

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: P517829

Luminaire Tested: HVL8-1-LD4-3HI-40-UNV-O-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: P517829
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-O-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: 3239.0 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

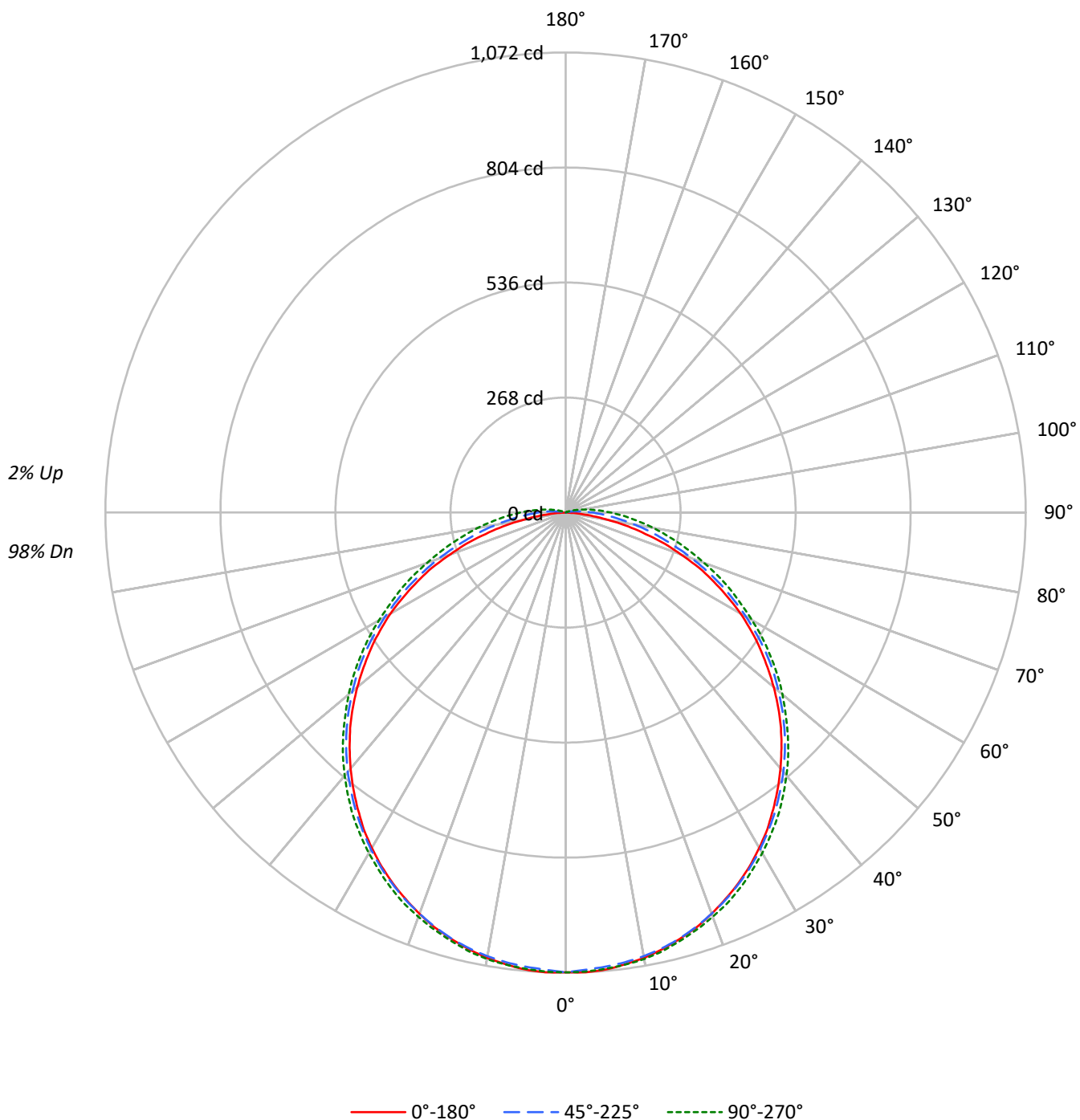
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17297	17297	17297
5°	17077	16783	16926
10°	16780	16361	16588
15°	16454	15915	16181
20°	16118	15435	15785
25°	15750	14952	15384
30°	15350	14445	14926
35°	14888	13901	14474
40°	14406	13336	13946
45°	13888	12730	13378
50°	13267	12046	12764
55°	12591	11306	12091
60°	11807	10388	11300
65°	10711	9376	10520
70°	9273	8215	9612
75°	7411	6964	8784
80°	4971	5733	8029
85°	2123	4487	7313

