

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: P517986

Luminaire Tested: HVL8-2-LD4-3LO-35-UNV-O-EDD

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: P517986
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3LO-35-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3237.0 lumens
Efficiency: N/A
Efficacy: 96.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

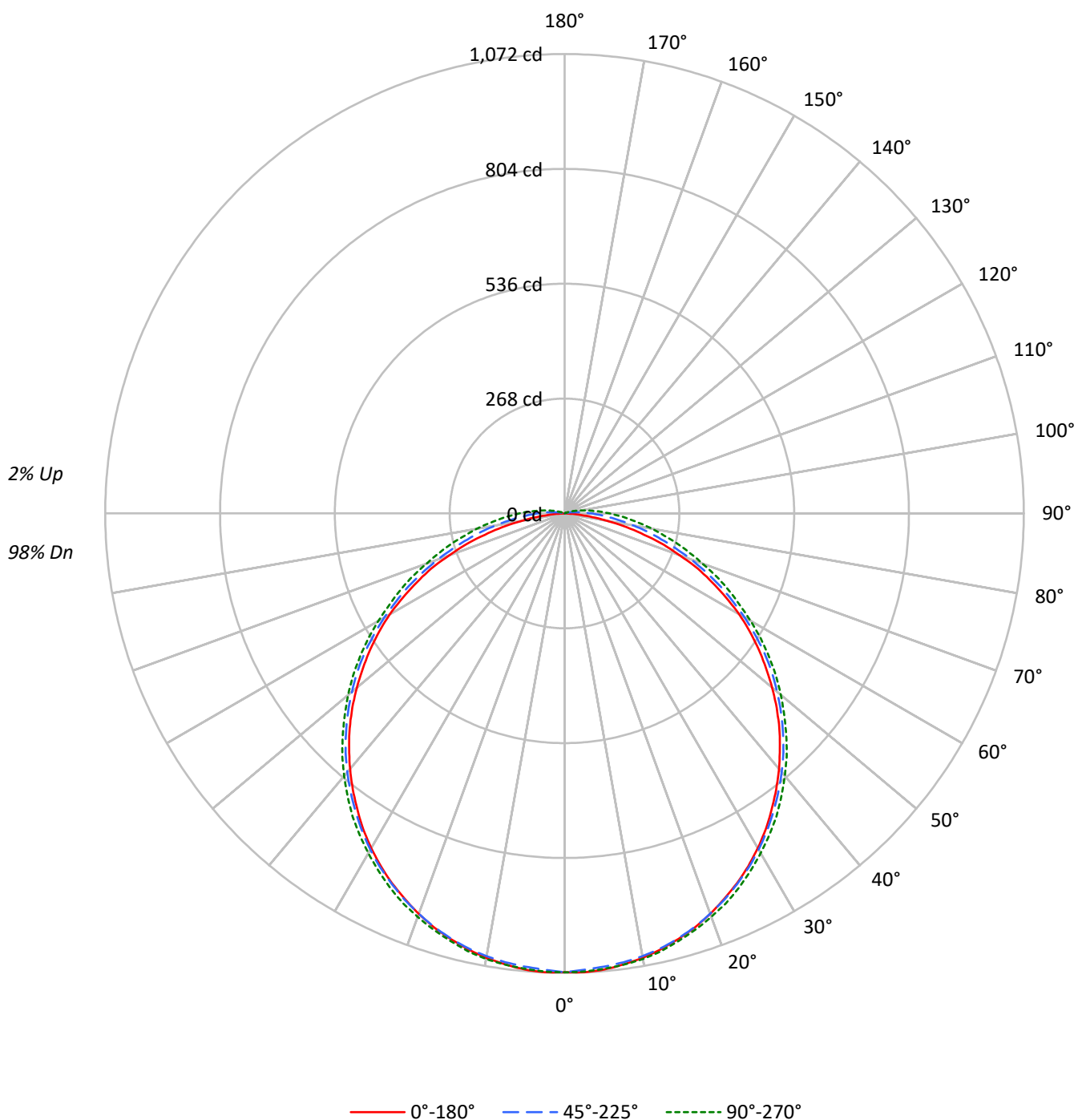
Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517986

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517986

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-O-EDD

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	8643	8643	8643
5°	8595	8428	8458
10°	8506	8258	8289
15°	8402	8071	8085
20°	8291	7865	7888
25°	8164	7656	7687
30°	8022	7435	7458
35°	7850	7193	7233
40°	7669	6939	6970
45°	7474	6664	6685
50°	7228	6349	6378
55°	6962	6006	6041
60°	6644	5567	5647
65°	6163	5079	5256
70°	5497	4508	4802
75°	4582	3886	4390
80°	3283	3274	4012
85°	1580	2650	3654

