



## Vyntus® CPX and Vyntus® ECG metabolic cart and ECG

# Vyntus<sup>®</sup> CPX

## Technical specifications



### Ergospirometry (physiological measurement)

Parameter	Measurement range	Accuracy
Ventilation (V'E)	0 to 300 L/min	2% or 0.50 L/min
O <sub>2</sub> uptake (V'O <sub>2</sub> )	0 to 7 L/min	3% or 0.05 L/min
CO <sub>2</sub> production (V'CO <sub>2</sub> )	0 to 7 L/min	3% or 0.05 L/min
RER	0.6 to 2.0	4% or 0.04

### Volume sensor (physiological measurement)

Parameter	Measurement range	Accuracy
Volume	0 to 10 L	2% or 0.05 L
Flow	0 to 15 L/s	3% or 0.07 L/s
Resolution	3 mL	
Resistance	< 0.1 kPa/L/s at 15 L/s	
ATS	Compliant	

### O<sub>2</sub> analyser

Type	Fully digital, high speed analyser, based on electrochemical principle
Measurement range	0 to 100 Vol%
Accuracy	0.05 Vol% or 0.2%
Resolution	0.01 Vol%
Typ. rise time (T10-90)*	75 ms
Operating life	Typical 2 years

### CO<sub>2</sub> analyser

Type	Fully digital, high speed analyser based on principle of infrared absorption
Measurement range	0 to 15 Vol%
Accuracy	0.05 Vol% or 1%
Resolution	0.01 Vol%
Typ. rise time (T10-90)*	75 ms

### Ambient measurement

Ambient unit	Measurement range	Accuracy
Temperature sensor	-40 to +85°C (-40 to +185°F)	0.5°C at 20°C (68°F)
Humidity sensor	10 to 95% relative humidity	4% relative humidity
Vyntus CPX	Measurement range	Accuracy
Air pressure sensor	30 to 110 kPa (225 mmHg to 825 mmHg)	0.25 kPa (1.88 mmHg) at 0 to 65°C (32 to 149°F)

#### Notes

\* Rise time after digital filtering. During every gas calibration the filter coefficients are specifically optimized for the sensors.

Canopy module specifications**	
Dilution flow range	25 - 80 L/min
SpO <sub>2</sub> sensors	
Displayed oxygen saturation range (SpO <sub>2</sub> )	0 to 100%
Displayed pulse rate range	18 to 321 beats per minute (BPM)
SpO <sub>2</sub> accuracy (arms*)	± 3 digits @ 70 to 100%
Power supply	
Vyntus CPX with Vyntus CART 3.0	
Mains voltage	115 V; 230 V, AC 50/60 Hz
Power input	690 VA
Electrical safety	Protection class I
Vyntus CPX without cart	
Type	Magic Power MPM-X125
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
Moisture protection	
Vyntus CPX with Vyntus CART 3.0	no IP protection
Vyntus CPX without cart	IP 20
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
Classification of applied parts	
Type applied part	B
Category according to MDD 93/42/EEC (2007)	
Complete system	Active class IIa medical product
Pressure reducer	
Type	Test gas pressure reducer
Inlet pressure	200 bar (2901 psi)
Outlet pressure	2 bar fixed (29 psi)
1 outlet	G 1/4 internal screw thread

Notes

\* ± 1 Arms represents approximately 68 % of measurements.

