

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: P517851

Luminaire Tested: HVL8-1-LD4-3STD-30-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: P517851
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-30-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2272.1 lumens
Efficiency: N/A
Efficacy: 95.1 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

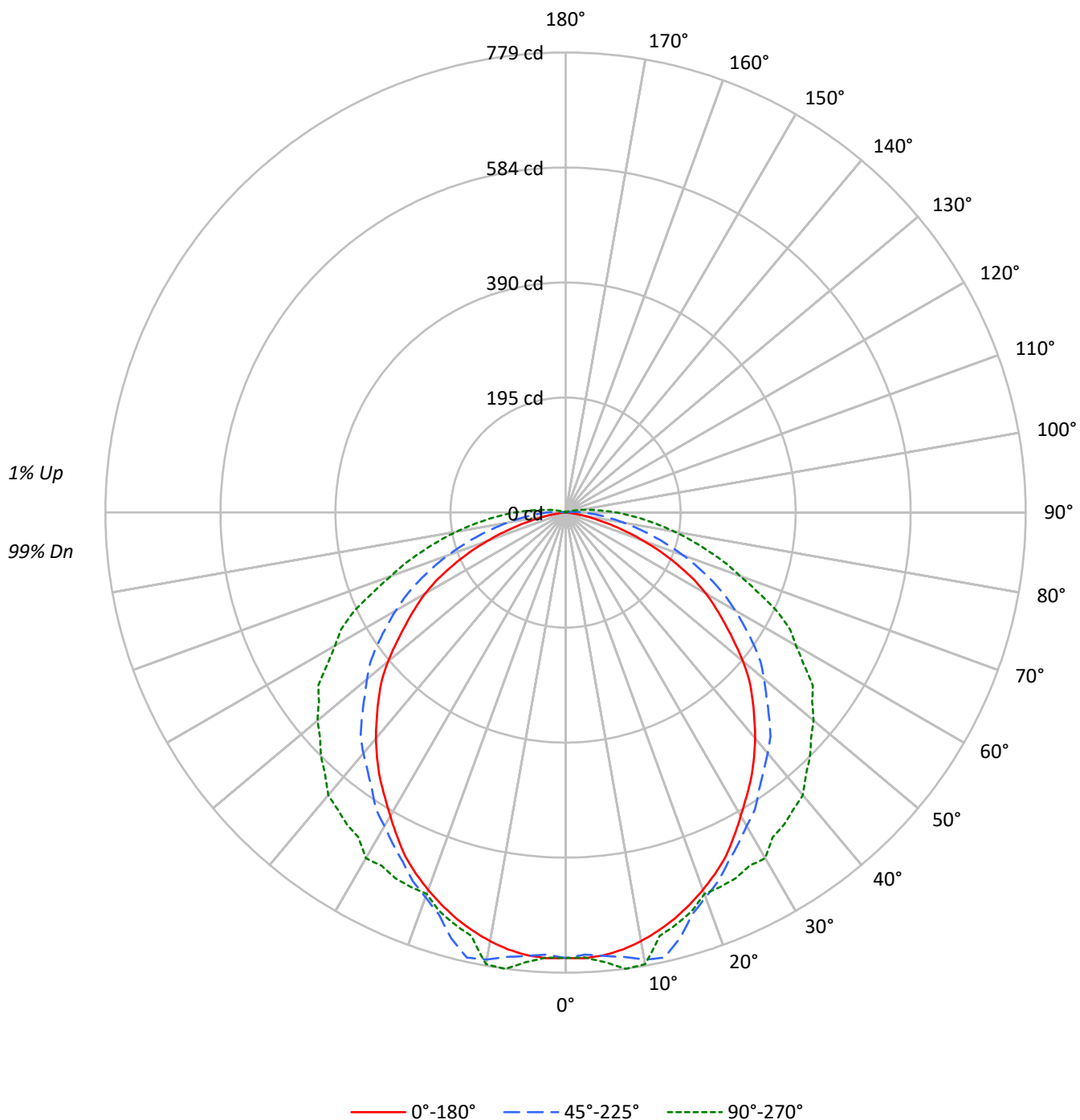
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517851

CATALOG NUMBER: HVL8-1-LD4-3STD-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517851

CATALOG NUMBER: HVL8-1-LD4-3STD-30-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°	12177	12177	12177
5°	12018	11904	12117
10°	11733	11977	12193
15°	11394	11568	11317
20°	11012	10757	10823
25°	10617	10215	10891
30°	10088	9767	11010
35°	9672	9341	10816
40°	9232	9000	10883
45°	8764	8587	10686
50°	8223	8154	10605
55°	7499	7695	10599
60°	6891	7098	10147
65°	5876	6405	9823
70°	4565	5543	8809
75°	3038	4534	8041
80°	1520	3530	7217
85°	453	2523	6357

