

SpO2 Reader (OSL) Sensor Data Sheet

OSL 10012018

SPECIFICATIONS

- > **SpO2:**
 - > Range: 0-100%
 - > Accuracy: $\pm 2\%$ for values $> 70\%$
- > **Heart Rate**
 - > Range: 30-250bpm
 - > Accuracy: ± 2 bpm
- > **Optical Sensor (Red Light)**
 - > Wavelength: 660nm at 6.64mW
- > **Optical Sensor (Infrared)**
 - > Wavelength: 88nm at 6.75mW
- > **Battery Type:** 2 AAA batteries

FEATURES

- > Oxygen saturation level measurement (in %)
- > Heart rate extraction
- > Independent channels for oxygen saturation level & heart rate
- > Built-in color LCD display
- > Auto power off function
- > Standalone device capability

FEATURES

- > Oximetry
- > Heart rate & heart rate variability
- > Life sciences studies
- > Biomedical research
- > Human-computer interaction

GENERAL DESCRIPTION

This comfortable and user-friendly finger clip sensor was designed to measure reliable oxygen saturation levels (%) and heart rate (bpm) information. The built-in colour LCD display displays all measured values and signals and allows this sensor to be used both as standalone device or as biosignalsplux sensor within our [OpenSignals \(r\)evolution software](#).



Fig. 1. User-friendly finger clip sensor for SpO2 and heart rate monitoring.

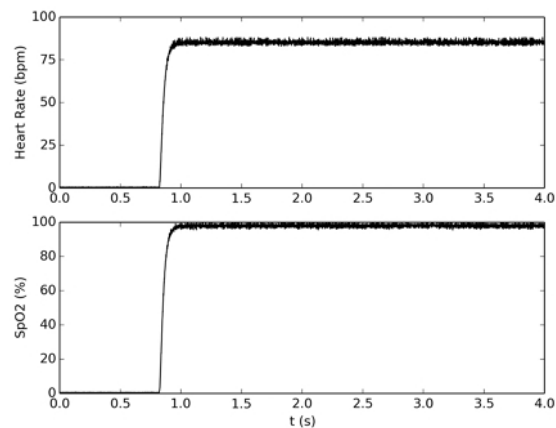


Fig. 2. Typical raw OSL data (acquired with biosignals).

biosignalsplux
wearable body sensing platForm

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APPLICATION NOTES

This sensor is designed to measure oxygen saturation levels and heart rate on the index finger.

This sensor is not powered by the biosignalsplux hub and requires 2 AAA batteries which are not included.

TRANSFER FUNCTION

SpO2 [0%, 100%] & HR [30bpm, 250bpm]

$$SpO2(\%) = 0.25 \times 2^{10-n} \times ADC - 0.8$$

$$HR(BPM) = 0.25 \times 2^{10-n} \times ADC - 0.8$$

SpO2(%) – Blood oxygenation in percentage

HR(BPM) – Heart rate in beats per minute

ADC – Value sampled from the channel

n – Number of bits of the channel¹

PHYSICAL CHARACTERISTICS

> **Sensor Size (W x L x H):** 53x31x34mm

> **Weight (standalone):** 43g

> **Weight (with adapter):** 78g

> **Cables length:** 135cm

ORDERING GUIDE

Reference	Package Description
SENSADV-SpO2-OSL	Oxygen saturation level reader (dual channel sensor for individual SpO2 & heart rate signals)

3rd PARTY NOTE

This sensor is an adaptation of the 3rd party *CMS-50D Plus* which provides compatibility with biosignalsplux devices. It can be used both as standalone device or as biosignalsplux sensor.

¹ The number of bits for each channel depends on the resolution of the Analog-to-Digital Converter (ADC); in biosignalsplux the default is 16-bit resolution ($n = 16$), although 12-bit ($n = 12$) and 8-bit ($n = 8$) may also be found.