SPACELABS HEALTHCARE

USA ONLY

DATA SHEET

CardioExpress

Electrocardiograph Model 4012 & 5012

Spacelabs' CardioExpress 4012 and 5012 ECG machines have been designed to simplify your workflow and minimise steps to acquiring high-quality ECG waveforms, while fitting with existing workflows.

They include high-resolution color touchscreens to aid diagnosis, and are packed with intelligent tools like color-coded arrhythmia detection, Glasgow Interpretation and spirometry.

They are lightweight and portable with multiple connectivity options for seamless use across any organization, with a 10-hour battery life to ensure uninterrupted care.

ECG

Gain	2.5, 5, 10, 20, Auto (I~aVF: 10, V1~V6: 5) mm/mV
Frequency Response	0.05~200Hz (-3dB)
Input Impedance	≥ 50 MΩ
Input Voltage Range	≤ ±5 mV
Digital Resolution	1 µV/LSB
Sampling Rate Analysis Sampling Rate: Digital Sampling Rate:	 500 Samples/s 8000 Samples/s
CMRR	≥ 105 dB
ECG Storage	Internal Storage for 500 Data: Built-in Memory
ECG Lead	Simultaneous 12 channel ECG and acquisition
HR Accuracy	30~300 bpm (±3 bpm)
Display Format	3x4+1 and 6x2
Printing Format	3CH+3RHY, 3CH+1RHY, 6CH+1RHY, 12CH 1CH long Time (1min, 3 min, 5 min, 10 min, 20 min, 30 min and Special Beat Report (Text, Guide, Vector)

Printing

Printing Type	Thermal Print Head, Z-fold Paper
Dot Density Vertical Horizontal	 8 dot/mm 16 dot/mm (0.125 mm pitch)
Paper	Thermal Printing Paper A4: 210 mm x 150 mm (half A4) Letter: 215 mm x 140 mm (half Letter)
Printing Speed	5, 12.5, 25, 50, 100 mm/sec
Printing Resolution	203 dpi

Communication

Connections	LAN, WiFi (option), USB, External Screen Connection
Connection Ports	3x USB, 1x LAN, 1x External screen
File Transfer Formats	DICOM, PDF, MFER, XML, BMP, JPG

Filter

AC	50/60 Hz,-20dB or better
EMG	25~35 Hz, -3dB or better
Baseline Drift	0.05 Hz, 0.1 Hz, 0.2 Hz.-3dB or better
Low Pass Filter	off, 40 Hz, 100 Hz, 150 Hz

Electrical Requirements

Power Requirement	Internal Lithium Ion rechargeable 10.8V, 6500 mAh battery (Replaceable)
Recharging Time	Recharge to full capacity in 3 hours (with the device turned off)
Operation Time	10 hours of normal use or 350 ECG (12 channel format at 25mm/s and 10mm/mV) or Spiro pages

Display

Type	Color TFT Wide Display
Resolution	1024 x 600
Size	10.1 inch (256 mm) (CardioExpress 5012) / 8 inch (203 mm) (CardioExpress 4012)
External Display	1024 x 600 @60Hz

Environmental Requirements

Input Type	Capacitive Touch Screen, Function Buttons, Keyboard (5012 Only)
Power	
Input	100~240 VAC, 50/60Hz, 1.5 ~0.75A
Output	15 VDC, 4.2A
Operating	
Temperature	10 °C to 40 °C)
Relative Humidity	30 %- 85 %
Atmospheric Pressure	700 hPa to 1060 hPa
Storage and Transport	
Temperature	-20 °C to 60 °C)
Relative Humidity	10 %- 95 %
Atmospheric Pressure	500 to 1060 hPa

Physical Dimensions

Main Body

Height	
CardioExpress 4012	140 mm
CardioExpress 5012	144 mm
Depth	
CardioExpress 4012	350 mm
CardioExpress 5012	350 mm
Width	
CardioExpress 4012	286 mm
CardioExpress 5012	286 mm
Weight	
CardioExpress 4012	Approx 4.2kg
CardioExpress 5012	Approx 4.2kg

Spirometer Handle

Height	201 mm
Depth	39 mm
Width	48 mm
Weight	Approx 250g

Safety Conformity

ECG	Class I, Type CF Applied Parts: ECG Electrodes
Spirometer	Class I, Type B Applied Parts: Spirometer Handle

Spirometer

Measuring Parameter	-FVC: FVC, FEV1, FEV1/FVC, FEF 0.2-1.2L, FEF 25-75%, FEF 75-85%,PEF, FEF 25%, FEF 50%, FEF 75%, FIVC, FEV6, PEFT, FET 100%, Error Code, Extrapolation volume -COPD: FEV1, FEV6, FEV1/FEV6, LFI COPD Classification -SVC: SVC, TV, ERV, IRV, EC -MVV: MVV, FB, TV
Presentation	Flow Volume Loop / Volume Time Graph / Measurement Values Table
Measuring Range	Flow: 0 to ±14L/s / Volume 0 to ±12L
Measuring Method	Differential Pressure Method
Prediction Equation	Morris-Polgar, Knudson-ITS, ECCS-Quanjer, Korea CJK, Pereira
Sample Rate	200 samples/sec
Flow Impedance	< 0.2 mbar s/L at 12 L/s
Measuring Accuracy	-3 ~ 3L (±0.09 L) / Complies with ISO 26782, ISO 23747
FVC	Accuracy & Repeatability: ±3.5% or ≤0.1 L (whichever is greater) Linearity: 0.4 ~0.6 L (error: <3%)
FEV1	Accuracy & Repeatability: ±3.5% or ≤0.1 L (whichever is greater) Linearity: 0.4 ~0.6 L (error: <3%)
PEF	Accuracy & Repeatability: ±12% or ≤ ±0.42 L/s (25 L/min) (whichever is greater) Linearity: Error between two consecutive test flows is < 5 % of the greater value

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Rx only

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