March 2019

performance data sheet

MyLabX5™

Evo 1.0
Build F080100

Approved by: G Altobelli

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REV G

esaote
Creativity in Healthcare

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GENERAL OVERVIEW

Product Description

MyLabX5 ultrasound imaging system has been designed for the following applications:

- Abdominal
- Cephalic (Adult, Neonatal)
- Breast
- Cardiac (Adult, Pediatric)
- Gynecology
- Musculoskeletal
- Obstetric
- Pediatric
- Small Parts
- Thyroid
- Intraoperative/Interventional
- Vascular
- General Imaging (Neonatal, Pediatric, Adult)
- Urology

System Configuration

- Ergonomic and compact cart designed for easy maneuverability
- Adjustable control panel:
  - Lateral orientation +/- 60 degrees
  - Vertical displacement: ±12 cm (92 – 104cm)
- Complete and back-illuminated control panel
- Multilanguage touch screen keyboard
- Color LCD touchscreen with additional controls and mode-depending keys.
- Four multidirectional wheels with breaking mechanism
- Lever for easy regulation of the height and rotation of the console-keyboard
- On Board location for peripherals storage
- Movable transducer holders
- Movable Gel & ECG cable holders
- Movable Transducer cables supports
- 3 active probe connectors (small connector probes)
- Integrated cooling system with very silent fans
- Optional Battery

Control panel

- Full Alphanumeric Keyboard on touch screen
- LEDs Brightness Digital adjustment
- Ergonomic Key Layout
- Ergonomic and adjustable back lighting control panel
- Primary controls easily accessible and logically grouped
- Programmable keys
- eTouch: Macro Recorder
- Trackball with two keys - PC mouse logic + jolly key
- Dedicated buttons to activate primary modalities:
  - B-Mode
  - M-Mode
  - 3D/4D
  - CFM
  - PWR D
  - PW
  - CW
- Direct multifunction knob to activate and control primary modalities:
  - B-Mode/M-Mode
  - Imaging Gain
  - Color Gain
  - Doppler Gain
- Dedicated key for
  - System ON/OFF
  - End exam
  - General Setup Menu
  - Archive
  - eTouch
  - Application Measure
  - Generic Measurement
  - Line/Update (in Split modes)
  - Dual Imaging
  - Image Storage
  - Clip Storage
  - Acquire (for advanced operations)
  - Peripherals remote controls (1 - 2)
  - AutoAdjust
  - 8 TGC slide controls
- Integrated Loudspeakers

Touch screen

- Capacitive Touch screen
- Resolution: 1024x600px 32 bit
- Brightness Digital Adjustment
- Dimension: 19.5x11.8cm (7.7x4.6inch) – Wide Screen 15/9 – 8.9”
- Tools activation
- Physio (ECG signal)
- Exam Review
- Reverse
- Orientation
- Duplex/Triplex (in Split modes)
- XView
- MView
- Gray Map
- High Definition Zoom
- TPView
- Power
- TVM
- Color Map
- CMM
- ADM: Automatic Doppler Measurements
- B-Ref (for Split modes)
- B-Ref/Trace representation format
- Special functions buttons
- 6 direct encoders for Software Keys (up to 2 layers)
- Multilanguage Alphanumeric keyboard (US International, Italian, Danish, Norwegian, French, Swedish, German, Russian)
- Block of Keyboard and Touch Screen for cleanability

Monitor

- 19” Wide Screen full HD LED monitor
- Resolution: 1920x1080 32bit
- Colors: 16.7M
- IPS Technology
- Image Resolution
    - Ultrasound Image Matrix: 1120*800
    - Brightness digital adjustment
    - Articulated monitor arm (option)
- 21,5 16/9 Wide Screen full HD LED monitor (option)
- Resolution: 1920x1080 32bit
    - Ultrasound Image Matrix: 1120*800
    - Brightness digital adjustment
    - Articulated monitor arm (option)
- Information on Monitor:
    - Application
    - Selected Preset
    - Date and Hour
    - Transducer in Use
    - Transducer Orientation
    - Operating Frequency Range
    - Selected Central Frequency Range
    - Acoustic Power Output
    - Gray Map
    - Dynamic Range
    - Compression
    - Persistence
    - Enhancement
    - XView
    - MView
    - Depth
    - Focus (position/number)
    - Doppler Angle
    - CFM and Spectral Doppler Filter
    - Sample Volume Size and depth
    - Frame Rate
    - PRF
    - Gain 2D, CFM, PW/CW
    - Patient Data
    - Hospital Data
    - Body mark
    - Remote Digital Printing and Storage Status
    - TEE Probe Position Angle
    - TEE Probe Temperature
    - Heart Rate
    - Timer
    - Sweep time indication on trace
    - Trackball action function
    - Remote DICOM Storage Status
    - Icons for XView, AutoAdjust, MView, Battery, Peripherals, Media Storage options and Networks

SYSTEM OVERVIEW

Operative Modes

- B-Mode (2D)
- Colorize 2D, M-Mode and PW/CW
- PW/CW Doppler
- HPRF
- Non Imaging CW
- CFM (Color Doppler)
- Power Doppler
- Directional Power Doppler (VeloPower)
- XFlow
- TEI (Tissue Enhancement Imaging)
- ECG
- Breathing Curve
- CMM (Compass M – Mode)
- TVM (Tissue Velocity Mapping)
- TPView
- MView on linear and convex and microconvex transducers
- VPan (Panoramic View)
- 3D/4D Imaging

