

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: P517243

Luminaire Tested: HVL12-1-LD4-3HI-30-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: P517243
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3HI-30-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3053.0 lumens
Efficiency: N/A
Efficacy: 94.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

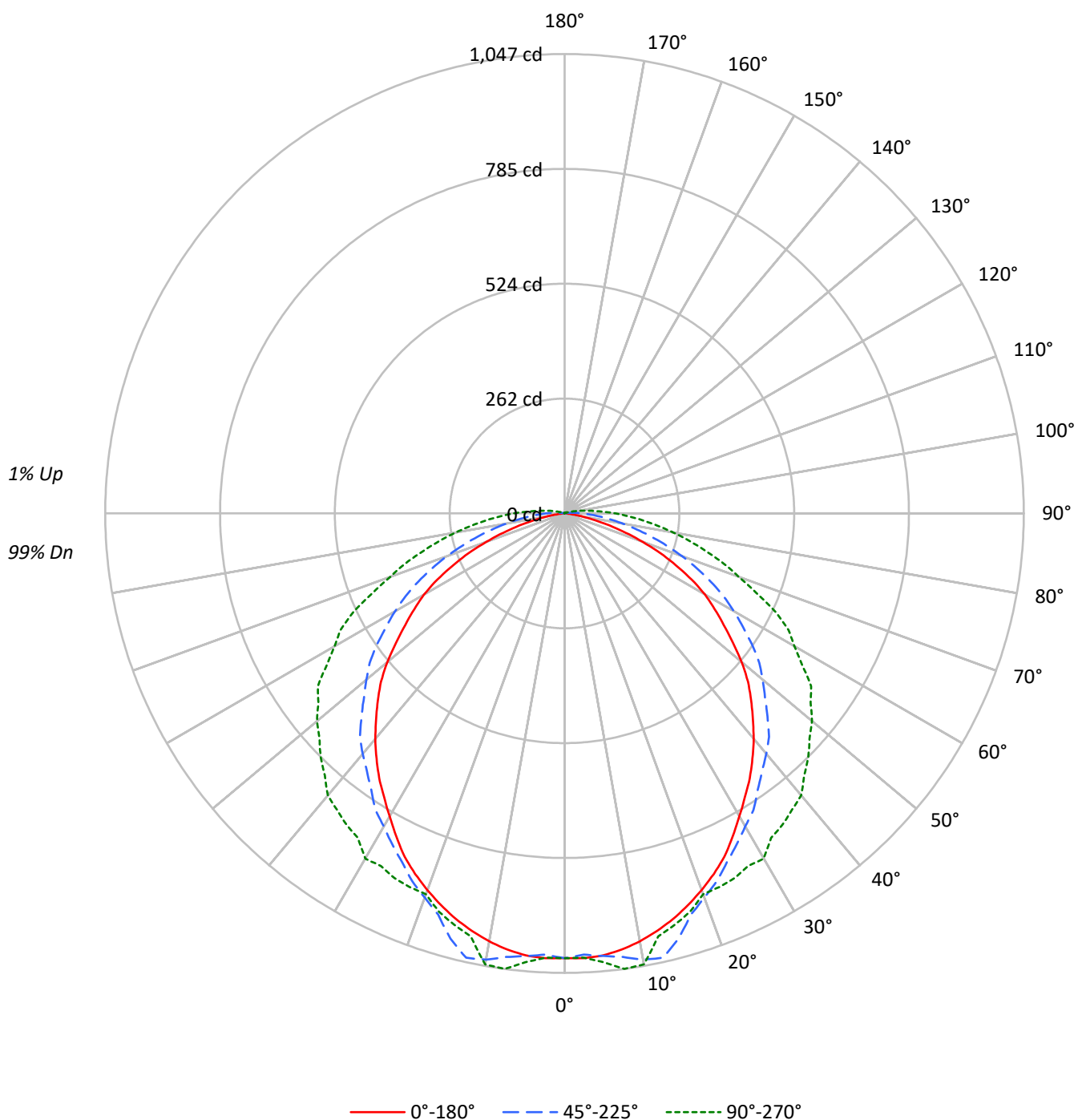
Input Watts (W): 32.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	10908	10908	10908
5°	10767	10718	10933
10°	10511	10836	11079
15°	10207	10516	10355
20°	9865	9827	9972
25°	9511	9378	10108
30°	9037	9011	10296
35°	8665	8664	10195
40°	8270	8396	10347
45°	7852	8059	10257
50°	7367	7705	10288
55°	6718	7327	10407
60°	6172	6819	10108
65°	5265	6220	9959
70°	4090	5453	9131
75°	2720	4535	8586
80°	1361	3615	8039
85°	404	2671	7566

