

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: P518107

Luminaire Tested: HVL8-4-LD4-3HI-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: P518107
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-30-UNV-C-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13496.0 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

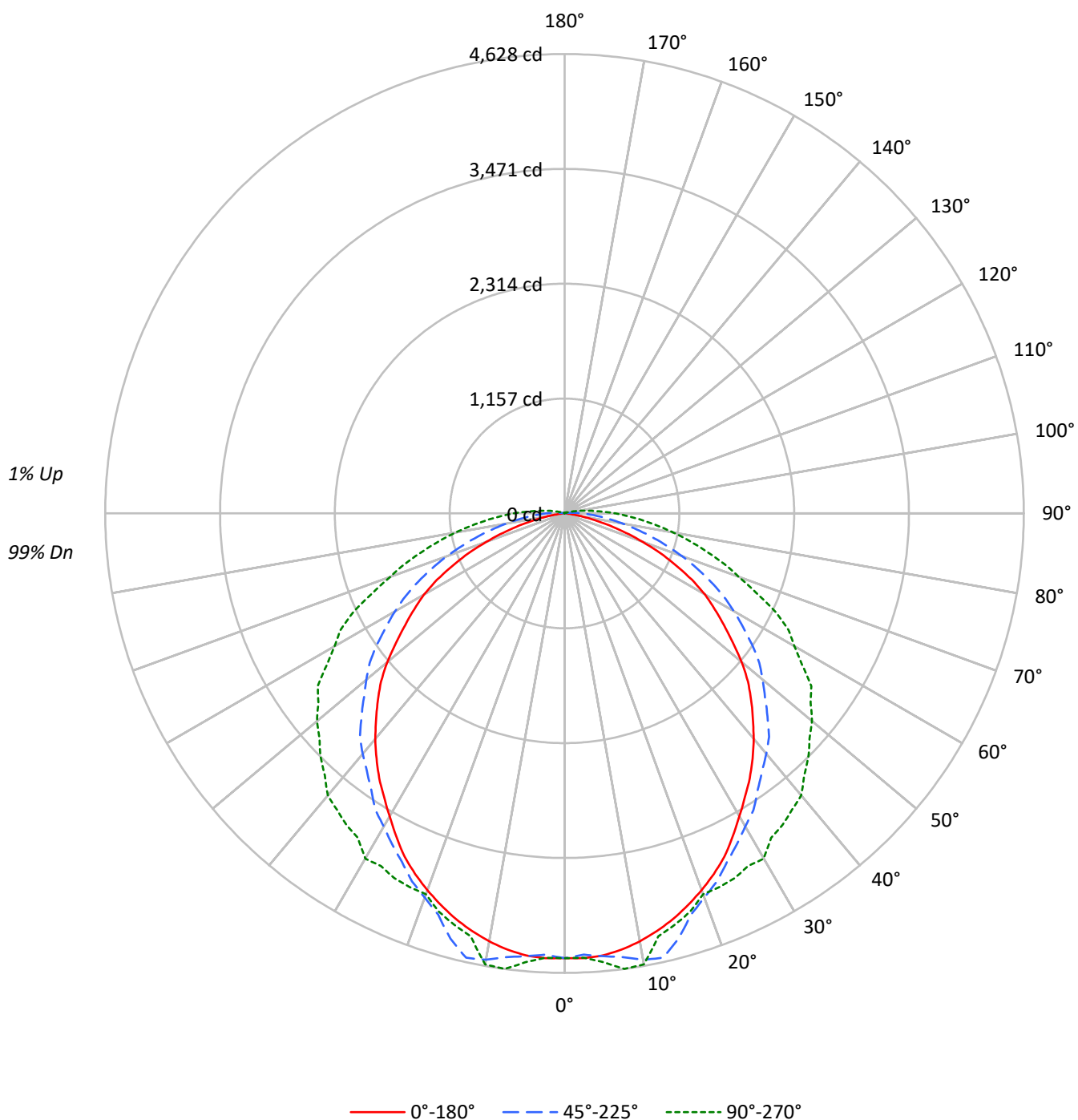
Input Watts (W): 125.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518107

CATALOG NUMBER: HVL8-4-LD4-3HI-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518107

CATALOG NUMBER: HVL8-4-LD4-3HI-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
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°	18083	18083	18083
5°	18042	17812	17995
10°	17805	18053	18106
15°	17481	17563	16806
20°	17087	16452	16072
25°	16670	15740	16173
30°	16037	15166	16351
35°	15586	14621	16062
40°	15100	14212	16161
45°	14578	13686	15870
50°	13944	13133	15748
55°	13014	12541	15740
60°	12299	11730	15068
65°	10873	10762	14587
70°	8872	9507	13081
75°	6331	7985	11941
80°	3552	6452	10720
85°	1318	4872	9444