Image Display Modes

  - 256 gray levels or B-color levels
  - Orientation: Left / Right, Up / Down
  - Real Time Triplex mode (2D+CFM+PW)
  - 2D+2D (w or w/o CFM or PWR_D)
  - 2D+M-Mode (update or Real time Duplex)
  - 2D+CFM+M-Mode (update)
  - 2D+Doppler (update or Real time Duplex)
  - 2D+CFM+Doppler (update or Real time Triplex)
  - 2D+PWRD/VeloPower
  - 2D+PWRD/VeloPower+Doppler (update or Real time Triplex)
  - 2D+TVM
  - 2D+TV
  - 2D+TVM+(M-Mode or PW)
  - 2D+TVM+TV

- Colorize on all combinations

Formats

- Imaging
  - Full / Split / Multiple
  - Full Screen
  - Left-Right / Up-Down
- Tracings
  - Split / Dual (scroll by line)
- CFM – Color On/Off in Freeze

Transducer Types

  - Multifrequency Electronic Convex Array
  - Multifrequency Electronic Linear Array
  - Multifrequency Electronic Phased Array
  - Pencil CW
  - Bi-Scan Convex Array
  - Pencil PW

Operating Console

- Fully digital modular platform
- Factory presets (unlimited programmable) for every probe and application

Beam Former

- Ultrasound beam generation with:
  - Programmable number of cycles
  - Frequencies: up to 22 MHz
- Up to 8 focal zones dynamically controlled
- Up to 15 steering angle dynamically switchable (on frame basis for Linear/Convex Probe)
- CW generation capability
- Programmable ultrasound beam aperture
- TEI

Image Former

2D

- Field of view:

  - 19° ÷ 190° on Convex Array
  - 14° ÷ 89° on Phased Array
  - 16 ÷ 47 mm on Linear Array
  - 3° ÷ 60° on Linear Array with TP-View

(The values above are dependent on the transducer)

- Probe depending formats:
  - Phased Array
  - Linear Array (with steering and TPView)
  - Convex Array
- Depth: 22÷414 mm depending on probe
- Digital scan converter with bilinear interpolation process (860x600x8bits)
- Dynamic Range >250dB
- Digital Processing channel >3.000.000
- Frame rate: up to 1449Hz
- Maps:
  - up to 10 (customizable) post processing gray maps
  - up to 20 Color Doppler color maps
  - up to 9 Power Doppler color maps
- Zoom:
  - High definition zoom (Real time)
  - Variable magnification from 1.3 up to 8x (Real time / Frozen image)
- XView processing:
  - 3 custom algorithms (4 parameters each)
  - Steering (linear probes): up to ±30° with up to 15 step
- Gain and TGC AutoAdjust
- Biopsy kits and display line
- Capability to change gain on freezed images

M-Mode

- Sweep time: 1.7 ÷ 12 sec
- Lines with CMM: up to 3
- Capability to change gain on freezed images.

COLOR DOPPLER

- Frequencies: 1.7 ÷ 16.7 MHz
- Sampling PRF: 125 Hz ÷ 11,6 KHz
- Wall filters: 5 levels
- Data dynamic: 11 bit (+5 for intensity)
- Frame rate: up to 180Hz
- Maps: up to 18
- Frame interpolation
- Interleave: up to 32 lines
- Samples: up to 512 lines
- Velocity range CFM 5.35m/s (SP2730, 1.7MHz)
- Packet size: 4 ÷ 16
- Format: ROI w/wo wider b/w
- Steering (linear probes): up to ±30° with up to 15 step
- HD CFM (up to 4 values of color spatial resolution)
- AutoAdjust

DOPPLER PW

- Frequencies: 1.7 ÷ 16.7 MHz
- PRF: 500 Hz ÷ 41.7 KHz
- Multigate HPRF
- Wall filters: 50 ÷ 1200 Hz (10 step)
- Stereophonic audio
- Sweep Time: 1.7 ÷ 12 sec
- Spectrum: FFT with 64, 128 or 256 frequencies, interpolated up to 512 points (analysis time: ≤1 ms)
- Sample Size: 0,5 ÷ 24 mm
- Angle correction : 0° to 90°
- Velocity range PW +/-8.02m/s (SP2730, 1.7MHz)
- Steering (linear probes): up to ±30° with up to 15 step
- Doppler gain, baseline and scale AutoAdjust
- Capability to change Baseline and gain on frozen images

DOPPLER CW

- Frequencies: 2.0 ÷ 8 MHz
- Wall filters: 40 ÷ 1800 Hz (8 step)
- Stereophonic audio
- Sweep Time 1.7 ÷ 12 sec
- Spectrum: FFT with 64, 128 or 256 frequencies
- Velocity range: up to +/- 6.42 m/s (@ 2.1 MHz)
- Capability to change Baseline and gain on frozen images
- Doppler gain, baseline and scale AutoAdjust

