corpuls®

corpuls auryx

MONITORING BEYOND LIMITS – SMALL SIZE, BIG POSSIBILITIES

SMALL DEVICE
BIG DIFFERENCE

Universal access to vital parameters with corpuls auryx monitoring technology:
The unique, medically approved in-ear sensor, weighing just 8.6 grams, enables the measurement of multiple vital parameters, no matter where patients may be. The data can be viewed and assessed remotely using integrated, high-end software solutions. **corpuls auryx** provides reliable and effective monitoring of multiple patients simultaneously, even in the most challenging situations, giving emergency responders significant advantages.

VITAL PARAMETERS

corpuls auryx is a Class IIb medical device that continuously generates data streams of key vital parameters:

- Body temperature
- Pulse rate
- Oxygen saturation (SpO2)

TWO IN ONE

corpuls auryx is a wearable in-ear sensor that combines a temperature probe and pulse oximeter in a single device.

3 CAP SIZES

S 10 mm
M 11.5 mm
L 12.5 mm

INSIDE THE EAR CANAL,

in close proximity to the brain

SPECIAL FEATURES

- **Measurements taken at a central body location**, within the ear canal, in close proximity to the brain
- Quality-assessed **vital parameters**
- **Continuous data stream**
- **Easy integration**
- **Update capability**
- **Small and lightweight**: 8.6 g
- **CE Class IIb**

OUTLOOK

In the future, the **corpuls auryx** sensor will be connected to the **corpuls3**. For more information, see page 10.

PATIENT MONITOR
IN YOUR POCKET

The **corpuls auryx app** (class IIb medical device) is the data-processing component of the **corpuls auryx** patient monitoring solution. It enables both lay users and medical professionals to view relevant patient vital data on smartphones or tablets.

PATIENT MONITORING ON MOBILE DEVICES

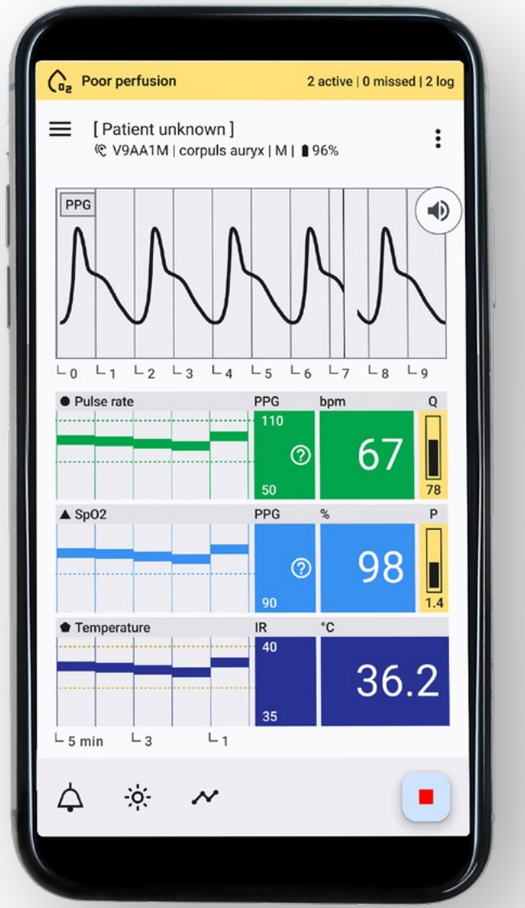
The **corpuls auryx app** is a standalone software solution that can receive data from **corpuls auryx** via a Bluetooth broadcasting interface and display it on a smartphone. The app can be installed on iOS and Android smartphones or tablets, enabling the visualisation, documentation and export of data captured and transmitted by **corpuls auryx**.

DISPLAY FEATURES

- **Pulse curve**: ECG-like PPG signal
- Numerical display of **current measurements**
- Trend display of **previous measurements**
- **Notifications** on system status and measurements, with configurable **alarm limits**
- **Connection status**
- **Battery level**

SPECIAL FEATURES

- **Look and Feel** of conventional patient monitors
- **Continuous recording** of multiple vital parameters
- **Alarm system** (configurable alarms)
- **Automatic documentation**
- **Simple data export**



*The **corpuls auryx app** provides a mobile solution for displaying vital data and curves.*

TOGETHER
TWO STEPS AHEAD

At **corpuls**, we have always approached medical technology as an integrated system, with users and patients at its core. In a well-designed system, all components are interconnected, working together towards a shared goal.

