



vyaire™  
MEDICAL

## Vyntus™ ONE

pulmonary function 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 systems that strive for higher levels of accuracy, and are more patient and clinician friendly than ever before.*

Vyntus™ Systems represent our latest efforts to reimagine existing boundaries and advance the practice of respiratory diagnostics.

## **Human centric design is so obvious, it's often overlooked.**

Patients must feel at ease for any technology to perform at its best. So, to help patients feel less anxious and more comfortable, we reimaged everything from materials to ergonomics, along with the entire breathing circuit. We've invested enormous energy in innovation to give you the most patient-friendly systems and reliable information from them as possible.

## **Less down time, more patient time.**

We've extended our philosophy to clinicians as well, working hard to make our Vyntus systems incredibly user friendly. Our latest flow sensor is factory calibrated, leaving you with only a simple daily verification. And SentrySuite software offers cues and indications that make navigating through different tests easier than ever. There's more... Hardware components adapt to existing hygiene protocols, require minimal disassembly, and allow for automated or manual cleaning and disinfection. So now clinicians can do what they do best, focus on their patients.

## **Connectivity isn't just a buzzword to us.**

The Power of SentrySuite™ software changes everything by changing nothing on your end. SentrySuite seamlessly connects with your existing network and clinical infrastructures, making collaboration easy from everywhere. And, it provides automated workflow processes that let you keep tabs on the status of every test, simplifying operations in even the busiest labs. All of this happens under an advanced umbrella of cybersecurity, with stringent access controls to keep sensitive patient information safe and protected.

## **A partnership that goes above, and way beyond "tech support".**

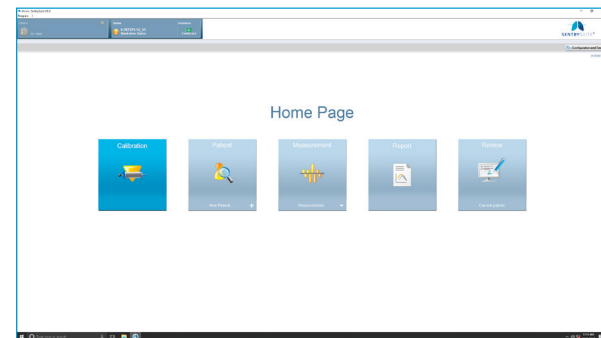
Our extensive support team supports this awesome Vyntus technology. The Vyair team is one of the largest local support organizations of its kind. Our technical service, field service, training and IT project management teams are focused on only one job – making sure our products perform their best for you, without compromising the needs of your practice. Our team will be there for you every step of the way.

# The Power of SentrySuite. Simple to operate, yet sophisticated for your team's wide-ranging clinical needs.

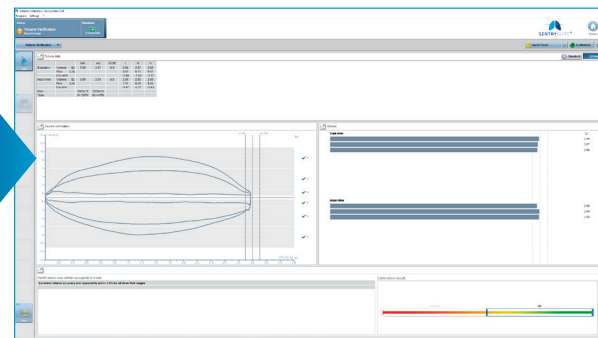
Our SentrySuite software powers all of your Vyntus Systems, making them incredibly easy to operate from system-to-system and test-to-test. We've designed a very simple user interface with guidance cues and QC feedback, ensuring that patient test performance is acceptable and repeatable. All this simplifies operations even in the busiest facilities.

