

Respiratory Diagnostics



SCHILLER
The Art of Diagnostics

SpiroScout



With the development of ultrasound flow measurement, GANSHORN opened new perspectives for spirometry and lung function testing. Based on simultaneous flow and molar mass determination the SpiroScout measures all spirometry parameters not only precisely and accurately, but also collects additional information about capnovolumetry, which adds another dimension to your diagnostic capabilities. Together with the LFX software the SpiroScout complies with current medical and technical standards.



**Highly accurate
and precise**



**Calibration
free**



**Compact and
portable**



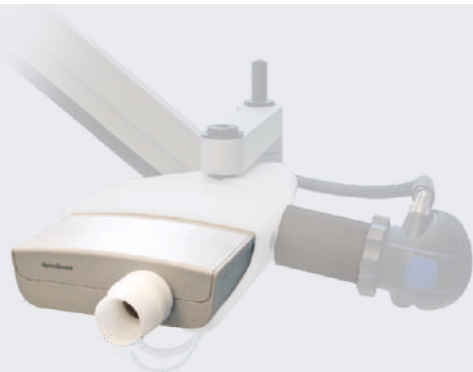
**Maintenance
free**



**Reliable, ultra-
fast and no
warm-up time**



**Powerful,
intuitive
LFX software**



Ultrasound Technology

The heart of GANSHORN diagnostic systems is its ultrasound sensor. SpiroScout, PowerCube Body+ as well as the PowerCube Diffusion+ are based on GANSHORN ultrasound technology. So every measurement comes with precise and direct digital sound pulse transit-time flow determination of lung function. Every system, every session result, always the same accuracy and precision.

Measurement Principle and Set Ups

Two diagonally opposite ultrasound transducers alternately send and receive ultrasonic waves. Without any air flow inside the breathing insert, the transit time of the ultrasound waves is the same in both directions. Any air flow inside the insert will accelerate the waves in one direction and decelerate in the other. The difference between the transit times of the ultrasonic waves allows to calculate the flow. Flow and gas density are calculated from the measured transit times, allowing changes in the concentration of the exhaled gases to be determined directly and at the same time with the respiratory volume.



ScoutSensor used with
PowerCube Diffusion+

ScoutSensor used in
PowerCube Body+

PowerCube Diffusion+



GANSHORN PowerCube Diffusion+ is the first diffusion system on the market that uses ultrasound technology. Its long-life sensor technology is based on a GANSHORN innovation and requires no maintenance. In addition, the high-speed sensor allows the user to change the ejection and withdrawal volume to measure patients up to 0.5 l VC.



Highly accurate and precise ultrasound flow sensor



Easy to use



Maintenance free



Fast semi-automatic gas calibration



Spare part free



Lowest operational costs in the industry

Single Breath Diffusion

Precise analyzers enable the high-resolution display of wash-in curves for CO and helium. The PowerCube Diffusion+ demand valve is economical in sample gas consumption. The long life multigas sensor delivers highly accurate and fast CO results which ease the determination of both single breath and online diffusion procedures. The PowerCube Diffusion+ is available as stand alone device or integrated in PowerCube Body+

Single breath diffusion is a non-invasive method to determine:

- ❖ Diffusion capacity [DLCO in mmol / min / kPa]
- ❖ Alveolar volume [VA in l]
- ❖ Total lung capacity HE [TLC HE in l]



Optional Upgrades

- ❖ N2 washout
- ❖ Rhinomanometry
- ❖ ROCC
- ❖ MIP/MEP (Muscle Strength)
- ❖ SNIP
- ❖ HL7/ DICOM Compatibility with SEMA Data Management Software

