vyaire™ MEDICAL

Vyntus® BODY

body plethysmography

TECHNICAL SPECIFICATIONS

Vyntus® BODY

Measurement

***(Specific)* airway resistance:**	sReff, sRtot, sR0.5, sRmid as well as Reff, Rtot, R0.5, Rmid and others
Static lung volumes:	Absolute lung volumes: TLC, FRCpleth, RV, RV/TLC and others; Static lung volumes: VC MAX, IC, ERV and others
Dynamic lung volumes:	FVC, FEV1, FEV1/FVC, MFEF 25-75, FEF 75, PEF and others
Options:	• CO-Diffusion RT and IB • MIP/MEP • P0.1 • Rocc • APS – Aerosol Provocation System

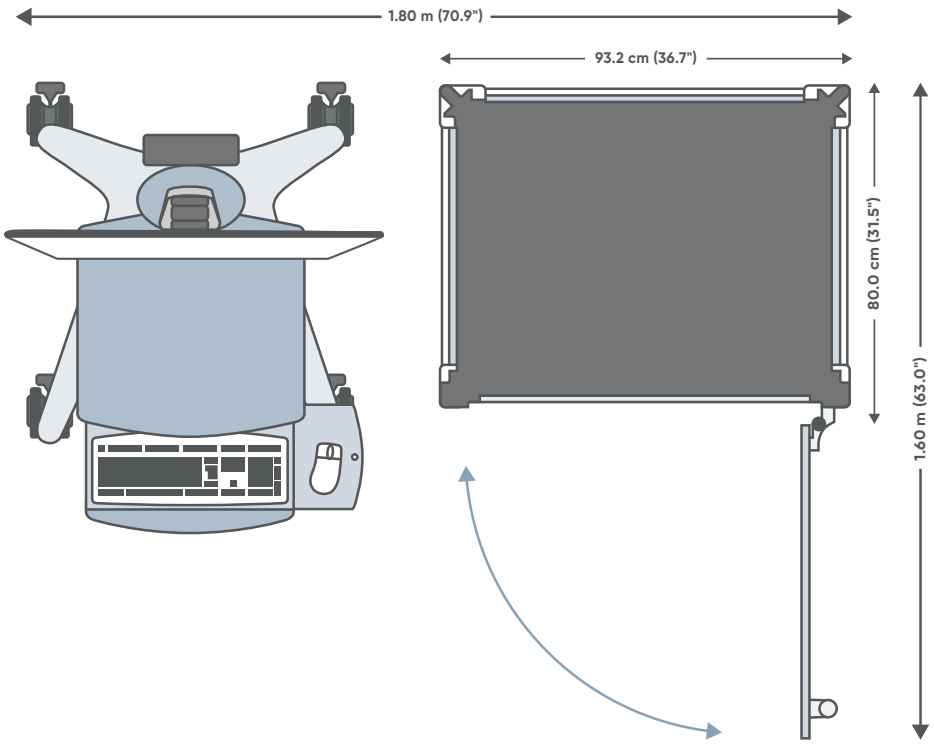
Components

- Airtight box with panorama glazing, integrated control units and new digital ambient pressure compensation circuit
- Calibration-free and waterproof ultrasonic flow sensor
- PC with hygiene keyboard / mouse, inkjet printer and 24" LCD flatscreen monitor on an ergonomic, smooth-running trolley
- Set of accessories
- Complete software package for measurement and report generation plus extended infrastructure for data management

Required space

Vyntus® BODY with CART 3.b

Space requirements: 180 × 160 cm (70.9" x 63.0")



To test outside the cabin, more space is required.
The guidelines for the patient area must be followed.

