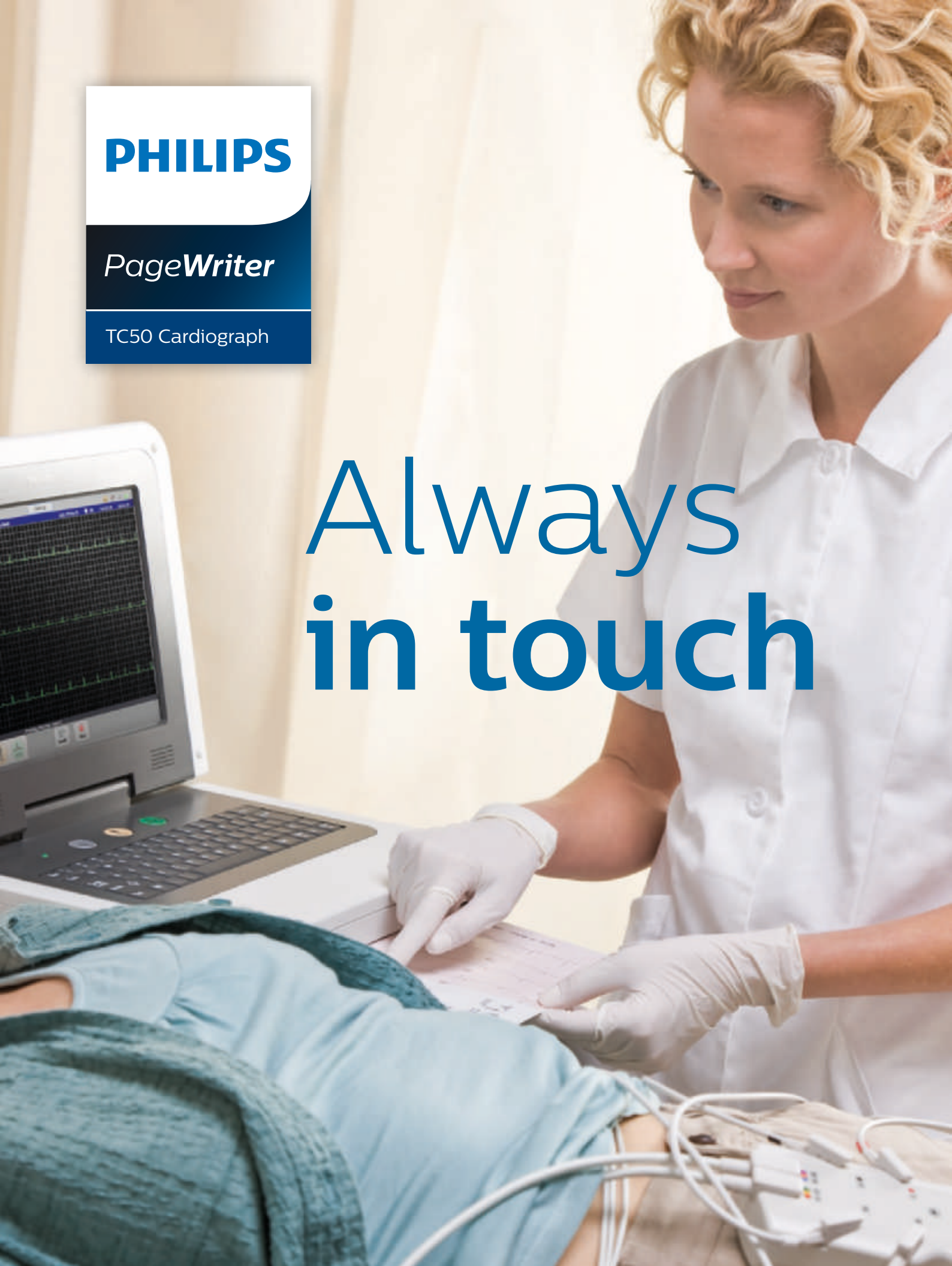
PHILIPS

PageWriter

TC50 Cardiograph

Always in touch



Intuitive and efficient

You need to fit a lot into every day. That is why we have fit a lot into the Philips PageWriter TC50 cardiograph. It is an affordable and compact solution, packed with advances to make it easier to help you meet the demands you face every day. Easy to use, it also has the reliability, workflow performance, and clinical support tools to enable you to simply focus on your patients.

