



MAC™ 600

Resting ECG

Instrument Type

Microprocessor augmented automatic electrocardiograph; 10-leadwire, 12 lead simultaneous acquisition with programmable lead configuration.

Processing

ECG Interpretation	Marquette™ 12SL ECG Analysis Program for adults and pediatrics
Computerized measurements	12-lead analysis
ECG analysis frequency	500 samples/second (sps)
Digital sampling rate	2,000 samples/second/channel
ECG on-screen preview	On-screen preview of acquired 10 second ECG waveform and optional 12SL measurement and interpretation
Acquisition mode	Pre-acquisition or post-acquisition, provide 10 seconds of instantaneous ECG acquisition
Dynamic range	AC Differential ± 5 mV DC offset ± 300 mV
Resolution	4.88 μ V/LSB at 500 sps
Frequency response	-3 dB at 0.01 to 150 Hz
Low cut-off frequency	0.01 Hz, 0.02 Hz, 0.16 Hz or 0.32 Hz (-3 dB limits)
High cut-off frequency	Configurable at 20 Hz, 40 Hz, 100 Hz or 150 Hz
Adaptive AC filter	47 Hz to 53 Hz when set to 50Hz 57 Hz to 63 Hz when set to 60 Hz
Common mode rejection	>100 dB (with AC filter switched on)



Input impedance	>10MW at 10 Hz, defibrillator protected
Patient leakage	<10 μ A
Special acquisition functions	Disconnected lead detection except RL, excessive AC noise, baseline wander and muscle tremor messages
Heart rate meter	30 to 300 BPM $\pm 10\%$ or ± 5 BPM, whichever is greater. Heart rates outside this range will not be displayed
Start-up time	Less than 7 seconds

Patient information

Supported patient information	Patient ID, Secondary ID, Age, Date of Birth, Gender Alphanumeric entry in T9 type for patient ID and secondary ID
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Display

Display type	4.3 inch (110 mm) diagonal, TFT LCD with LED graphics backlit (color optional)
Display resolution	480 X 272 pixels with scrolling waveform
Display data	Heart rate, patient ID, clock, battery power indicator, waveforms, lead labels, speed, gain and filter settings, warning messages, information messages, prompts. 12 leads standard display.

Writer

Writer technology	Thermal dot array
Writer speed	5, 12.5, 25, & 50 mm/s

Number of traces	3 leads + 1 Rhythm or 3 leads; user selectable
Writer sensitivity/gain	2.5, 5, 10, 20, 10/5 (split calibration) mm/mV
Writer speed accuracy	±5%
Writer amplitude accuracy	±5%
Writer resolution	Horizontal 40 dots/mm at 25 mm/s, 8 dots/mm vertical
Paper type	Thermal. Z-fold perforated, 80 mm width, 280 sheets/pack. Roll paper 15.7 m

Keyboard

Type	Type Membrane keyboard with tactile feedback
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Software standard

Resting ECG mode	Records and prints 12-lead resting ECGs with 10 seconds duration as a standard feature
Hookup Advisor™	Provides visual indication of signal quality
Multi-language support	Supports 16 languages

Software options

Measurement	Supports measurement with Marquette 12SL ECG Analysis Program
Measurement and interpretation	Supports measurement and interpretation with Marquette 12SL ECG Analysis Program
Color	Color display
External Storage	200 ECGs in external memory (SD card)
Transmission	ECG data transmission via serial cable
XML Format	ECG Storage in XML format
PDF format ¹	ECG Storage in PDF format

Communication (optional)

MUSE™ Cardiology Information System compatible

Serial cable	ECG Transmission to MUSE™ Cardiology Information System
Serial cable	ECG transmission in XML format
SD card interface	Compatible with MUSE V7 or later

Cardiosoft™ interface

SD card interface	Compatible with Cardiosoft V6.51 or later
Serial cable	ECG transmission over serial line to CardioSoft V6.61 or above

MobileLink RC WiFi Interface

MobileLink RC	ECG wireless transmission through a communicator module attached to the device
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Storage (optional)

ECG Storage Format	GE™ storage format for MUSE and Cardiosoft XML storage format PDF storage format
PDF File name format	User configurable file name, which includes patient ID, secondary ID, Date of Birth, ECG recording date and time

Report formats

Thermal printer report formats	4 by 2.5s 4 by 2.5s + 1 rhythm lead 4 by 3s 4 by 10s Autorhythm (10 second ECG data for 3 leads) Printing of 4 by 10s or Autorhythm for abnormal ECG Continuous 3 channel rhythm
PDF report format (A4 format)	4 by 2.5s 4 by 2.5s + 1 rhythm lead 2 by 5s 2 by 5s + 1 rhythm lead 2 by 5s at 50mm/s 4 by 10s Autorhythm (12 lead)

Accessories

IEC/AHA lead-wire and electrode adaptor sets (user selectable)
10-lead patient cable (user selectable replaceable leads or fixed lead cables)
Electrodes (disposable or reusable, user selectable)
Country-specific power cords
Z-fold and Roll paper
Electrode cream 250ml/tube

Electrical

Power Supply	External ACDC adaptor or battery operation
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External adaptor specifications

Input voltage	100 to 240 VAC $\pm 10\%$
Input current	Maximum 0.6A at 90 VAC, 0.3A at 240 VAC
Input frequency	50 to 60 Hz ± 3 Hz
Output voltage	12V $\pm 5\%$

Battery specifications

Battery type	Replaceable and rechargeable, Lithium Ion
Battery capacity	7.2V typical, 3.35 AH $\pm 10\%$ 450 minutes of continuous operation without recording or 350 ECGs in 2.5 X 4 format at 25 mm/S and 10 mm/mV or 150 minutes continuous rhythm print at 25 mm/S and 10 mm/mV
Battery charge time	Approximately 4 hours from total discharge (with display off)

Physical specification

Height	81 mm
Width	263 mm
Depth	208 mm
Weight	1.2 kg including battery, without paper

Environmental specification

Temperature

Operating	5°C to 40°C
Transport/storage	-15°C to 50°C

Humidity

Operating	25% to 95% RH non-condensing
Transport/storage	25% to 95% RH non-condensing

Pressure

Operating	700 to 1060 hPA
Transport/storage	500 to 1060 hPA

Certification

Class I, type CF defibrillator proof

UL 60601-1 Medical Electrical Equipment, part 1:General Requirements for Safety

CAN/CSA C22.2 No. 601.1 General Requirements for Safety

CE marking for Council Directive 93/42/EEC concerning medical devices

IEC 60601-1 General Requirements for Safety

IEC 60601-1-1 General Requirements for Safety Medical Electrical systems

IEC 60601-2-25 Particular Requirements for the Safety of Electrocardiographs

IEC 60601-2-51 Particular requirements for safety, including essential performance, of recording and analyzing single channel and multi channel electrocardiographs

IEC 60601-1-2 General Requirements for Safety Electromagnetic Compatibility

IEC 60601-1-4 General Requirements for Safety – Programmable electrical medical systems

IEC 60601-1-6 General Requirements for basic safety and essential performance – Collateral Standard: Usability – Edition 2.0

Meets applicable AAMI EC-11 requirements and AAMI EC 13 (Clause 4.2.7 only)



¹ECG storage in PDF format is not supported in Russian language.

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