PowerCube® ROS

cooperation-free determination of the airway resistance

as flow/volume test alone is not sufficient enough!

GANSHORN
MEDIZIN ELECTRONIC

PowerCube®

The oscillometric resistance-measurement answers the central question for the current degree of obstruction immediately and practically without the patients' cooperation!

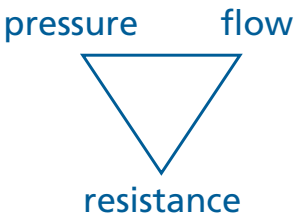
A gentle measurement method without influence on the respiratory tract
When measuring with the PowerCube®-ROS »normal« tidal breathing replaces the strenuous, cooperation-depending, and error-prone breathing manoeuvres. Oscillation volumes smaller than one milliliter make fixing of the cheeks unnecessary.

Compared to the usual methods the bronchial system is practically not being stressed.

Therefore the gentle resistance measurement is ideal for children!

**PowerCube®-ROS –
how does the measurement work?**

Like with the classic method for the determination of airway obstructions the measurement of the oscillatory resistance is based on the physical coherence between pressure (alveolar pressure), flow (breathing flow) and resistance (airway resistance).



For the classic measuring methods the patient produces pressure and flow by his breathing manoeuvre which are being measured and the resistance being calculated from it.

The oscillatory resistance is based on the same physical basis. Here the measuring instrument produces a precisely defined alternating flow (sinus) producing an oscillation pressure in the air ways. The course of oscillation pressure and alternating flow is being measured and the impedance (alternating current resistance) is being calculated from it.

The continuous determination of the phase displacement between oscillation pressure and flow enables diagnostically most interesting conclusions on characteristics of tissue and elasticity of lung and thorax area.

ROS

PowerCube®-ROS – save time and money during the every day's routine

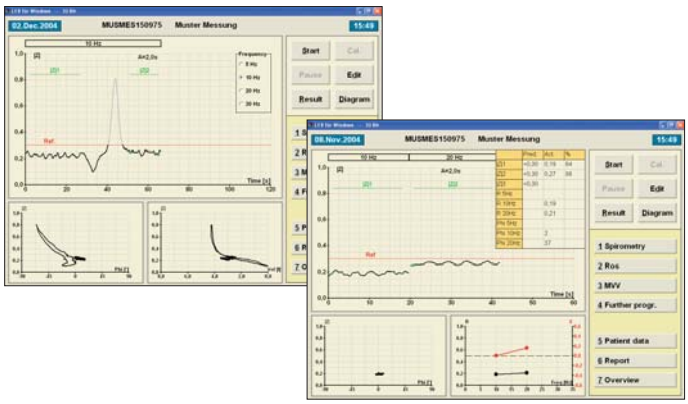
Short measuring times (from 10 seconds on) as well as measurements during tidal breathing cycles relieve your waiting room.
Even personnel without specific pneumologic training can execute precise and reliable measurements quickly and rapidly.

In provocation series or with bronchospasm, inaccuracies of measurements by uneven cooperation do not occur.

With a mask adapter the determination of the nasal resistance is immediately possible.
An extensive and comfortable spirometry program with flow/volume and MVV measurements is included in the scope of performances.

Lung functions made to measure: the GANSHORN software LF8

to determine respiratory resistance, impedance, and phase angle, as well as a large selection of secondary parameters with real time display on the monitor.



A clear display design and a logic user guidance support quick measurements and a smooth processes. Whether course of measurements, evaluation or display of measurement values, everything can be configured as per your requirements:

- on-screen selections of measurement frequencies
- individual editing options and evaluation options (artefact suppression, definition of individual evaluation sections)
- combination of resistance, spirometry, flow/volume and MVV measurements in one report are possible
- freely configurable print reports with presentation of the required parameters as numeric tables or color graphs for monitor, printer, PCS or data file (e.g. for the immediate transfer into the doctor's letter)

Powerful measuring system for reliable results

- The available measuring frequencies of 5, 10, 20, and 30 Hz are being measured selectively and directly.
  The high resolution of up to 60 measurements per second makes the resistance course visible with highest precision as if it was online.
- The detailed resistance volume graphs allow an excellent insight into the breathing mechanics.
- The patient breathes through a reference tube, the defined resistance of which also serves to calibrate the whole system – an important contribution to accuracy of the measurement and to quality assurance.
- The reference impedance guarantees long-time stability and reproducible results since all basis parameters (mouth pressure, flow, and phase displacement) are being measured simultaneously by the automatic calibration.

Determine bronchial obstructions quickly, easily, and surely.

- Cooperation-free test of the bronchial system with reference to resistance, elasticity, and reactivity.
- separation of exobronchial and endobronchial components as alternative to cooperation-depending parameters, e.g. FIV1
- differential diagnostically important information in the form of:
  - resistance-volume graphs,
  - resistance-phase graphs,
  - frequency response of the bronchial system
  - phase response of the bronchial system
- separate resistance determination for inhalation and exhalation to determine bronchial instabilities

Also available as option together with other PowerCube measuring systems.

PowerCube®-ROS

PC-based measuring module for the test of the bronchial system. Resistance-measurement including spirometry, flow/volume, maximum voluntary ventilation MVV.
Integrated program for pre-/post-comparisons, bronchospasm tests and provocations

337 020 **PowerCube®-ROS with software LF8 and basis accessories**
(flow transducer, tubes, mouthpieces, calibration resistors, etc.)

Options

337 105 nose resistance ROS nasal (with face-mask)
223 030 emphysema-diagnosis (CO_2- capnography)
337 150 FRC determination SB and StSt (N_2- wash out)
337 125 rhinomanometry
971 010 movable trolley standard
942 206 med. 230V insulation transformer 1000 VA
The software is network compatible and can be connected by GDT interface with a computer network in the surgery.
870 010 PCS connection
871 040 multi-station license for the establishment of additional examination places
More options, accessories (e.g. trolleys), connections, personal computer requirements on request.

Technical data PowerCube®-ROS:

Active medical product class II a
Dimensions:
Measuring module (depth x width x height): 15 x 15 x 15 cm
Measuring desk (depth x width x height): about. 65 x 120 x 65 cm
Weight:
Measuring module: about 3 kg
Whole measuring desk about 70 kg
Power consumption base unit: about 15 VA
Measuring principle resistance: oscillation (Siemens system)
Measuring ranges: 0.5, 1, 2 und 4 kPa/l/sec.
Oscillation frequencies: 5, 10, 20, 30 Hz
Automatic BTPS correction
RS 232- infra red interface for a 4 KV-insulation between PowerCube and personal computer

Developed, produced and quality-controlled according to EN ISO 9001/12.2000 / EN ISO 13485/11.2000

CE 0124

GANSHORN
MEDIZIN ELECTRONIC

Industriestraße 6-8
D-97618 Niederlauer / Germany
phone: +49 - 9771 - 62 22 - 0
fax: +49 - 9771 - 62 22 - 55
e-mail: sales@ganshorn.de
www.ganshorn.de