Smart, simple, effective
The Philips PageWriter TC50 cardiograph is easy to use from the start.

- Quickly and intuitively attach patient lead wires using the anatomically designed Patient Interface Module
- Easily identify poor or missing electrode connections through color-coded lead traces and lead map
- Efficiently review the full ECG report on the large 10″ touchscreen before printing to save time and paper

The PageWriter TC50 is integrated into a rugged, compact trolley for easy mobility and storage.

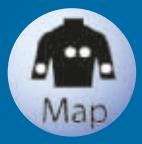
Follow the leads
An anatomical Patient Information Module mirrors the body, so clinicians can quickly and easily locate the right lead wires - reducing the risk of lead reversal, and therefore supporting accurate lead placement on the patient.

Avoid tangles
The Trident lead system unites three lead wires to reduce tangling and reversals, for easier placement and quicker ECGs.

Just touch it
Take ECGs from the large touchscreen, the keyboard, or the Patient Interface Module with a single touch of the green button.

It is as easy as 1-2-3

User-friendly illuminated buttons speed workflow



Connect Leads
The system will perform quality controls, in the form of lead reversal detection and lead checks (impedance).

Enter ID
The ID button enables electronic data entry, reducing the risk of errors caused by entering information manually. Confirm ID with the barcode scanner, or the IECG or EMR interfaces.

Take ECG
Acquire, analyze, print and transmit data with a single button. This standardizes your workflow, so that each ECG is captured and screened, and delivers critical, time-sensitive results to clinicians.

Designed around you
The compact system provides advanced features to support a variety of workflows for you.

Automatically streamlined

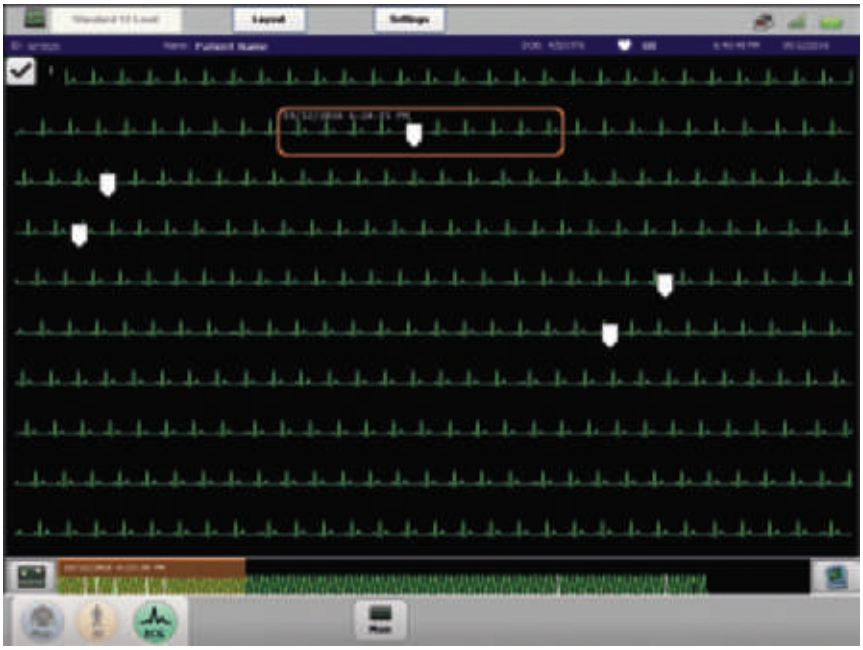
The PageWriter TC50 cardiograph gives you high-level features in a compact package with an attractive, large touchscreen. As your workflow needs evolve, you will find the system is scalable to grow with you, protecting your investment. Compatibility with industry-standard 802.11 wireless protocols enables secure wireless communication to quickly download patient information and send reports to your ECG management system.

10
Disclose

Pinpoint concerns
Quickly mark up to 10 different cardiac events for later review with a single touch of the screen.

Never miss a beat
Capture and store 10 minutes of uninterrupted 16-lead data to capture periodic and intermittent arrhythmias using full disclosure. Select any 10 seconds for a fully interpreted report.

Save it
After up to 20 minutes, cardiac event data is automatically saved in a time capsule, so you do not lose sight of an important clinical episode.



IntelliSpace
ECG Management System

Synchronize time
Auto set the PageWriter time with your hospital time master to obtain accurate documentation of your patient's clinical history.