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7474 cd/sqm

TEST NUMBER: P517986

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-O-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.3	3.1
10°-20°	290.6	9.0
20°-30°	440.9	13.6
30°-40°	533.2	16.5
40°-50°	556.3	17.2
50°-60°	508.7	15.7
60°-70°	396.5	12.2
70°-80°	248.0	7.7
80°-90°	112.7	3.5
90°-100°	37.8	1.2
100°-110°	9.5	0.3
110°-120°	1.5	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	832.9	25.7
0°-40°	1366.1	42.2
0°-60°	2431.0	75.1
0°-90°	3188.3	98.5
90°-120°	48.8	1.5
90°-150°	48.8	1.5
90°-180°	49.0	1.5
0°-180°	3237.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1071	1071	1071	1071	1071	
5°	1068	1066	1062	1067	1067	101
15°	1028	1030	1027	1032	1032	290
25°	952	953	954	962	964	439
35°	843	847	850	859	862	528
45°	709	716	721	728	732	546
55°	554	560	570	579	582	494
65°	380	387	400	416	423	376
75°	193	204	234	262	272	205
85°	33	62	106	140	152	42
90°	0	23	62	94	105	1
95°	0	6	32	59	68	0
105°	0	1	5	16	21	1
115°	1	1	1	3	4	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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: P517986

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1070.6	1070.6	1070.6	1070.6	1070.6
2.5°	1071.9	1070.4	1065.6	1070.4	1070.1
5°	1068.3	1066.3	1061.5	1066.6	1066.6
7.5°	1061.3	1060.5	1056.2	1062.0	1062.0
10°	1052.9	1052.7	1049.2	1055.5	1055.7
12.5°	1041.3	1042.3	1039.1	1045.1	1045.9
15°	1027.7	1029.5	1026.7	1032.5	1032.2
17.5°	1012.8	1013.8	1011.8	1018.4	1018.1
20°	994.4	995.6	994.1	1000.9	1001.7
22.5°	973.9	975.7	975.5	982.5	984.5
25°	952.2	953.0	954.0	962.1	963.6
27.5°	928.3	929.5	931.3	938.6	940.1
30°	902.0	904.0	906.1	913.6	915.6
32.5°	874.3	876.3	878.8	888.6	889.6
35°	843.0	846.7	850.3	858.9	862.4
37.5°	811.7	816.5	819.7	828.8	831.6
40°	778.6	783.4	788.7	798.3	800.1
42.5°	744.0	749.6	755.9	764.5	767.5
45°	709.2	715.5	721.3	728.4	731.9
47.5°	671.6	677.9	685.0	693.0	695.3
50°	632.7	640.0	647.6	655.2	659.2
52.5°	592.8	601.7	610.3	618.3	622.1
55°	553.5	560.0	570.4	578.7	582.5
57.5°	512.6	518.1	527.5	541.1	543.1
60°	470.9	476.0	485.6	496.7	501.2
62.5°	425.0	431.8	441.9	456.1	460.1
65°	380.3	386.9	400.3	416.2	422.7
67.5°	337.2	339.5	356.6	373.3	383.9
70°	286.2	294.8	314.7	335.2	343.2
72.5°	242.3	250.9	272.8	296.8	306.9
75°	192.6	204.4	234.2	262.2	272.1
77.5°	148.9	162.0	198.9	227.1	238.5
80°	104.0	124.4	164.6	196.4	208.7
82.5°	65.4	90.6	133.5	166.8	177.7
85°	33.3	61.6	105.7	139.8	152.2
87.5°	8.8	39.9	82.3	114.8	127.5
90°	0.3	23.0	62.3	93.6	105.0
92.5°	0.3	12.9	46.4	74.5	86.1
95°	0.3	6.1	32.3	58.6	67.6
97.5°	0.3	2.5	22.2	44.2	53.3
100°	0.3	1.3	14.1	32.1	39.9
102.5°	0.5	0.8	8.8	23.0	29.3
105°	0.5	0.8	5.3	15.6	20.9
107.5°	0.5	0.8	3.0	10.6	14.4
110°	0.8	0.8	1.8	6.6	9.6

TEST NUMBER: P517986

CATALOG NUMBER: HVL8-2-LD4-3LO-35-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.0	4.3	6.3
115°	0.8	0.8	1.0	2.8	4.0
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)