



GANSHORN
SCHILLER GROUP



PowerCube **Diffusion+**

Diffusion system

The first with ultrasound technology

OVERVIEW

GANSHORN PowerCube Diffusion+ was the first diffusion system on the market using ultrasound technology. Its long life sensor technology is based on GANSHORN innovation and requires no

maintenance. Furthermore, the high-speed sensor enables the user to alter discard and sampling volumes, therefore being able to measure patients down to 0,5L 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

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.

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/lkPa]
- Alveolar volume [VA in l]
- Total lung capacity HE [TLC HE in l]



Diffusion & Post-Covid-Syndrome

A COVID-19 disease primarily happens in the alveoli, where the virus attacks the type II pneumocytes, which may lead to an abnormal alveolocapillary membrane and the so called Post-COVID syndrome. A diffusion test is the main measurement technique, which can detect this pathophysiology. Patients suffering from the Post-COVID syndrome complain

about symptom like shortness of breath and exhaustion, but will mostly have a normal spirometry reading. In those cases, a diffusion test is the method of choice to confirm the Post-COVID syndrome diagnosis, which is psychologically important for the patients and will be an important measure in order to observe COVID-19 rehabilitation.

Seated workplace



Optional medical grade ergonomic height adjustable trolley



For use in body box (optional)



- ✓ Height adjustable
- ✓ Medical All-in-One-PC with touch function
- ✓ optional with isolating transformer and external printer

FEATURES



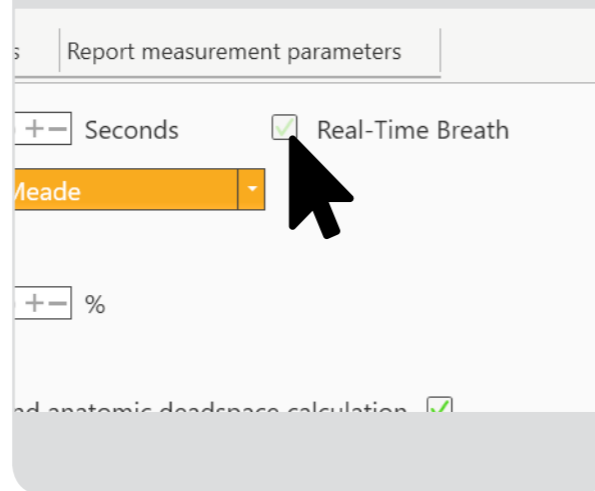
3D swivel arm

Flexible, height-adjustable interface



Real-time breath

For patients that are unable to hold their breath for a prolonged period. Measurement is carried out without breath hold.



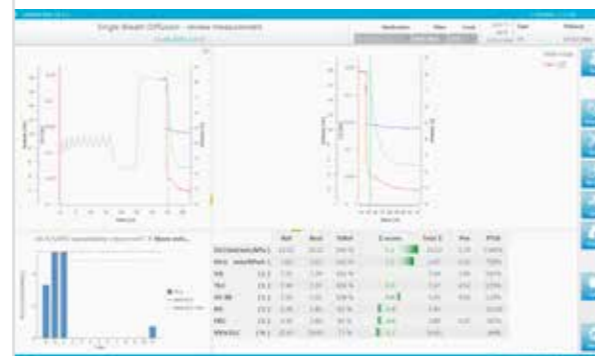
Intelligent Demand Valve (IDV)