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 15870 cd/sqm

TEST NUMBER: P518107

CATALOG NUMBER: HVL8-4-LD4-3HI-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	430.6	3.2
10°-20°	1226.2	9.1
20°-30°	1824.4	13.5
30°-40°	2192.9	16.2
40°-50°	2308.2	17.1
50°-60°	2141.7	15.9
60°-70°	1693.4	12.5
70°-80°	1034.4	7.7
80°-90°	450.7	3.3
90°-100°	140.3	1.0
100°-110°	31.5	0.2
110°-120°	12.7	0.1
120°-130°	7.1	0.1
130°-140°	1.9	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°	3481.1	25.8
0°-40°	5674.1	42.0
0°-60°	10124.0	75.0
0°-90°	13302.5	98.6
90°-120°	184.5	1.4
90°-150°	193.5	1.4
90°-180°	194.0	1.4
0°-180°	13496.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4480	4480	4480	4480	4480	
5°	4469	4460	4475	4526	4538	424
15°	4230	4392	4435	4288	4291	1192
25°	3816	4059	3874	3990	4055	1752
35°	3255	3346	3396	3704	3830	2034
45°	2660	2672	2892	3350	3475	2051
55°	1959	1991	2307	2812	3035	1760
65°	1240	1280	1625	2151	2346	1228
75°	469	622	906	1393	1480	512
85°	42	146	353	685	787	65
90°	1	44	185	434	512	2
95°	1	11	81	238	291	1
105°	1	6	16	46	66	1
115°	1	4	13	21	22	1
125°	1	2	6	14	19	1
135°	2	2	2	5	6	1
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: P518107

CATALOG NUMBER: HVL8-4-LD4-3HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4479.9	4479.9	4479.9	4479.9	4479.9
2.5°	4485.4	4473.5	4448.9	4472.6	4479.0
5°	4469.0	4459.9	4475.4	4525.6	4538.3
7.5°	4431.6	4466.2	4507.3	4598.6	4627.8
10°	4375.9	4441.6	4564.8	4642.4	4612.3
12.5°	4308.4	4419.7	4584.9	4433.4	4363.1
15°	4229.9	4392.3	4435.2	4288.3	4291.0
17.5°	4137.7	4369.5	4237.2	4233.5	4207.1
20°	4038.2	4292.9	4117.6	4110.3	4082.0
22.5°	3931.5	4191.6	4011.8	3997.2	4073.8
25°	3815.6	4059.2	3874.0	3989.9	4054.7
27.5°	3670.5	3885.8	3759.0	3923.3	4004.5
30°	3523.5	3707.0	3641.3	3870.3	4014.5
32.5°	3385.7	3519.9	3544.5	3850.2	3874.0
35°	3255.2	3345.6	3395.8	3704.2	3830.2
37.5°	3112.0	3136.6	3269.8	3643.1	3764.5
40°	2965.9	2950.4	3164.0	3542.7	3710.6
42.5°	2809.0	2803.5	3051.7	3492.5	3576.5
45°	2660.2	2672.1	2892.0	3350.1	3475.2
47.5°	2507.8	2523.3	2740.5	3194.1	3349.2
50°	2330.8	2350.8	2605.5	3055.4	3255.2
52.5°	2139.1	2177.5	2474.1	2924.0	3125.6
55°	1959.3	1991.3	2307.0	2811.7	3035.3
57.5°	1795.1	1814.2	2134.6	2670.3	2839.1
60°	1633.5	1638.1	1972.1	2513.3	2674.8
62.5°	1448.3	1456.5	1805.1	2328.0	2544.3
65°	1240.2	1279.5	1625.3	2151.0	2346.3
67.5°	1045.8	1114.3	1441.9	1988.5	2090.8
70°	837.8	953.7	1262.1	1797.8	1869.9
72.5°	647.0	783.0	1077.8	1584.3	1685.6
75°	469.1	621.5	906.2	1392.6	1480.2
77.5°	315.8	470.9	745.6	1180.9	1296.8
80°	188.9	344.0	602.3	984.7	1115.2
82.5°	96.7	230.9	467.2	825.9	942.7
85°	42.0	146.0	353.2	685.4	786.7
87.5°	11.9	83.0	260.1	553.9	639.7
90°	0.9	43.8	185.3	434.4	512.0
92.5°	0.9	21.0	130.5	328.5	387.9
95°	0.9	11.0	81.2	238.2	291.1
97.5°	0.9	6.4	49.3	168.8	213.5
100°	0.9	5.5	29.2	112.2	152.4
102.5°	0.9	6.4	20.1	71.2	99.5
105°	0.9	6.4	16.4	46.5	65.7
107.5°	1.8	6.4	14.6	34.7	45.6
110°	0.9	5.5	15.5	26.5	35.6

TEST NUMBER: P518107

CATALOG NUMBER: HVL8-4-LD4-3HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.8	4.6	14.6	21.9	26.5
115°	0.9	3.7	12.8	21.0	21.9
117.5°	1.8	2.7	10.0	21.0	21.9
120°	1.8	1.8	8.2	20.1	22.8
122.5°	1.8	1.8	6.4	18.3	21.9
125°	0.9	1.8	5.5	13.7	19.2
127.5°	1.8	1.8	4.6	11.0	14.6
130°	1.8	1.8	3.7	8.2	11.0
132.5°	1.8	1.8	2.7	6.4	8.2
135°	1.8	1.8	1.8	4.6	6.4
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)