

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: P517148

Luminaire Tested: HVL12-1-LD4-1HI-30-UNV-C-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: P517148
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1HI-30-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1176.0 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

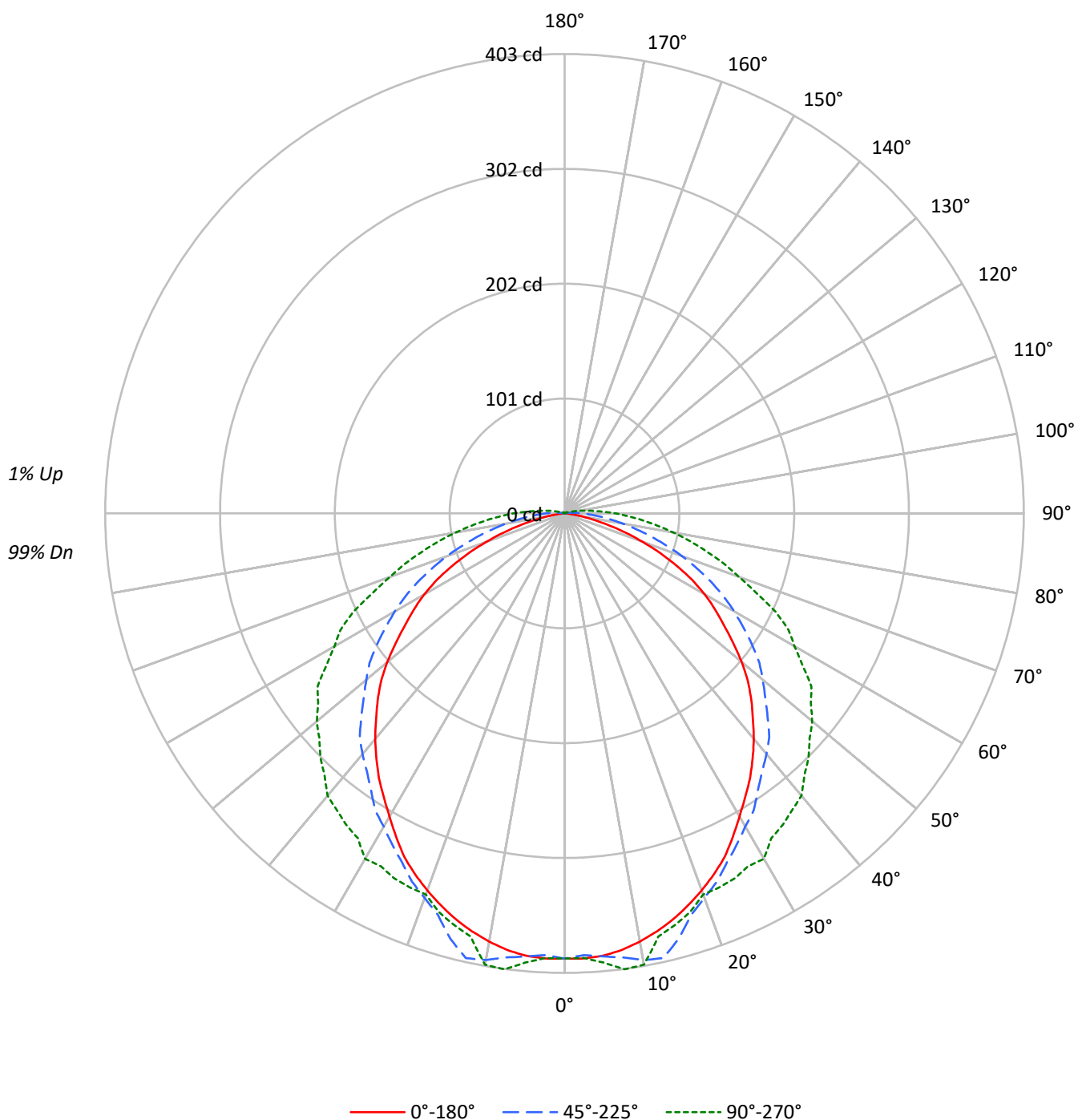
Input Watts (W): 11
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	44	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°	4202	4202	4202
5°	4147	4129	4212
10°	4049	4174	4267
15°	3932	4051	3988
20°	3800	3785	3841
25°	3664	3612	3893
30°	3481	3471	3966
35°	3338	3337	3927
40°	3185	3234	3985
45°	3024	3104	3951
50°	2837	2968	3963
55°	2587	2822	4009
60°	2377	2626	3894
65°	2028	2395	3835
70°	1576	2101	3516
75°	1049	1748	3307
80°	526	1393	3097
85°	157	1030	2912

