

CASE

Cardiac Assessment System for Exercise Testing



Performance specifications	
Signal processing*	
ECG analysis frequency	500 Hz
ST measurements	ST amplitudes, slope, integral, index, ST/HR slope, ST/HR loops, ST/HR index up to 15 leads
E, J and post-J point	Manual or computer selected
Signal processing	Incremental median updating technique
Baseline correction	Finite Residual Filter (FRF) or Cubic Spline analysis
QRS detection and analysis	Automatic or manual lead selection
ECG output	Real-time ECG/QRS beep/TTL synchronization output
Heart rate	Automatic arrhythmia detection, documentation and annotation
Full-disclosure ECG	Beat-to-beat ECG storage & event review
Reanalysis	Post-test medians measurements from E, J and post-J point selections
ECG interpretation	(Optional) Marquette 12SL ECG analysis program for adults and pediatrics
Additional ECG function	Vectorcardiography (15 lead)
Data acquisition	
Technology	Active, "Type BF" floating isolated powered 14-channel acquisition module with built-in lead-fail detection and lead prep impedance measurement
Sampling rate	Over-sampling @ 4000 Hz
Dynamic range	320 mV, ± 10 mV signal superimposed on ± 150 mV DC offset
Resolution	4.88 µV/LSB @ 500 Hz
Noise	< 15 µV peak-to-peak noise over 0.01 to 150 Hz (-3 dB) bandwidth
Frequency response	-3 dB, display and writer

High-pass filter	0.01 (or 0.05 Hz, special use) with DC offset control
Low-pass filter	20, 40, 100, 150 Hz (selectable)
Line filter	50.0 or 60.0 Hz notch filter (selectable)
Baseline correction	Cubic Spline algorithm
Artifact/baseline correction	Finite Residual Filter (FRF) analysis
Common mode rejection	> 140 dB (123 dB with AC filter disabled)
Input impedance	> 10 M Ohms @ 10 Hz, defibrillator protected
Patient leakage	< 10 µA
Pace detect	Orthogonal LA, LL and V6; 750 µV @ 50 µs
Communications/storage*	
MUSE systems compatible via diskette; network (optional)	
MUSE Web compatible for retrieval view and printing of MUSE system data	
Local storage	Minimum 40 GB hard drive storage of complete ECG record and test results
PDF export of final reports with auto naming protocols also from Microsoft Word and Excel	
XML export of specified data	
CASE network server with editing workstations	
Windows® XP operating system	
Display	
Display type	LCD (flat panel display)
Display resolution (minimum)	LCD-1280 x 1024
Display size	17- or 19-inch LCD
Monitored leads	3, 6, 12 or 15
Displayed leads	Number on screen 3, 6, 12 or 15



Display (cont.)	
Display format	3 rhythm, 3 rhythm + medians, 3 rhythm + trends, 6 rhythm, 4 x 2.5 + 1 rhythm, 2 x 6
Display speeds	25, 50 mm/s
Display sensitivity/gain	2.5, 5, 10, 20 mm/mV
Displayed vital signs data (configurable)	Heart rate, target heart rate, blood pressure, exercise clock, stage clock, phase clock, protocol, speed, grade, Watts, METS, RRP and SpO ₂
Displayed data	ST scan/median complexes, arrhythmias, ventricular ectopic/min counter, 3 to 12 lead waveforms, lead check torso and 12 leads, waterfall display, trends, tabular summary, stored ECG strips, interpretation, time-of-day clock, patient name, warning messages and prompts
Writer**	
Writer technology	"Instant" load, thermal dot array
Writer leads	3, 6, 12 or 15 leads (standard, NEHB, Cabrera, configurable)
Writer speeds	5, 12.5, 25 and 50 mm/sec (± 2%)
Writer sensitivity/gain	2.5, 5, 10 or 20 mm/mV (± 5%)
Writer resolution	Horizontal 1000 lines/sec x 200 dpi dedicated local printing. 200 x 200 dpi generic printing
Paper type	Thermal, perforated, fan-fold, 300 sheets/pack
Paper size	A size 214.63 x 280 mm (8.45 x 11 in); A4 size 210 x 297.5 mm (8.27 x 11.0 in)

Certification

UL classification, CSA classification, CE marking

Warranty

Standard warranty is one year

Ordering information

Available in: Czech, Danish, Dutch, English, French, German, Hungarian, Italian, Spanish, Swedish, Japanese, Chinese, Norwegian, Polish and Russian

Accessories

Accessories available from www.gehealthcare.com

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Physical specifications	
Height	148 cm (58 in) with no monitor installed (LCD Display rotates vertical and horizontal for optimum viewing)
Width	62 cm (24 in) with paper tray removed
Depth	75 cm (30 in)
Weight	68 kg (150 lb) without monitor
Interfaces included	Acquisition module Keyboard (PS/2) anti dedicated stress keypad (USB) Mouse (PS/2) Built-in thermal printer (USB) 100 Mbps ethernet MUSE compatible 6 serial ports: (COM 1-2, COM A-D) treadmill, BP, ergometer, SpO ₂ 4 analog and 1 TTL (trigger) output analog ergometer, camera sync...etc Diskette drive: 3 1/2 in, 1.44 Mb PC-compatible for data storage CD-R/W drive: readable for software updates; archivable data optional

Environmental specifications	
Power requirements	
Power supply	AC operation only
Operating voltage range	100-120 VAC 50-60 Hz, 2.8 A 200-240 VAC 50-60 Hz, 1.4 A
Power consumption	350 W max (1200 BTU/Hr) < 250 W normal (850 BTU/Hr) < 30 W standby (100 BTU/Hr)
Operating conditions	
Temperature	+10 to 40°C (+50 to 104°F)
Humidity	20 to 95% RH non-condensing
Storage/transport conditions	
Temperature	-40 to +70°C (-40 to 158°F) (paper discoloration may occur at high temperatures)
Humidity	15 to 95% RH non-condensing

* partly optional

** not in CASE Basic

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