

Technical Data

cardiofax 

ECG-3150

Electrocardiograph

Fighting Disease with Electronics

 **NIHON KOHDEN**

TD. ECG-3150_B

This technical data may be revised or replaced by Nihon Kohden at any time without notice.

Some products may not be available in your country.

DESIGN FEATURES

ECG-3150 is designed to ensure Quality diagnosis, Quality examination anywhere, and Quality accessibility.

Quality diagnosis

- Complies with the IEC60601-2-25 international standard for electrocardiographs.
- Nihon Kohden's advanced filtering technology eliminates noise with less waveform distortion.
- Nihon Kohden's ECG analysis program, ECAPS12C provides more than 200 findings with detailed analysis including Brugada type ECG interpretation.
- 5.0 inch color display realizes clear 12-lead ECG monitoring. Alert message and guide function help operators check cause of error.
- The most recent 3 minutes of all lead ECG waveforms can be stored internally, and a part which should be recorded and analyzed can be selected.

Quality examination anywhere

- The ultra-lightweight body, just 1.1kg, and the compact size enable stress-free portability.
- A long life rechargeable NiMH battery realizes more than 180 minutes of measurement and recording.

Quality accessibility

- Data can be output via wired LAN or built-in wireless LAN module.
- An USB memory can be used as an external storage.
- Patient information can be received from external server. And report can be output in DICOM or PDF format which realize greater data integration with various data management system.
- Web server function offers simple and unique solution. Data in Cardiofax C can be accessed, reviewed and extracted as PDF file via web browser.

SPECIFICATIONS

◆ ECG Input

Input impedance: $\geq 50M\Omega$ (at 0.67 Hz)

Electrode offset tolerance: ± 550 mV

Input protection function: defibrillation-proof function

Common mode rejection ratio: > 105 dB (at 10 V)

Input circuit current: $< 0.05\mu A$

Standard sensitivity: 10 mm/mV, not more than $\pm 2\%$

Internal noise: $\leq 20\mu V_{p-v}$

Interference between channels: ≤ -40 dB

Frequency response: 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: 8,000 samples/s

◆ Waveform Data Processing

Sample rate: 500 samples/s, 1.25 μV /LSB

Response to minimum signal: $20\mu V_{p-v}$

EMG filter: 25 / 35 Hz

High-cut filter: 75, 100, 150 Hz (≥ 3 dB)

AC line filter: 50 / 60 Hz

Baseline drift suppression: Weak: -20dB (0.1 Hz), Strong: -34dB (0.1 Hz)

Time constant: ≥ 3.2 s

Sensitivity: 5, 10, 20 mm/mV

◆ Display

Size: 5 inch

Type: TFT Color LCD (with Backlight)

Resolution: 800 x 480 dots

Displayed data: Waveform, patient information, recording settings, operation mode, heart rate, QRS sync mark, error message, electrode detachment, noise.

◆ Recorder

Printing density: 200 dpi (8 dots/mm)

Scanning line density: 1 ms

Number of recording channels: 1, 1 + rhythm, 3

Paper speed: 25 mm/s, 50 mm/s

Printing data: ECG waveform, heart rate, lead name, version, date and time, program type, paper speed, sensitivity, filter, patient information (ID number, sex, age), event mark, electrode detachment, noise.

Recording paper: 63 mm width, 30 m roll paper

Mechanical noise: ≤ 48 dB at paper speed 25 mm/s

◆ ECG Analysis

Program name: ECAPS 12C

Analysis patient age: neonate to adult

Finding items: approx. 200

Judging items: 5

◆ Power Requirements

Line voltage: AC (100 to 240 V) $\pm 10\%$

Line frequency: 50 / 60 Hz

Power input: ≤ 45 VA

Battery pack: 8.4V, 1600 mAh

Battery operation time:

More than 180 minutes (auto recording once each 3 minutes with a new battery, at 25°C)

About 60 minutes (continuous recording with a new battery, at 25°C)

Battery charging time: within 3 hours

◆ Interface

USB A type: 2

LAN port: 1

◆ Communication

Wireless LAN:

Applied wireless LAN standards: IEEE 802.11a/b/g/n/ac

◆ Environment

Storage and transport environment

Surrounding temperature:

- ECG-3150: -20 to +65°C
- Recording paper: 0 to +45°C
- Battery pack: -20 to +65°C (Less than 1 week)
-20 to +55°C (Less than 1 month)
-20 to +45°C (Less than 6 months)
-20 to +35°C (Less than 1 year)

Relative humidity:

- ECG-3150: 10 to 95% (noncondensing)
- Recording paper: 40 to 80% (noncondensing)
- Battery pack (within 2 months): 10 to 95% (noncondensing)
- Battery pack (>2 months and ≤1 year): 45 to 85% (noncondensing)

Atmospheric pressure: 700 to 1,060 hPa

Operating Environment

Surrounding temperature: 5 to 40°C

Relative humidity:

- ECG-3150: 25 to 95% (noncondensing)
- Battery pack: 40 to 85% (noncondensing)

Atmospheric pressure: 700 to 1,060 hPa

◆ **Safety and Performance standard**

Safety and performance standard:

IEC 60601-1: 2012

IEC 60601-2-25: 2011

IEC 60601-1-2: 2014

Type of protection against electric shock:

- AC power: CLASS I
- Battery pack power: Internally powered equipment

Degree of protection against electric shock:

Defibrillation-proof type CF applied parts when patient cable BJ-961D, BJ-962D or BJ-901D, BJ-902D, BJ-903D, BA-901D is used.

