

CardioScreen® 2000

DEVICE FOR CARDIO-
VASCULAR DIAGNOSIS
AND SCREENING

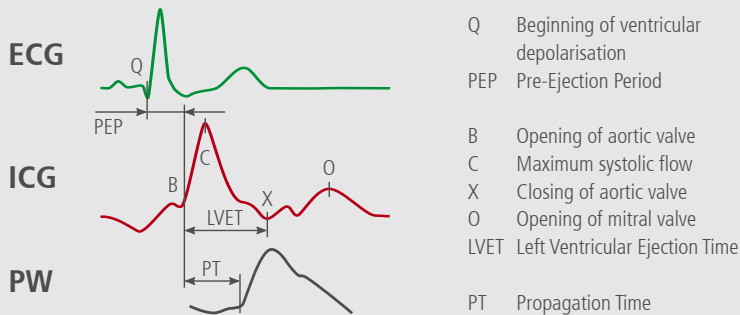
IMPEDANCE CARDIOGRAPHY (ICG)

Changes in volume and velocity of blood in the aorta cause variations in the thoracic bio-impedance which is measured and displayed as the ICG waveform. This signal is applied to innovative algorithms to provide key haemodynamic parameters non-invasively and continuously.

By means of our unique **ACM-Technology** in combination with the new **4TECT Sensor-Application** the accuracy of the measuring method could be considerably increased and its application could be made even more simple - **a new generation of Impedance Cardiography**.

AORTIC PULSE WAVE VELOCITY (PWV_{ao})

The opening of the aortic valve is defined as the B-Point in the ICG signal. The arrival of the Pulse Wave (PW) is measured on the thigh using a pressure cuff and the Propagation Time (PT) is determined. From this the aortic Pulse Wave Velocity (PWV_{ao}) can be calculated.



- Q Beginning of ventricular depolarisation
- PEP Pre-Ejection Period
- B Opening of aortic valve
- C Maximum systolic flow
- X Closing of aortic valve
- O Opening of mitral valve
- LVET Left Ventricular Ejection Time
- PT Propagation Time

PARAMETERS¹

- FLOW**
 - HR Heart Rate
 - BP Blood Pressure
 - SV/SI Stroke Volume/Index
 - CO/CI Cardiac Output/Index
- CONTRACTILITY**
 - VI Velocity Index
 - ACI Acceleration Index
 - HI Heather Index
 - PEP Pre-Ejection Period
 - LVET Left Ventricular Ejection Time
 - STR Systolic Time Ratio
 - FTc Corrected Flow Time
- FLUID**
 - TFC Thoracic Fluid Content
- VASCULAR**
 - ABI Ankle-Brachial-Index
 - PT Propagation Time
 - PWV_{ao} aortic Pulse Wave Velocity
 - SVR Systemic Vascular Resistance

¹ Selection of available parameters

FEATURES

Non-invasive	Enables 100% non-invasive measurement of haemodynamic parameters
Real-time	Continuous (beat-to-beat), real-time monitoring and recording of curves and parameters
Flexible	Different device configurations available according to the customer's needs
Easy-to-use	Only 4 sensors necessary Application-oriented through different screens for optimal data presentation in various clinical settings Standardised and operator-independent examinations
Integrable & connectable	Connectable to any Windows Panel PC (touch screen), PC or Notebook Interface to patient monitors, such as Philips/HP (VueLink / IntelliVue / IntelliBridge) Offline data analysis and data export (e.g. Excel)



APPLICATIONS

PERIPHERAL ARTERIAL OCCLUSION

The **Ankle-Brachial Index (ABI)** enables the assessment of the overall cardiovascular risk and the early diagnosis or follow-up of peripheral arterial occlusive disease (PAOD).

The CardioScreen® 2000 measures blood pressure on upper arms and ankles with four cuffs simultaneously using the oscillometric method. From this the ABI is calculated to diagnose PAODs. The measurement is fully automated and operator independent. For this reason, the CardioScreen® 2000 is a simple screening tool to detect vascular changes at an early stage.

ARTERIAL STIFFNESS EVALUATION

The opening of the aortic valve, when the blood is pumped into the aorta, can be derived from the ICG signal. The arrival of the pulse wave is measured on the thigh and the propagation time is determined. Taking into consideration the distance between aortic valve and pressure cuff the **aortic Pulse Wave Velocity (PWV_{ao})** can be calculated.

The CardioScreen® 2000 enables the simple, fast and automated determination of the PWV_{ao} as an indicator of vascular stiffness for cardiovascular risk stratification and assessment of "vascular age".

CARDIO-
VASCULAR
RISK

HYPERTENSION MANAGEMENT

As hypertension is the result of change in one or a combination of several haemodynamic modulators (vasoactivity, intravascular volume, inotropy), correct treatment of hypertension should include the identification and correction of haemodynamic modulators.

The CardioScreen® 2000 can help to identify the cause of hypertension in order to optimise and validate the appropriate possible medication. In this way, an individualised therapy is offered with the most effective antihypertensive combination of drugs (beta-blockers, ACE inhibitors, diuretics and others) at the optimal dosage for each patient.

EVALUATION OF CARDIOVASCULAR SYSTEM

OTHER APPLICATIONS

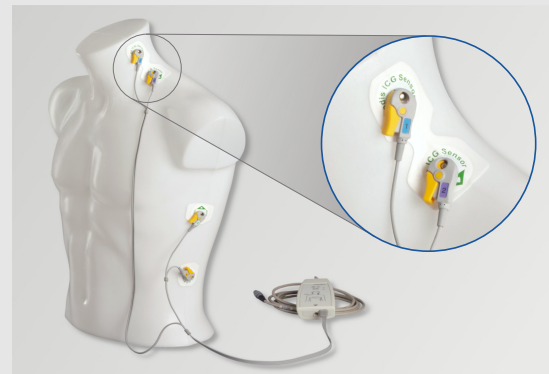
The CardioScreen® 2000 enables the non-invasive measurement of haemodynamic parameters, such as stroke volume and cardiac output. Thus, it can support the following clinical processes:

- monitoring and trending of haemodynamic parameters
- fluid management (Passive Leg Raising Test, Fluid Challenge)
- pacemaker optimisation



TECHNICAL DATA

Channels	standard optional	Impedance Cardiography (ICG) Blood Pressure (NiBP) Pulse Wave Velocity (PWV) Ankle-Brachial Index (ABI)
Dimensions	310 x 90 x 260 mm (w x h x d)	
Weight	approx. 2 kg	
Display	external computer	
Power Supply	100-240 V AC, 50 / 60 Hz	



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