PageWriter TC50
Cardiograph

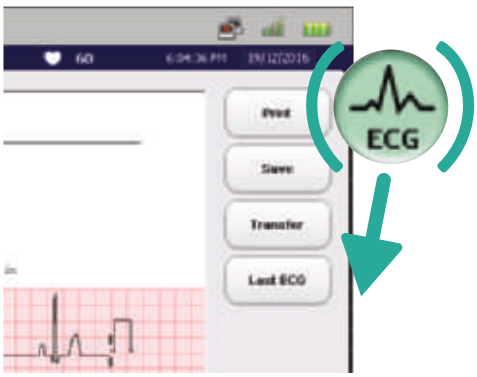
Download orders
Import ECG orders with comprehensive patient information from IntelliSpace ECG (DICOM order manager, EMR).

CISCO
Compatible

CCX compliance
Support for open communication protocols like Cisco's CCX and 802.11 (a,b,g,n)

Access ECGs anytime
Ever need a physician to read an ECG 10 minutes after they have left the hospital, or when they are 50 miles away? With TC cardiograph communications capability and IECG, your physicians can access ECGs virtually anywhere for confirmation, over-reads and consultation right around the clock.

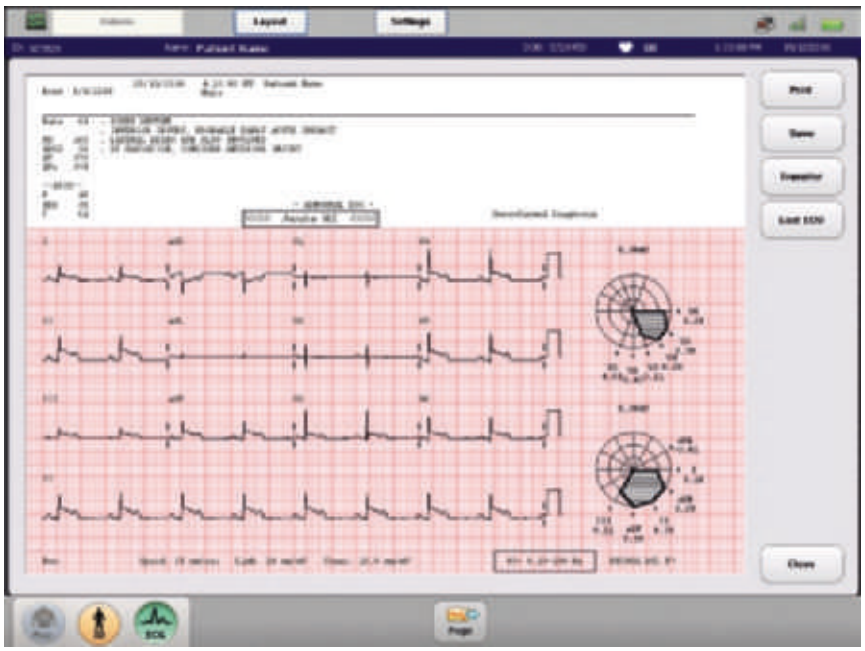
Instant access
Easily acquire or enter patient demographic information by barcode scanning, keyboard entry, worklist download or patient search.



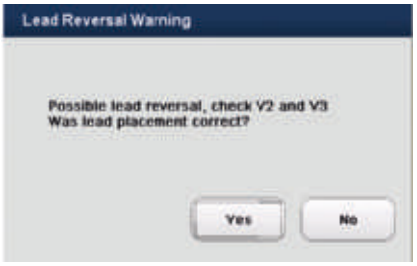
One-touch workflow
With a touch of a button, PageWriter TC50 can be configured to automatically print, save, transfer and retrieve a previous ECG – significantly accelerating your workflow.

Clarity when it matters most

Clinical decision support means the right information at the right time presented with clarity to help guide the most productive course of action. All PageWriter TC cardiographs include the clinical excellence of the DXL ECG algorithm which is built upon over 45 years of research and experience, and provides continuity and consistency in ECG reading and diagnosis through all PageWriter products and the IntelliSpace ECG management system. The Philips DXL 16-Lead ECG Algorithm provides industry-leading ECG interpretations, particularly with respect to pediatric analysis, pacemaker pulse detection, QT measurements, and a suite of advanced STEMI decision support tools to help guide the treatment of patients with chest pain.