Archiving Capabilities

- Still image (Full resolution)
- Video clips (Full resolution)
- Doppler Video clips (Full resolution)
- Patient data, Annotations, Bodymarks and Measurement from the graphic overlay
- Reports
- Offline capability
- Pause a study
- Visual comparison (saved images and clips can be compared both with each other and with archived images and clips).
- Compressed images and clips
- Cine Memory: up to 1.000 frames
- PC: ≥ 4 GByte
- Local drivers
  - Hard disk: ≥ 500 GB
  - DVD reader/writer
- Internal Patient Database
- Visual comparison with real time images and clips
- User selectable filter for the database search
- Still images and loops storage in DICOM formats
- Real Time Archive capability for still frames and video clips
- Stored data thumbnails always displayed on two columns on the right side of the screen
- IHE Compliant
- Annotation/Bodymark/Measurements capability on previously stored images
- Possibility to share and review system archive from an external device (MylabTablet license is needed)

Connectivity

- I/Os connectors
  - LAN RJ45
  - 5 USB: 2 on keyboard, 2 on lateral panel, 1 for printer
- Dedicated connectors
  - Audio input/output (stereo): dedicated port for headset with microphone
  - ECG input
- Wi-Fi (optional)

Data export

- Image formats:
  - Standard output file formats (BMP, PNG, JPEG)
  - Native and DICOM formats
- Clips formats:
  - AVI Codec: Microsoft® MPEG4-V2 and Microsoft® -Video1
  - Still frames: compressed (lossy, not lossy) and not compressed
  - Native and DICOM formats
- Patient data, Annotations, Bodymarks and Measurements from the graphic overlays
- Reports in PDF and XLM

Video I/O

- HDMI output (auxiliary monitor)

Printing Capability

- Ink jet color or Laser B/W & Color USB Printer (1,2,4 and 6 images printed out on A4 format
- Thermal Digital B/W and Color Printers

IHE Compliance

Integrating the Healthcare Enterprise (IHE) is an initiative by the healthcare industry and professionals to improve the way computer systems in healthcare share information.
IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical needs in support of optimal patient care. System developed in accordance with IHE communicate with one another better, are easier to implement and enable care providers to use information more effectively.
MyLabX5 complies with the following IHE profiles:
- Scheduled Workflow,
- Echocardiography Workflow integrates ordering, scheduling, imaging acquisition, storage and viewing for digital echocardiography

- Cardiology Evidence Documents adds cardiology specific options to the Radiology ED profiles (specifies how data objects such as digital measurements are created, exchanged, and used)
- Portable Data for Imaging
- Patient Information Reconciliation

For more details, please refer to the updated version of the IHE Integration Statement present on the Esaote website (www.esaote.com).

Software

- Operating system: Microsoft® Windows 10
- Multilanguage Operation Menus (English, French, German, Italian, Spanish, Portuguese, Russian)
- Reports, calculations and measurements (application dependent)
- Start-up: less than 20s (with batteries)
- Shut-down: around 30s

Security

- Two different accounts: administrator and users
- Multiple users
- Login by user

DICOM Connectivity

MyLabX5 system supports the following DICOM service classes:

- Verification service class as the SCU and SCP
- Modality Worklist management service class in the role of SCU
- Modality Performed Procedure Step (MPPS) class in the role of SCU
- Storage service class as a SCU
- Storage Commitment service class as SCU
- DICOM Print SCU
- DICOM Query retrieve SCU (multimodality)

Verification Service Class
As the SCU for the Verification SOP class, the system allows the user to test the availability of remote DICOM nodes from the DICOM configuration pages

As the SCP for the Verification SOP class, the system answers to verification requests coming in from remote DICOM nodes (when Storage Commitment is active)

Modality Worklist Management Service Class
As the SCU for the Modality Worklist management SOP class, the system allows for querying the Information System obtaining information about scheduled exams and patient demographics

Modality Performed Procedure Step (MPPS)
As the SCU for the Modality Performed Procedure Step SOP class, the system automatically updates systems involved in the echocardiography workflow (CIS, PACS) about the status of the study

Storage Service Class
As the SCU for the Storage service class, the system supports transferring objects of the following SOP classes to remote DICOM nodes (PACSs):

- DICOM Ultrasound Image storage SOP class for transfer of 2D single frame images either uncompressed or using lossless or lossy image compression
- DICOM Ultrasound Multi-Frame Image Storage SOP class for the transfer of 2D clips using lossy image compression
- DICOM Secondary Capture Image Storage SOP class for the for measurement information in a human readable format
- DICOM Comprehensive Structured Report Storage SOP class using the Adult Echocardiography Procedure Report template (TID 5200) or the Vascular Ultrasound Procedure Report template (TID 5100) for the transfer of measurement information about Cardiac and Vascular exams
- The system allows for the following storage modes:
  - "End of exam", the system automatically stores all image and measurement data in the background once the study has been closed
  - "Manual", the system transfer multiple exams as selected by the user in the background

Storage Commitment Service Class
As the SCU of the Storage Commitment service class, the system automatically requests the archive to take

responsibility for the safekeeping of data that were stored using the above mentioned storage classes
For more details on all the provided DICOM services, please refer to the updated version of the DICOM Conformance Statement present in the Esaote website.

