

vyaire<sup>TM</sup>  
MEDICAL

Vyntus® ONE  
the power of ONE – pulmonary function testing  
and cardiopulmonary exercise testing



IRONICALLY, OUR LATEST  
ADVANCES IN RESPIRATORY  
DIAGNOSTICS WILL TAKE  
YOUR BREATH AWAY

Nothing is more critical to human life than air. When the ability to breathe is compromised, quality of life suffers.

That's what pushes us to create respiratory diagnostic equipment that strives for higher levels of accuracy and patient-friendliness than ever before.

As always, we started from the perspective of the patient. **Because patient comfort isn't just a "nice-to-have."** It's the cornerstone of our human centric design philosophy. How will patients interact with the systems? How will they feel during the tests?

We designed Vyntus® ONE to be hassle-free for clinicians and people-friendly for patients. **Vyntus ONE is incredibly capable with a modular design that possesses an impressive array of features.**

It is designed to make your tests **more accurate, less intrusive and less stressful for patients.**

Powered by our trusted SentrySuite® software platform, the Vyntus ONE is **easy to operate, and seamlessly integrated** with your clinical information systems and existing network infrastructures. We also addressed functional aspects. We labored over hygiene and maintenance so clinicians don't have to. The Vyntus ONE is **easy to clean** using standard hygiene practices and readily available products like disinfectant wipes. **And your Vyntus ONE can scale as your practice grows.**

In the end, all this attention to detail offers a radical leap forward in **patient comfort, accessibility and outcomes.** With unmatched ease of operation for our clinician partners.

# The Power of ONE



Spirometry  
Diffusion SB Realtime and Intrabreath  
Lungvolumes with N<sub>2</sub> Washout and LCI  
P0.1, MIP/MEP, SNIP, Compliance,  
Rocc, Rhinomanometry,  
Noninvasive cardiac output.

## All-in-ONE Vyntus ONE module

Flexible arm to fit adults  
and the little ones

Patient friendly innovative eDemand gas supply and Flow Path Valve with magnetic rotary shutter mechanism

Calibration-free ultrasonic  
sensor for high accuracy



Optional height  
adjustable cart

Built-in medical isolation  
transformer for your  
security



Combine your Vyntus ONE with various bikes, treadmills and the **Vyntus® ECG** to be ready for cardiopulmonary exercise tests.

# ONE device – Two sensors

Benefit from the trusted sensors for pulmonary function testing and cardiopulmonary exercise testing – each the proper technology to fit your needs.



## Ultrasonic sensor for pulmonary function testing



- Calibration-free: **stay focused on your patients.**
- Waterproof: **makes hygiene routines fast and easy.**  
There is no need to dis- and reassemble the sensor for the cleaning process.
- No meshes or orifices mean a low resistance and **very comfortable breathing feeling** for the patient.
- Expert for **all volumes and flows.**



## Digital volume transducer for cardiopulmonary exercise testing



- Light weight and compact size for your **patients wearing comfort.**
- **Highly accurate**, being insensitive to water vapor and breathing gases.
- **Minimal dead space ventilation** due to the low mechanical dead space.
- **Your flexibility:** for use with mask and mouthpiece.
- **Ideal for high ventilation.**



Using the MicroGard® filter means minimal hygienic effort and reduces the cleaning of downstreamed parts to three months.\*



Two sensors means no conflicts in your clinical and hygienic workflow.

Pulmonary function tests are not influenced by cardiopulmonary exercise tests and vice versa.

While the digital volume transducer needs to be cleaned after each measurement (no MicroGard filter possible), the ultrasonic sensor only needs to be cleaned every three months.

We reengineered every facet of Vyntus ONE's breathing circuit, to achieve **significant improvements** in patient's comfort and accuracy

#### ULTRASONIC SENSOR

Double Shot Technology measures twice the number of signals across the flow path providing **enhanced data resolution and precision**.

Dynamic Flow Correction: already during the flow measurement we are measuring the gas temperature of each breath. With this information an online BTPS correction is carried out leading to a higher **accuracy and minimizing any drifts**.