LFX Software Platform

Preliminary patient overview

Quick patient access

Big zoomable trial chart area

Alternate chart view

Quick measurement access

Customizable parameter list

SB diffusion measurement review

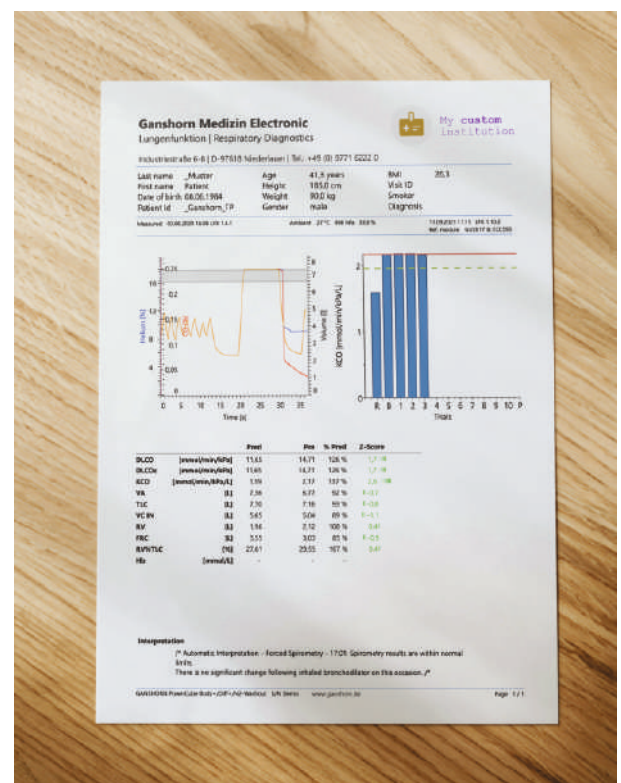
ATS/ERS measurement check



One Software System

Diagrams with flexible, large display sizes and various customization options enable quick and accurate evaluation of measurements and breathing maneuvers at a glance. The use of modern Windows tools such as .NET enables platform- and language-independent communication. A modern database concept that leverages both Microsoft SQL and MySQL offers the perfect approach – both for private physicians and large hospital networks. This enables optimal integration and performance.

- HIS/EMR integration
- DICOM / HL7
- GDT communication
- Full network compatibility
- SQL Database system
- Export of PDF and raw data files
- Running on Microsoft® Windows®



Fully customizable report with automatic comments

PowerCube Body+



GANSHORN PowerCube Body+ represents 40 years of experience in developing and manufacturing state-of-the-art lung-function diagnostic equipment. Already with the forerunner of the current series, in 2011 many pioneering and innovative features, such as ultrasound technology, were introduced into the market, which is why nowadays the PowerCube Body+ represents the most experience and quality. Users can configure the PowerCube Body+ hardware and LFX so requirements and preferences.



**Long life,
robust hardware**



Spare part free



**Full flexibility,
various options**



**Powerful, intuitive
LFX software**



**Lowest costs per
measurement in
industry**

The GANSHORN PowerCube Body+ sets a new focus on first-class quality and the highest precision down to the smallest detail. Thanks to the fully barrier-free wheelchair version, it offers improved patient comfort and increased safety, while hygiene measures are made significantly easier and faster thanks to the well-thought-out design.

Features



Electromagnetic door lock

with LED locking indicator



Safety unlock button

gives patients sense of control



Patient speaker and microphone

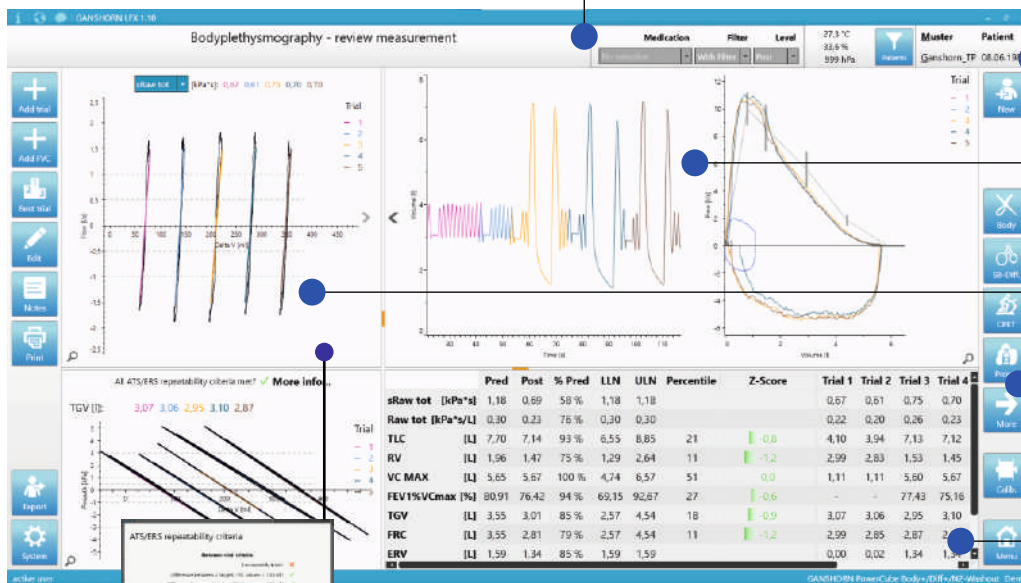
for a maximum of cooperation



Optional Upgrades

- ❖ Diffusion
- ❖ N2 washout
- ❖ Rhinomanometry
- ❖ SNIP
- ❖ ROCC
- ❖ MIP/MEP (Muscle Strength)
- ❖ HL7/DICOM Compatibility with SEMA Data Management Software

