

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: P517879

Luminaire Tested: HVL8-2-LD4-1HI-50-UNV-C-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517879
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1HI-50-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2113.0 lumens
Efficiency: N/A
Efficacy: 98.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

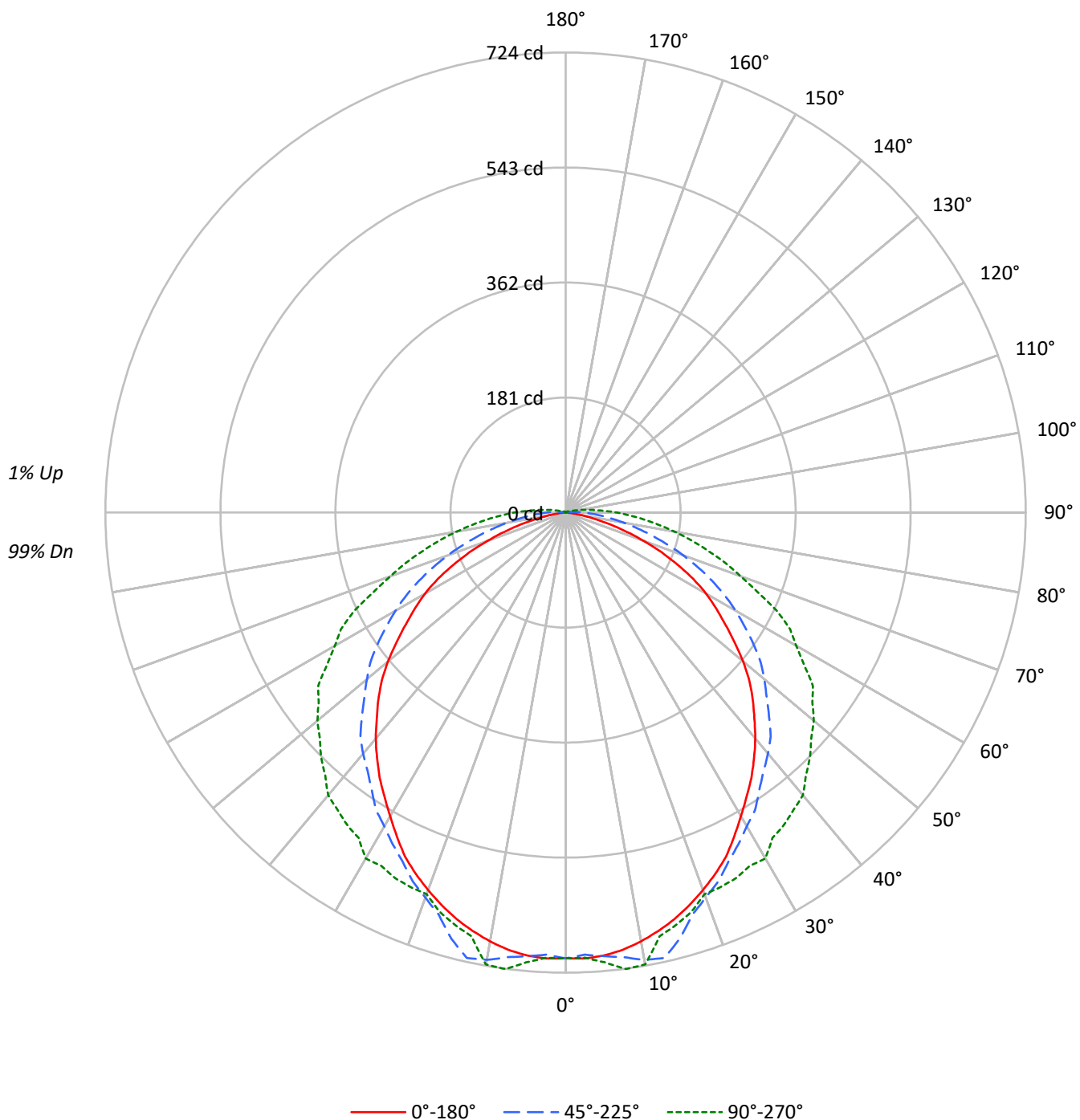
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517879

CATALOG NUMBER: HVL8-2-LD4-1HI-50-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517879

CATALOG NUMBER: HVL8-2-LD4-1HI-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°	5662	5662	5662
5°	5629	5564	5634
10°	5535	5625	5669
15°	5414	5459	5262
20°	5271	5101	5033
25°	5122	4867	5064
30°	4907	4678	5120
35°	4746	4498	5030
40°	4574	4359	5061
45°	4389	4183	4969
50°	4169	3999	4932
55°	3859	3803	4928
60°	3609	3540	4718
65°	3147	3229	4567
70°	2520	2831	4097
75°	1746	2355	3740
80°	934	1876	3357
85°	313	1386	2958

