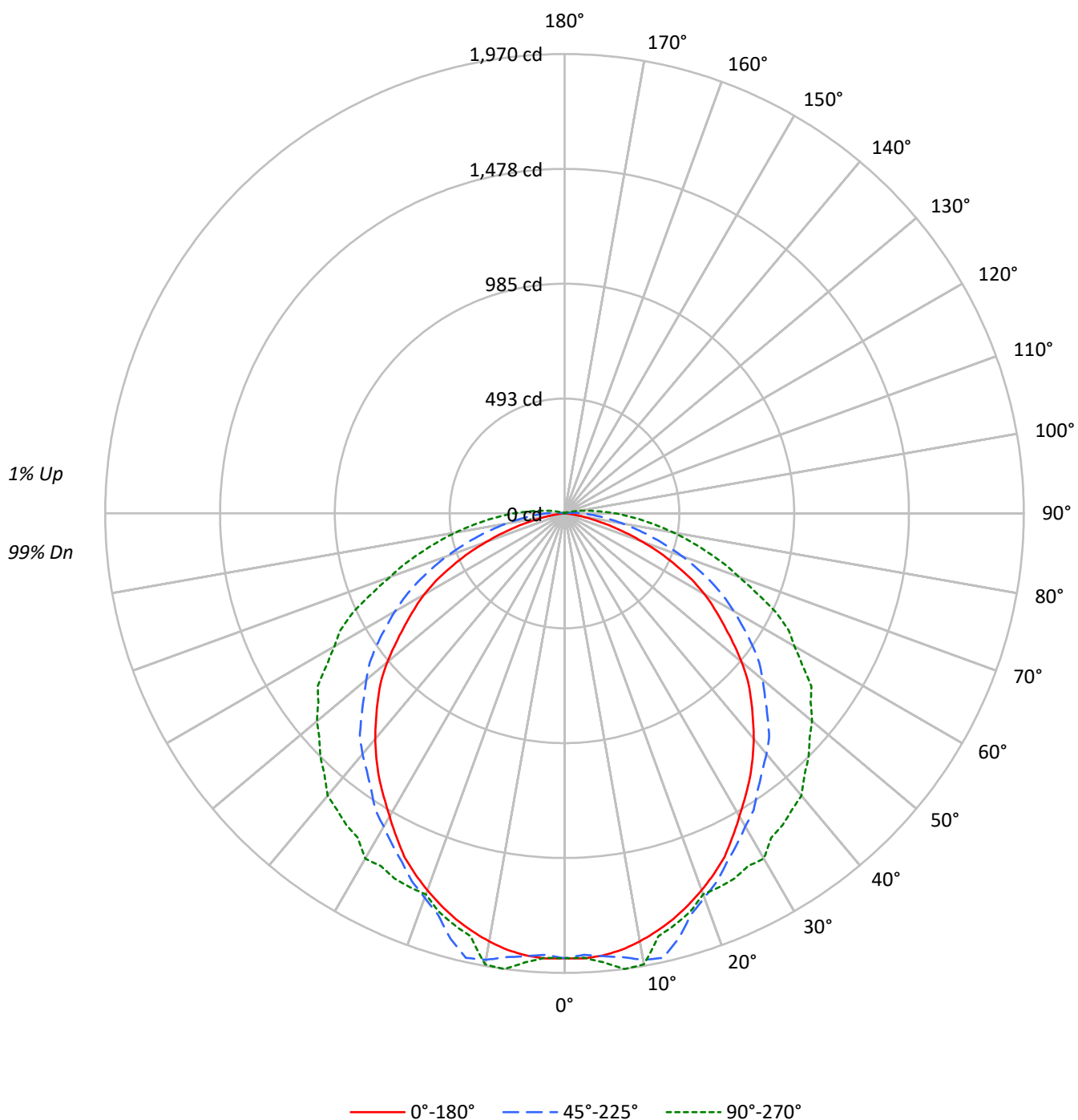
Input Watts (W): 49.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517424

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

Luminous Intensity Polar Plot



TEST NUMBER: P517424

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

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°	10266	10266	10266
5°	10205	10137	10289
10°	10034	10300	10425
15°	9815	10045	9744
20°	9557	9434	9385
25°	9286	9049	9512
30°	8895	8742	9689
35°	8603	8453	9594
40°	8292	8242	9737
45°	7957	7964	9653
50°	7558	7671	9681
55°	6995	7358	9794
60°	6542	6919	9512
65°	5704	6390	9371
70°	4567	5692	8592
75°	3167	4833	8079
80°	1692	3968	7564
85°	566	3074	7118