- Supports a comprehensive list of PFT and CPET measurements
- **Meets 2017 ATS standards** for DLCO testing
- **Intuitive, single screen user interface** makes operation and navigating various tests easier than ever
- **Simple-to-follow cues** offer consistent patient guidance
- Provides **immediate Quality Check feedback** on acceptability and repeatability of the measurement
- Customizable settings, data tables, and parameters
- Central deployment ensuring that reports, layouts and norm sets are the same in every location.

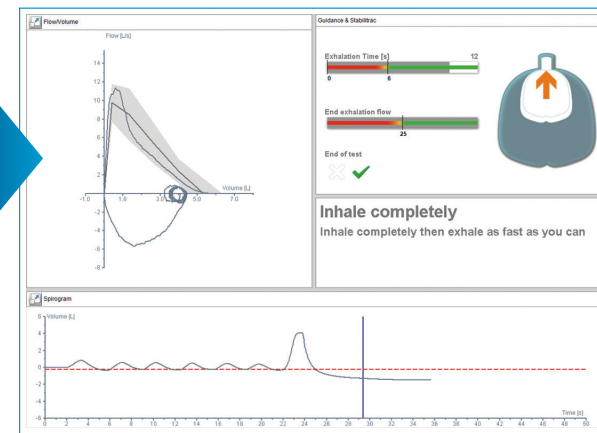
## Simple User Interface



## USS Verification Screen



## Real-Time Cues & Guidance



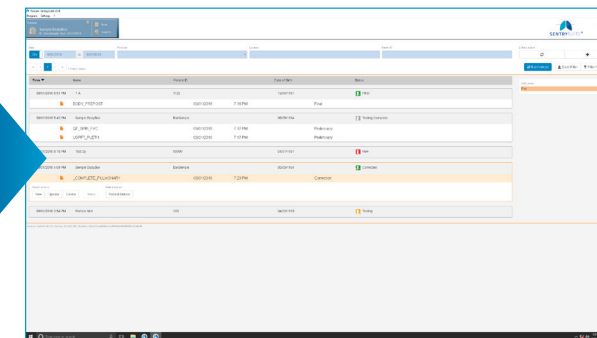
# And, with equally powerful workflow and reporting functionality.

When it comes to workflow processes, SentrySuite packs even more punch. With simple patient icons, it's easy to visually track each patient through their laboratory visit. SentrySuite is highly adaptable with customization and filtering capabilities to suit your team's specific needs. And, our web-based **Sentry Mobile Review** supports everywhere viewing and interpretation from virtually any device.

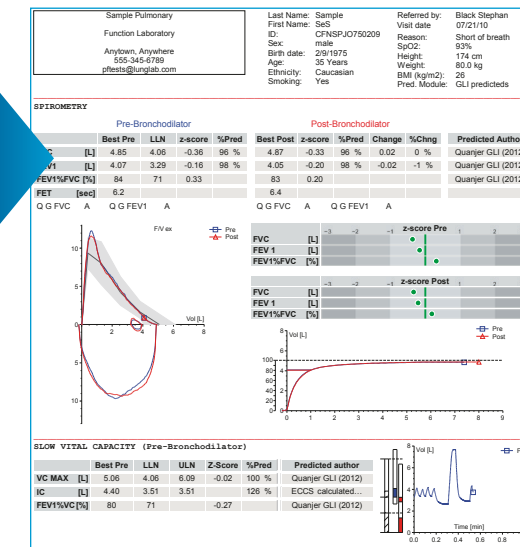
## Comprehensive reporting tools

- **Unlimited Patient Trending** and comparison reports
- **Global Lung Index (GLI)** reference value equations
- **Meets 2017 ATS DLCO guidelines** for reporting
- Supports PDF uploads from other programs to any patient visit and provides addition of comments
- Numerical and graphical Z-score capability including colored Quanjer bars for severity

## SentrySuite Review



## Comprehensive Reporting



## Measurement capabilities:

- Complete Spirometry (FVC, SVC, MVV) pre/post dilator
- Bronchial Challenge Testing
- Lung Volumes, FRC by N2 Washout
- Body Plethysmography (FRC pleth, Raw)
- SB Diffusing Capacity
- SB Diffusing Capacity, Intra-breath
- MIP/MEP
- IOS
- CPET, breath-by-breath
- REE, mask
- ECG, Rest & Stress

Vyntus ONE goes places other PFTs don't; like to the future.