LFX Software Platform



Preliminary patient overview

Quick patient access

Big zoomable trial chart area

Alternate chart view

Quick measurement access

Customizable parameter list

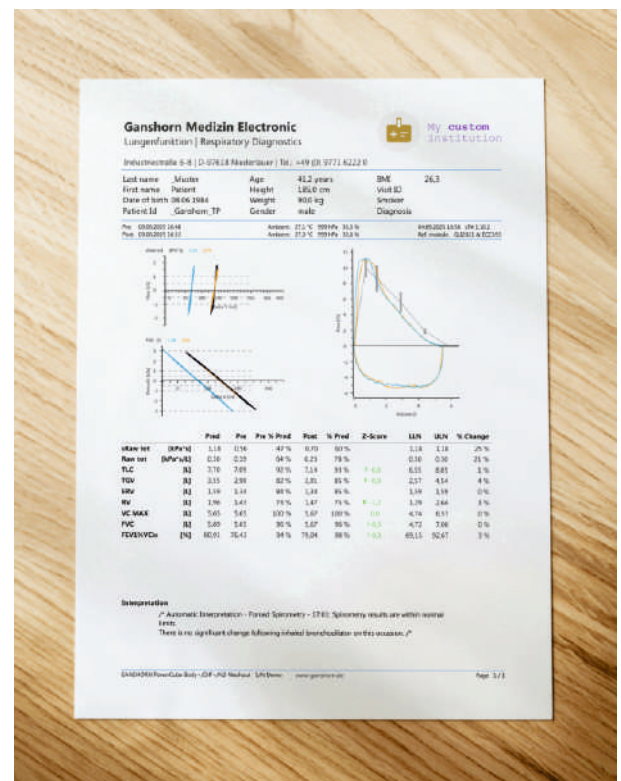
Body plethysmography measurement review

ATS/ERS measurement check

One Software System

Diagrams with flexible, large display sizes and various customization options enable quick and accurate evaluation of measurements and breathing maneuvers at a glance. The use of modern Windows tools such as .NET enables platform- and language-independent communication. A modern database concept that leverages both Microsoft SQL and MySQL offers the perfect approach – both for private physicians and large hospital networks. This enables optimal integration and performance.

- HIS/EMR integration
- DICOM / HL7
- GDT communication
- Full network compatibility
- SQL Database system
- Export of PDF and raw data files
- Running on Microsoft® Windows®



Fully customizable report with automatic comments

FeNO by NIOX®

The gold standard FeNO device - a safe and easy way to instantly transform your asthma care

With over 40 million tests conducted worldwide, NIOX® is the preferred choice for thousands of healthcare professionals in clinical settings and global research. The NIOX® VERO is a non-invasive device that measures Fractional exhaled Nitric Oxide (FeNO) levels, a crucial biomarker for detecting airway inflammation in asthma patients. Offering accurate and immediate results, NIOX® VERO aids in diagnosing asthma, monitoring treatment response, and managing the condition effectively. This essential tool empowers clinicians to tailor care plans and make informed decisions, enhancing patient outcomes.

ACCURATE
RELIABLE
STRAIGHTFORWARD



Inhale. Exhale.

The unique NIOX® breathing handle is designed with accuracy in mind. Inhaling through the handle first is key. As patients inhale, ambient NO and other contaminants are removed from the breath, ensuring the exhalation reflects their true FeNO level.

One test, one result

NIOX® protects your patients from failing a test. Flow Rate Control™ guides patients to easily perform a steady exhalation throughout the test, leading to an accurate result each time, every time.



Never-ending performance

Our sensors just work, from the first test to the last test. NIOX® products are accurate throughout their lifetime and never require recalibration. Whenever you need a new sensor, replace instantly and simply resume testing.