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9794 cd/sqm

TEST NUMBER: P517424

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.3	3.2
10°-20°	522.0	9.1
20°-30°	776.7	13.5
30°-40°	933.7	16.2
40°-50°	982.7	17.1
50°-60°	911.9	15.9
60°-70°	721.0	12.5
70°-80°	440.4	7.7
80°-90°	191.9	3.3
90°-100°	59.7	1.0
100°-110°	13.4	0.2
110°-120°	5.4	0.1
120°-130°	3.0	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°	1482.1	25.8
0°-40°	2415.8	42.0
0°-60°	4310.3	75.0
0°-90°	5663.6	98.6
90°-120°	78.5	1.4
90°-150°	82.4	1.4
90°-180°	82.0	1.4
0°-180°	5746.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1907	1907	1907	1907	1907	
5°	1903	1899	1905	1927	1932	180
15°	1801	1870	1888	1826	1827	507
25°	1624	1728	1649	1699	1726	746
35°	1386	1424	1446	1577	1631	866
45°	1133	1138	1231	1426	1480	873
55°	834	848	982	1197	1292	750
65°	528	545	692	916	999	523
75°	200	265	386	593	630	218
85°	18	62	150	292	335	28
90°	0	19	79	185	218	1
95°	0	5	35	101	124	0
105°	0	3	7	20	28	1
115°	0	2	5	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

TEST NUMBER: P517424

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1907.4	1907.4	1907.4	1907.4	1907.4
2.5°	1909.7	1904.6	1894.1	1904.3	1907.0
5°	1902.7	1898.8	1905.4	1926.8	1932.2
7.5°	1886.8	1901.5	1919.0	1957.9	1970.3
10°	1863.1	1891.0	1943.5	1976.5	1963.7
12.5°	1834.3	1881.7	1952.0	1887.5	1857.6
15°	1800.9	1870.1	1888.3	1825.8	1826.9
17.5°	1761.7	1860.3	1804.0	1802.5	1791.2
20°	1719.3	1827.7	1753.1	1750.0	1738.0
22.5°	1673.8	1784.6	1708.0	1701.8	1734.5
25°	1624.5	1728.2	1649.4	1698.7	1726.3
27.5°	1562.7	1654.4	1600.4	1670.3	1704.9
30°	1500.2	1578.3	1550.3	1647.8	1709.2
32.5°	1441.5	1498.6	1509.1	1639.3	1649.4
35°	1385.9	1424.4	1445.8	1577.1	1630.7
37.5°	1324.9	1335.4	1392.2	1551.1	1602.7
40°	1262.8	1256.2	1347.1	1508.3	1579.8
42.5°	1195.9	1193.6	1299.3	1487.0	1522.7
45°	1132.6	1137.7	1231.3	1426.3	1479.6
47.5°	1067.7	1074.3	1166.8	1359.9	1426.0
50°	992.3	1000.9	1109.3	1300.8	1385.9
52.5°	910.7	927.1	1053.3	1244.9	1330.8
55°	834.2	847.8	982.2	1197.1	1292.3
57.5°	764.3	772.4	908.8	1136.9	1208.8
60°	695.5	697.4	839.6	1070.0	1138.8
62.5°	616.6	620.1	768.5	991.2	1083.3
65°	528.0	544.7	692.0	915.8	998.9
67.5°	445.3	474.4	613.9	846.6	890.2
70°	356.7	406.0	537.4	765.4	796.1
72.5°	275.5	333.4	458.9	674.5	717.6
75°	199.7	264.6	385.8	592.9	630.2
77.5°	134.4	200.5	317.4	502.8	552.1
80°	80.4	146.5	256.4	419.2	474.8
82.5°	41.2	98.3	198.9	351.6	401.4
85°	17.9	62.2	150.4	291.8	334.9
87.5°	5.1	35.4	110.7	235.8	272.4
90°	0.4	18.7	78.9	184.9	218.0
92.5°	0.4	8.9	55.6	139.9	165.1
95°	0.4	4.7	34.6	101.4	123.9
97.5°	0.4	2.7	21.0	71.9	90.9
100°	0.4	2.3	12.4	47.8	64.9
102.5°	0.4	2.7	8.5	30.3	42.4
105°	0.4	2.7	7.0	19.8	28.0
107.5°	0.8	2.7	6.2	14.8	19.4
110°	0.4	2.3	6.6	11.3	15.2

TEST NUMBER: P517424

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	1.9	6.2	9.3	11.3
115°	0.4	1.6	5.4	8.9	9.3
117.5°	0.8	1.2	4.3	8.9	9.3
120°	0.8	0.8	3.5	8.5	9.7
122.5°	0.8	0.8	2.7	7.8	9.3
125°	0.4	0.8	2.3	5.8	8.2
127.5°	0.8	0.8	1.9	4.7	6.2
130°	0.8	0.8	1.6	3.5	4.7
132.5°	0.8	0.8	1.2	2.7	3.5
135°	0.8	0.8	0.8	1.9	2.7
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)