Dimensions

- Approximately 490 (w) x 1000-1120(h) x 650(d) mm (on site)
- Approximately 610(w) x 1000-1120(h) x 650(d) mm (on site, with gel holder on one side and a probe holder on the other side)
- Approximately 610(w) x 1390÷1510 (h) x 650 (d) mm (at top of monitor)

Weight

- Less than 55 kg

Operating requirements

- Temperature: 15÷35°C
- Humidity:
  - 15÷85 % (not condensing) without standby batteries
  - 15÷80 % (not condensing) with standby batteries
- Pressure: 700÷1060 hPa

Storage requirements

- Temperature: -20 ÷ +60°C
- Humidity: 5÷85 % (not condensing) without standby batteries
- Humidity: 5÷80 % (not condensing) with standby batteries
- Pressure: 700÷1060 hPa

Standard Compliance

MyLabX5 system meets the requirements of the Medical Device Directive and carries the CE mark.

- EN 60601-1
- EN 60601-1-2
- EN 60601-2-37
- ENISO 10993-1
- EN 61157
- AIUM / NEMA UD-2 / UD-3 – FDA 510(k) Track 3

Noise value

Position	Level [dBA]
Operator seated	41.0
Operator standing	41.4
Patient	39.9

Operator seated: measurement point centered on the front surface of the ultrasound at a horizontal distance of 0.30m from the trackball and a height, with respect to the support plane of the ultrasound system, equal to 0.94m.

Operator standing: measurement point centered on the front surface of the ultrasound at a horizontal distance of 0.30m and a height of 1.37m, with respect to the support plane of the ultrasound system.

Patient: point of measurement is centered on the front surface of the scanner at a horizontal distance of 0.60 m from it and at a height of 0.94 m from the floor

Power supply

- Optional batteries for standby suspension or short movements
- Battery operating time up to 30 minutes with system on, more than 20 hours in stand-by
- Battery charger integrated
- Voltage operative range: 100÷120V / 200÷240V
- Voltage limit range: 90÷132V /180÷264V
- Working frequency range: 47÷63 Hz
- Power consumption: ≤220 VA
- Available power on peripherals: up to 380VA
- Available power on peripherals: up to 600 VA @ 200 ÷ 240V / 400 VA @ 100 ÷ 120V

Power Cables

- Power cable with CEE socket
  - Socket: 510 IEC 320/C13 type: 10A-250V
  - Plug: VII (7) VII type; 10A-250V
  - Conductors: 3
  - Section: 1 mm2
  - Length: 2,5 m
- Power cable with CEI socket
  - Socket: 510 IEC 320/C13 type: 10A-250V
  - Plug: I/3 CEI 23-16 type; 10A-250V
  - Conductors: 3
  - Section: 1 mm2
  - Length: 2,5 m
- Power cable with NEMA socket
  - Socket type and amperage: 510 IEC 320/C13 type; 13A-125V
  - Plug type: NEMA 5-15; 13A-125V
  - Conductors: 3
  - Section: AWG 16
  - Length: 3 m
- Power cable with China socket
  - Cord: PRC 250V 10A
  - Chinese plug: PRC/3
  - H05VVF3G1(cable 1mm²)
  - C13/2 (plug IEC)
  - Length 2,5m
  - Color: black
- Power cable with Brazil socket
  - Cord: 250V 10A BR/3 (Brazil plug – follows NBR14136)
  - H05VVF3G1(cable 1mm²)
  - C13/2 (plug IEC)
  - Length 2,5m
  - Color: black

Calculation & Reports

- Standard Calculation Packages for:
  - Abdomen
  - Breast
  - Cardiology
  - Gynecology
  - Obstetric with programmable tables
  - Pediatric
  - Small Parts
  - Thyroid
  - Transcranial
  - Vascular
- Standard biometry reports & user programmable reports
- AutoNT
- All the reports are automatically stored in the patient file
- Automatic Doppler Measurements (ADM) and profiles (Real Time profiles extraction with Aliasing managing capability; Measurement on automatically detected hearth cycle or on selectable time slot for venous flow; Averaged values on selectable number of measurement; Selection of Full, Negative or Positive range; Add to report capability, Automatic point to point Doppler measurement)
- Refer to Operation Manual

Generic Measurements

The tables below list the measurements available in each/application mode.

B-Mode

Parameter	Measurement	Displayed results
Distance	Distance	Distance
Distance ratio	Distance1, Distance2	Distance1, Distance2, Distance1/Distance2
% Distance reduction	Distance1, Distance2	Distance 1, Distance 2, (Distance1 - Distance2)/Distance1
Length (Vertex)	More distances	Global distance
Length (Trace)	Profile	Global distance
Area (Ellipse	Area, Distance	Area, Perimeter

Parameter	Measurement	Displayed results
axes)		
Area (Vertex)	More distances	Area, Perimeter
Area (Trace)	Profile	Area, Perimeter
Area ratio	Area1, Area2	Area1, Area2, Area1/ Area2
% Area reduction	Area1, Area2	Area1, Area 2, (Area 1 - Area 2)/Area1
Volume (Ellipse)	Distance, Area	Area, Volume
Volume (Trace)	Profile, Distance	Area, Distance, Volume
Biplane volume	Distance1, Distance2, Distance3	Distance1, Distance2, Distance3, Volume
Ellipse ratio	Two areas (ellipse based)	Two areas, Area1/Area2
Hip angle	Distance1, Distance2, Distance3	α and β angles