Drug free Bronchial Provocation



The Eucapnic Voluntary Hyperpnea (EVH) test is an alternative method to other indirect or direct bronchial challenge tests such as exercise challenge or methacholine challenge test. The huge advantage of EVH is that no medication is needed. Traditionally it has been used for elite athletes and is widely regarded as the gold standard for assessing Exercise-induced Bronchoconstriction (EIB) among athletes. As EVH mimics perfectly the breathing while exercising, the provocative method is the best tool to diagnose exercise-induced airway narrowing. EucapSys® is the first commercially available system which makes EVH applicable for a wide range of users. As it mixes the eucapnic gas concentration by itself, the test becomes more affordable and independent from expensive gas mixtures.



One step protocol
saves time



More comfortable
for the patient



Drug free provocation
with dry air



Easy to implement
stand-alone device



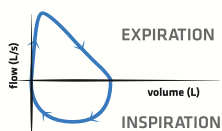
High specificity Fewer
false positive results



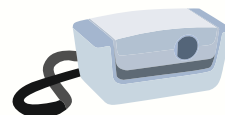
Low operating
costs

Measurement Principle

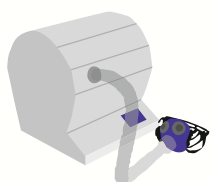
1. PRE spirometry test



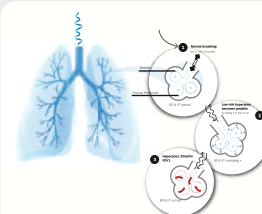
Before doing the provocation, a forced spirometry sets the baseline for pre FEV1.



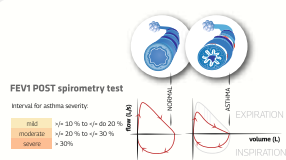
2. EucapSys® test



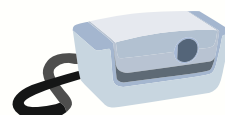
Then, a dry gas mixture enriched with 5% CO₂ is hyperventilated at room temperature for about six minutes through a breathing mask. The patient will breathe faster than normally through a mouthpiece. The maneuver is recorded to the EucapSys® system box.



3. POST spirometry test



After the provocative phase, the post measurements are carried out. If the value falls below 10% of the baseline FEV1, an asthma can be diagnosed.



AltiTrainer® is an innovative device for research in hypoxic, hyperoxic, and hypercapnic condition.

Hypoxia training is a training method based on the adaptation of the body to reduced oxygen levels. Classically, this is done at high altitudes. Of course, that's not always practical, sometimes impossible and not economically viable for every workout. The AltiTrainer® allows individual reduction of the oxygen fraction in the inhaled air. The body's physiological adaptations to hypoxia can lead to improved athletic performance and overall wellbeing. The benefits of hypoxia training on athletic performance have been investigated in numerous studies. It was found that hypoxia training in combination with intense interval training (HIT) or strength training can lead to significant improvements in cardiorespiratory fitness and muscle strength.