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 makes your tests more accurate, less intrusive and less stressful for patients. And because hygiene and maintenance are necessary tasks, we simplified disassembly and made sure that Vyntus ONE can be cleaned and cared for using your existing procedures and practices.



### Vyntus Mobile Cart

enables you to take PFT testing on the go, including room for all the things you need to have with you.



We reengineered every facet of Vyntus ONE's breathing circuit, achieving significant improvements in efficiency and accuracy.

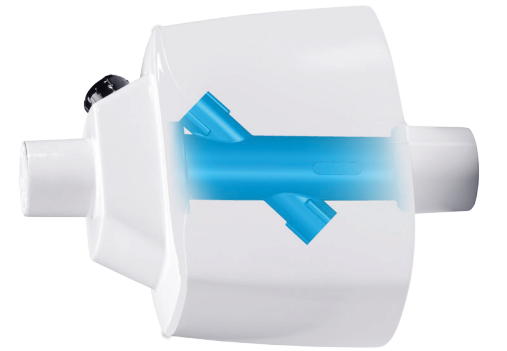
### Ultrasonic Flow Sensor

Factory calibrated sensor requires only simple verification so that clinicians can stay focused on patients.

**Dynamic Flow Correction** compensates for variables in real time for fast, reliable and accurate results. Accounts for and eliminates signal drift during measurement.

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

### Ultrasonic Flow Sensor



### Flowpath Valve

Simple, maintenance free, magnetically-controlled shutter is highly responsive to patient effort. For an easier testing experience and testing it right the 1st time.

### eDemand Valve

The electronically controlled demand valve reduces cracking pressure. And, since it's closer to the patient this maintains ease of breathing throughout the testing maneuvers.

### "Tool-free" O<sub>2</sub> Cell

Notifies you when replacement is needed (*typically ~2 years*). Effortlessly changed by you; no need for a service call.

### "Tool-free" O<sub>2</sub> Cell



# Vyntus ONE innovates around the latest ATS/ERS PFT recommendations

Vyntus ONE delivers both trusted and innovative measurement technology to perform key tests such as Spirometry, DLCO and FRC N<sub>2</sub> Washout.

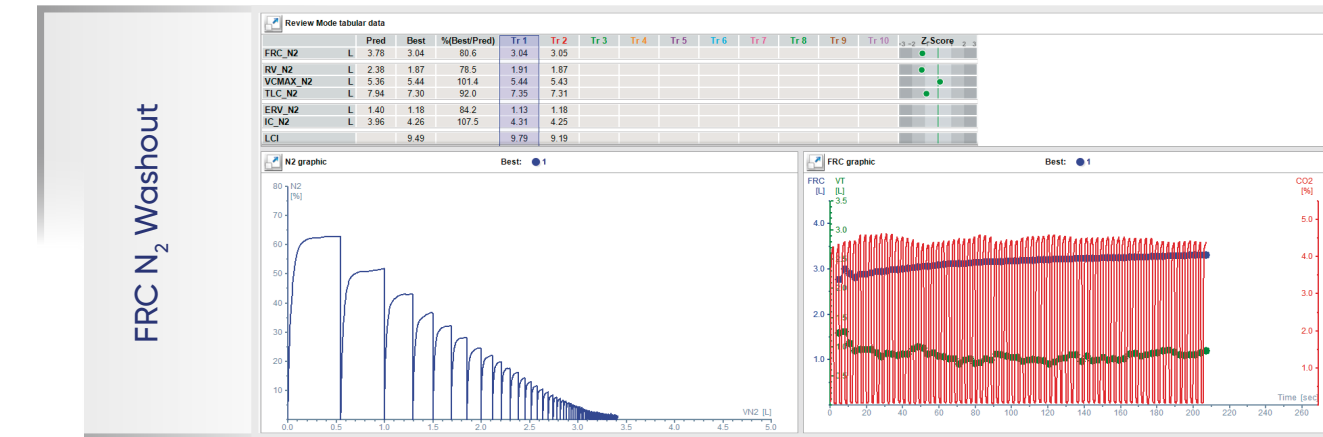
## Key Success Factors for DLCO Measurement

