

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: P517831

Luminaire Tested: HVL8-1-LD4-3HI-50-UNV-C-EDD-90

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: P517831
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-50-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3164.0 lumens
Efficiency: N/A
Efficacy: 100.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

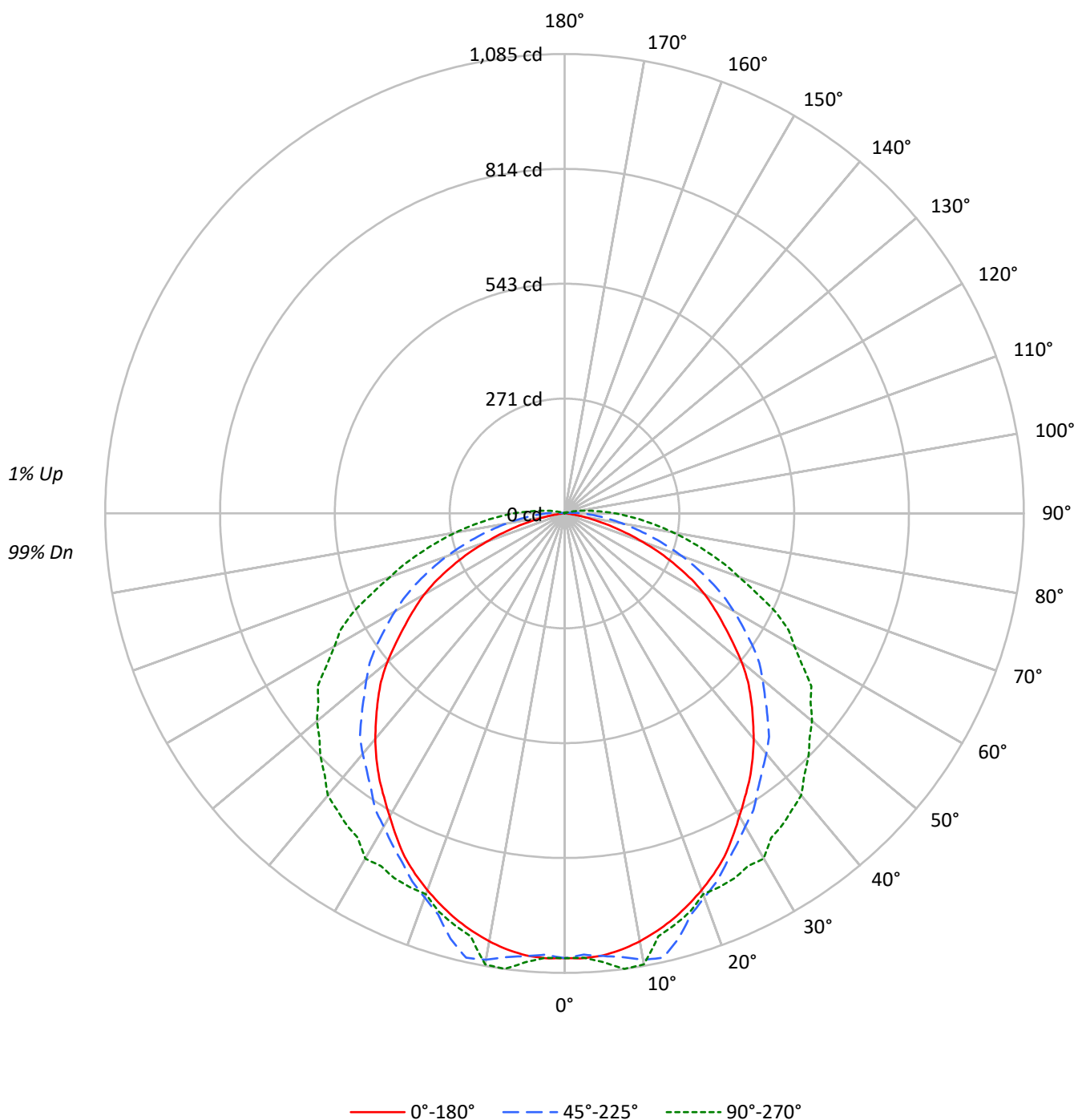
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517831

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517831

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD-90

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°	16958	16958	16958
5°	16737	16578	16876
10°	16339	16679	16979
15°	15868	16109	15760
20°	15336	14979	15072
25°	14786	14225	15167
30°	14049	13602	15334
35°	13471	13008	15061
40°	12856	12535	15155
45°	12207	11958	14882
50°	11450	11355	14769
55°	10443	10716	14760
60°	9597	9884	14130
65°	8184	8919	13680
70°	6359	7719	12268
75°	4230	6313	11197
80°	2117	4915	10051
85°	625	3511	8854