INTEGRATED. CONNECTED. DIGITAL.

With **corpuls.mission**, you can bring essential knowledge and specialist expertise directly to the point of care. By combining medical data, chat, video and documentation, all relevant information is available in one place.

Integrating the **corpuls auryx** sensor with **corpuls.mission** opens up a wide range of new possibilities in telemedical monitoring. Users benefit in particular in extreme operating conditions, in remote locations and/or hostile environments, or where medical equipment is limited and transport to the nearest facility is prolonged.

USE CASES

MOBILE
PATIENT MONITORING

From initial care and transport to telemedical support, triage and in-hospital monitoring: reliable vital data forms the foundation for successful treatment and patient recovery. However, despite advances in medical technology, gaps in monitoring still exist, particularly in confined environments, in situations where conventional monitoring is not feasible, or when patients are monitored from a centralised location. **corpuls auryx** closes these gaps, providing a comprehensive patient monitoring solution.

DATA CAPTURE, TRANSMISSION & ANALYSIS

Access to the system can be established at any point via standardised or customisable interfaces. Individual components, or the complete monitoring solution, can therefore be seamlessly integrated into existing third-party infrastructures.

KEY FEATURES

- **One device – three vital parameters:** temperature, oxygen saturation & pulse rate
- **Precise measurements:** quality and perfusion index, PPG curves, 3-axis accelerometer data
- Simple, automated **recording**

Easy-to-use in-ear sensor

Small, lightweight and pocket-sized

Cost-efficient monitoring

AIR & MOUNTAIN
RESCUE OPERATIONS

Capturing patients' vital parameters during specialist rescue missions, whether at high altitude, in confined spaces or in complex environments, is of critical importance. Emergency responders must obtain objective information about a patient's condition quickly in order to make informed decisions regarding treatment, prioritisation and transport suitability. However, existing systems often reach their limits due to the measurement site and can be difficult or even impossible to apply effectively.

The integrated functions of the **corpuls auryx app** significantly enhance operational workflows. They enable medical personnel to configure customised notifications based on vital parameter thresholds, with individually adjustable alarm limits. This ensures that even the smallest changes in a patient's condition are detected immediately, providing an additional layer of safety in dynamic, high-stress environments. In addition, **corpuls auryx** offers a distinct advantage over conventional systems due to its measurement location within the ear canal.[1 2 3]

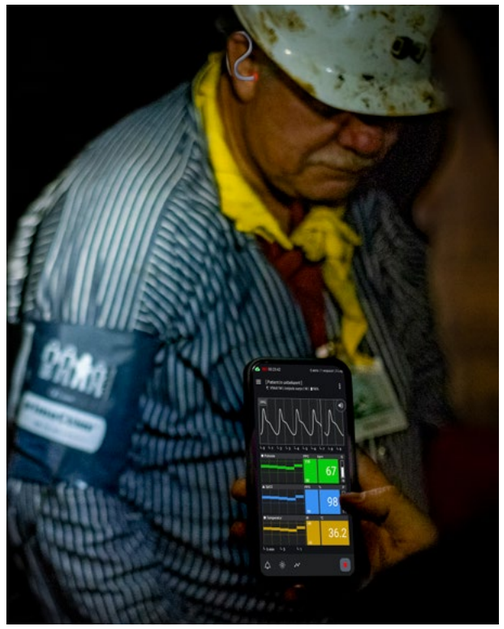
KEY FEATURES

- **Smartphone as a patient monitor**
- Continuous **monitoring of multiple vital parameters**
- **Continuous temperature monitoring,** including hypothermia cases
- Automatic **documentation**
- Simple **data export**

Continuous temperature monitoring

SPECIALIST RESCUE & CHALLENGING MISSIONS

corpuls auryx enables patient monitoring in situations where it was previously not possible. The ultra-lightweight in-ear sensor has been specifically developed for use in demanding environments. It allows emergency responders to monitor patients in hard-to-reach, confined or remote locations, as well as in situations where measurement using a finger clip or temperature probe is not feasible.