**Simulates altitudes
up to 5,500 m**



**Safe and
comfortable**



**Time efficient
altitude training**



**Hypoxic
training**



**Mitochondrial
interval training
(IHT)**



Easy to use

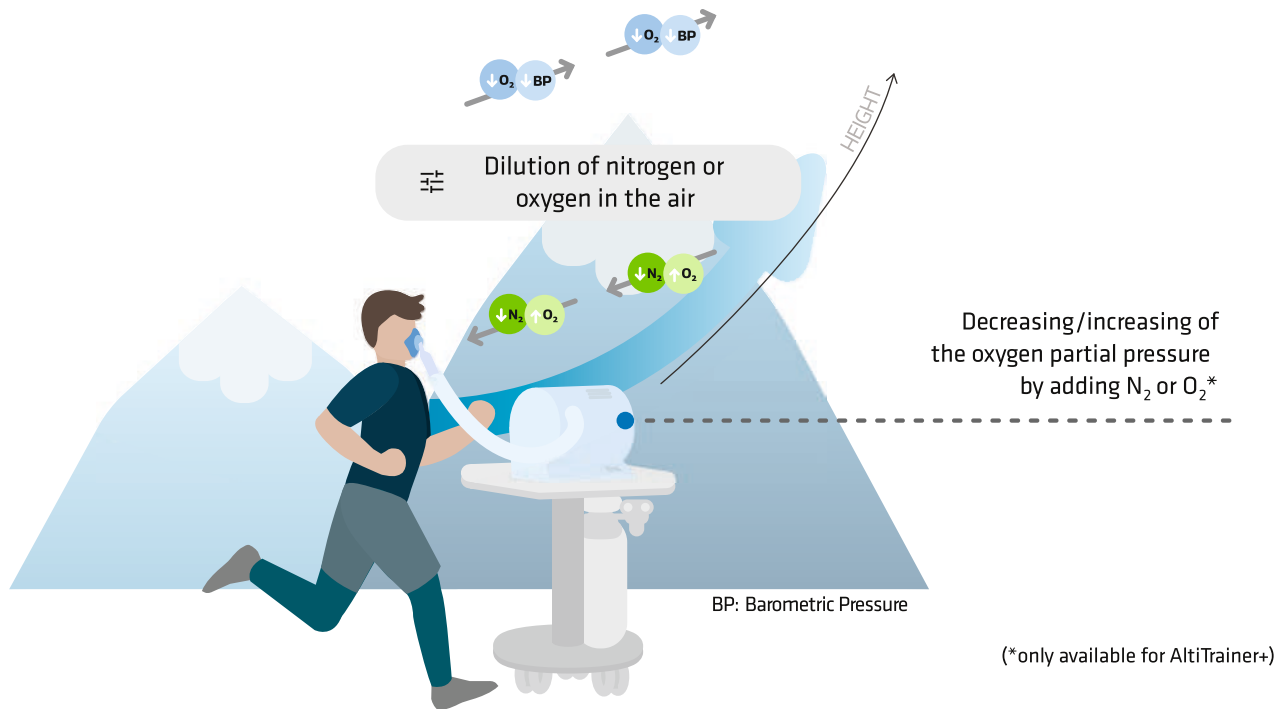
The Device



Operating Principle

Lowering the partial pressure of oxygen by reducing the amount of N_2

The addition of nitrogen (N_2) above the usual 78% reduces the fraction of oxygen (O_2). This simulates the effect of the decreasing partial pressure of oxygen at high altitudes.



Training Example

The AltiTrainer® method consists of training at altitude for a limited time, then recovering to normal altitude or continuing the training at a lower altitude. Specifically, training is done once or twice a week for 30 to 40 minutes at an altitude of about 2,500m at the anaerobic threshold. Initial results are achieved quickly - after just two weeks, the training load often needs to be increased as the anaerobic threshold shifts. Increases in VO_2 max of 8% and time limit of 35% have been observed in elite athletes during the final phase of preparation. AltiTrainer® enables the athlete to train under hypoxia and hyperoxia conditions at individually adjusted breathing rates up to 190 l/min. The method can be also used for resting phases. The user can change the inhaled oxygen fraction (FO_2) at any time by simply touching the screen. The gas mixture is automatically mixed according to the user's needs.



antlia Pro



A pulmonary function testing device designed to simplify and enhance the assessment of lung mechanics. Based on the advanced Forced Oscillation Technique (FOT), it measures respiratory impedance during natural tidal breathing, offering clinicians a fast, reliable, and effort-independent way to evaluate airway resistance and reactance. With its user-friendly design, rapid test time, and accurate intra-breath analysis, antlia Pro empowers healthcare professionals with detailed insights for diagnosing and monitoring a wide range of respiratory conditions.

Features:

Get a detailed picture of the lungs

- ❖ Complete lung health – Precise treatments for patients
- ❖ Intra-Breath Analysis for Detailed Respiratory Insights – Early diagnosis and Time Course of the disease
- ❖ Uncover Small Airway Disease – Respiratory Mechanics Info at Your Fingertips



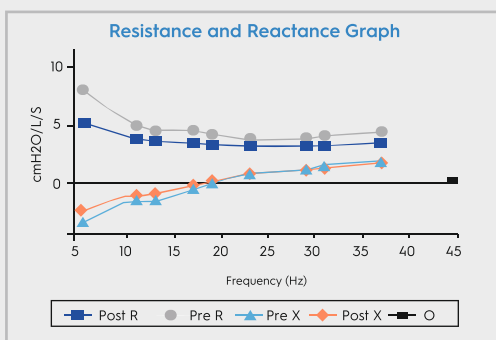
Suitable for all your patients

- ❖ Simple Tidal Breathing – No Hassle for patient
- ❖ Customized Cut-off Values for Indian Population, both adults and paediatric age groups
- ❖ Wide Frequency Range for Comprehensive Analysis – Covers All Age Groups