**Polytubes** on both sides of the ultrasonic sensor for flow conditioning **making the air laminar**.

#### FLOWPATH VALVE

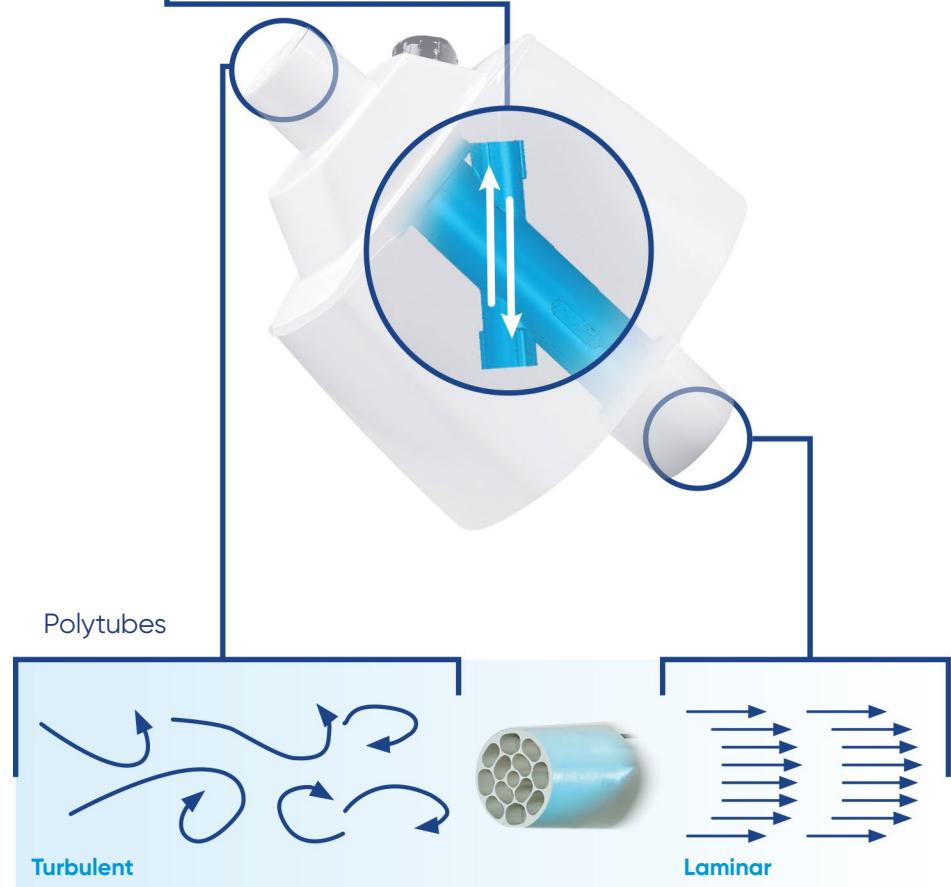
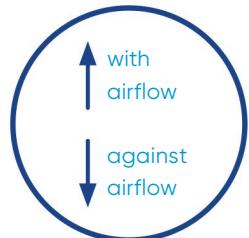
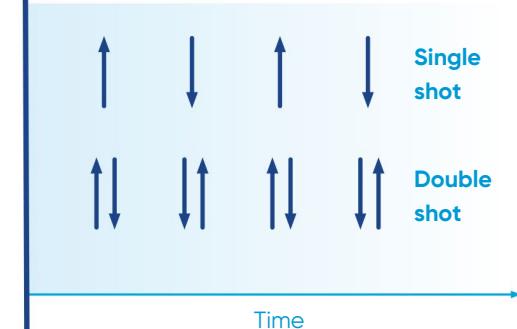
Simple, maintenance free, magnetically-controlled rotary shutter is **highly responsive to patient effort**. This means an **easier and noise reduced testing experience** as well as testing it right the first time.

#### eDEMAND

With the electronic patented demand valve the patient no longer needs to maintain a significant under-pressure during gas supply to keep the valve open. **This improves the patient experience during gas inhalation**, makes the measurement **less demanding and increases the number of successful tests**.

#### Ultrasonic sensor

Double shot technology:  
**Time of flight measurement**



# Pulmonary Function Testing with your Vyntus ONE

Benefit from both trusted and innovative measurement methods.

Your Vyntus ONE is able to perform Spirometry, Diffusion SB Realtime and Intrabreath as well as FRC N<sub>2</sub> Washout measurements.