\*\* Not available in the US

Dimensions / Weight		
Vyntus CPX module		
Dimensions	33 cm W x 28.5 cm D x 13.5 cm H (13" x 11.2" x 5.3")	
Weight	4.08 kg (8.9 lbs)	
Vyntus CPX with Vyntus CART 3.0		
Dimensions total	61 - 82.5 cm W x 62 cm D x 172 - 197 cm (depending on monitor assembly) (24 - 32.5" x 24.4" x 67.7 - 77.6")	
Weight total	82 kg (180.8 lbs) inclusive CardioSoft ECG, KISS suction unit and 34" curved monitor	
Castors	4 twin swivel castors Ø 10 cm (3.9"), lockable	
	Number	3
Shelves	Platform area	45 cm W x 36 cm D (17.7" x 14.2")
	Load capacity	20 kg (44 lbs) distributed load
Keyboard drawer with mousepad (left / right)	Keyboard platform area	40 cm W x 20 cm D (15.7" x 7.9")
	Load capacity	3 kg (6.6 lbs) distributed load
	Interior area	34 cm W x 24 cm D x 8 cm H (13.4" x 9.4" x 3.1")
Drawer	Platform area	45 cm W x 36 cm D (17.7" x 14.2")
	Load capacity shelf	15 kg (33 lbs) distributed load
	Load capacity drawer	3 kg (6.6 lbs) distributed load
Tower computer holder with two tension belts	Platform area	10.3 cm W x 6.4 cm D (4.0" x 2.5")
	Load capacity	5 kg (11 lbs)
Monitor mount height adjustable	Range height adjustment	18 cm (7.1")
	Load capacity	8.5 kg (18.7 lbs)
34" curved monitor as dual monitor application	Dimensions	82.5 cm W x 7.3 cm D x 37.2 cm H (32.5" x 3.0" x 14.7")
	Weight	8 kg (17.6 lbs)
Vyntus CPX Canopy option**		
Vyntus Canopy module	Dimensions	17.5 cm W x 25.5 cm D x 11 cm H (6.9" x 10" x 4.3")
	Weight	2.62 kg (5.8 lbs)
Holder for hood	Dimensions	40 cm W x 53 cm D x 28 cm H (15.7" x 20.9" x 11")
	Weight	1.2 kg (2.6 lbs)
Canopy tube	Length	183 cm (72")
Foil	Dimensions	150 cm W x 160 cm D (59.1" x 63.0"), 50 µm thickness
	Material	LDPE, biocompatible
Standards, directives and market clearances		
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 for Vyntus CPX and Vyntus CPX Canopy option, FDA 510(k) clearance for Vyntus CPX only	

# Vyntus<sup>®</sup> ECG

## Technical specifications



### ECG Amplifier, 10 electrodes, 12 leads

Application	ECG recording	
ECG leads	according to Einthoven, Wilson, Goldberger	
Bandwidth	0.05 - 150 Hz digital	
Sampling rate per channel	500 Hz	
Pacemaker detection	4000 Hz	
Resolution	< 2.5 $\mu$ V/bit	
Connection to the PC	Wireless, Bluetooth <sup>®</sup>	
Bluetooth <sup>®</sup>	Bluetooth <sup>®</sup> module	Panasonic PAN 1322
	Bluetooth <sup>®</sup> standard	V2.1, class 2 device
	Output power	2.5 dBm, max. 4.5 dBm
	Frequency range	2400 - 2483.5 MHz
	FCC identifier	T7VEBMU
	IC identifier	216QEBMU
Bluetooth <sup>®</sup> QD ID	B021246	
Connection of the electrodes	4 mm snap, gilded	

### Dimensions / Weight

ECG housing	Dimensions	9.5 cm W x 8.5 cm D x 2 cm H (3.7" x 3.3" x 0.8")
	Weight	0.2 kg (0.4 lbs)
Length of electrode cables	V1 - V6	60 cm (23.6")
	LL	45 cm (17.7")
	LA / RL	70 cm (27.6")
	RA	80 cm (31.5")

### Power supply

Supply voltage	1.5 V DC AA battery or 1.2 V DC AA NiMH rechargeable battery, at least 2500 mAh
Power input (max.)	500 mA
Service life with fully charged battery	at least 6 hours

### Moisture protection

Type applied part	IP 20
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### 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)

### Classification of applied parts

Type applied part	CF, defibrillator proof
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### Category according to MDD 93/42/EEC (2007)

Complete system	Active class IIa medical product
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### Standards, directives and market clearances

Standards	EN 60601-1, EN 60601-1-2, EN 60601-2-25, 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, FDA 510(k) clearance



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