M-Mode

Parameter	*Measurement*	*Displayed results*
Distance	Distance	Distance
Distance ratio	Distance1, Distance2	Distance1, Distance2, Distance1/Distance2
Time	Time	Time
Time ratio	Time1, Time2	Time1, Time 2, Time 1/Time 2
Heart Rate	Time	R-R interval, Heart rate
Velocity	Velocity	Distance, Time, Velocity
Velocity ratio	Velocity1, Velocity2	Velocity1, Velocity2, Velocity1/Velocity2

Doppler

Parameter	Measurement	Displayed results
Time	Time	Time
Time ratio	Time1, Time2	Time1, Time2, Time1/Time2
Velocity	Velocity	Instantaneous velocity
Cardiac Velocity	Velocity	Instantaneous velocity, Instantaneous gradient

Parameter	Measurement	Displayed results
Velocity ratio	Velocity1, Velocity2	Velocity1, Velocity2, Velocity1/Velocity2
Heart Rate	Time	R-R interval, Heart rate
Systolic velocity /Diastolic velocity	Systolic velocity, Diastolic velocity	Systolic velocity, Diastolic velocity, Systolic velocity/Diastolic velocity
Cardiac FVI	Spectral envelope	FVI, Peak velocity, Reverse velocity, Peak and mean gradient
Vascular FVI	Spectral envelope	FVI, Pulsatility index, Resistive index, Reverse velocity, Diastolic velocity, Peak and mean velocity, Peak and mean gradient, Acceleration, Acceleration time, Systolic velocity/Diastolic velocity
Pulsatility index	Spectral envelope	FVI, Pulsatility index, Resistive index, Reverse velocity, Peak and mean velocity, Diastolic velocity
Resistive index	Systolic velocity, Diastolic velocity	Peak systolic velocity, Diastolic velocity, Resistive index
Flow (Trace)	Envelope, Contour	Time average velocity, Area, Volume,
Flow (Ellipse)	Envelope, Ellipse	Time average velocity, Area, Volume,
Flow (Diameter)	Envelope, Distance	Time average velocity, Diameter, Area, Volume
Slope	Velocity	Acceleration, PHT

Advanced Measurements

Refer to the Advanced Operations Manual for further information

Custom Measurements

Refer to the Advanced Operations Manual for further information

System Features

TEI

TEI is using Harmonic Imaging technology that includes pulse inversion capability.
TEI (Tissue Enhancement Imaging) increases the signal-to-noise ratio and further enhances contrast resolution allowing the visualization of a high level of detail, even in difficult-to-scan patients.
The superb contrast and detailed resolution of TEI technology is based on the information always present in returning echoes.

- Touch Screen access and quick response time
- Available in combination with CFM, M-Mode, Power/VeloPower Doppler, TVM

XView

XView elaborates the pattern of every single frame at the pixel level, eliminating speckle and noise artifacts, dynamically enhancing tissue margins, improving tissue

conspicuity and increasing diagnostic confidence through real-time adaptive algorithm.

- Adaptive - During acquisition, XView uses different techniques in order to produce as little speckle as possible.
- Optimized - XView removes speckle, while the information necessary for the diagnostic image is preserved and enhanced

MView

MView consists in an ultrasound technique which applies beam-line steering and acquire several coplanar scans of an object from different view angles.

- Improved images quality by reducing the presence of artefacts, shadowing and speckle
- Available with all linear and convex/microconvex transducers.
- Up to 15 lines

AutoAdjust

AutoAdjust enables the automatic adjustment of Imaging and Doppler parameters at the press of a button.

TVM

TVM (Tissue Velocity Mapping) provides a complete Wall Motion Analysis for both systolic and diastolic myocardial function evaluation.

- TVM displays color coded information on moving tissue in velocity mode. The Velocity mode displays velocity distribution of moving myocardial tissue
- TVM can operate in
  - 2D imaging/TVM
  - M–Mode/MTVM
  - PW/Doppler/TV
    - Factory and user programmable presets for TVM
    - Requires the cardio module
    - Available on the SP2730, P2 3-11 and Transesophageal transducer ST2612

TPView

TPView enlarge the field of view without losing resolution and extending structures in breast, vascular and musculoskeletal applications.

- 60°
- Specially studied for breast, thyroid and vascular applications
- Available with all linear transducers

VPan

VPan (Panoramic Imaging) merges multiple B-Mode images in one complete panoramic image extending the field of view to entire organs.

- Auto fit of composite image
- Image Zoom
- Merging Level – realigning
- Frame marker
- Colorize
- Distance measurement
- Images can be saved to the patient's file
- CFM capability
- Rotation/Pan/Zoom

Directional Power Doppler (VeloPower)

- VeloPower - Directional Power Doppler
- Automatic algorithm for noise rejection
- Five VeloPower maps
- Analysis: Autocorrelation with use 8/16 selectable samples
- Frequency: User selectable from 2MHz up to 16.7MHz
- PRF: 125Hz up to 11,7KHz
- Motion Discrimination Filter: 3 levels (Min – Med – Max)
- Processing Parameters:
  - Persistence: 10 Levels
  - Smoothing: Low, Med & Max
  - Moving Artifact Suppression: 5 levels
  - Gain: 0 to 255
- Post Processing Parameters:
  - Correlation
  - Rejection
  - Saturation
  - Grey Maps

- Electronic Steering (LA Transducers ±30°)
  - Read and scrolling Pan Zoom with user adjustable ROI (max. magnification factor 8x)
- Information on monitor:
  - Selected Frequency
  - PRF and HPRF
  - Color Map
  - Filter
  - Gain

XFlow

XFlow technology provides extraordinary flow sensitivity and spatial resolution. XFlow gives direct visualization of blood echoes, extending the wideband resolution, high frame rate and wide dynamic range of blood flow. High sensitivity in detecting slow flow.

