

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: P517827

Luminaire Tested: HVL8-1-LD4-3HI-40-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: P517827
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-40-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3005.0 lumens
Efficiency: N/A
Efficacy: 95.4 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

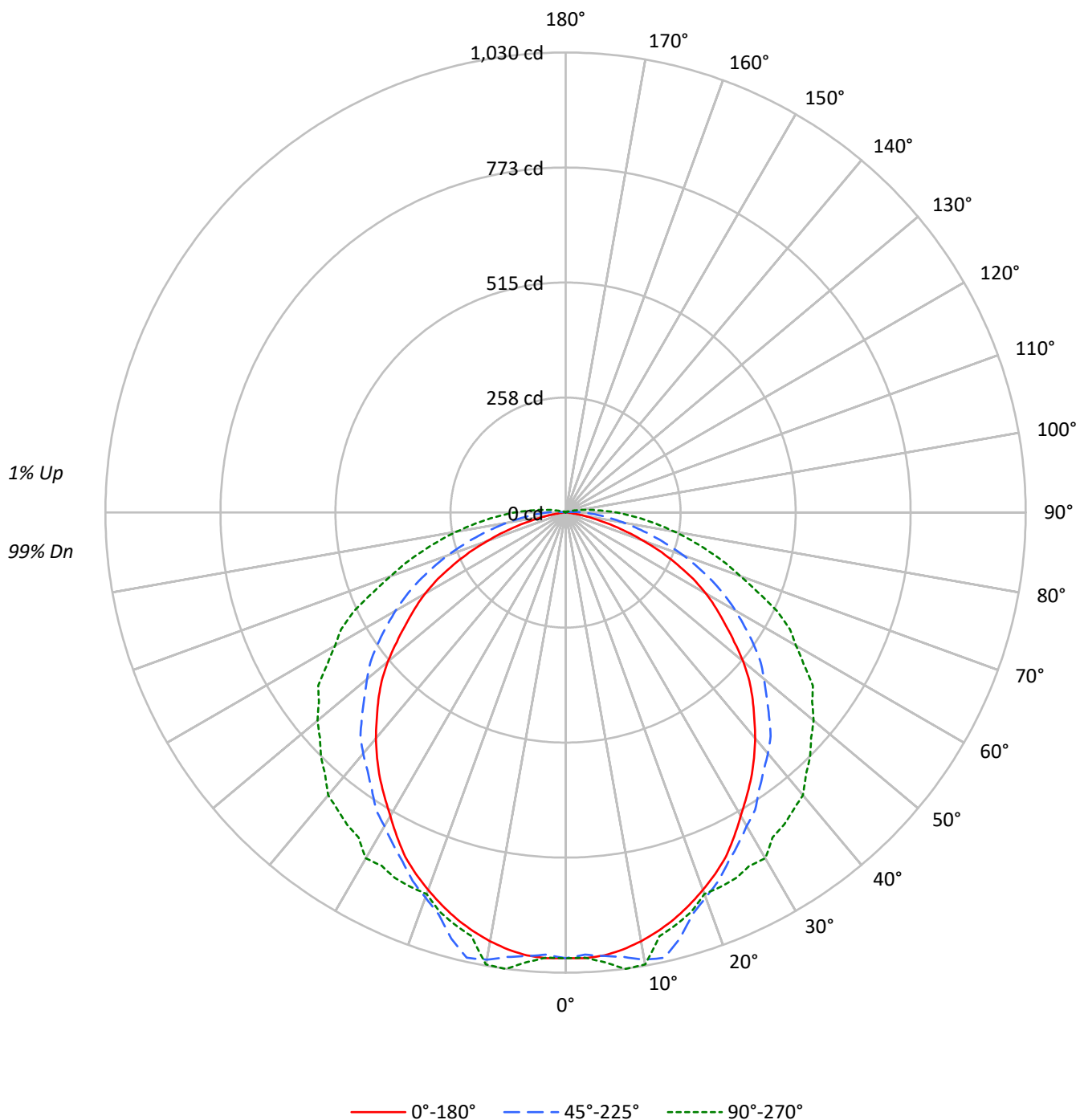
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517827

CATALOG NUMBER: HVL8-1-LD4-3HI-40-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517827

CATALOG NUMBER: HVL8-1-LD4-3HI-40-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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16106	16106	16106
5°	15896	15745	16027
10°	15517	15841	16127
15°	15069	15299	14967
20°	14565	14227	14314
25°	14044	13511	14404
30°	13342	12918	14563
35°	12793	12354	14305
40°	12211	11905	14394
45°	11592	11356	14134
50°	10876	10784	14026
55°	9920	10177	14018
60°	9113	9388	13421
65°	7770	8472	12991
70°	6039	7330	11652
75°	4015	5995	10636
80°	2012	4668	9548
85°	593	3333	8413