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 14882 cd/sqm

TEST NUMBER: P517831

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.9	3.2
10°-20°	287.5	9.1
20°-30°	427.7	13.5
30°-40°	514.1	16.2
40°-50°	541.1	17.1
50°-60°	502.1	15.9
60°-70°	397.0	12.5
70°-80°	242.5	7.7
80°-90°	105.7	3.3
90°-100°	32.9	1.0
100°-110°	7.4	0.2
110°-120°	3.0	0.1
120°-130°	1.7	0.1
130°-140°	0.4	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°	816.1	25.8
0°-40°	1330.2	42.0
0°-60°	2373.5	75.0
0°-90°	3118.6	98.6
90°-120°	43.2	1.4
90°-150°	45.3	1.4
90°-180°	45.0	1.4
0°-180°	3164.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1050	1050	1050	1050	1050	
5°	1048	1046	1049	1061	1064	99
15°	992	1030	1040	1005	1006	279
25°	894	952	908	935	951	411
35°	763	784	796	868	898	477
45°	624	626	678	785	815	481
55°	459	467	541	659	712	413
65°	291	300	381	504	550	288
75°	110	146	212	326	347	120
85°	10	34	83	161	184	15
90°	0	10	43	102	120	0
95°	0	3	19	56	68	0
105°	0	2	4	11	15	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	0
135°	0	0	0	1	2	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: P517831

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1050.3	1050.3	1050.3	1050.3	1050.3
2.5°	1051.6	1048.8	1043.0	1048.6	1050.1
5°	1047.7	1045.6	1049.2	1061.0	1064.0
7.5°	1038.9	1047.1	1056.7	1078.1	1084.9
10°	1025.9	1041.3	1070.2	1088.4	1081.3
12.5°	1010.1	1036.2	1074.9	1039.4	1022.9
15°	991.7	1029.7	1039.8	1005.3	1006.0
17.5°	970.0	1024.4	993.4	992.5	986.3
20°	946.7	1006.4	965.3	963.6	957.0
22.5°	921.7	982.7	940.5	937.1	955.1
25°	894.5	951.6	908.2	935.4	950.6
27.5°	860.5	911.0	881.3	919.8	938.8
30°	826.1	869.1	853.7	907.4	941.2
32.5°	793.8	825.2	831.0	902.7	908.2
35°	763.2	784.3	796.1	868.4	897.9
37.5°	729.6	735.3	766.6	854.1	882.5
40°	695.3	691.7	741.8	830.6	869.9
42.5°	658.5	657.3	715.4	818.8	838.5
45°	623.7	626.4	678.0	785.4	814.7
47.5°	587.9	591.6	642.5	748.8	785.2
50°	546.4	551.1	610.8	716.3	763.2
52.5°	501.5	510.5	580.0	685.5	732.8
55°	459.3	466.8	540.9	659.2	711.6
57.5°	420.8	425.3	500.4	626.0	665.6
60°	383.0	384.0	462.3	589.2	627.1
62.5°	339.5	341.5	423.2	545.8	596.5
65°	290.8	300.0	381.0	504.3	550.1
67.5°	245.2	261.2	338.0	466.2	490.2
70°	196.4	223.6	295.9	421.5	438.4
72.5°	151.7	183.6	252.7	371.4	395.2
75°	110.0	145.7	212.5	326.5	347.0
77.5°	74.0	110.4	174.8	276.9	304.0
80°	44.3	80.7	141.2	230.9	261.4
82.5°	22.7	54.1	109.5	193.6	221.0
85°	9.8	34.2	82.8	160.7	184.4
87.5°	2.8	19.5	61.0	129.9	150.0
90°	0.2	10.3	43.4	101.8	120.0
92.5°	0.2	4.9	30.6	77.0	90.9
95°	0.2	2.6	19.0	55.8	68.2
97.5°	0.2	1.5	11.6	39.6	50.1
100°	0.2	1.3	6.8	26.3	35.7
102.5°	0.2	1.5	4.7	16.7	23.3
105°	0.2	1.5	3.9	10.9	15.4
107.5°	0.4	1.5	3.4	8.1	10.7
110°	0.2	1.3	3.6	6.2	8.3

TEST NUMBER: P517831

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.1	3.4	5.1	6.2
115°	0.2	0.9	3.0	4.9	5.1
117.5°	0.4	0.6	2.4	4.9	5.1
120°	0.4	0.4	1.9	4.7	5.3
122.5°	0.4	0.4	1.5	4.3	5.1
125°	0.2	0.4	1.3	3.2	4.5
127.5°	0.4	0.4	1.1	2.6	3.4
130°	0.4	0.4	0.9	1.9	2.6
132.5°	0.4	0.4	0.6	1.5	1.9
135°	0.4	0.4	0.4	1.1	1.5
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)