Enhance your PFT lab with an optional bunch of measurements for the lung mechanics.

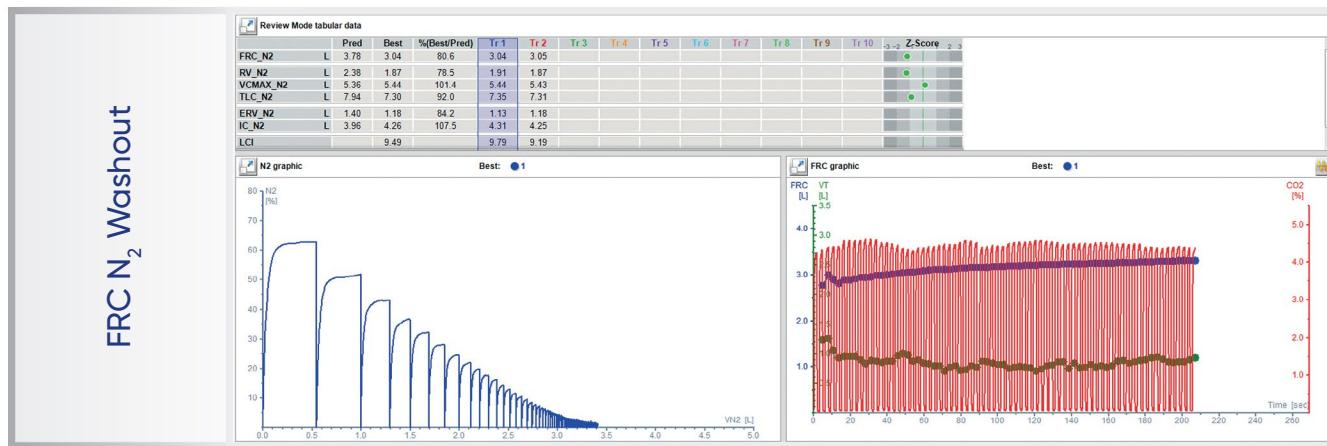
## Key Success Factors for DLCO Measurement

ERS/ATS 2017 requirements	Vyntus ONE for SB Diffusion
Inspiratory flow from demand valve at least 6 L/s	Two parallel electronic demand valves delivering at least 8 L/s
Inspiratory flow resistance <0.9 kPa @ 6 L/s	Average inspiratory pressure @ 6 L/s below 0.5 kPa
RealTime Analyzer response time < 150 ms	Multigas response-time 130 ms



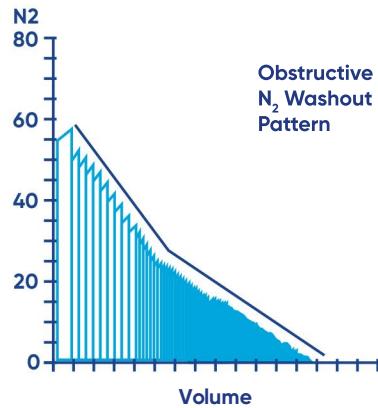
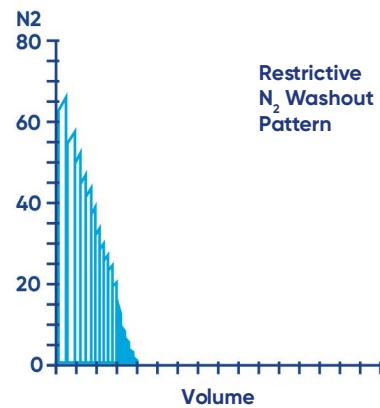
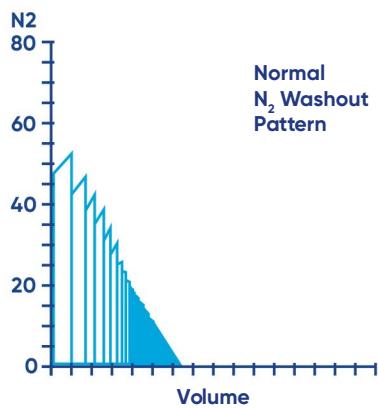
## Lung Volumes by Nitrogen Washout

- Minimizes your disposables spend as no rebreathing bag, CO<sub>2</sub> absorber or tubes are needed.
- Automatic leak detection.
- **Workflow-driven:** No preparation time before starting the test and automatic switches to the next sequence during the measurement.
- Differentiation of fast and slow lung compartments.
- Measurement of **Lung Clearance Index** (LCI) to diagnose patients with small airway diseases.