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4969 cd/sqm

TEST NUMBER: P517879

CATALOG NUMBER: HVL8-2-LD4-1HI-50-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.4	3.2
10°-20°	192.0	9.1
20°-30°	285.6	13.5
30°-40°	343.3	16.2
40°-50°	361.4	17.1
50°-60°	335.3	15.9
60°-70°	265.1	12.5
70°-80°	161.9	7.7
80°-90°	70.6	3.3
90°-100°	22.0	1.0
100°-110°	4.9	0.2
110°-120°	2.0	0.1
120°-130°	1.1	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°	545.0	25.8
0°-40°	888.4	42.0
0°-60°	1585.1	75.0
0°-90°	2082.7	98.6
90°-120°	28.9	1.4
90°-150°	30.3	1.4
90°-180°	30.0	1.4
0°-180°	2113.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	701	701	701	701	701	
5°	700	698	701	708	710	66
15°	662	688	694	671	672	187
25°	597	636	606	625	635	274
35°	510	524	532	580	600	319
45°	416	418	453	524	544	321
55°	307	312	361	440	475	276
65°	194	200	254	337	367	192
75°	73	97	142	218	232	80
85°	7	23	55	107	123	10
90°	0	7	29	68	80	0
95°	0	2	13	37	46	0
105°	0	1	3	7	10	0
115°	0	1	2	3	3	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: P517879

CATALOG NUMBER: HVL8-2-LD4-1HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	701.4	701.4	701.4	701.4	701.4
2.5°	702.3	700.4	696.5	700.3	701.3
5°	699.7	698.3	700.7	708.5	710.5
7.5°	693.8	699.3	705.7	720.0	724.5
10°	685.1	695.4	714.7	726.8	722.1
12.5°	674.5	692.0	717.8	694.1	683.1
15°	662.3	687.7	694.4	671.4	671.8
17.5°	647.8	684.1	663.4	662.8	658.7
20°	632.2	672.1	644.7	643.5	639.1
22.5°	615.5	656.3	628.1	625.8	637.8
25°	597.4	635.5	606.5	624.7	634.8
27.5°	574.7	608.4	588.5	614.2	627.0
30°	551.7	580.4	570.1	606.0	628.5
32.5°	530.1	551.1	554.9	602.8	606.5
35°	509.7	523.8	531.7	580.0	599.7
37.5°	487.2	491.1	511.9	570.4	589.4
40°	464.4	461.9	495.4	554.7	581.0
42.5°	439.8	438.9	477.8	546.8	559.9
45°	416.5	418.4	452.8	524.5	544.1
47.5°	392.6	395.1	429.1	500.1	524.4
50°	364.9	368.1	407.9	478.4	509.7
52.5°	334.9	340.9	387.3	457.8	489.4
55°	306.8	311.8	361.2	440.2	475.2
57.5°	281.0	284.0	334.2	418.1	444.5
60°	255.8	256.5	308.8	393.5	418.8
62.5°	226.8	228.0	282.6	364.5	398.4
65°	194.2	200.3	254.5	336.8	367.3
67.5°	163.7	174.5	225.8	311.3	327.3
70°	131.2	149.3	197.6	281.5	292.8
72.5°	101.3	122.6	168.7	248.0	263.9
75°	73.4	97.3	141.9	218.0	231.8
77.5°	49.4	73.7	116.7	184.9	203.0
80°	29.6	53.9	94.3	154.2	174.6
82.5°	15.1	36.1	73.2	129.3	147.6
85°	6.6	22.9	55.3	107.3	123.2
87.5°	1.9	13.0	40.7	86.7	100.2
90°	0.1	6.9	29.0	68.0	80.2
92.5°	0.1	3.3	20.4	51.4	60.7
95°	0.1	1.7	12.7	37.3	45.6
97.5°	0.1	1.0	7.7	26.4	33.4
100°	0.1	0.9	4.6	17.6	23.9
102.5°	0.1	1.0	3.1	11.1	15.6
105°	0.1	1.0	2.6	7.3	10.3
107.5°	0.3	1.0	2.3	5.4	7.1
110°	0.1	0.9	2.4	4.1	5.6

TEST NUMBER: P517879

CATALOG NUMBER: HVL8-2-LD4-1HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.3	3.4	4.1
115°	0.1	0.6	2.0	3.3	3.4
117.5°	0.3	0.4	1.6	3.3	3.4
120°	0.3	0.3	1.3	3.1	3.6
122.5°	0.3	0.3	1.0	2.9	3.4
125°	0.1	0.3	0.9	2.1	3.0
127.5°	0.3	0.3	0.7	1.7	2.3
130°	0.3	0.3	0.6	1.3	1.7
132.5°	0.3	0.3	0.4	1.0	1.3
135°	0.3	0.3	0.3	0.7	1.0
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)