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 14134 cd/sqm

TEST NUMBER: P517827

CATALOG NUMBER: HVL8-1-LD4-3HI-40-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.9	3.2
10°-20°	273.0	9.1
20°-30°	406.2	13.5
30°-40°	488.3	16.2
40°-50°	513.9	17.1
50°-60°	476.9	15.9
60°-70°	377.1	12.5
70°-80°	230.3	7.7
80°-90°	100.3	3.3
90°-100°	31.2	1.0
100°-110°	7.0	0.2
110°-120°	2.8	0.1
120°-130°	1.6	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°	775.1	25.8
0°-40°	1263.4	42.0
0°-60°	2254.2	75.0
0°-90°	2961.9	98.6
90°-120°	41.1	1.4
90°-150°	43.1	1.4
90°-180°	43.0	1.4
0°-180°	3005.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	998	998	998	998	998	
5°	995	993	996	1008	1010	94
15°	942	978	988	955	955	265
25°	850	904	863	888	903	390
35°	725	745	756	825	853	453
45°	592	595	644	746	774	457
55°	436	443	514	626	676	392
65°	276	285	362	479	522	273
75°	104	138	202	310	330	114
85°	9	32	79	153	175	14
90°	0	10	41	97	114	0
95°	0	2	18	53	65	0
105°	0	1	4	10	15	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	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: P517827

CATALOG NUMBER: HVL8-1-LD4-3HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	997.5	997.5	997.5	997.5	997.5
2.5°	998.7	996.1	990.6	995.9	997.3
5°	995.1	993.0	996.5	1007.7	1010.5
7.5°	986.7	994.4	1003.6	1023.9	1030.4
10°	974.3	989.0	1016.4	1033.7	1027.0
12.5°	959.3	984.1	1020.9	987.1	971.5
15°	941.8	978.0	987.5	954.8	955.4
17.5°	921.3	972.9	943.4	942.6	936.7
20°	899.1	955.8	916.8	915.2	908.9
22.5°	875.4	933.3	893.3	890.0	907.1
25°	849.6	903.8	862.6	888.4	902.8
27.5°	817.3	865.2	837.0	873.5	891.6
30°	784.5	825.4	810.8	861.8	893.9
32.5°	753.9	783.7	789.2	857.3	862.6
35°	724.8	744.9	756.1	824.8	852.8
37.5°	692.9	698.4	728.1	811.2	838.2
40°	660.4	656.9	704.5	788.8	826.2
42.5°	625.4	624.2	679.5	777.6	796.3
45°	592.3	595.0	643.9	745.9	773.8
47.5°	558.4	561.8	610.2	711.2	745.7
50°	519.0	523.4	580.1	680.3	724.8
52.5°	476.3	484.8	550.9	651.0	696.0
55°	436.3	443.4	513.7	626.1	675.8
57.5°	399.7	404.0	475.3	594.6	632.1
60°	363.7	364.7	439.1	559.6	595.6
62.5°	322.5	324.3	401.9	518.4	566.5
65°	276.1	284.9	361.9	478.9	522.4
67.5°	232.9	248.1	321.1	442.8	465.5
70°	186.5	212.3	281.0	400.3	416.4
72.5°	144.1	174.3	240.0	352.8	375.3
75°	104.4	138.4	201.8	310.1	329.6
77.5°	70.3	104.8	166.0	262.9	288.7
80°	42.1	76.6	134.1	219.3	248.3
82.5°	21.5	51.4	104.0	183.9	209.9
85°	9.3	32.5	78.6	152.6	175.2
87.5°	2.6	18.5	57.9	123.3	142.4
90°	0.2	9.8	41.2	96.7	114.0
92.5°	0.2	4.7	29.1	73.2	86.4
95°	0.2	2.4	18.1	53.0	64.8
97.5°	0.2	1.4	11.0	37.6	47.5
100°	0.2	1.2	6.5	25.0	33.9
102.5°	0.2	1.4	4.5	15.8	22.1
105°	0.2	1.4	3.7	10.4	14.6
107.5°	0.4	1.4	3.3	7.7	10.2
110°	0.2	1.2	3.5	5.9	7.9

TEST NUMBER: P517827

CATALOG NUMBER: HVL8-1-LD4-3HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.3	4.9	5.9
115°	0.2	0.8	2.8	4.7	4.9
117.5°	0.4	0.6	2.2	4.7	4.9
120°	0.4	0.4	1.8	4.5	5.1
122.5°	0.4	0.4	1.4	4.1	4.9
125°	0.2	0.4	1.2	3.0	4.3
127.5°	0.4	0.4	1.0	2.4	3.3
130°	0.4	0.4	0.8	1.8	2.4
132.5°	0.4	0.4	0.6	1.4	1.8
135°	0.4	0.4	0.4	1.0	1.4
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)