



cardiofax C

Easy access to reliable diagnosis

Nihon Kohden's Cardiofax C electrocardiograph is designed to support the daily routine of ECG diagnostics and offer high-level analysis for a reliable diagnosis. Cardiofax C uses the Nihon Kohden ECG analysis program ECAPS 12C. It provides simultaneous 12-lead ECG acquisition and analysis with approximately 200 findings with active noise suppression. Accurate data supports fast diagnosis.

With its 4.8" angles display, 12-lead waveforms can be confirmed at a glance before recording. Cardiofax C has a built-in LAN and supports paper based and paperless workflows – waveform and analysis results can be transferred to a PC for review. The lightweight and compact design of Cardiofax C and a long battery operation time support high mobility in the daily workflow.



cardiofax 

Workflow support

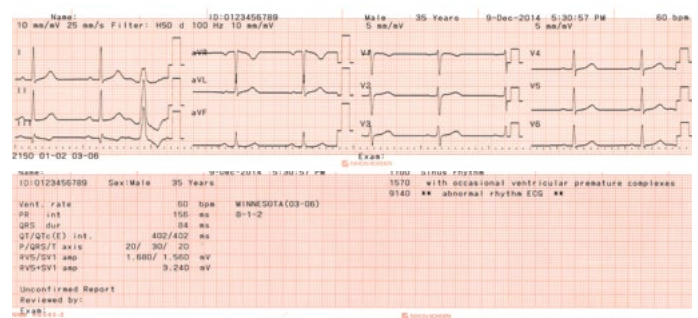
- **Easy-to-view:** Its 4.8" tilted display enables viewing of 12-lead ECG real-time waveform and data more easily. The preview function allows for checking 2.8 seconds 12-lead waveforms and analysis results before recording (3 channels).
- **Electronic recording:** Up to 40 ECG files can be stored in the internal memory and approximately 3,000 ECG files can be stored in an external SD memory card. Moreover, ECG data can be transferred to a PC using a wired LAN. The ECG data can be reviewed and compared on a PC with Nihon Kohden's optional ECG data management software polaris.one. Paperless ECG management saves time as well as money.
- **Enhanced workflow:** Supporting barcode or magnetic card reader which saves not only time when entering the patient ID but also reduces potential data entry errors.
- **Highest mobility :** Its lightweight and compact design of just 1.7kg and a long battery operation time of more than 120 minutes allow for the highest possible mobility in the daily workflow.

Reliable diagnosis with advanced analysis

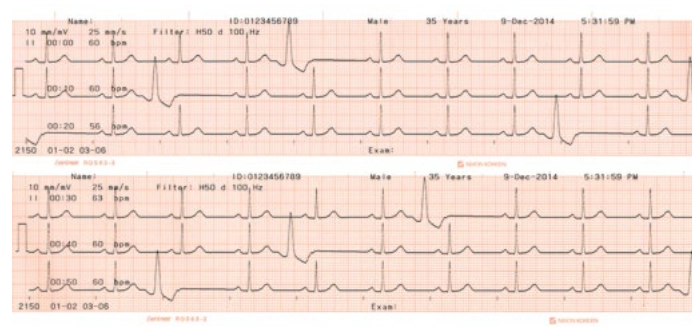
- **High-level 12-lead ECG analysis :** Cardiofax C includes Nihon Kohden's latest interpretation program, the ECAPS 12C analysis program. It provides simultaneous 12-lead ECG acquisition for up to 24 seconds and analysis with approximately 200 findings and 5 judgment categories. ECAPS 12C can also find typical waveforms of Brugada-type ECG.
- **High-performance compliance with IEC 60601-2-51:** Cardiofax C complies with IEC standard IEC60601-2-51, which approves high accuracy of signal processing (AC filtering), ECG measurement, and ECG analysis. It helps you with accurate ECG diagnosis.