Calibration-free and waterproof ultrasonic sensor

Barrier free spacious cabin for safe and easy entry

Technical data

Flow measurement	
Type	Ultrasound
Methodological peculiarities	Simultaneous measurement of ultrasound transit time in and against flow direction
Sample rate	True 1000 Hz for flow, achieved by 2000 ultrasound transit time measurements *(double shot technology)*
Range	0 to 18 L / s bidirectional
Accuracy	Exhalation 0 to 14 L / s: 1.5 % or 0.05 L / s *(whichever is greater)* Inhalation 0 to 14 L/s: 2.0 % or 0.05 L/s *(whichever is greater)*
Precision	1% or 0.1 L / s *(whichever is greater)*
Resolution	1 mL / s
Total resistance *(MicroGard® II filter + USS Module + FPV block)*	<0.150 kPa*s/L at 14 L / s <1.53 cmH20*s/L
Dead space USS Module	66 mL
Volume integration	
Principle	Software volume integration of flow signal
Range	30 L *(software limited)*
Accuracy	Exhalation and inhalation 0.5 to 14 L/s: 2.5% or 0.075 L (75 mL)
Precision	1% or 0.05 L *(whichever is greater)*
Resolution	1 mL
Mouth pressure measurement	
Type	Piezo resistive
Range	±20 kPa (±150 mmHg)
Accuracy	±1% or 0.01 kPa (0.075 mmHg) *(whichever is greater)*
Resolution	0.003 kPa (0.0225 mmHg)
Box signal	
Transducer type	Piezo resistive, calibrated in terms of shift volume
Transducer range	0 to ±2500 mL at 1000 hPa ambient pressure
Accuracy	±2% at 0.25 Hz / 0.5 Hz
Resolution	0.1 mL
Compensation of ambient pressure variations	Digital ambient pressure compensation
Box	
Material	Aluminium / glass construction
Principle	Volume-constant
Volume	1110 L
Height step-in	70 mm (2.8")
Weight	175 kg (385 lbs), 150 kg (330 lbs) without door
Door-lock	Electromagnetic via 8 magnets
Size outside	932 × 800 × 1850 mm *(incl. door handle)* (36.7" x 31.5" x 72.8")
Space inside	882 × 705 × 1739 mm (34.7" x 27.8" x 68.5")
Interface to PC	USB

Flexible 3D arm - can be extended outside of the cabin up to an impressive reach of 63 cm (24.8")

Vyntus® APS Aerosol Provocation System integrated inside the cabin for automated, software controlled, safe and accurate bronchial challenge testing

Hygiene keyboard and mouse - only one part of our complete hygiene concept

Box calibration syringe		
Calibration volume	50 mL, motor-driven calibration pump	
Calibration frequency	0.25 Hz, 0.5 Hz and 1 Hz	
Chair		
Maximal load chair	150 kg (330 lbs)	
Sitting height	Adjustable from 40 to 60 cm (15.7" x 23.6")	
Turnable	Yes	
Material seatshell	Polypropylene	
Kind of disinfection	Wipe disinfection	
Flexible 3D arm		
Max. length outside the cabin	63 cm (24.8")	
Adjustable height inside the cabin	98.3 cm to 141.5 cm (38.7" to 55.7")	
Multigas analyzer (CO / CH4) – Diffusion measurement		
Type	Infrared	
Range	0 to 0.33 vol %	
Accuracy	± 0.003 vol % or ± 2 % relative *(whichever is greater)*	
Resolution	0.0005 vol %	
Maximum nonlinearity	±1 % of full scale	
Response time	≤ 145 ms	
Pressure reducer (Diffusion pressure reducer for demand valve)		
Inlet pressure	200 bar	
Outlet pressure	7 bar (fixed)	
Flow rate	At least 500 L / min	
Flow rate	At most 700 L / min	
2 outlets	G 1 / 4 internal screw thread	
Vyntus® APS		
Compressor	Flow	8 L / min ± 1.5 L / min
	Pressure	1.4 bar ± 0.3 bar
Nebulizer	Name	Philips Respironics Sidestream®
	Type	Compressed air nebulizer
	Mean mass diameter	3.2 µm
	Output power	240 mg / min
Ambient measurement	**Measurement range**	**Accuracy**
Temperature sensor	– 10 to 50 °C (14 to 122 °F)	± 0.5 °C at 20 °C (68 °F) ± 1 °C at 10 to 34 °C (50 to 93.2 °F)
Humidity sensor	0 to 100 % relative humidity	4 % relative humidity at 20 – 80 % relative humidity
Air pressure sensor	500 to 1100 hPa (375 to 825 mmHg)	± 2.5 hPa (1.88 mmHg) at 700 to 1060 hPa (525 to 795 mmHg)
Keyboard / Mouse		
Hygiene keyboard	Kind of disinfection	Wipe disinfection
	Material	Silicone key membrane / sealed key field
Hygiene mouse	Kind of disinfection	Wipe disinfection
	Protection class	IP68 fully sealed

Flexible 3D arm extends to accomodate mobility impaired patients

Stable hand grip for easy entry and exit with integrated emergency button to open the door from inside

