GE Healthcare

MAC® 600 Resting ECG

Technical Specifications

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 ± 5mV, DC offset ±300 mV
Resolution:	4.88 µV/LSB @ 500 sps
Frequency response:	–3 dB @ 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:	>10MΩ @ 10 Hz, defibrillator protected
Patient leakage:	<10 µA
Special acquisition functions:	Disconnected lead detection except RL, excessive AC noise, baseline wander and muscle tremor messages
Heart rate meter:	30 to 300 BPM ±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.
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 @ 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
Software Standard	
Resting ECG mode:	Records and prints 12-lead resting ECGs with 10-second 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
CardioSoft™ Interface	
SD card interface:	Compatible with Cardiosoft V6.51 or above
Serial cable:	ECG transmission over serial line to CardioSoft V6.61 or above
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 @ 50mm/s 4 by 10s Autorhythm (12-lead)
Accessories	
IEC/AHA leadwire and electrode adaptor sets (user-selectable) 10-lead patient cable (user-selectable replaceable leads or fixed leads cables) Electrodes (disposable or reusable, user-selectable) Country-specific power cords Z-fold and Roll paper Electrode cream 250 ml/tube	
Electrical	
Power supply:	External AC/DC adaptor or battery operation
External Adaptor Specifications	
Input voltage:	100 to 240 VAC ±10%
Input current:	Maximum 0.6A @ 90 VAC, 0.3A @ 240 VAC
Input frequency:	50 to 60 Hz ± 3Hz
Output voltage:	12V ± 5%
Battery Specifications	
Battery type:	Replaceable and rechargeable, Lithium Ion
Battery capacity:	7.2V typical, 2.25 AH ±10% 360 minutes of continuous operation without recording or 250 ECGs in 2.5 X 4 format at 25 mm/S and 10 mm/mV or 100 minutes continuous rhythm print at 25 mm/S and 10 mm/mV.
Battery charge time:	Approximately 3 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

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

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 II, 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)	

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About GE Healthcare

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services helps our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our “healthymagination” vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access and improving quality and efficiency around the world.

imagination at work