No heavy equipment required underground: the sensor and app are ideally suited for rough terrain and confined spaces.

SPECIAL FORCES & MILITARY

Special forces and military personnel either possess basic medical training themselves or are supported by medical professionals in operational missions. They must operate efficiently despite limited infrastructure, challenging terrain and constant threat, and therefore benefit from the compact size and low weight of the **corpuls auryx** sensor.
It enables personnel to carry multiple units, allowing several patients to be monitored simultaneously on site. The sensor also delivers reliable vital parameters in situations where a tourniquet is applied to the upper limbs, or where injuries impair distal circulation and therefore limit the effectiveness of finger-based measurements. In addition, it proves to be a practical monitoring tool during unplanned, prolonged field care, as it can provide essential data for telemedical consultations.

KEY FEATURES

- **Flexible mission possibilities** – including mobile use and operation within independent networks
- Fast **remote monitoring**
- **Lightweight, small & compact** – with powerful performance
- Can be **used with injured limbs**

Hands-free

Mobile alarm system

Small, lightweight & multi-parameter

Easy to use

OUTLOOK: CONNECTION TO CORPULS3

The integration of corpuls auryx into corpuls3 is currently in development.

In the near future, the "**corpuls auryx**" sensor will be able to be paired with the **corpuls3**. This integration, which is currently under development, will open up numerous new monitoring possibilities, as the in-ear sensor will allow the **corpuls3** to offer additional options for monitoring oxygen saturation, heart rate, and body temperature.

This will be particularly advantageous when previously used sensors cannot be employed for a variety of reasons. Users will benefit from this in a wide variety of situations — for example, when patients' fingers are unsuitable for measurements, when patients rely on wireless monitoring, or when they are hypothermic. With the **corpuls auryx** sensor, body temperature monitoring is always guaranteed, even in cases of hypothermia — and without the invasive insertion of probes.

Easy measurement of vital signs

SPECIFICATIONS

CORPULS AURYX SENSOR

- **Dimensions**: (WxH): 55 x 59 mm
- **Weight**: 8.6 g
- **Protection rating**: IP 47
- **Battery life**: 10 hrs.
- **Operating temperature (continuous)**: 0° C to 40° C (up to 50°C for short periods)
- **Vital parameters**: body temperature, pulse rate, oxygen saturation
- **Parameters**: perfusion, signal quality, pulse curve
- **Cap sizes**: **S** 10 mm, **M** 11.5 mm, **L** 12.5 mm
- **Adaptable** to different ear sizes
- **CE class** IIb
- **MDR-CE-certified** product

DUAL CHARGING CASE

- **Dimensions** (WxHxD): 140 x 19 x 70 mm

CORPULS AURYX APP

- **Quality & perfusion index**
- **PPG curves** (three-colour; pulse curve: ECG-like PPG signal)
- 3-axis **accelerometer data**
- Simple, automated **data recording**
- Numerical display of **current measurements**
- **Connection status**
- **Battery level**
- Configurable **notifications & alarms**
- **MDR-CE-certified** product

[1] Budidha, K. & Kyriacou, P. A. (2014). The human ear canal: investigation of its suitability for monitoring photoplethysmographs and arterial oxygen saturation. Physiological Measurement, 35(2), pp. 111-128. doi: 10.1088/0967-3334/35/2/111.
[2] Davies, Harry J., Ian Williams, Nicholas S. Peters, and Danilo P. Mandic. 2020. „In-Ear SpO2: A Tool for Wearable, Unobtrusive Monitoring of Core Blood Oxygen Saturation" Sensors 20, no. 17: 4879. https://doi.org/10.3390/s20174879
[3] Venema, B.; Blanik, N.; Blazek, V.; Gehring, H.; Opp, A.; Leonhardt, S. (2012). Advances in Reflective Oxygen Saturation Monitoring With a Novel In-Ear Sensor System: Results of a Human Hypoxia Study. , 59(7), 1–1. doi:10.1109/tbme.2012.2196276

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