Check and confirm quality
Preview ECG waveforms and interpretation on the 15-inch touchscreen to check for signal quality before printing.



Be sure
Unique LeadCheck software tests for 20 different lead reversals to help you be sure of capturing a diagnostic-quality ECG.

Reveal more
Unique DXL ECG Algorithm offers 16-lead interpretation to enable a more complete view of the heart.

ST map
At a glance, get a clear indication of ST elevation for quick triage.

Critical Values
Quickly identify patients that need urgent care in support of Joint Commission Patient Safety goals.

STEMI-CA
Culprit artery criteria provide an indication of which artery may be occluded to help you manage your cath lab interventions.

Clinically significant
The previous ECG can be automatically retrieved at the bedside, because a cardiac event is dynamic, with clinical decisions changing frequently during an encounter.

Gender-accurate analysis
Differentiated criteria to help interpret cardiac symptoms in women, including identification of ischemia.

Up-to-date statements
Enhance consistency of care with terminology that conforms to ACC/AHA recommendations.

Higher standards achieved
The solution meets FDA requirements for pharmaceutical studies.

Stay connected
PageWriter TC50 fits seamlessly into your existing IT infrastructure, and supports WiFi 802.11 a/b/g/n. So you are always connected – without being locked in.

Maintain security
The PageWriter TC50 delivers secure, wireless connectivity via standard LAN protocols like 802.11(i) and WPA2/CCMP to protect the privacy of patient, staff, and financial information.

PageWriter TC50 benefits

Clinicians
- Simple 1-2-3 process
- 3-in-1 Trident lead wires minimize tangling
- Mark events within 20 minutes of patient's ECG
- Anatomic PIM design supports correct lead placement

Department Managers
- Automated sequence speeds workflow
- Critical Values identify patients who need urgent attention
- LeadCheck reveals lead reversals at the bedside
- Solution supports consistent, standards-based workflow and terminology

IT Administrators
- Strong wireless security toolset 802.11(i), WPA2/CCMP
- Connectivity using industry standards

Cardiologists
- Integrated interpretation on 16 leads
- Advanced STEMI diagnostic tools
- Previous ECGs aid clinical diagnosis

Technical specifications

ECG functions

Simultaneous lead acquisition	• Up to 16 leads
ECG reports: 12-lead	• 3x4, 3x4 1R, 3x4 3R, 3x4 ST, 3x4 1R ST, 6x2, 12x1, 6x2 1R • Standard and Cabrera formats, plus Pan 12 Cabrera
ECG reports: Extended leads	• 3x5, 3x5 1R, 3x5 3R, 4x4, 4x4 1R, 6x2 1R • Standard and Cabrera formats, plus Pan 18 Cabrera • 3x5 3R, 4x4, 4x4 1R plus ST Maps, 6x3, 6x3 1R, 3x5 + 1x3 1R, 3x4 + 2x3 1R, 3x4 + 3x2
Rhythm strips	• Up to 16 configurable leads
Event marking	• 10 independent events can be marked for later review and analysis
Full disclosure	• Twenty minute history of all 16 leads • Complete ECG report of any 10 seconds
Timed ECG	• Support for pharma stress protocols
Report storage/transfer	• Full fidelity at 500 Hz of all 10 sec for up to 16 leads • PDF, XML, DICOM 12-lead ECG, and DICOM General ECG formats

Philips DXL 16-lead ECG algorithm

Interpretive statements	• >600 interpretive statements • Integrated pediatric analysis
Leads used in diagnosis	• Standard 12 leads plus V3R, V4R, V5R, V7, V8, and V9
Borderline statement suppression	• Three configurable settings
Standard measurements	• Ten interval, duration, and axis measurements • Configurable QT correction method
Extended measurements	• 46 measurements of Morphology analysis in each lead; 21 parameters of Rhythm analysis
Reasons	• Selectable explanations of all interpretive statements
Nomenclature	• Conforms to 2009 AHA/ACCF/HRS Recommendations for the Standardization and Interpretation of the Electrocardiogram and 2013 ACCF/AHA STEMI Management Guidelines

STEMI diagnostic aids

Graphical ST vector	• Five ECG reports with polar ST Maps; frontal and transverse planes
Unique right heart statements	• 9 statements called by right-chest leads
Unique posterior MI statements	• 16 statements called by posterior leads
STEMI-CA	• Criteria that suggest the probable site of the occlusion
Critical values	• Highlights 4 conditions requiring immediate clinical attention

