



# ES-30DE

Digital 3-Channel  
ECG machine



CARDIOLOGY



## Signal processing specification

*ECG interpretation: ES-30DE ECG analysis program for adults and pediatrics*

*Acquisition mode : Simultaneous standard 12-lead acquisition*

*A/D conversion: 24 bit*

*Sampling rate: 8,000 samples/s*

*Frequency response: 0.01 Hz~250 Hz*

*Common mode rejection ratio: >115dB*

*Polarization voltage:  $\pm 500$  mV*

*Input circuit: Floating circuit input*

*Input impedance:  $\geq 50$  M $\Omega$*

*Input CIR current:  $\leq 0.1$   $\mu$ A*

*Patient leakage current:  $< 10$   $\mu$ A*

*Time constant:  $\geq 3.2$  s*

*Noise level:  $\leq 12.5$   $\mu$ Vp-p*

*Sensitivity threshold:  $\leq 20$   $\mu$ V*

*Calibration voltage: 1 mV $\pm 3$  %*

*Sensitivity: (0.625, 1.25, 2.5, 5, 10, 20, 40, 10/5, 20/10) mm/mV, Auto Gain*

*Filter setting: EMG filter: 25/35/75/100/150/250Hz*

*Baseline wander filter: 0.01/0.02/0.05/0.35/0.5/0.8Hz*

*AC filter: 50Hz, 60Hz*

*Heart rate range: 30~300 bpm*

*Special acquisition functions: Lead-off detection, lead overflow, AC interference, baseline wander interference, EMG interference*

*Acquisition time: 10~24 seconds*

## Display and keyboard specifications

*Display type: 5 inch TFT LCD*

*Display resolution: 800 $\times$ 480*

*Display data: Waveforms, heart rate, clock, printing mode, filters, sensitivity, paper speed, system prompt, alarming messages, battery, power indicator, tone level*

*Waveform display mode:*

*Same screen display: 3\*4, 3\*4+1R, 6\*2, 6\*2+1R, 12\*1*

*Split-screen display: 3\*4, 3\*4+1R*

*Keyboard type: Silicon quick-access function keys*

## External peripheral use

*Patient cable socket: Connect to the patient cable*

*Two USB port: Support USB flash disk and barcode scanner*

*LAN port: Communication with ECG-1000 workstation software on PC*



## Recorder specifications

Recorder technology: Thermal dot matrix word printing system

Recorder resolution: 8 points/mm (perpendicular)

16 points/mm (horizontal, 25 mm/s)

Recorder speed: (5, 6.25, 10, 12.5, 25, 50) mm/s  $\pm$  5%

Recording paper: 80 mm, roll paper

## Standard software specifications

Measurement and interpretation: Supports measurement and interpretation with ES-30DE ECG analysis program for adults and pediatrics

Measurement values: HR, PR interval, QRS duration, QT/QTc interval, P/QRS/T axis, RV5/SV1 amplitude, RV5+SV1 amplitude

Minnesota code: With newest Minnesota code

Working mode: Automatic mode, Manual mode, Rhythm mode, Upload mode

DEMO mode: Normal ECG, Arrhythmia ECG

QTc formula: Bazett, Fridericia, Framingham, Hodges

Rhythm analysis: Single rhythm mode 30-300 seconds

Extended printing in arrhythmia: Supports extended arrhythmia waveform printing in automatic mode

Waveform frozen: Supports 300 seconds of waveform frozen

Pacemaker detection: Weak, Normal, Enhance

Report auto-saved: Selectable auto-saved file

Interpretation printout: Selectable interpretation printing

Report preview: Preview the report before printing

Data format: ECG, DICOM, XML, JPEG, PDF

Patient information setting: Record No., Name, Gender, D.O.B, Height, Weight, BP, Race, Pacemaker, Medication, Accession No., Ref-physician, Technician, Physician, Room No., User-define

Language: English, Spanish, Portuguese, Russian, Polish, German, Czech, French, Italian, Ukrainian, Turkish, Chinese

Local memory capacity: More than 3000 files

## Report specifications

Report type: Manual report, Simple report, MVB report (Median beat report)

Record format: 3\*4, 3\*4+1R; 1\*12, 1\*12+1R; 3/2



## Power supply

Power supply AC/DC: AC power supply 100 V~240 V, 50 Hz /60 Hz, 80 VA

Battery power supply: Rechargeable lithium battery, 11.1V, 2600mAh

Battery capacity: Supports about 3 hours for continuous operation

Battery charge time: Approximately 4 hours for total charge

## Dimensions and weight

Length×width×height: 281 mm×191 mm×59 mm

Weight: About 1.3 kg

## Standard accessories

ECG Cable: 10 lead wires, TPU, banana plug, defi, IEC

Chest Electrode: Adult chest electrode, Φ4mm, 6pcs/set

Limb Electrode: Adult limb electrode, Φ4mm, 4pcs/set, no LOGO, light blue color

Thermal Recording Paper: Roll paper, 80mm×20m, no LOGO

Paper roller: ABS fire-proof UL94V-0

Power Cord: L=1900±100mm H05VV-F/3G\*0.75 AP24/AC24, black, European standard

Grounding Cable: L=4mm UL1015 14AWG

Battery: HYLB-1994, 11.1V 2600mAh

## Environment requirements

### Transportation

Environment temperature -20°C ~ +55°C

Relative humidity ≤95% (No condensation)

Air pressure 70 kPa~106 kPa

In accordance with the requirements stipulated in the contract order, the transport process to prevent rain and sun.

### Storage

Environment temperature -20°C ~ +55°C

Relative humidity: ≤95% (No condensation)

Air pressure 70 kPa~106 kPa

The packaging of ECG stored in the non-corrosive gases and well-ventilated room.

### Using

Environment temperature +5°C ~ +40°C

Relative humidity: ≤95% (No condensation)

Air pressure 86 kPa~106 kPa



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