System Options

CMM

CMM (Compass M-Mode) allows to improve the M-Mode visibility during cardiac exams and acquire all information even in hard-to-scan situations with particular or difficult heart positioning.

- Up to three independent lines in real time

QIMT

The QIMT (Quality Intima Media Thickness) calculation automatically measure the thickness between the intima and the media on the image in real time using the radio frequency signal. The calculated value is displayed on a graph including the normal values curve.

- Direct analysis of the radiofrequency signal
- Add to report capability
- Report of QIMT with table reference

AutoNT

AutoNT is the dedicated software to automatically capture Nuchal Translucency measurement.
The image places a ROI within which the machine automatically recognizes the NT pattern and measures it accurately. The measure thus obtained can be reproduced and stored on the patient's report.

3D/4D

- Bi-Scan probes management
- Volume data acquisition
- Volume rendering reconstruction
- Real time modality (4D)
- Volume Rate: 40 volumes/second
- Depth Color Algorithm to improve 3D depth effect
- Multiplan sections with rotating planes
- Multiple tomographic slices
- Grey map on volume and slices for contrast improvement
- Measurement on bi-dimensional slices
- VRA
- 3D color
- XLight

Needle Enhacement

Esaote Needle Enhancement Technology makes the needle especially visible during angled needle insertions for different clinical procedures.
Esaote advanced detection and visualization technology makes the needle clearly distinguishable from the surrounding tissues while maintaining top image quality of the target.

MyLibrary

- Dedicated Library for Rheuma, Vascular, Regional Anaestesia, MSK and emergency market.
- Live Preview feature allows to scan in real-time while using anatomical references and scanning guidance

XStrain

XStrain allows physician to estimate and quantify endocardial velocities of contraction and relaxation, and estimate and quantify local deformation of the heart.

- Extensive potential applications.
- Innovation and non-invasiveness
- Angle-independent technology
- User-friendly interface
- Intuitive workflow
- Comprehensive measurement possibilities

Stress-Echo

Stress-Echo provides a dedicated report template for a complete wall motion score and ejection fraction reporting, which allow the evaluation of any cardiac segment.

- Real Time 2D loops digitally synchronized with the ECG trace
- User-programmable protocols
- Multi-format reviewing capabilities for accurate monitoring of cardiovascular pathologies.
- Loop comparison
- Continuous capture

AutoEF

AutoEF, "zero click" function performs the Automatic Ejection Fraction computation. This simplified tool provides border tracking estimation, and plots LV Volume over Time: Vd (Diastolic Volume), Vs (Systolic Volume), and EF (Ejection Fraction)

MyLab DeskEvo

Dedicated software (not for diagnostic use) for review, post-process and printing of exams performed with a MyLab ultrasound system on a PC Workstation working with Windows 10 Operative Systems.

- User interface extremely similar to the MyLabX5 user interface for convenience
- To import native Esaote file format
- To perform generic measurements
- For reviewing, modifying and printing the examinations (images)
- To export the data by using the standard features of the PC (burn on a CD/DVD, archiving on the local
  HDD or store on an USB key in standard PC formats, transfer to e-mail, etc.)

TRANSDUCERS

Probes Technical Specifications

Transducer Types

- Multifrequency Electronic Convex Array
- Multifrequency Electronic Volumetric Convex Array
- Multifrequency Electronic Linear Array
- Multifrequency Electronic Phased Array
- Multifrequency Electronic End-Fire Endocavity
- Multifrequency Electronic bi-plane for transrectal exams
- Multifrequency Electronic Volumetric End-Fire Array
- Pencil CW

Convex

AC2541

- Type: Convex
- Technology: Wideband Electronic Array
- Operating Bandwidth: 1-8 MHz
- Max Field of view: 17° - 63°
- Radius of Curvature: 50 mm
- Footprint: 65x19mm
- Depth: 50- 414 mm
- B-M Frequencies: PEN-H, PEN-L, RES-H, GEN-M,
- TEI-MTEI Frequencies: PEN-H,PEN-L, GEN-M, RES-H
- CFM–PW Frequencies: 1.8, 2.0, 2.5, 3.3 MHz
- CW: Not Available
- Steered Angle: Not Available
- Biopsy: 15°, 25°, 35°
- Weight: 95 g transducer head excluding cable and connector; 520 g complete transducer
- Dimensions: 101,4x66,7x34,7 mm

SI2C41

- Type: convex with 0° biopsy groove
- Technology: Wideband Electronic Convex Array
- Operating Bandwidth: 1-8MHz
- Max Field of view: 20° - 63°
- Radius of Curvature: 50mm
- Footprint: 68x23mm
- Depth: 50-357mm
- B-M Mode Frequencies: PEN-H, PEN-L, GEN-M, RES-H
- TEI-MTEI Frequencies: PEN-H, PEN-M, PEN-L, GEN-L, RES-L
- CFM–PW Frequencies: 1.8, 2.0, 2.5, 3.3 MHz
- CW: Not Available
- Steered Angle: Not Available
- Biopsy: 0°, 5°, 15°
- Weight: 95g transducer head excluding cable and connector; 520g complete transducer
- Dimensions: 67x50x110 mm