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10407 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.4	3.2
10°-20°	277.4	9.1
20°-30°	412.7	13.5
30°-40°	496.1	16.2
40°-50°	522.1	17.1
50°-60°	484.5	15.9
60°-70°	383.1	12.5
70°-80°	234.0	7.7
80°-90°	101.9	3.3
90°-100°	31.7	1.0
100°-110°	7.1	0.2
110°-120°	2.9	0.1
120°-130°	1.6	0.1
130°-140°	0.4	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°	787.5	25.8
0°-40°	1283.6	42.0
0°-60°	2290.2	75.0
0°-90°	3009.2	98.6
90°-120°	41.7	1.4
90°-150°	43.7	1.4
90°-180°	44.0	1.4
0°-180°	3053.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1013	1013	1013	1013	1013	
5°	1011	1009	1012	1024	1027	96
15°	957	994	1003	970	971	270
25°	863	918	876	903	917	396
35°	736	757	768	838	866	460
45°	602	604	654	758	786	464
55°	443	450	522	636	687	398
65°	281	289	368	487	531	278
75°	106	141	205	315	335	116
85°	10	33	80	155	178	15
90°	0	10	42	98	116	0
95°	0	2	18	54	66	0
105°	0	1	4	10	15	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1013.4	1013.4	1013.4	1013.4	1013.4
2.5°	1014.7	1012.0	1006.4	1011.8	1013.2
5°	1011.0	1008.9	1012.4	1023.8	1026.6
7.5°	1002.5	1010.3	1019.6	1040.3	1046.9
10°	989.9	1004.8	1032.6	1050.2	1043.4
12.5°	974.6	999.8	1037.2	1002.9	987.0
15°	956.9	993.6	1003.3	970.1	970.7
17.5°	936.0	988.5	958.5	957.7	951.7
20°	913.5	971.1	931.5	929.8	923.4
22.5°	889.4	948.2	907.5	904.2	921.6
25°	863.1	918.3	876.4	902.6	917.2
27.5°	830.3	879.0	850.3	887.5	905.9
30°	797.1	838.6	823.7	875.5	908.1
32.5°	765.9	796.3	801.8	871.0	876.4
35°	736.4	756.8	768.2	838.0	866.4
37.5°	704.0	709.5	739.7	824.1	851.6
40°	670.9	667.4	715.7	801.4	839.4
42.5°	635.4	634.2	690.3	790.1	809.1
45°	601.8	604.5	654.2	757.9	786.1
47.5°	567.3	570.8	619.9	722.6	757.6
50°	527.3	531.8	589.4	691.2	736.4
52.5°	483.9	492.6	559.7	661.4	707.1
55°	443.2	450.5	521.9	636.1	686.6
57.5°	406.1	410.4	482.9	604.1	642.2
60°	369.5	370.6	446.1	568.5	605.1
62.5°	327.6	329.5	408.3	526.6	575.6
65°	280.6	289.4	367.7	486.6	530.8
67.5°	236.6	252.1	326.2	449.8	473.0
70°	189.5	215.7	285.5	406.7	423.0
72.5°	146.4	177.1	243.8	358.4	381.3
75°	106.1	140.6	205.0	315.0	334.9
77.5°	71.4	106.5	168.7	267.1	293.4
80°	42.7	77.8	136.3	222.8	252.3
82.5°	21.9	52.2	105.7	186.8	213.3
85°	9.5	33.0	79.9	155.0	178.0
87.5°	2.7	18.8	58.8	125.3	144.7
90°	0.2	9.9	41.9	98.3	115.8
92.5°	0.2	4.7	29.5	74.3	87.7
95°	0.2	2.5	18.4	53.9	65.9
97.5°	0.2	1.4	11.1	38.2	48.3
100°	0.2	1.2	6.6	25.4	34.5
102.5°	0.2	1.4	4.5	16.1	22.5
105°	0.2	1.4	3.7	10.5	14.9
107.5°	0.4	1.4	3.3	7.8	10.3
110°	0.2	1.2	3.5	6.0	8.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.3	5.0	6.0
115°	0.2	0.8	2.9	4.7	5.0
117.5°	0.4	0.6	2.3	4.7	5.0
120°	0.4	0.4	1.9	4.5	5.2
122.5°	0.4	0.4	1.4	4.1	5.0
125°	0.2	0.4	1.2	3.1	4.3
127.5°	0.4	0.4	1.0	2.5	3.3
130°	0.4	0.4	0.8	1.9	2.5
132.5°	0.4	0.4	0.6	1.4	1.9
135°	0.4	0.4	0.4	1.0	1.4
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)