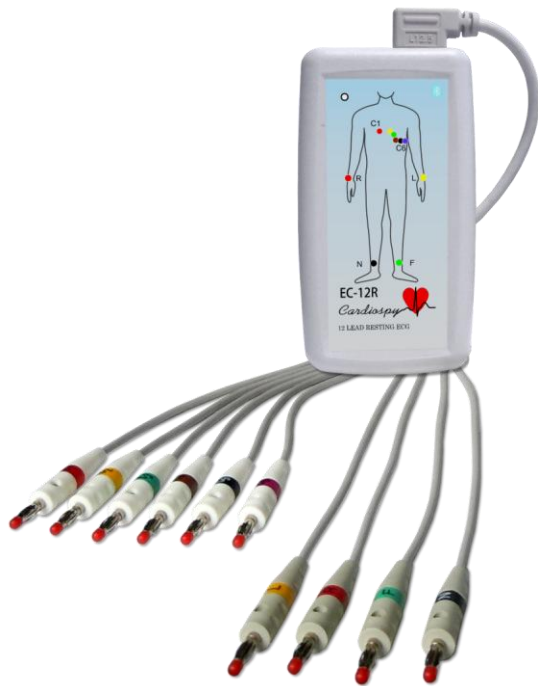


EC-12R EC-12RM EC-12R/S EC-12S Resting and Stress ECG Family

Technical specification



TECHNICAL SPECIFICATION OF RECORDERS								
	EC-12R	EC-12RM	EC-12R/S	EC-12S	EC-12R Wi-Fi	EC-12RM Wi-Fi	EC-12R/S Wi-Fi	EC-12S Wi-Fi
Leads	Standard 12-channel (10 electrodes): I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6 NEHB 6-channel (4 electrodes): I, II, III, aVR, aVL, aVF							
Resting ECG (Windows)	With USB-02/A or /B interface				With supplied Wi-Fi interface			
Stress ECG (Windows)	-		With USB-02/A or /B		-		With Wi-Fi interface	
Resting ECG (Android)	-	+	-			+	-	
Resting ECG (iOS)	-					+	-	
BP measurement method	-			Auscultatory QRS-gated	-			Auscultatory QRS-gated
BP measurement range	-			20-280 Hgmm	-			20-280 Hgmm
BP measurement accuracy	-			± 3 mmHg	-			± 3 mmHg
Wireless connection	Bluetooth 2.0				Wi-Fi IEEE 802.11g			
Patient protection	EN 60601 (IEC-601-1), CF type							
Power supply	2 x 1,2 V rechargeable batteries (or 2 x 1.5 V AA alkaline battery) Exchangeable during recording.							
Dynamic interval	±20 mV							
DC offset range	±1000 mV							
Frequency response	0.05 Hz ... 150Hz							
Sampling rate (recorder)	1024 Hz							
Transmission rate	512 Hz							
Sampling rate (software)	1000 Hz							
A/D resolution	16 bit							
Input impedance	≥100 MΩ							
Size	125 x 70 x 33 mm							
Weight	ca. 110 g			ca. 200 g	ca. 110 g			ca. 200 g
On/off switch	Option	+	Option	-	Option	+	Option	-

Specifications of Cardiospy (Windows) software

BASIC FUNCTIONS OF SOFTWARE

DATABASE FUNCTIONS

<ul style="list-style-type: none"> Common database for all Labtech system 	<ul style="list-style-type: none"> Record recycle bin function 	<ul style="list-style-type: none"> Search records
<ul style="list-style-type: none"> Acquire Patient ID from barcode reader 	<ul style="list-style-type: none"> System log 	<ul style="list-style-type: none"> Local database, Network database: Microsoft SQL Server database, SQLite database
<ul style="list-style-type: none"> Acquire Patient ID using magnetic card reader 	<ul style="list-style-type: none"> Filter records 	<ul style="list-style-type: none"> Different date format
<ul style="list-style-type: none"> Medical record for patients 	<ul style="list-style-type: none"> Import – export records 	<ul style="list-style-type: none"> Password protected software starting
<ul style="list-style-type: none"> Access control 	<ul style="list-style-type: none"> Import – export records by date 	

BASIC FUNCTIONS

<ul style="list-style-type: none"> Automatic update 	<ul style="list-style-type: none"> Normal and MSI install 	<ul style="list-style-type: none"> Full screen mode
<ul style="list-style-type: none"> HIS integrations: GDT, DICOM MODALITY WORKLIST, Cardiospy SDK 	<ul style="list-style-type: none"> Two display mode 	<ul style="list-style-type: none"> Cubios HRV export
<ul style="list-style-type: none"> FTP integration 	<ul style="list-style-type: none"> Email function 	<ul style="list-style-type: none"> AHA / IEC electrode placement

PRINT AND EXPORT FUNCTIONS

<ul style="list-style-type: none"> Report printing and exporting 	<ul style="list-style-type: none"> Automatic print 	<ul style="list-style-type: none"> Selectable reports
<ul style="list-style-type: none"> Color and Black and white reports 	<ul style="list-style-type: none"> Contrast settings 	<ul style="list-style-type: none"> Resizable resolution
<ul style="list-style-type: none"> Customizable company logo 	<ul style="list-style-type: none"> Automatic diagnosis 	<ul style="list-style-type: none"> Custom report
<ul style="list-style-type: none"> Adjustable paper speed and amplitude 	<ul style="list-style-type: none"> Import /Export settings 	<ul style="list-style-type: none"> Export ECG data to CSV, SCP, Dat format
<ul style="list-style-type: none"> Export QRS data 	<ul style="list-style-type: none"> Export N-N intervals 	<ul style="list-style-type: none"> Export R-R intervals