Device made for you

- ❖ Quick Results in Minutes – Fast and Efficient
- ❖ Portable and Lightweight – Take It Anywhere
- ❖ Daily Self Calibration as per ATS Standards – Stay Calibrated with Ease



Parameter	Description
Z	Overall Airway Impedance at 5 and 19 Hz
R	Airway Resistance at 5 and 19 Hz
X	Reactance at 5 and 19 Hz
Ax	Area of Reactance
Fres	Resonant Frequency

Parameter	Description
Vt	Tidal Volume
R/X ins and exp	End inspiration and expiration R and X (intra-breath parameter)
T ins and exp	Inspiratory and expiratory time
CoV	Coefficient of variability at R5 and Z5
RR	Respiratory Rate

CARDIOVIT® CS-200 Office ErgoSpiro

- ✧ Breath-by-breath gas exchange analysis (VE, VO_2 , VCO_2) with unique maintenance-free ultrasonic cell for CO_2 measurement
- ✧ Fully integrated 12-lead exercise ECG with wireless acquisition improves patient comfort
- ✧ Full disclosure storage of unfiltered, continuous ECG signals



The CARDIOVIT® CS-200 Office ErgoSpiro performs Cardiopulmonary Exercise Tests (CPET) according to the latest ATS/ERS guidelines. The metabolic tests combined with diagnostic-quality 12-lead exercise ECG is suitable for a wide range of subjects, from clinical patients to high-performance athletes.

Accuracy

PWC-ERGO

Fast-response, stable and durable electrochemical (long-life) technology for O_2 measurements and rapid ultrasound (patent) for CO_2 measurements. The CO_2 cell ensures long periods of accurate measurements without periodical system calibration. The long-life O_2 fuel cell can be replaced within one minute.

PNEUMOTACH

The proven pneumotach meets the ATS/ERS requirements and provides accurate and reliable flow/volume measurements in the complete range of low to high flow. Thanks to its compact and lightweight design (30g), the pneumotach has a very small dead space (30mL). The pneumotach is not sensitive to water vapour in the exhaled air. Patients and athletes appreciate the minimal resistance to airflow and the comfort of both mask and mouthpiece.

- ✧ No moving parts or electronics for cost-effective testing

Flexibility

- ✧ Online entry of RPE scale, blood gas marker, blood pressure or events
- ✧ Offline entry of blood gases with automatic calculation of related parameters
- ✧ Comprehensive protocol editor program to create individual ramp and step protocols
- ✧ Customized reports
- ✧ Optional LFSport for the performance assessment and exercise scheduler are two comprehensive features for the use in sports medicine

RESTING ECG

- ❖ Resting ECG with ETM automatic interpretation
- ❖ ETM sport for interpretation of athletes' hearts
- ❖ 3D vector ECG

THE ART OF DIAGNOSTIC INTEGRATION

Integrated diagnostic quality 12-lead exercise ECG (available either in wireless or USB configuration) with full disclosure storing of the unfiltered, continuous ECG signals

PNEUMOTACH

Meets the 24-waveform test of ATS/ERS

BLOOD PRESSURE

Automatic blood pressure measurement with optional built-in SpO₂ module

PWC-ERGO

The heart of the system

THE ART OF METABOLIC INTEGRATION

- ❖ Easy, quick and fully assisted calibration for highly accurate measurements
- ❖ Charts and data display through standard or user-defined 9 panel
- ❖ Powerful post-test editing phase for data filtering, calculation of thresholds (AT, RCP), VO₂max, EFVL, VE/VCO₂ slope, intercept and other parameters
- ❖ Real-time acquisition and capture of Exercise Flow-Volume Loops (EFVL)
- ❖ Slow/Forced Spirometry and MVV including Pre/Post testing and incentive screen for paediatric spirometry



CARDIOVIT® CS-200 Excellence ErgoSpiro

Research-grade Cardio-
pulmonary Exercise
Testing device for clinical
and sport applications

SCHILLER introduces the new generation of ErgoSpiro systems (Cardiopulmonary Exercise Testing), the result of over 30 years of experience in the development of ErgoSpiro devices. It's not often that a new system is introduced in the Cardiopulmonary Exercise Testing industry. In today's market, a medical system cannot just look nice, it has to be able to improve patient care with intuitive, easy-to-use technology, optimized by functional design. The CARDIOVIT® CS-200 Excellence ErgoSpiro system can perform both Pulmonary Function Tests (PFT) according to the latest ATS/ERS guidelines and metabolic tests with diagnostic quality 12 or 16-lead Exercise ECG conveniently and accurately in a single device, with absolutely none of the compromises sometimes found in combined systems.