Networked features

Central time management	• Time can be manually or automatically synchronized to a network time server via IntelliSpace ECG or IntelliBridge Enterprise
Last ECG orders (requires IntelliSpace ECG)	• Automated retrieval of previous ECG • Configurable rules to retrieve cardiograph-specific Worklists

Signal quality indicators

Leads-off advisory	• Anatomical lead map displays the location and label of any loose or disconnected leads/electrodes
Lead color	• Four colors to indicate levels of waveform quality
LeadCheck	• Lead placement software detects lead reversals
Heart rate	• Continuous display of patient heart rate
Print preview	• Full screen preview of complete 16-lead report prior to printing

Training

Application help	• Integrated graphical help screens for primary functions
Self paced	• PC-based, interactive, dynamic animation covering all major clinical functionalities

User interface

Touchscreen	• 1-2-3 operation • Context-sensitive application • 5-wire, resistive touchscreen
	• 65 button, standard full alphanumeric keyboard • Special characters supported

Display

Size	• 10.4 inch TFT active matrix
Resolution	• 800 x 600 SVGA
Colors	• 64K colors

Signal processing

Sampling rate	• 8,000 samples per second per lead wire
Patient Interface Module	• Remote, microprocessor-controlled digital module provides 5µV resolution

Printer

Resolution	• High-resolution, digital-array printer using thermal-sensitive paper; 200 dpi (voltage axis) by 500 dpi (time axis) at 25 mm/s
Paper sizes:	• Z-fold letter and A4

Connectivity

Modem (option H11)	• V.90, K56flex, enhanced V.34, V.32bis, V.32, V.22bis and below
Fax (included in H11)	• Group 3, Class 1 or 2 fax modem protocol
LAN connectivity	• 10/100 Base-T IEEE 802.3 Ethernet via on-board RJ45
Wireless connectivity and security (option D24)	• 802.11 (a/b/g/n) 802.11(i), WPA, WEP, WPA2
Internal storage	• 200 ECGs
External storage	• 200 ECGs with optional USB device

Automated data input

Barcode reader (option H17)	• Reads Code 39 Symbology • Flexible field data entry
Smart "IC" card reader (option H14)	• ISO 7816 and EMV 3.1.1; supports SLE 4418/28 and SLE 4443/42

Pre-processing filters

AC noise	• 50 or 60 Hz
Signal processing	• Artifact rejection and baseline wander

Presentation filters - 10 sec reports

High pass	• 0.05, 0.15, and 0.5 Hz
Low pass	• 40, 100, and 150 Hz

Presentation filters - rhythm

High pass	• 0.05 and 0.15 Hz
Low pass	• 40, 100, and 150 Hz

Electrical

Battery	• Lithium ion; 2 modules; hot swappable with direct access
Battery capacity	• Typically 30 ECGs on a single charge or 30 minutes of continuous rhythm recording; • No fail operation during ECG printing
Battery recharge	• 4 hours to full capacity
AC power	• 100-240 Vac, 50/60 Hz
Power consumption	• 60 W max

Mechanical

Dimensions	• 31 x 40 x 11 cm (12 x 16 x 4 in)
Weight	• 9.8 kg (21.6 lb) • Includes battery, patient module, lead wires, alligator clips, electrode pack and paper pack

Environmental

Operating conditions	• 10° to 40°C (50°F to 104°F); • 10% to 90% relative humidity (non-condensing); • Up to 3,000 m (10,000 ft) altitude
Storage conditions	• (-20°C to 50°C) (-4°F to 122°F); • 10% to 90% relative humidity (non-condensing); • Up to 4,550 m (15,000 ft.) altitude

Safety and performance

International standards and regulations	• General requirement for safety IEC 60601-1: 1988 +A1:1991 +A2:1995 • Particular requirement for safety of electrocardiographs IEC 60601-2-25: 1993 + A1:1999 • Particular requirements for safety IEC 60601-2-51: 2003 • US general requirements for safety UL 2601-1: 2003 1997 • Diagnostic electrocardiographic devices AAMI EC11 1991 (R: 2001) • General requirement for safety and electromagnetic compatibility IEC 60601-1-2:2001 • CAN/CSA-C22.2 No. 601.1-M90 S1:1994 B:1996

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