SB2C41

- Type: Volumetric Convex
- Technology: Volumetric Wideband Electronic Convex
- Operative Bandwidth: 1–8MHz
- Max Field of view: 8° - 82°
- Radius of curvature: 40mm
- Footprint: 68x23mm
- Depth: 46-343mm
- B-Mode Frequencies: PEN–H, PEN-L, GEN-M, RES-L, RES-H
- TEI-MTEI Frequencies: PEN–H, PEN-L, GEN-M, RES-L,RES-H
- CFM-PW Frequencies: 2.4 – 2.8 – 3.3 – 3.8 MHz
- CW: Not Available

- Steered Angle: Not Available
- Biopsy: Available
- Weight: 190 g transducer head excluding cable and system connector, 640 g transducer complete
- Dimensions: 67x50x110mm

SC3123

- Type: Microconvex
- Technology: Wideband Electronic Microconvex
- Operating Bandwidth: 4–9 MHz
- Max Field of view:42° - 91°
- Radius of Curvature: 14°
- Footprint: 11 x 25 mm
- Depth: 186 mm
- B-Mode Frequencies: PEN-H, GEN-L, GEN-M, RIS-L, RES-H
- TEI Frequencies: PEN-H, PEN-L, GEN-M, RIS-H
- CFM Frequencies: 4.2 – 4.5 – 5.0 – 6.3 MHz
- PW Frequencies: 4.2 – 4.5 – 5.0 – 6.3 MHz
- Weight: 45 g transducer head excluding cable and system connector, 245 g transducer complete
- Dimensions: 88 x 31 x 27mm

mC 3-11

- Type: Microconvex
- Technology: Wideband Electronic Microconvex
- Operating Bandwidth: 3–11 MHz
- Field of view: 20° - 94°
- Radius of Curvature: 10°
- Footprint: 11 x 25 mm
- Max Depth: 186 mm
- B-M Modes Frequencies: PEN-H, PEN-M, PEN-L, GEN-L, GEN-M, RES-M, RES-H
- TEI-MTEI Frequencies: PEN-H, PEN-M, PEN-L, GEN-L, RES-L, RES-M
- CFM–PW Frequencies: 4.2, 5, 5.6, 6.3, 7.1 MHz
- Weight: 45 g transducer head excluding cable and system connector, 390 g transducer complete
- CW: Not Available
- 2D-CnTi Frequencies: PEN-H, PEN-M, GEN-M, RES-M
- Steered Angle: not available
- Tilt: from -37° to 37°
- Biopsy: 20°, 35°
- Dimensions: 31x27x88 mm

Linear

L 3-11

- Type: Linear
- Technology: Wideband Electronic Linear Array
- Operating Bandwidth: 3-11 MHz
- Max Field of view: 9-39 mm (6°-60° Tp-View)
- Footprint: 49x12 mm
- Depth: 22-177 mm
- B-M Modes Frequencies: PEN-H, PEN-L, GEN-M, RES-H
- TEI-MTEI Frequencies: PEN-H, PEN-L, GEN-L, RES-L, RES-M, RES-H
- CFM–PW Frequencies: 2.5, 3.3, 4,2, 5.0 MHz
- CW: Not Available
- Steered Angle: Maximum 28° (in Color mode)
- Biopsy: 25°, 30°, 50°
- Weight: 120 g transducer head excluding cable and system connector; 470 g complete transducer
- Dimension: 93x51x28 mm

L 4-15

- Type: Linear
- Technology: Wideband Electronic Linear Array

- Operative Bandwidth: 4-15MHz
- Max field of view: 16-46 mm (3°-36° Tp-View)
- Footprint: 52x10mm
- Max Depth:22-103 mm
- B-M Modes Frequencies: PEN-H, PEN-M, PEN-L, GEN-L, GEN-M, RES-L, RES-M, RES-H
- TEI-MTEI Frequencies: PEN-H, PEN-L, GEN-L, RES-L, RES-H
- CFM–PW Frequencies: 4.2, 4.5, 5.0, 5.6, 6.3, 7.1, 8.3 MHz
- CW: Not Available
- Steered Angle: Maximum 21° (in Color mode)
- Biopsy: 40°, 60°
- Weight: 120 g transducer head excluding cable and connector, 475 g complete transducer
- Dimension: 88,5x58,1x27,2 mm

SL2325

- Bandwidth: 6 – 19 MHz
- Depth: 15-103 mm
- Field of view: TP view 4°-36°
- B-Mode Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- TEI Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- CFM Frequencies: 6.3 – 8.3 – 10.0 – 12.5 MHz
- PW Frequencies: 6.3 – 8.3 – 10.0 – 12.5 MHz
- Steering angles: 7 steps
- Weight: 100 g transducer head excluding cable and connector, 470 g complete probe
- Dimensions: 105 x 56.4 x 25.8 mm
- Biopsy angles: 45°/50°/60°/70°