Fields of Application

In recent years, cardiopulmonary exercise testing has become an increasingly important tool and has established itself as a valuable differential diagnosis in the fields of:

RESPIRATORY MEDICINE

- ❖ Obstructive and restrictive ventilatory disorders
- ❖ Pre-operative risk assessment for lung transplant patients

CARDIOLOGY

- ❖ Heart disease, valvular heart failure
- ❖ Pre-operative risk assessment for heart transplant patients

SPORTS MEDICINE / SCIENCE

- ❖ Measurement of physical exercise capacity
- ❖ Quantification of training success

OCCUPATIONAL MEDICINE

- ❖ Determining the degree of disability or work limitation/inability
- ❖ Fitness check-ups

INTENSIVE CARE

- ❖ Pre-operative risk assessment
- ❖ Nutrition control (adjusting parenteral nutrition of intensive care patients)

REHABILITATION

- ❖ Optimizing rehabilitative measures
- ❖ Assessing and documenting rehabilitative and therapeutic progress

NUTRITION

- ❖ Energy expenditure during exercise
- ❖ Dietary advice

CARDIOLOGY

- ❖ Fully integrated 12 or 16-lead exercise ECG
- ❖ Duke treadmill score
- ❖ Pharmacological exercise testing

RESPIRATORY

- ❖ True breath-by-breath ErgoSpiro Testing
- ❖ Customized panel during CPET test
- ❖ Automatic AT & RCP detection
- ❖ Ventilatory threshold analysis using 7 detection methods