ATS/ERS 2017 requirements	Vyntus ONE for SB Diffusion
Flow Sensor Accuracy (3 L syringe check) ±2.5%	USS accuracy: Exhalation ± 1.5% or .05L/s (whichever is greater) Inhalation ± 2.0% or .05 L/s (whichever is greater)
RealTime Analyzer response <150ms	Multigas Analyzer response ≤145 ms
New Quality Grading System Recommended	ATS/ERS 2017 DLCO grading implemented
Equipment dead space <200ml	Equipment dead space <200ml
Ability to perform QA check	QC application and specialized syringe available to a complete recommended QA check.



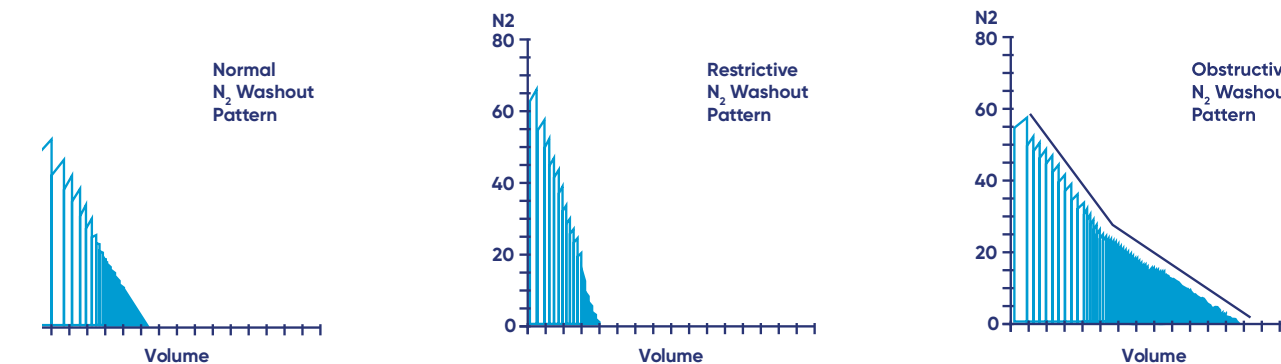
## Lung Volumes by Nitrogen Washout

- **Save money and time.** Consumables such as rebreathing bags and CO<sub>2</sub> absorber are not required.
- **Workflow-driven.** No waiting to begin the test. And, SentrySuite automatically advances the test protocol.
- Automatic leak detection.
- Differentiation of fast and slow lung compartments.
- Measurement of **Lung Clearance Index (LCI)** to identify patients who may have small airway disease.



**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.

## Patterns help characterize your patient's condition



## Vyntus Systems have plenty of room to grow, even if you don't.

Vyntus ONE packs a full PFT offering into a very small footprint. And with a simple software expansion, it provides even more capability, incorporating cardio-pulmonary exercise testing all in the same device.

This is especially beneficial for facilities that don't have 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 a single package.



