

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: P517821

Luminaire Tested: HVL8-1-LD4-3HI-30-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: P517821
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-30-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3055.0 lumens
Efficiency: N/A
Efficacy: 97.0 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

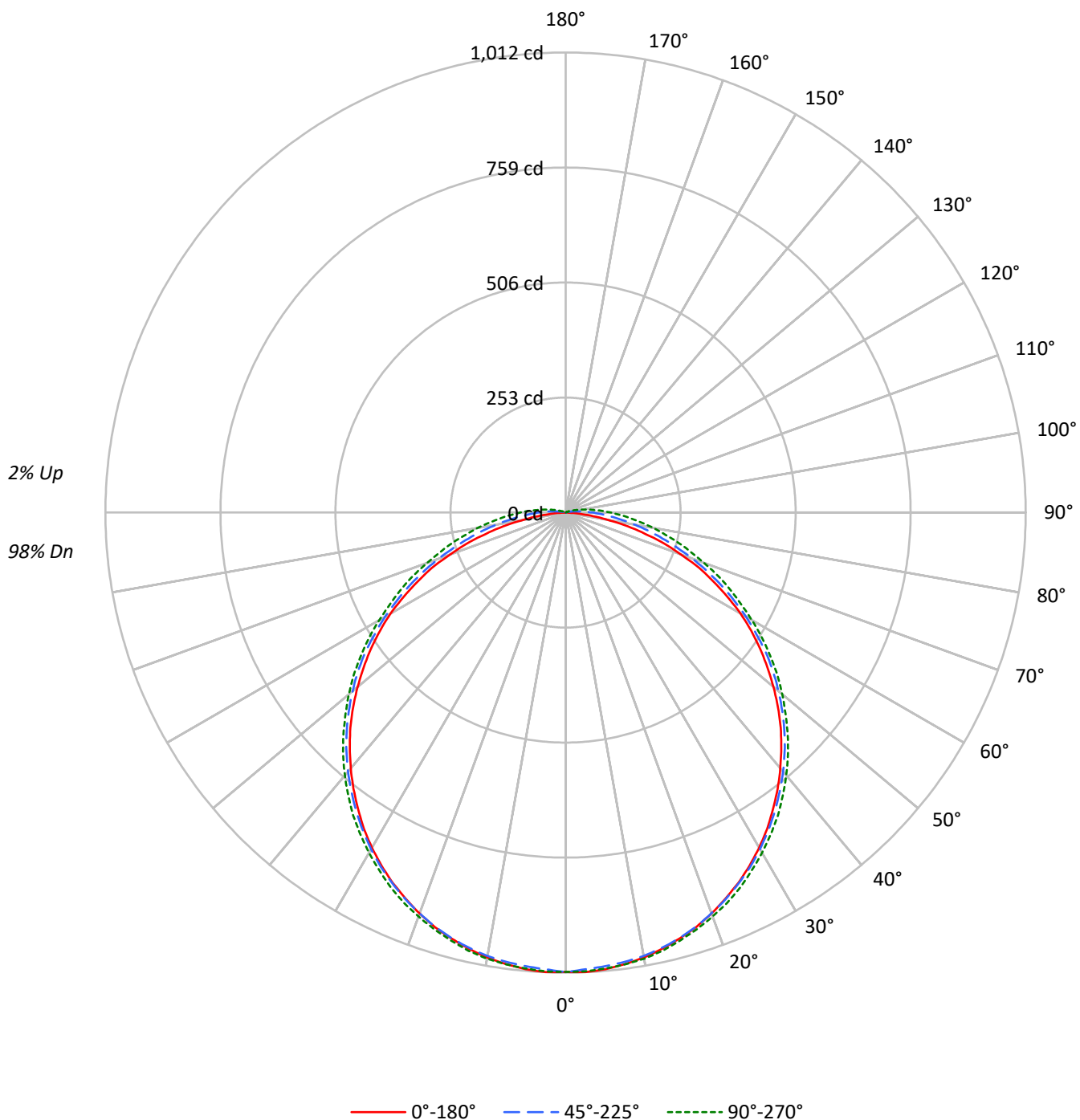
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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					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°	16314	16314	16314
5°	16107	15829	15965
10°	15826	15432	15646
15°	15519	15012	15262
20°	15203	14559	14889
25°	14856	14103	14509
30°	14478	13624	14079
35°	14043	13112	13652
40°	13587	12578	13155
45°	13099	12007	12618
50°	12512	11362	12041
55°	11878	10665	11402
60°	11138	9798	10658
65°	10103	8844	9923
70°	8745	7748	9064
75°	6988	6566	8287
80°	4689	5406	7575
85°	2002	4232	6895