REST SOFTWARE FUNCTIONS

<ul style="list-style-type: none"> 5, 10, 20 sec and long ECG record 	<ul style="list-style-type: none"> Rhythm curves 	<ul style="list-style-type: none"> Lead-off warning
<ul style="list-style-type: none"> Precise QRS classification 	<ul style="list-style-type: none"> Store the Indication and medication of the patient 	<ul style="list-style-type: none"> Smoothing, baseline, mains filters
<ul style="list-style-type: none"> Arrhythmia analysis 	<ul style="list-style-type: none"> QRS frontal axis 	<ul style="list-style-type: none"> Full Disclosure ECG recording
<ul style="list-style-type: none"> Paper speed: 5-12,5-25-50-100-200 mm/s 	<ul style="list-style-type: none"> Amplitude: 2,5, 5-10-20-40 mm/mV 	<ul style="list-style-type: none"> BMI and BMI prime
<ul style="list-style-type: none"> Automatic diagnosis 	<ul style="list-style-type: none"> Average view 	<ul style="list-style-type: none"> ECG contrast
<ul style="list-style-type: none"> Milimeter paper settings 	<ul style="list-style-type: none"> Display channels: 3, 6, 12, additionally: Cabrera, Custom 	

STRESS SOFTWARE FUNCTIONS		
• Lead-off warning	• Precise QRS classification	• colour-coded ST level, slope and ST loop graphs
• Store the Indication and medication of the patient	• SAECG	• Smoothing, baseline, mains filters
• MET and VO2 computation	• HR, BP, LOAD, MET graphs	• Customizable alarm and stop criteria
• Ergometer and treadmill database	• Show T-wave deviation: QT, QTc trends	• Vectorcardiography in stress-continuous test
• Arrhythmia analysis	• Weber and Morris function classification	• Bayes theorem in the analysis
• Duke-nomogram	• Borg rank	• QRS frontal axis
• Exercise and condition plan	• Pacemaker detection	• Paper speed: 5-12,5-25-50-100-200 mm/s
• Amplitude: 2,5, 5-10-20-40 mm/mV	• Gender and age-specific ECG analysis software	• Full Disclosure ECG recording
• Modifiable protocols under Load	• standard stress protocols, custom protocols	• manual blood pressure measure
• Speed measure km/h and mph	• BMI and BMI prime	• Adjustable infoboxes
• Rhythm curves	• Templates analysis	• Event screen
• QT, QTc, QT%	• QRS Axis	• Ectopic rate
• Average view	• ECG contrast	• Milimeter paper settings
• Display channels: 3, 6, 12, additionally: Cabrera, Custom	•	•

COMPUTER MINIMUM CONFIGURATION	
Processor	minimum: Core 2 Duo or better recommended: Intel® Core™ i3 or better (Sandy Bridge or newer architecture)
RAM	minimum: 2 GB; recommended: 6 GB
Graphics card	DirectX 10 compatible, min. 128 MB video memory
Display	minimum: min. 1280x800 resolution recommended: dual 22" monitor 1920 x 1080 resolution (Full HD)
HDD	200 GB (SATA II or newer recommended)
Interface	1 USB port for the USB-02 or Wi-Fi dongle 1 USB port for the printer
Printer	Laser (printing speed: 15-20 page/min, color printer recommended)
Operating system	Windows XP SP 3 (32-bit only) Windows Vista, Windows 7, Windows 8, Windows 8.1 (32-bit or 64-bit versions)

*Windows XP is no longer supported by Microsoft. Labtech provides only limited support for previously installed systems.

Specifications of Cardiospy Mobile (Android, iOS) software

Software specification	
Simple, user friendly software with multiple functions	
Precise QRS classification	
Built-in ST analysis	
Baseline; Main; Smoothing filter	
Real-time ECG display	
1x3; 2x3; 1x6; 2x6; 1x12 leads view	
Sending JPEG reports in e-mail, and telemedicine support	
Record uploading to Labtech NetEcg Server	
Record viewer	
ECG amplitude, time measurement	
Patients database	
Continuous updating and developments	
Bluetooth communication	
5-10-20s and long ECG recording	
Lead-off warning (Indication of disconnected electrodes)	
Language: English	

ANDROID MINIMUM CONFIGURATION	
Operating system	Android 4.0 (Ice Cream Sandwich) or newer
CPU	ARM or Intel architecture, min. 2 core, 1 GHz
RAM	minimum: 1 GB; recommended: 2 GB
Bluetooth	Bluetooth interface with serial port profile enabled
Wi-Fi	Internet tethering or external Mi-Fi hotspot
Display	minimum: 1024 x 768 or 1280 x 720

iOS SUPPORTED DEVICES	
Operating system	7.0 or newer, newest version recommended
Phones	iPhone 4, 4S, 5, 5C, 5S: supported with internal or external hotspot iPhone 6, 6 Plus, 6S, 6S Plus: supported with external hotspot only
Wi-Fi only tablets	iPad 2, 3, 4, iPad Air 1, 2, iPad Mini 1, 2, 3, 4, iPad Pro: supported with external hotspot only
Wi-Fi + Cellular tablets	iPad 2, 3, 4, iPad Air 1, iPad Mini 1, 2: supported with internal or external hotspot iPad Air 2, iPad Mini 3, 4, iPad Pro: supported with external hotspot only
Display	Display size of iPhone 4, 4S, 5, 5C and 5S is not optimal for the display of 12-channel ECG, only 3-6 channels are visible without overlapping