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4009 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.5	3.2
10°-20°	106.8	9.1
20°-30°	159.0	13.5
30°-40°	191.1	16.2
40°-50°	201.1	17.1
50°-60°	186.6	15.9
60°-70°	147.6	12.5
70°-80°	90.1	7.7
80°-90°	39.3	3.3
90°-100°	12.2	1.0
100°-110°	2.8	0.2
110°-120°	1.1	0.1
120°-130°	0.6	0.1
130°-140°	0.2	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°	303.3	25.8
0°-40°	494.4	42.0
0°-60°	882.2	75.0
0°-90°	1159.1	98.6
90°-120°	16.1	1.4
90°-150°	16.9	1.4
90°-180°	17.0	1.4
0°-180°	1176.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	390	390	390	390	390	
5°	389	389	390	394	396	37
15°	369	383	386	374	374	104
25°	332	354	338	348	353	153
35°	284	292	296	323	334	177
45°	232	233	252	292	303	179
55°	171	174	201	245	264	153
65°	108	112	142	187	204	107
75°	41	54	79	121	129	45
85°	4	13	31	60	68	6
90°	0	4	16	38	45	0
95°	0	1	7	21	25	0
105°	0	1	1	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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°	390.4	390.4	390.4	390.4	390.4
2.5°	390.8	389.8	387.7	389.7	390.3
5°	389.4	388.6	390.0	394.3	395.5
7.5°	386.2	389.2	392.8	400.7	403.3
10°	381.3	387.0	397.8	404.5	401.9
12.5°	375.4	385.1	399.5	386.3	380.2
15°	368.6	382.7	386.5	373.7	373.9
17.5°	360.5	380.7	369.2	368.9	366.6
20°	351.9	374.1	358.8	358.2	355.7
22.5°	342.6	365.2	349.6	348.3	355.0
25°	332.5	353.7	337.6	347.7	353.3
27.5°	319.8	338.6	327.5	341.9	348.9
30°	307.0	323.0	317.3	337.2	349.8
32.5°	295.0	306.7	308.9	335.5	337.6
35°	283.7	291.5	295.9	322.8	333.7
37.5°	271.2	273.3	284.9	317.4	328.0
40°	258.4	257.1	275.7	308.7	323.3
42.5°	244.8	244.3	265.9	304.3	311.6
45°	231.8	232.8	252.0	291.9	302.8
47.5°	218.5	219.9	238.8	278.3	291.8
50°	203.1	204.8	227.0	266.2	283.7
52.5°	186.4	189.7	215.6	254.8	272.4
55°	170.7	173.5	201.0	245.0	264.5
57.5°	156.4	158.1	186.0	232.7	247.4
60°	142.3	142.7	171.8	219.0	233.1
62.5°	126.2	126.9	157.3	202.9	221.7
65°	108.1	111.5	141.6	187.4	204.4
67.5°	91.1	97.1	125.6	173.3	182.2
70°	73.0	83.1	110.0	156.7	162.9
72.5°	56.4	68.2	93.9	138.0	146.9
75°	40.9	54.2	79.0	121.3	129.0
77.5°	27.5	41.0	65.0	102.9	113.0
80°	16.5	30.0	52.5	85.8	97.2
82.5°	8.4	20.1	40.7	72.0	82.1
85°	3.7	12.7	30.8	59.7	68.5
87.5°	1.0	7.2	22.7	48.3	55.7
90°	0.1	3.8	16.1	37.9	44.6
92.5°	0.1	1.8	11.4	28.6	33.8
95°	0.1	1.0	7.1	20.8	25.4
97.5°	0.1	0.6	4.3	14.7	18.6
100°	0.1	0.5	2.5	9.8	13.3
102.5°	0.1	0.6	1.7	6.2	8.7
105°	0.1	0.6	1.4	4.1	5.7
107.5°	0.2	0.6	1.3	3.0	4.0
110°	0.1	0.5	1.4	2.3	3.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	1.9	2.3
115°	0.1	0.3	1.1	1.8	1.9
117.5°	0.2	0.2	0.9	1.8	1.9
120°	0.2	0.2	0.7	1.7	2.0
122.5°	0.2	0.2	0.6	1.6	1.9
125°	0.1	0.2	0.5	1.2	1.7
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.7	1.0
132.5°	0.2	0.2	0.2	0.6	0.7
135°	0.2	0.2	0.2	0.4	0.6
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)