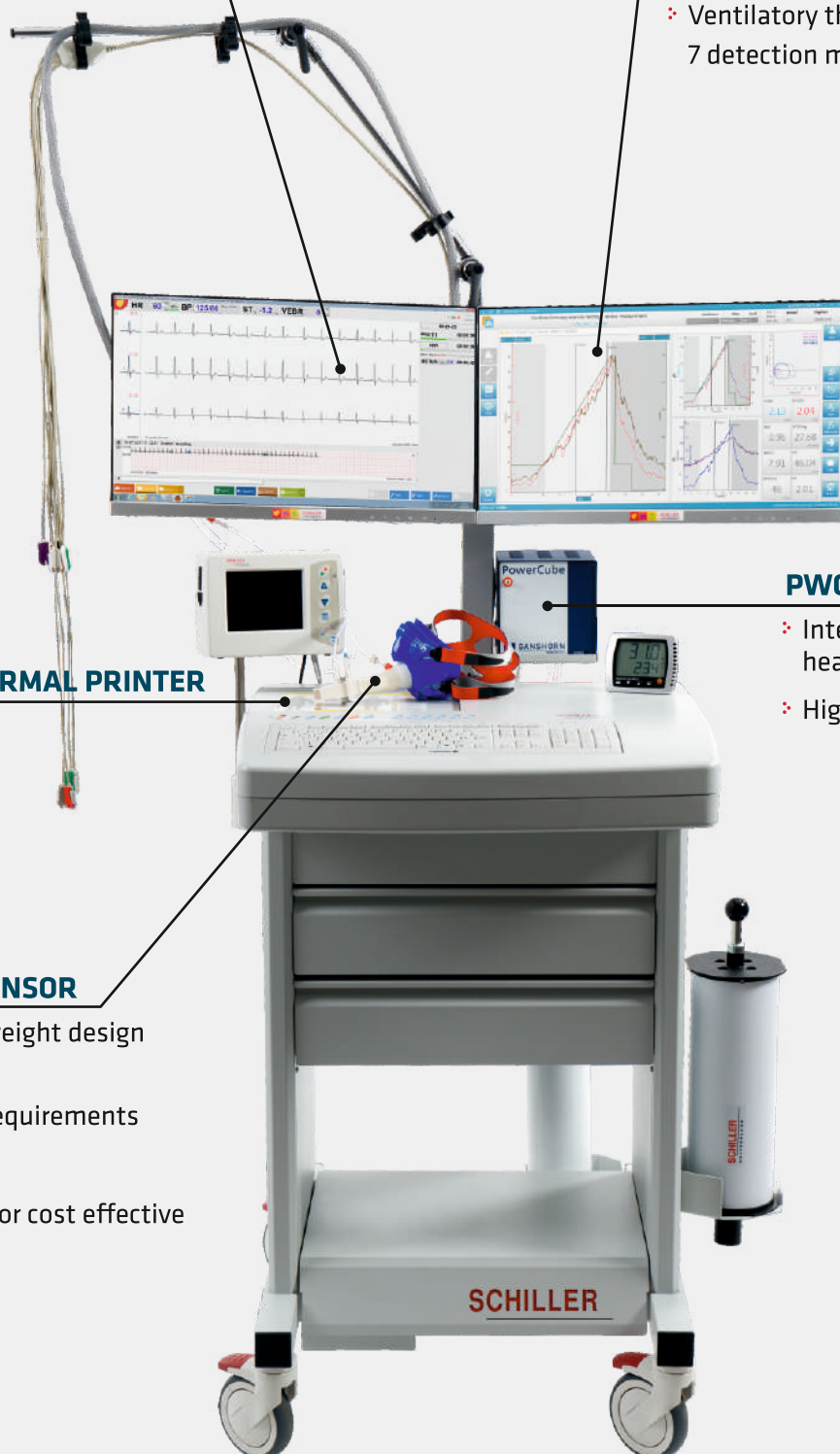
INTEGRATED THERMAL PRINTER

PNEUMOTACH SENSOR

- ❖ Compact & light weight design (only 30 g)
- ❖ Meets ATS/ERS requirements
- ❖ No warm-up time
- ❖ No moving parts for cost effective testing

PWC-ERGO

- ❖ Integrated ergo controller – heart of the system
- ❖ Highly accurate & fast response





SCHILLER

The Art of Diagnostics

About SCHILLER

SCHILLER A. G., a company based in Switzerland, was founded by Alfred Schiller in 1974. Over the last 50 years, it has evolved into a successful Global Group with 31 subsidiaries and dealers across 30 countries. Today, SCHILLER is a world-leading manufacturer and supplier of devices for cardiopulmonary diagnostics, defibrillation and patient monitoring as well as software solutions for the medical industry.

Schiller in India was founded as a joint venture in 1997, and since then has established itself as a leader in the medical technology sector. With 450+ employees, a state-of-the-art ISO 13485-certified production centre in Puducherry, multiple R&D centres, and 17 offices across India; Schiller makes advanced healthcare equipment accessible through a network of 100 sales and service dealers across more than 45 locations. Our product range includes Critical Care, Anaesthesia, Emergency Care, Cardiology, Respiratory Diagnostics, Radiology, and Robotics.



GANSHORN

SCHILLER GROUP

For 40 years GANSHORN has been manufacturing a complete state-of-the-art portfolio of pulmonary function testing systems for spirometry, bodyplethysmography, diffusion, bronchial provocation and cardiopulmonary stress testing. With its technological innovations, the company has been a leader in the diagnostics market since 1982. Many of these are now perceived as gold standards. In order to meet high quality standards, all key components are made in Germany. All devices are created in modern processes in Bavaria, from the initial idea to distribution.



Scan Here
To Know More

All registered trademarks acknowledged.

Part No. B7.200002 07/2026 Ver. no. 1.3

SCHILLER
The Art of Diagnostics

Swiss H.Q.: SCHILLER AG, Altgasse 68, P. O. Box 1052, CH -6341 Baar, Switzerland

Indian H.O.: Schiller Healthcare India Pvt. Ltd., Advance House, Makwana Road, Andheri (East), Mumbai-59. Tel : + 91 - 22 - 61523333

India : No. 15/5 & 15/6, Vazhuthavur Road, Kurumbapet, Puducherry - 605 009, India

Regional Offices: Mumbai: 022-61523333 Email: sales.west@schillerindia.com Delhi: 011-41062067 / 09312432205 Email: sales.north@schillerindia.com Kolkata: 033-23593102 / 033-23593103 Email: sales.east@schillerindia.com Chennai: 044-28232648 / 044-28311021 Email: sales.south@schillerindia.com Ahmedabad: 079-35337949 / 079-35337950 Email: sales.west2@schillerindia.com Puducherry: 0413-2202680 / 0413-2292940 Email: sales.south@schillerindia.com

CIN : U33110MH1997PTC111307

sales@schillerindia.com, help@schillerindia.com www.schillerindia.com 1800 209 8998

Follow us on : /SchillerHealthcareIndia /schiller_healthcare_india /schillerhealthcareindia /schiller_healthcare_india @schillerindia1074