

Blood Volume Pulse (BVP) Sensor Data Sheet

BVP 24042015

SPECIFICATIONS

- > **Gain:** 34
- > **Wavelength:** 670nm
- > **Bandwidth:** 0.02-2.1Hz
- > **Consumption:** ~4.8mA

FEATURES

- > Optical emitter and receiver
- > Transmittance operating principle
- > Pre-conditioned analog output
- > High signal-to-noise ratio
- > Shielded miniaturized cables
- > Spring loaded clip-on mechanism
- > Ready-to-use form factor

APPLICATIONS

- > Life sciences studies
- > Heart rate & heart rate variability
- > Pulse transit time analysis
- > Vasoconstriction effect detection
- > Affective computing
- > Physiology studies
- > Psychophysiology
- > Biofeedback

GENERAL DESCRIPTION

Our Blood Volume Pulse (BVP) sensor is an optical, non-invasive sensor that measures cardiovascular dynamics by detecting changes in the arterial translucency. When the heart pumps blood the arteries become more opaque, allow less light to pass from the emitter on the sensor through to the receiver. The BVP sensor has a plastic clip-on housing for placement on the finger, which houses the light emitter and detector, and also minimizes interferences from external light sources. Together with the Heart Rate Variability (HRV) plugin on our OpenSignals software, one can easily record and extract meaningful information from the collected data. Examples:

<http://bit.ly/1HE6UCJ>
<http://bit.ly/1GiEN6z>

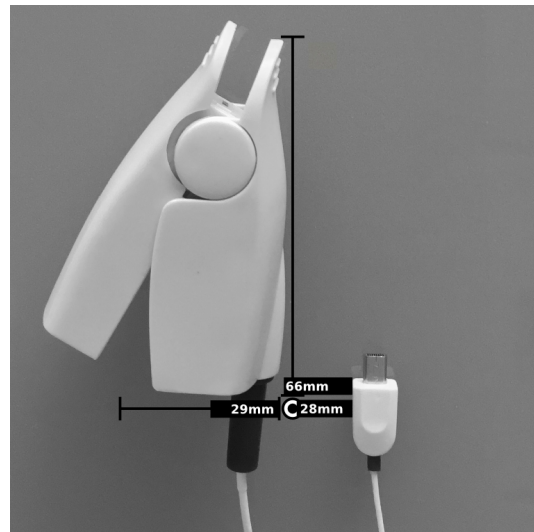


Fig. 1. Sturdy housing with convenient clip-on action for improved signal quality and ease-of-use.

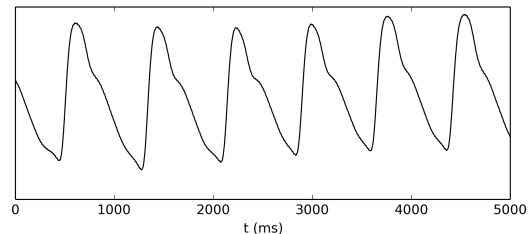


Fig. 2. Typical raw BVP data (acquired with biosignals).

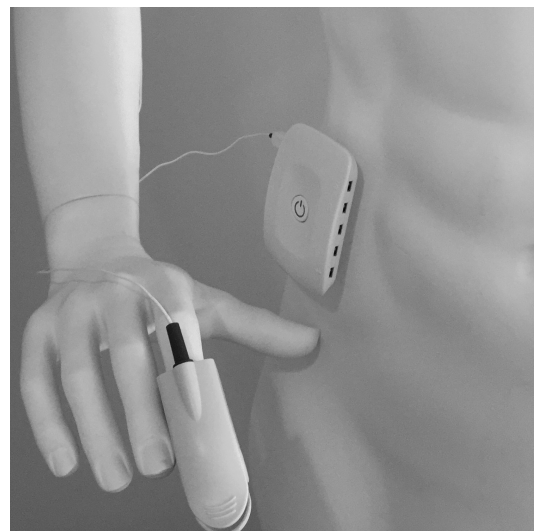


Fig. 3. Example sensor placement on the index finger.

biosignalsplux
wearable body sensing platForm

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REV A

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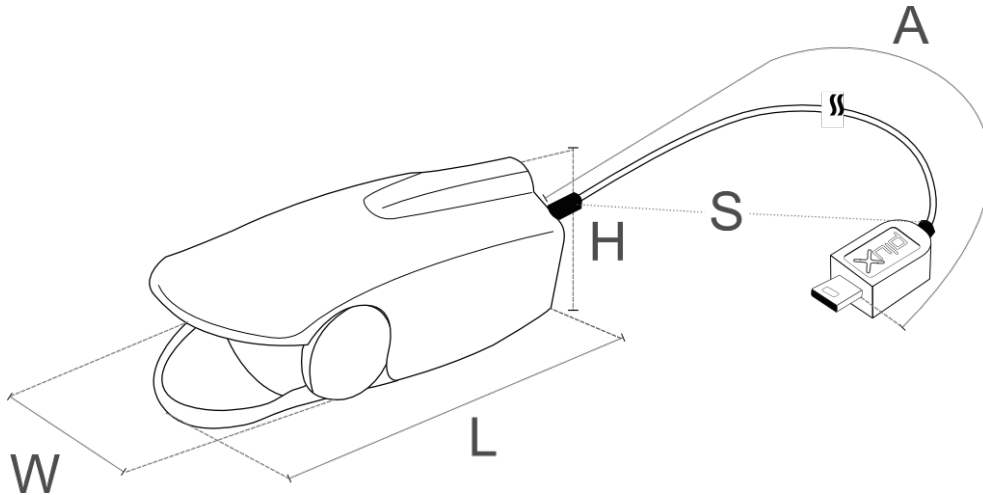
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PHYSICAL CHARACTERISTICS

> **W x L x H:** 1.0x1.8x0.4cm

> **A:** 105.0±0.5cm

> **S:** White, Black, Blue, Green, Red, Yellow, Gray, or Brown



ORDERING GUIDE

Reference	Package Description
BVP1	Blood Volume Pulse (BVP) sensor with standard physical characteristics and a random cable sleeve color
BVP1-A-S	Blood Volume Pulse (BVP) sensor built with custom length A and custom sleeve color S; for standard physical characteristics in A or S use 0. Examples: > BVP1-200-0: BVP sensor with a 200cm cable A > BVP1-50-Red: Fully custom BVP sensor with a 50cm cable A and a red cable sleeve