Secures the patient, lowers the cost per test and optimizes gas usage



Powerful software

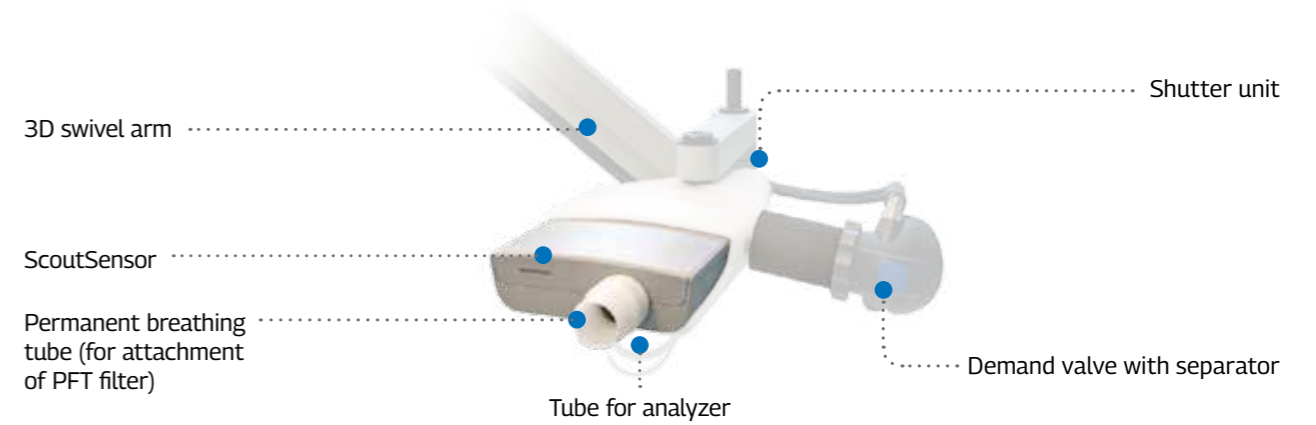
Powerful, user-friendly LFX software



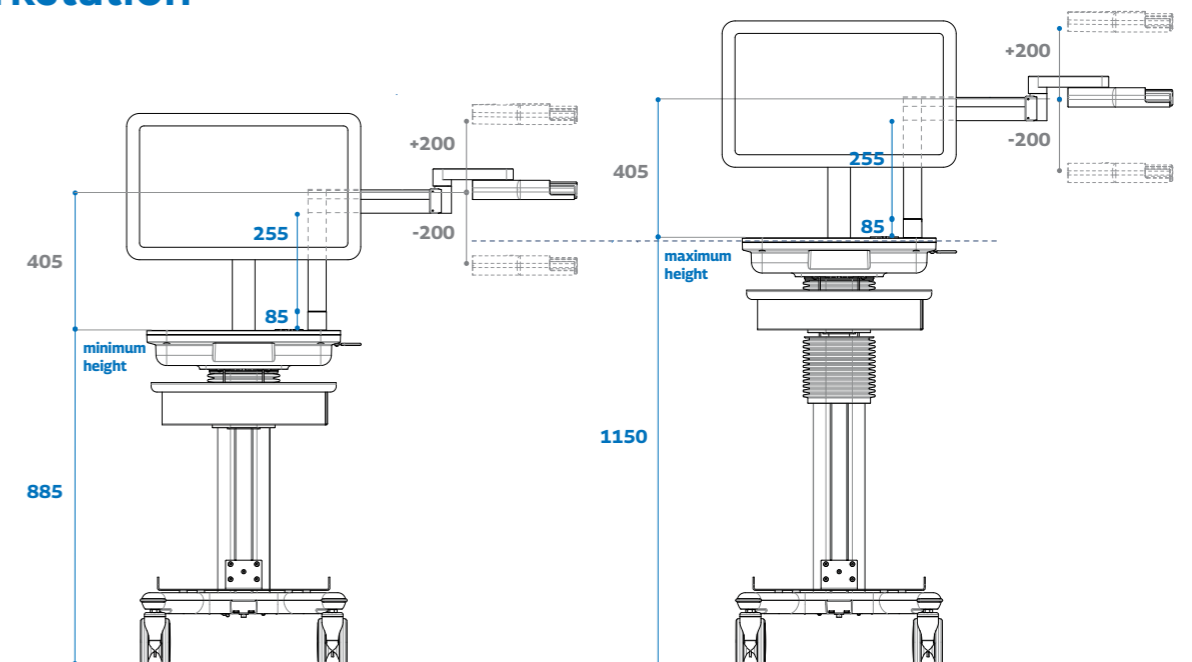
PROGRAMS & FEATURES

| Features | Standard | Option | Programs | Standard | Option |
|-------------------------|----------|--------|---------------------|----------|--------|
| Single breath diffusion | ✓ | | Microsoft SQL/MySQL | ✓ | |
| Slow spirometry | ✓ | | XML report | ✓ | |
| Forced spirometry | ✓ | | Multuser license | | ✓ |
| Provocation | | ✓ | Worklist | | ✓ |
| Rhinomanometry | | ✓ | DICOM/HL7/GDT | | ✓ |
| MIP/MEP | | ✓ | | | |
| SNIP | | ✓ | | | |
| N2 washout | | ✓ | | | |