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 13888 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.4	3.1
10°-20°	290.8	9.0
20°-30°	441.2	13.6
30°-40°	533.5	16.5
40°-50°	556.7	17.2
50°-60°	509.0	15.7
60°-70°	396.8	12.2
70°-80°	248.2	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°	833.4	25.7
0°-40°	1366.9	42.2
0°-60°	2432.5	75.1
0°-90°	3190.2	98.5
90°-120°	48.8	1.5
90°-150°	48.8	1.5
90°-180°	49.0	1.5
0°-180°	3239.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1071	1071	1071	1071	1071	
5°	1069	1067	1062	1067	1067	102
15°	1028	1030	1027	1033	1033	290
25°	953	954	955	963	964	439
35°	844	847	851	859	863	528
45°	710	716	722	729	732	547
55°	554	560	571	579	583	495
65°	381	387	400	416	423	377
75°	193	205	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1071.3	1071.3	1071.3	1071.3	1071.3
2.5°	1072.5	1071.0	1066.2	1071.0	1070.8
5°	1069.0	1067.0	1062.2	1067.2	1067.2
7.5°	1061.9	1061.2	1056.9	1062.7	1062.7
10°	1053.6	1053.3	1049.8	1056.1	1056.4
12.5°	1042.0	1043.0	1039.7	1045.8	1046.5
15°	1028.3	1030.1	1027.3	1033.1	1032.9
17.5°	1013.4	1014.4	1012.4	1019.0	1018.7
20°	995.0	996.3	994.7	1001.6	1002.3
22.5°	974.5	976.3	976.1	983.1	985.2
25°	952.8	953.6	954.6	962.7	964.2
27.5°	928.8	930.1	931.9	939.2	940.7
30°	902.6	904.6	906.6	914.2	916.2
32.5°	874.8	876.8	879.3	889.2	890.2
35°	843.5	847.3	850.8	859.4	862.9
37.5°	812.2	817.0	820.2	829.3	832.1
40°	779.1	783.9	789.2	798.8	800.5
42.5°	744.5	750.0	756.4	764.9	768.0
45°	709.6	715.9	721.8	728.8	732.4
47.5°	672.0	678.3	685.4	693.5	695.7
50°	633.1	640.4	648.0	655.6	659.6
52.5°	593.2	602.1	610.6	618.7	622.5
55°	553.8	560.4	570.7	579.1	582.9
57.5°	512.9	518.5	527.8	541.4	543.5
60°	471.2	476.3	485.9	497.0	501.5
62.5°	425.3	432.1	442.2	456.3	460.4
65°	380.6	387.1	400.5	416.4	423.0
67.5°	337.4	339.7	356.8	373.5	384.1
70°	286.4	295.0	314.9	335.4	343.5
72.5°	242.4	251.0	273.0	297.0	307.1
75°	192.7	204.6	234.4	262.4	272.2
77.5°	149.0	162.1	199.0	227.3	238.6
80°	104.0	124.5	164.7	196.5	208.8
82.5°	65.4	90.7	133.6	166.9	177.8
85°	33.3	61.6	105.8	139.9	152.3
87.5°	8.8	39.9	82.3	114.9	127.5
90°	0.3	23.0	62.4	93.7	105.1
92.5°	0.3	12.9	46.5	74.5	86.1
95°	0.3	6.1	32.3	58.6	67.7
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	15.7	21.0
107.5°	0.5	0.8	3.0	10.6	14.4
110°	0.8	0.8	1.8	6.6	9.6

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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)