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10686 cd/sqm

TEST NUMBER: P517851

CATALOG NUMBER: HVL8-1-LD4-3STD-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.5	3.2
10°-20°	206.4	9.1
20°-30°	307.1	13.5
30°-40°	369.2	16.2
40°-50°	388.6	17.1
50°-60°	360.5	15.9
60°-70°	285.1	12.5
70°-80°	174.1	7.7
80°-90°	75.9	3.3
90°-100°	23.6	1.0
100°-110°	5.3	0.2
110°-120°	2.1	0.1
120°-130°	1.2	0.1
130°-140°	0.3	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°	586.0	25.8
0°-40°	955.2	42.0
0°-60°	1704.3	75.0
0°-90°	2239.4	98.6
90°-120°	31.1	1.4
90°-150°	32.6	1.4
90°-180°	33.0	1.5
0°-180°	2272.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	754	754	754	754	754	
5°	752	751	753	762	764	71
15°	712	739	747	722	722	201
25°	642	683	652	672	683	295
35°	548	563	572	624	645	343
45°	448	450	487	564	585	345
55°	330	335	388	473	511	296
65°	209	215	274	362	395	207
75°	79	105	153	234	249	86
85°	7	25	60	115	132	11
90°	0	7	31	73	86	0
95°	0	2	14	40	49	0
105°	0	1	3	8	11	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	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: P517851

CATALOG NUMBER: HVL8-1-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	754.2	754.2	754.2	754.2	754.2
2.5°	755.1	753.1	749.0	753.0	754.0
5°	752.3	750.8	753.4	761.9	764.0
7.5°	746.0	751.9	758.8	774.2	779.1
10°	736.7	747.7	768.5	781.5	776.5
12.5°	725.3	744.0	771.8	746.3	734.5
15°	712.1	739.4	746.7	721.9	722.4
17.5°	696.6	735.6	713.3	712.7	708.2
20°	679.8	722.7	693.2	692.0	687.2
22.5°	661.8	705.6	675.4	672.9	685.8
25°	642.3	683.4	652.2	671.7	682.6
27.5°	617.9	654.2	632.8	660.5	674.1
30°	593.2	624.1	613.0	651.6	675.8
32.5°	570.0	592.6	596.7	648.2	652.2
35°	548.0	563.2	571.7	623.6	644.8
37.5°	523.9	528.0	550.5	613.3	633.7
40°	499.3	496.7	532.6	596.4	624.7
42.5°	472.9	472.0	513.7	588.0	602.1
45°	447.8	449.8	486.9	564.0	585.0
47.5°	422.2	424.8	461.4	537.7	563.8
50°	392.4	395.8	438.6	514.4	548.0
52.5°	360.1	366.6	416.5	492.2	526.2
55°	329.8	335.2	388.4	473.3	511.0
57.5°	302.2	305.4	359.3	449.5	477.9
60°	275.0	275.8	332.0	423.1	450.3
62.5°	243.8	245.2	303.9	391.9	428.3
65°	208.8	215.4	273.6	362.1	395.0
67.5°	176.1	187.6	242.7	334.8	352.0
70°	141.0	160.5	212.5	302.7	314.8
72.5°	108.9	131.8	181.4	266.7	283.8
75°	79.0	104.6	152.6	234.4	249.2
77.5°	53.2	79.3	125.5	198.8	218.3
80°	31.8	57.9	101.4	165.8	187.7
82.5°	16.3	38.9	78.7	139.0	158.7
85°	7.1	24.6	59.5	115.4	132.4
87.5°	2.0	14.0	43.8	93.3	107.7
90°	0.2	7.4	31.2	73.1	86.2
92.5°	0.2	3.5	22.0	55.3	65.3
95°	0.2	1.8	13.7	40.1	49.0
97.5°	0.2	1.1	8.3	28.4	35.9
100°	0.2	0.9	4.9	18.9	25.7
102.5°	0.2	1.1	3.4	12.0	16.7
105°	0.2	1.1	2.8	7.8	11.1
107.5°	0.3	1.1	2.5	5.8	7.7
110°	0.2	0.9	2.6	4.5	6.0

TEST NUMBER: P517851

CATALOG NUMBER: HVL8-1-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.7	4.5
115°	0.2	0.6	2.2	3.5	3.7
117.5°	0.3	0.5	1.7	3.5	3.7
120°	0.3	0.3	1.4	3.4	3.8
122.5°	0.3	0.3	1.1	3.1	3.7
125°	0.2	0.3	0.9	2.3	3.2
127.5°	0.3	0.3	0.8	1.8	2.5
130°	0.3	0.3	0.6	1.4	1.8
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)