Connectors, controls and indicators



Workstation



SOFTWARE PLATFORM

GANSHORN LFX software

The LFX software is our user-friendly interface, developed with the physiologist in mind. The Patient Management interface provides all the tools necessary to perform every task done in the laboratory, while remaining easy to operate. Built on state-of-the-art Windows tools like .Net, C# and MySQL database, the LFX software is the future of modern respiratory diagnostics.



Quality control

The LFX software has built-in quality control monitoring based on 2017 ATS/ERS guidelines, which are accessible during and after the measurements are performed.



TECHNICAL DATA

Flow measurement

| | |
|-----------------|---------------------------------------|
| Method | Ultrasound transit time |
| Range | 0 to ± 18 l/s |
| Accuracy | ± 2,0% or 50 ml/s (for 0 to ± 16 l/s) |

CO analyzer

| | |
|-----------------|----------------------------------|
| Method | Non-dispersive infrared analyzer |
| Range | 0 to 3000 ppm CO |
| Accuracy | ± 2.5 % FSO |

Volume measurement

| | |
|-----------------|---------------------|
| Method | Digital integration |
| Range | Not limited |
| Accuracy | ± 2% |

Weight

| | |
|----------------------------|--------|
| Measurement module | 7.6 kg |
| Module with trolley | 70 kg |

Diffusion

| | |
|---------------------------------|--|
| Measured curves | Helium and CO |
| Standards | Determination of diffusion capacity (TLCO) and VA meets 2017 ERS/ATS standards |
| Hold breath time | User set between 4 and 12 seconds |
| Hold breath time calcul. | Jones and Meade, ERS, Ogilvie |

Power supply

| | |
|-----------------|-------------|
| Standard | 110 V/240 V |
|-----------------|-------------|

He analyzer

| | |
|-----------------|------------------|
| Method | Ultrasound |
| Range | 0 to 20 Vol.% He |
| Accuracy | ± 2.5 % FSO |

Dimensions - seated workplace



Connectivity

The LFX software connectivity infrastructure includes networking and EMR interface solutions. The advantage of GANSHORN's connectivity solutions is that they were developed internally (not outsourced). This gives GANSHORN the ability to provide customized interface solutions that meet the laboratory's exact needs.

Customizable reports

LFX software comes standard with a large library of default reports. Additionally, the report generator application gives laboratories the ability to customize all of their reports.

WHY GANSHORN?

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 our high quality standards, it is important to us that all key components are made in Germany. Our devices are created in modern processes in Bavaria, from the initial idea to distribution. In the meantime GANSHORN is represented worldwide, with strong markets in Europe, Asia, North and South America.



PowerCube Body+

Bodyplethysmography



SpiroScout

Spirometry



PowerCube Diffusion+

Diffusion measurement



Provo.X

Provocation testing



PowerCube Ergo

Cardiopulmonary exercise testing (CPET)



Vivatmo pro

FeNO monitoring



tremoflo®

Airwave oscillometry



EucapSys

EVH provocation



Altitrainer

Hypoxic challenge testing, hypoxia training



GANSHORN Medizin Electronic GmbH

Industriestr. 6-8 | 97618 Niederlauer, Germany

✉ sales@ganshorn.de

☎ +49 9771 6222 0

🌐 www.ganshorn.de

GANSHORN
SCHILLER GROUP



Art. Nr. **019950155** | Rev. **2.1**

The model shown may also include optional equipment which is not within the standard scope of supply. Design, equipment, and contents are subject to change without notice, as are misprints and errors.