**FRC N<sub>2</sub> Washout** allows the determination of the **functional residual capacity** (FRC) using the N<sub>2</sub> Washout method as well as the determination of the absolute volumes **TLC and RV** by combining it with slow spirometry measurements.

Easily diagnose your patient's disease



# Cardiopulmonary Exercise Testing with your Vyntus ONE



Don't having the testing volume or space to justify a completely separate CPET system?

You'd be hard pressed to find another pulmonary testing system that delivers so much **performance and utility** in one single package.

- Real-time 9-Panel-Wasserman graph with dynamic predicteds and the possible limitation graph
- Multiple threshold evaluations (VT1, VT2, VT3), six automatic slope calculations and Tau
- Individual pre-programmed EFVL (exercise flow/volume loops) measurements
- Online entry of RPE scale, blood gas marker, blood pressure or events
- Offline entry of blood gases with automatic calculation of related parameters
- Customizable evaluation workflow
- Bluetooth 12-lead Vyntus ECG for a powerful integrated solution
- Integrated pulse oximetry with ear-clip or forehead sensors

# Your Vyntus ONE is equipped with our trusted SentrySuite software platform



## EASE-OF-USE MEASUREMENT CONCEPT

Keep the overview without any program switches. All important steps; calibration, patient data entry, measurements, interpretation and reporting can be navigated within ONE screen.



## SentrySuite NETWORKING

Connect all your measurement devices and review workplaces in one network and profit from one central patient database and the possibility of a HIS interface.



## GUIDANCE & QUALITY

- Coaching for operator and patient
- Acceptability and repeatability check against ATS/ERS
- Biological and mechanical quality control



## WORKFLOW DRIVEN REVIEW

Save time with the stationary or web-based physician's review tool.



## SECURITY

- Authentication
- Authorization
- Audit

# ONE device, your flexibility – now it is your choice!

We offer the highest flexibility to fulfil your individual needs.

Your Vyntus ONE can even grow later on together with your needs delivering high performance and utility in a single package. And you can add the **Vyntus® BODY** for body plethysmography to your Vyntus ONE – all in ONE system.

	Vyntus ONE DL	Vyntus ONE PFT	Vyntus ONE
STANDARD TESTING CAPABILITIES			
Spirometry, Diffusion SB Realtime and Intrabreath			
Lungvolumes with N <sub>2</sub> Washout method and LCI			
CPET Breath-by-Breath			
OPTIONAL TESTING CAPABILITIES			
P0.1, MIP/MEP, SNIP, Compliance, Rocc, Rhinomanometry, Noninvasive cardiac output Vyntus BODY for body plethysmography Vyntus ECG for rest and stress			

## PATIENT CENTRICITY

The Vyntus ONE helps all patients to easily perform the manoeuvre.