Degree of protection against harmful ingress of water:

IPX0 (non-protected)

Degree of safety of application in the presence of

FLAMMABLE ANAESTHETIC MIXTURE WITH

AIR, OR WITH OXYGEN OR NITROUS OXIDE: Not suitable for use.

Operation Mode: Continuous operation

◆ **Dimensions and Weight**

Dimensions: W260 x H75 x D172 mm ±10%

Weight: 1.1 kg ±10% (without battery pack, recording paper and AC power adapter)

STANDARD ACCESSORIES

AC Adapter, FSP065-DGBM1	1
Recording paper, RQS63-3A, A129	1
Thermal head cleaner, Y011	1
Input check jig	1
Operator's Manual	1
Service Manual CD	1
ECAPS 12C CD	1

OPTIONAL ACCESSORIES

Accessory kit:

YD-311D: BJ-961D patient cable (IEC/3mm dia), limb electrodes (4pcs, Fast clip), chest electrodes (6pcs), power cord (220-240V)

YD-312D: BJ-961D patient cable (IEC/3mm dia), limb electrodes (4pcs, Fast clip), chest electrodes (6pcs), power cord (100-127V)

YD-313D: BA-901D patient cable (AHA/3mm dia), limb electrodes (4pcs, Fast clip), chest electrodes (6pcs), power cord (100-127V)

YD-314D: BJ-962D patient cable (IEC/4mm dia), limb electrodes (4pcs, Fast clip), chest electrodes (6pcs), power cord (220-240V)

Battery pack: SB-301DC

Wireless LAN module: QI-330D

Cart: KD-105D (Height: 790mm) / KD-105E (Height: 890mm)

Patient cable hanger: KH-100D

Paper tray: DI-011D

Magnetic card reader holder: DI-012D

Middle shelf: DI-013D

Drawer: DI-014D

Tray set: DI-015D

◆ **Local Purchase Options**

Bar code scanner: LS2208 (MOTOROLA) or the equivalent

Magnetic card reader: CRF-200U-5101-00 (NEURON) or the equivalent

QR code reader: Xenon 1900 (Honeywell) or the equivalent

CONSUMABLES

Recording paper:

A129 RQS63-3A, 10 pcs/set, roll, 63 mm x 30 mm

Patient cable:

K079 Patient cable, BJ-901D, IEC, 3mm dia

K081 Patient cable, BJ-902D, IEC, 4mm dia

K082 Patient cable, BJ-903D, IEC, clip

K019 Patient cable, BA-901D, AHA, 3mm dia

K020 Patient cable, BA-903D, AHA, clip

Clip-on limb electrode

H068A 4 pcs/set, adult, for 3mm dia tip, FASTCLIP

H068B 4 pcs/set, adult, for 4mm dia tip, FASTCLIP

H068D 4 pcs/set, child, for 3mm dia tip, FASTCLIP

H068E 4 pcs/set, child, for 4mm dia tip, FASTCLIP

Chest electrode

H041A 3 pcs/set, adult, for 3mm dia tip

H043A 3 pcs/set, adult, for 4mm dia tip

H042C NC-123D, 3 pcs/set, child, for 3mm dia tip, suction Octopus

H042D NC-123D, 3 pcs/set, child, for 3mm dia tip, suction Bear

H042E NC-123D, 6 pcs/set, child, for 3mm dia tip, suction 6 colors

H044A NC-124D, 3 pcs/set, child, for 4mm dia tip, suction Octopus

H044B NC-124D, 3 pcs/set, child, for 4mm dia tip, suction Bear

H044C NC-124D, 6 pcs/set, child, for 4mm dia tip, suction 6 colors

Disposable electrode

G207 L-150X, 30 x 5 pcs/set, adult, 35mm dia, X-ray

ECG paste

F010 Z-101BC, 100g tube x 2/set, CARDIOCREAM

ORDERING INFORMATION

When ordering, please specify the following information:

Requirements for consumables

Requirements for optional accessories

Specify the code in **XXXX**



NIHON KOHDEN CORPORATION

1-31-4 Nishiochiai, Shinjuku-ku, Tokyo 161-8560, Japan

Phone +81 3-5996-8041

<https://www.nihonkohden.com/>