Easy and fast adjustment to fit your patients

Dimensions / weight CART 3.b		
Dimensions total	61 cm W × 62 cm D × 120 cm H (24" × 24.4" × 47.3")	
Weight total	45 kg (99.2 lbs) inclusive PC, printer and 24" LCD monitor	
Castors	4 twin swivel castors Ø 10 cm (3.9"), lockable, conductive	
Shelves	Number	1
	Platform area	45 cm W × 36 cm D (17.7" × 14.2")
	Load capacity	20 kg (44 lbs) distributed load
Keyboard drawer with mousepad (left / right)	Keyboard platform area	40 cm W × 20 cm D (15.7" × 7.9")
	Load capacity	3 kg (6.6 lbs) distributed load
Drawer	Interior area	34 cm W × 24 cm D × 8 cm H (13.4" × 9.4" × 3.1")
	Platform area	45 cm W × 36 cm D (17.7" × 14.2")
	Load capacity shelf	15 kg (33 lbs) distributed load
	Load capacity drawer	3 kg (6.6 lbs) distributed load
Monitor mount	Load capacity	14 kg (30.9 lbs)
Ambient conditions		
Temperature	+ 10 °C to + 34 °C (+ 50 °F to 93.2 °F)	
Relative humidity	20 to 80 % RH, non-condensing	
Ambient pressure	700 to 1060 hPa (525 to 795 mmHg)	
Altitude	≤ 3000 m (9842 ft)	
Vyntus BODY – Transport and storage conditions		
Temperature	– 20 °C to + 50 °C (– 4 °F to 122 °F)	
Relative humidity	15 to 95 % RH, non-condensing	
Ambient pressure	600 to 1200 hPa (450 to 900 mmHg)	
Vyntus BODY (cabin) – Power supply		
Mains voltage	100 to 240 V, AC 50 to 60 Hz	
Power input	Max. 80 VA	
Electrical safety	Protection class I	
Mains plug	Used for isolating all poles simultaneously from supply mains	
CART 3.b with PC / Monitor / Printer – Power supply		
Mains input voltage	100 to 240 V, AC 50 to 60 Hz, max. 1.5 A	
Power input	Max. 1.5 A (depending on PC)	
Electrical safety	Protection class I	
Vyntus APS – Power supply		
Type	Magic Power MPM-X125	
Mains input voltage	100 to 240 V, AC 47 to 63 Hz	
Power consumption	1.5 to 1 A	
Output voltage	24 V DC	
Output	120 VA / 5 A	
Electrical safety	Protection class I	
Mains plug	Used for isolating all poles simultaneously from supply mains	

Vyntus BODY - designed for you and your patients

Moisture protection		
Vyntus BODY	IP 20	
CART 3.b	No IP protection	
Ultra Sound Sensor (USS Module)	IP 67	
Vyntus APS	IP 20	
Classification of applied parts		
Vyntus BODY	Type applied part	B
Vyntus APS	Type applied part	B
Category according to MDD 93/42/EEC (2007)		
Complete system	Active class IIa medical product	
Operating mode		
Complete system	Continuous operation	
Standards, directives		
Standards	EN 60601-1, EN 60601-1-2 (4th edition), EN 62304, EN 62366, EN ISO 14971, EN ISO 10993-1	
Directives	93/42/EEC amended by 2007/47/EC, RoHS 2011 / 65 / EU compliant	
Market clearances	CE, Brazil-ANVISA, Australia-TGA, Health Canada	

All around glazing for full patient control

Software

✓ Standard o Option

Measurement programs	
Body plethysmography	✓
Forced spirometry (FVC) / Slow spirometry (SVC) / MVV	✓
Spirometry animation programs	✓
Single-breath CO-diffusion realtime and intrabreath	o
Airway resistance by R occlusion	o
P 0.1	o
MIP / MEP	o
Bronchial challenge with Vyntus APS	o
Calibration programs	
Volume calibration for the Vyntus APS / verification for the USS module	✓
Gas calibration	o
Body box calibration	✓
Organization programs	
SentrySuite home page	✓
SentrySuite review	✓
SentrySuite mobile review web application	o
Patient data	✓
Report output	✓
Multiformat output *(JPG, TIFF, RTF and others)*	✓
Auto interpretation	✓
ATS / ERS quality check	✓
Comments / Physician interpretation	✓
Report designer for generating customized reports	✓
Predicted values / Reference sets design / editor	✓
Offline data input	✓
SentrySuite (SeS) quality management	✓
Log file viewer	✓
Backup / Restore	✓
Data export / import	✓
User parameter editor for customized parameters	o
Patient data management for advanced corrective actions	o
Questionnaire designer for customized questionnaires	o
SeS Q remote tablet questionnaire	o
Security and user administration	o
Networking	o
SentryConnect for HIS integration via HL7	o
GDT connection *(German standard)*	✓
Spirometer data transfer *(MicroLoop, MicroLab, FlowScreen, SpiroPro)*	✓
InterConnectivity Manager for interface with JLAB / Vmax / SPCS platforms	✓
SeS SQL database interface query / DataCube	o

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