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 13099 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.6	3.1
10°-20°	274.3	9.0
20°-30°	416.2	13.6
30°-40°	503.2	16.5
40°-50°	525.1	17.2
50°-60°	480.1	15.7
60°-70°	374.2	12.2
70°-80°	234.1	7.7
80°-90°	106.3	3.5
90°-100°	35.6	1.2
100°-110°	9.0	0.3
110°-120°	1.4	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°	786.0	25.7
0°-40°	1289.2	42.2
0°-60°	2294.4	75.1
0°-90°	3009.0	98.5
90°-120°	46.0	1.5
90°-150°	46.0	1.5
90°-180°	46.0	1.5
0°-180°	3055.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1010	1010	1010	1010	1010	
5°	1008	1006	1002	1007	1007	96
15°	970	972	969	974	974	274
25°	899	899	900	908	909	414
35°	796	799	802	811	814	498
45°	669	675	681	687	691	516
55°	522	528	538	546	550	467
65°	359	365	378	393	399	355
75°	182	193	221	248	257	194
85°	31	58	100	132	144	40
90°	0	22	59	88	99	1
95°	0	6	30	55	64	0
105°	0	1	5	15	20	1
115°	1	1	1	3	4	0
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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CATALOG NUMBER: HVL8-1-LD4-3HI-30-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1010.4	1010.4	1010.4	1010.4	1010.4
2.5°	1011.6	1010.2	1005.6	1010.2	1009.9
5°	1008.3	1006.4	1001.8	1006.6	1006.6
7.5°	1001.6	1000.9	996.8	1002.3	1002.3
10°	993.7	993.5	990.2	996.1	996.4
12.5°	982.8	983.7	980.6	986.4	987.1
15°	969.9	971.6	969.0	974.4	974.2
17.5°	955.9	956.8	954.9	961.1	960.9
20°	938.5	939.7	938.2	944.7	945.4
22.5°	919.2	920.8	920.6	927.3	929.2
25°	898.7	899.4	900.4	908.0	909.4
27.5°	876.1	877.3	878.9	885.8	887.3
30°	851.3	853.2	855.1	862.3	864.2
32.5°	825.1	827.0	829.4	838.7	839.6
35°	795.6	799.1	802.5	810.6	813.9
37.5°	766.0	770.6	773.6	782.2	784.8
40°	734.8	739.3	744.3	753.4	755.1
42.5°	702.2	707.4	713.4	721.5	724.3
45°	669.3	675.3	680.8	687.4	690.8
47.5°	633.8	639.8	646.5	654.1	656.2
50°	597.1	604.1	611.2	618.3	622.2
52.5°	559.5	567.8	575.9	583.6	587.1
55°	522.4	528.5	538.3	546.2	549.7
57.5°	483.8	489.0	497.8	510.7	512.6
60°	444.5	449.2	458.3	468.8	473.0
62.5°	401.1	407.5	417.1	430.4	434.2
65°	359.0	365.1	377.8	392.8	399.0
67.5°	318.2	320.4	336.6	352.3	362.3
70°	270.1	278.2	297.0	316.3	323.9
72.5°	228.7	236.8	257.5	280.1	289.6
75°	181.7	192.9	221.0	247.5	256.8
77.5°	140.5	152.9	187.7	214.4	225.1
80°	98.1	117.4	155.3	185.3	197.0
82.5°	61.7	85.5	126.0	157.4	167.7
85°	31.4	58.1	99.8	132.0	143.6
87.5°	8.3	37.6	77.7	108.4	120.3
90°	0.2	21.7	58.8	88.4	99.1
92.5°	0.2	12.1	43.8	70.3	81.2
95°	0.2	5.7	30.5	55.3	63.8
97.5°	0.2	2.4	21.0	41.7	50.3
100°	0.2	1.2	13.3	30.3	37.6
102.5°	0.5	0.7	8.3	21.7	27.6
105°	0.5	0.7	5.0	14.8	19.8
107.5°	0.5	0.7	2.9	10.0	13.6
110°	0.7	0.7	1.7	6.2	9.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	0.7	1.0	4.0	6.0
115°	0.7	0.7	1.0	2.6	3.8
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)