## Breath-by-breath exercise testing with Vyntus ONE and Vyntus ECG

- **Digital Volume Transducer (DVT)** combines compact, lightweight design with little dead space and minimal resistance to airflow
- **On-board pulse oximetry** with finger, ear-clip and forehead sensors
- **Real time 9 panel graphical displays** during testing
- **Automated and Customizable post test workflow** making test evaluations simple and systematic.
- **Smart tools automate pre-test setup** and provide guided event timing during the test (e.g.: *blood pressure, RPE signaling, exercise flow volume loops, etc.*)
- **Exercise Flow Volume loop (EFVL)** measurements



### Vyntus ECG. Integrated gas exchange and ECG reporting with SentrySuite's single user interface.

- Integrated 12-Lead Bluetooth ECG
- Single SentrySuite report for gas exchange and ECG

Vyntus ONE. A single device, configurable to meet a variety of clinical needs.



	Vyntus ONE DL	Vyntus ONE PFT	Vyntus ONE
STANDARD TESTING CAPABILITIES			
Spirometry, Diffusion SB Realtime and Intrabreath	●	●	●
Lung Volumes with N <sub>2</sub> Washout method and LCI		●	●
MIP/MEP	●	●	●
Bronchial Challenge Testing Software	●	●	●
CPET Breath-by-Breath			●

Simple, validated hygiene & maintenance routines mean unmatched confidence and less hassle for you.

You've shared that maintenance and hygiene aren't the most productive or exciting parts of a clinician's day. So, we've spent a lot of time minimizing what our Vyntus Systems require. Our latest flow sensor requires no calibration. Instead, just a simple verification. We've accomplished a lot when it comes to hygiene and maintenance. So you can do what you do best, focus on your patients.

### Designed for easy hygiene & maintenance

- **Smartly designed** hardware does not utilize balloons or valves. Just a few robust parts, making disassembly and reassembly a snap.
- Components tolerate manual and automated cleaning and disinfection processes. The **Ultrasonic Sensor is waterproof** and dishwasher safe up to 140°F.
- **'Tool free' O<sub>2</sub> cell** notifies you when replacement is needed (*typically ~2 years*). Effortlessly changed by you; no need for a service call.

### MicroGard™ II means confidence

- **MicroGard II stands for patient and operator safety** without compromising system performance or clinical results.
- MicroGard II filters are manufactured to strict specifications, **optimizing filtration efficiency** with minimal resistance to airflow.
- With the use of the MicroGard filter, hygiene routines take less time, since cleaning and disinfection is required **only every 3 months.\***



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

## Secure connectivity. The Power of SentrySuite changes everything, by changing nothing on your end.

The SentrySuite software platform seamlessly connects with your existing network and clinical infrastructures, making data transfer to and from the EMR that much easier. Plus, our security features help ensure that your patient data remains protected. Our experienced IT project management team will perform an assessment to ensure that your existing systems coalesce with ours. And, they'll be there for you every step of the way.

### Connectivity

- **SQL database**
- **Easier Installation and Network Maintenance** via centralized tools that apply changes across the system
- HL7 Messaging with discrete data and PDF graphics provides **full visual clinical reporting**

### Role-based System Security

- Authentication Authorization, and Audit **protects key patient health information** and provides an audit trail of important data access.
- Active directory interface provides **facility-level password management** so users don't have to remember multiple passwords.
- **User Administration and Group Rights** can restrict rights so not everyone has access to everything; a role-based NIST cybersecurity standard.



# 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'll keep pushing the technical boundaries.*

*Vyaire's Vyntus Systems offer bold examples of what can be accomplished when embracing human-centric design, delivering everything for your pulmonary function testing needs.*

*And since SentrySuite software powers all of them, it's easy to navigate from system to system and test to test.*

*What's more, future Vyntus innovations will follow this same approach. So, keep up with every Vyntus innovation, even the ones we haven't dreamed up yet.*

*We're not slowing down now and we'll continue to evolve and expand the complete Vyntus line of testing devices.*

**vyaire**<sup>™</sup>  
M E D I C A L





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HEADQUARTERS

Vyairē Medical, Inc.  
26125 North Riverwoods Blvd  
Mettawa, IL 60045, USA

[vyaire.com/Vyntus](https://vyaire.com/Vyntus)

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