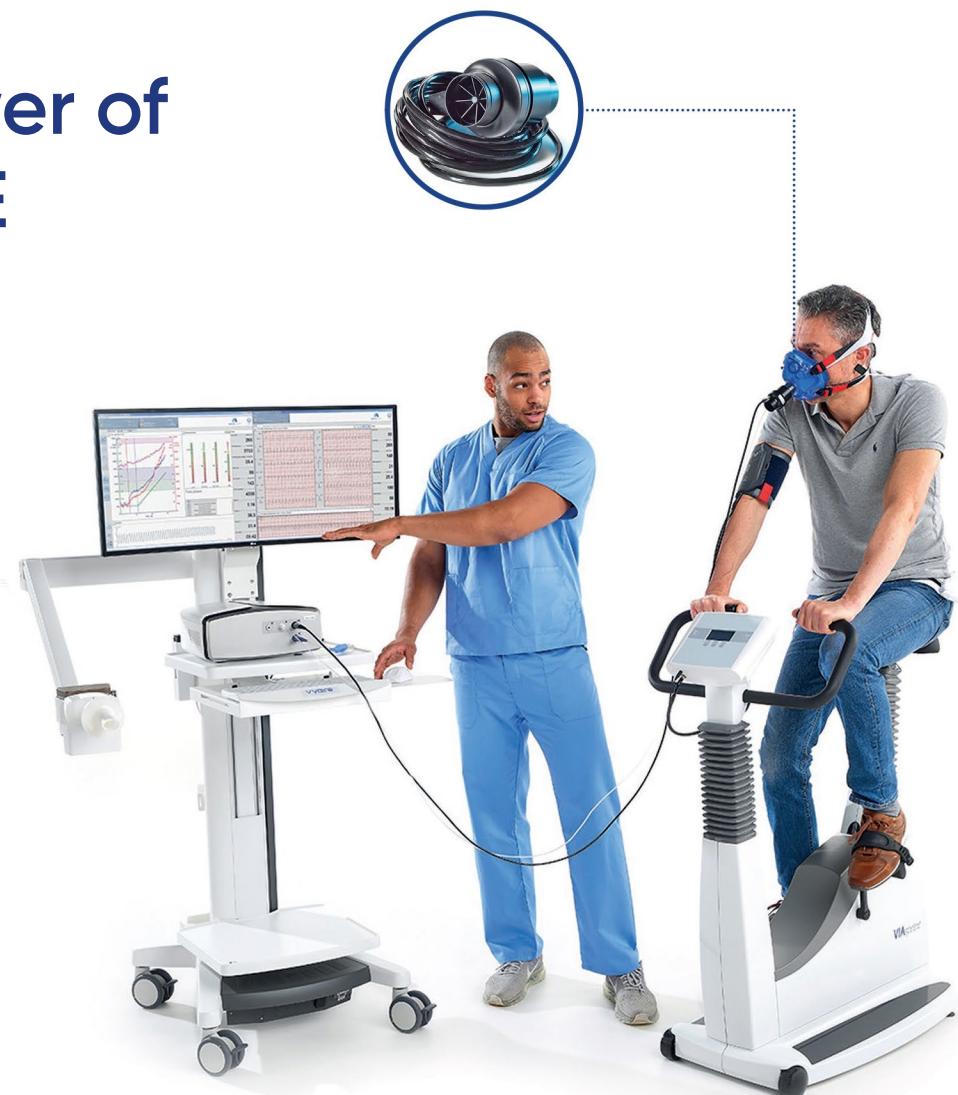
## INNOVATION

The Vyntus ONE technology drives high quality results, accuracy and repeatability.

## HYGIENE

The Vyntus ONE combined with MicroGard™ filters makes hygiene routines fast and easy.

# The power of ONE



# Keep up with every Vyntus innovation

The right diagnostics for each individual patient.

Vyaire's Vyntus systems deliver everything for your pulmonary function testing needs. And since SentrySuite software powers all of them, it's easy to navigate through all systems and tests with a consistent and intuitive user interface.

What's more, future Vyntus innovations to come will follow this same approach.



**Vyntus® QUESTIONNAIRE**  
your digital questionnaire app.



**Vyntus® WALK**  
a complete mobile solution  
for the 6-minute walk test.



**Vyntus® CPX**  
the specialist for cardiopulmonary exercise testing, high/low FIO<sub>2</sub> and indirect calorimetry with canopy.





### Vyntus® BODY

for bodyplethysmography as stand alone device or in combination with the Vyntus ONE.



## WE HELP PEOPLE CATCH THEIR BREATH. BUT WE'RE NOT STOPPING TO CATCH OURS.

Vyaire represents a powerful force dedicated to the simple act of breathing. Today, you'll find **our unique products are giving clinicians all across the world the power** to diagnose, treat and monitor respiratory conditions like never before.

And we're not about to slow down now. We will continue to evolve and expand the complete Vyntus line of testing devices. Tomorrow and all the days after.



### Vyntus® ECG

standalone or as option to other Vyntus devices for resting and exercise ECG.



### Vyntus® SPIRO

for all essential spirometry tests including, medication testing and animation incentives.



### Vyntus® PNEUMO

the modular spirometer with optional Rocc, P0.1, MIP/MEP, SNIP, rhinomanometry, compliance and aerosol provocation system APS.



### Vyntus® IOS

for impulse oscillometry, spirometry and optional aerosol provocation system APS.



## NOTES

\*based on the Bio Burden DIN EN ISO 11737-1: Report 18AA0088

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