

# Technical Specifications



**Vyntus PNEUMO**



**Vyntus IOS**



**Vyntus APS/IOS**

## Flow-Volume/pressure measurements

Flow	Type	Pneumatach
	Range	0 to $\pm 20$ L/s
	Accuracy	0 to 18 L/s: $\pm 2\%$ 18 to 20 L/s: $\pm 5\%$
	Resolution	1 $\mu$ L/s
	Resistance	< 0.05 kPa/(L/s) (0.5 cmH <sub>2</sub> O/(L/s)) at 10 L/s
	CMRR	> 60 dB at 50 Hz
Volume	Type	Software Integration
	Range	$\pm 20$ L
	Accuracy	0 to 20 L: $\pm 3\%$ or $\pm 0.05$ L (whichever is greater)
	Resolution	1 $\mu$ L
Mouth pressure Vyntus PNEUMO	Type	Piezo Resistive
	Range	$\pm 20$ kPa ( $\pm 150$ mmHg)
	Accuracy	0 to 2 kPa (0 to 15 mmHg): $\pm 2\%$ 2 to 20 kPa (15 to 150 mmHg): $\pm 5\%$
	Resolution	0.001 Pa (0.0000075 mmHg)
	CMRR	> 60 dB at 50 Hz
Mouth pressure Vyntus IOS	Type	Piezo Resistive
	Range	$\pm 2$ kPa ( $\pm 15$ mmHg)
	Accuracy	$\pm 2\%$
	Resolution	0.001 Pa (0.0000075 mmHg)

## Vyntus APS

Compressor	Flow	8 L/min $\pm 1.5$ L/min
	Pressure	1.4 bar $\pm 0.3$ bar
Nebulizer	Name	Philips Respironics Sidestream®
	Type	Compressed air nebulizer
	Mean mass diameter	3.2 $\mu$ m
	Output power	240 mg/min

## Vyntus IOS

Test signal	Type	Impulses of alternating direction
	Pulse interval	0.1 – 10 s
	Impulse length	40 ms
	Frequency range of single impulse	0 – 100 Hz
	Maximal impulse pressure	0.3 kPa (3 cmH <sub>2</sub> O)
	Power spectrum	Maximum at 5 Hz to $-25$ dB at 50 Hz
System verification	Reference impedance	0.2 kPa/(L/s) (2 cmH <sub>2</sub> O/(L/s))
	Accuracy	< $\pm 2\%$

## Calibration syringe

Volume:	1 L / 3 L
Accuracy:	+/- 12 mL



**Vyntus APS nebulizer**



**Option rhinomanometry**



**Option SNIP**

<b>Power supply</b>	
PC or notebook	Main voltage 100 to 240 V AC; 50 to 60 Hz, max 1.5 A Power input max. 1.5 A (depending on PC/notebook) Type Magic Power MPM-X125
Vyntus PNEUMO/IOS/APS	Mains input voltage 100 – 240 V, AC 47 – 63 Hz Power consumption 1.5 – 1 A Output voltage 24 V DC Output 120 VA/5 A Electrical safety Protection class I Complete system IP 20
<b>Classification of applied parts</b>	
Vyntus PNEUMO	Applied part Type B
Vyntus IOS	Applied part Type B
Vyntus APS	Applied part Type B
<b>Category according to MDD 93/42/EEC (2007)</b>	
Complete system	Active class IIa medical product
<b>Operating mode</b>	
Complete system	Continuous operation
<b>Ambient conditions</b>	
Complete System	Altitude ≤ 3000 m Temperature +10 °C to +34 °C (+50 °F to 93.2 °F) Rel. humidity 20 to 80 % RH, non-condensing Ambient pressure 700 to 1060 hPa (525 to 795 mmHg)
<b>Transport and storage conditions</b>	
Complete System	Temperature – 20 °C to +50 °C (– 4 °F to 122 °F) Rel. humidity 15 to 95 % RH, non-condensing Ambient pressure 600 to 1200 hPa (375 to 900 mmHg)
<b>Dimensions</b>	
Vyntus Basic Module for Vyntus PNEUMO/IOS	Size 29.2 x 19.8 x 6.4 cm (11.5" x 7.8" x 2.5") (W x D x H)
Vyntus Extended Basic Module for Vyntus APS	Size 29.2 x 29.2 x 12.3 cm (11.5" x 11.5" x 4.8") (W x D x H)
Medical power supply	Size 18 x 9 x 6 cm (7.1" x 3.5" x 2.4") (W x D x H)
<b>Standards, directives and market clearances</b>	
Standards	EN 60601-1, EN 60601-1-2, 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