Recording examples

- **12-lead ECG (3 traces x 4 groups) with analysis results**



- **1-channel rhythm recording**



Specifications

ECG-2150

Display

Display size	4.8"
Display type	Monochrome backlit LCD
Display resolution	320 x 240 dots
Displayed data	Waveform, patient information, recording settings, operation mode, heart rate, QRS sync mark, error message, electrode detachment, noise

ECG input

Input impedance	$\geq 50 \text{ M}\Omega$ at 10 Hz
Electrode offset tolerance	$\pm 550 \text{ mV}$
Input protection function	Defibrillation-proof function
Common mode rejection ratio	$>105 \text{ dB}$
Input circuit current	$<0.05 \mu\text{A}$
Standard sensitivity	$10 \text{ mm/mV} \pm 2\%$
Internal noise	$A20 \mu\text{Vp-p}$
Interference between channels	A-40dB
Frequency characteristics	With 10 Hz as benchmark, 0.05 to 150 Hz (+0.4 dB /-3.0 dB) 150 Hz ($\geq 71\%$, high-cut filter: 150 Hz)
Sample rate	8000 samples/s

Waveform data processing

Number of leads	12 leads
Input channel	1 channel
Sample rate	500 samples/s, 1.25 $\mu\text{V}/\text{LSB}$
Response to minimum signal	$\leq 20 \mu\text{Vp-p}$
High-cut filter	When the filter is set to 75 Hz, 100 Hz, 150 Hz, the attenuation for 75 Hz, 100 Hz, 150 Hz is no more than 3 dB
AC line filter	50 / 60 Hz
Baseline drift suppression	Weak: 0.1Hz (-20 dB); Strong: 0.1Hz (-34 dB)
Time constant	$\geq 3.2 \text{ s}$
Sensitivity	5, 10, 20 mm/mV

Data transfer

Method	SD card, wired LAN
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Recorder

Number of recording channels	1, 2, 3
Recording mode	Thermal line
Printing density	200 dpi (8 dots/mm)
Scanning line density	1 ms
Paper speed	25, 50 mm/s
Recording paper width	63 mm width, 30 m roll paper
Recording data	Recording data: Waveform, program type, version, date and time, paper speed, sensitivity, lead name, filter, event mark, patient information, electrode detachment, noise
Mechanical noise	A48 dB at paper speed 25 mm/s

ECG analysis

Program name	ECAPS 12C
Analysis patient age	3 years to adult
Finding items	Approximately 200
Judging items	5

Power requirements

Voltage	AC (100 to 240 V) $\pm 10\%$
Frequency	(50 /60 Hz)
Power input	45 VA
Battery operation time	12 V, battery pack operation time: more than 120 minutes (when fully charged: 3-channel recording, input 1 mV 10 Hz sine wave; recording speed 25 mm/s)
Battery charging time	Within 10 hours

Interfaces

USB A type USB1.1	Yes, 1
SD slot	Yes, 1
LAN port	Yes, 1

Dimensions and weight

Dimensions	279 (W) x 75 (H) x 210 (L) mm $\pm 10\%$
Weight	1.7 kg $\pm 10\%$ (excluding battery and recording paper)

Environment

Operating environment	<i>Surrounding temperature:</i> 5 to 40°C <i>Relative humidity:</i> 25 to 95% (non-condensing); (Recording paper: 25 to 80%) <i>Atmospheric pressure:</i> 700 to 1060 hPa
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Transport and storage environment	<i>Surrounding temperature:</i> -20 to 65°C <i>Relative humidity:</i> 25 to 95% 25 to 80% (recording paper) <i>Atmospheric pressure:</i> 700 to 1060 hPa
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Safety and performance standard

Safety and performance standard	IEC 60601-1: 2012 IEC 60601-2-25: 2011 IEC 60601-1-2: 2007
Type of protection against electric shock	AC power: CLASS I Battery pack power: Internally powered equipment
Degree of protection against electric shock	Defibrillator proof type CF applied part (when patient cable BJ-901D, BJ-902D, BJ-903D, BA-901D, BA-903D, BJ-961D or BJ-962D is used)
Degree of protection against harmful ingress of water	IPX0 (non-protected)
Safety grade of use in the environment	Not suitable for use in the presence of flammable anaesthetic mixture with air, oxygen, or nitrous oxide
Mode of operation	Continuous operation



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