SL3235

- Bandwidth: 6 – 18 MHz
- Depth: 15-103 mm
- Field of view: 28 mm (TP view 5°-36°)
- B-Mode Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- TEI Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- CFM Frequencies: 6.3 – 8.3 – 10.0 – 12.5 MHz
- PW Frequencies: 6.3 – 8.3 – 10.0 – 12.5 MHz
- Steering angles: 7 steps
- Weight: 100 g
- Footprint: 28 x 6.5 mm

SL3323

- Bandwidth: 3 – 13 MHz
- Depth: 22- 103 mm
- Field of view: 33 mm (TP view 9°-54°)
- B-Mode Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- TEI Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- CFM Frequencies: 4.2 - 5.0 - 6.3 - 7.1 MHz
- PW Frequencies: 4.2 - 5.0 - 6.3 - 7.1 MHz
- Steering angles: 7 steps

Weight: 100 g

SL3332

- Operating Bandwidth: 3 – 11MHz
- Depth: 22- 177mm
- Field of view: 33 mm (TP view 11°-80°)
- B-M Modes Frequencies: RES – H, GEN – M, PEN – L, PEN - H
- TEI Frequencies: RES – H, GEN – M, PEN – L, PEN - H
- CFM–PW Frequencies: 2.5 – 3.3. – 4.2 – 5.0 MHz
- Steered angles: 7 angles

SL3116

- Operating Bandwidth: 10 – 22 MHz
- Depth: Linear 15 mm- 44 mm
- Field of view: Linear 13 mm(TP view 8°-80°)
- Steering angles (Linear array): 7 steps

- B-M Modes Frequencies: PEN-H, PEN-L, GEN-M, RES-H
- TEI Frequencies: PEN-H, PEN-L, GEN-M,
  RIS-H
- CFM Frequencies: 10 -12,5 -16,7 MHz
- PW Frequencies: 10 -12,5 -16,7 MHz
- Footprint: 28 x 6,5 mm
- Weight: 435 gr complete probe
-

IH 6-18

- Type: linear – hockey stick
- Technology: Wideband Electronic Linear Array
- Operating Bandwidth: 6-18 MHz
- Footprint: 32x5 mm
- Depth: 15-103 mm
- Field of view: 18-28 mm (4°- 36° Tp-View)
- B-M Modes Frequencies: PEN-H, PEN-L, GEN-M, RES-H
- TEI-MTEI Frequencies: PEN-H, PEN-L, GEN-M, RES-H
- CFM Frequencies: 8.3, 10, 12.5, 16.7 MHz, PW Frequencies: 8.3, 10, 12.5, 16,7 MHz
- CW: Not Available
- Steered Angle: Maximum 21° (in Color mode)
- Biopsy: Not available
- Weight: 90 g transducer head excluding cable and system connector; 410 g complete transducer
- Dimension: 5 x 32 x118 mm

LP 4-13

- Application: Laparoscopic
- Technology: Wideband Electronic Linear Array
- Depth: 22– 103 mm
- Operating Bandwidth: 4-13 MHz
- B-M Modes Frequencies: Pen H, Pen L, Gen M, Res H
- TEI Frequencies: Pen H, Pen L, Gen M, Res H
- CFM–PW Frequencies: 5.0, 5,6, 6.3, 7,1 MHz
- Field of view: 17-35 (6°-40° TP-View)
- Articulation ± up/down 90°
- Articulation ± right/left 90°
- Biopsy: Not Available
- Weight: 620 gr complete probe

IL 4-13

- Application: Intraoperative
- Technology: Wideband Electronic Linear Array
- Depth: 22– 103 mm
- Footprint: 30mm
- Operating Bandwidth: 4-13 MHz
- Field of view: 17-35 (6°-40° TP-View)
- B-M Modes Frequencies: Pen H, Pen L, Gen M, Res H
- TEI Frequencies: Pen H, Pen L, Gen M, Res H
- CFM–PW Frequencies: 5.0,5.6,6.3,7.1 MHz
- Biopsy: Multi angle reusable autoclave sterilised adaptor
- Weight 320 gr complete probe

Phased Array

SP2730

- Operating Bandwidth: 1 – 4MHz
- Depth: 44-349mm
- Field of view: 16° - 87°
- Footprint: 19x25 mm
- Max Depth: 356 mm
- B-M Modes Frequencies: PEN–H, PEN–L, GEN–M, RES-H

- TEI Frequencies: PEN–H, PEN– L, GEN–M, RES-H
- CFM–PW Frequencies:1.7, 2.0 ,2.5 MHz
- CW Frequencies: 2.1 - 2.5 MHz
- Steered Angle: Not Available
- Biopsy: Not Available
- Weight: 85g transducer head excluding cable and system connector; 825g complete transducer
- Dimensions: 80.5 x 34.2 x 27.7 mm

P2 3-11

- Bandwidth: 3 – 11 MHz
- Depth: 44-296 mm
- Field of view: 18° - 90°
- B-Mode Frequencies: PEN–H,PEN–L, GEN-M, RES L, RES-H
- TEI Frequencies: PEN–H,PEN–L, GEN-M, RES L, RES-H
- CFM Frequencies: 2.8 – 3.6 – 4.2 MHz
- PW Frequencies: 2.8 – 3.6 – 4.2 MHz
- CW Frequencies: 3.6 – 5.0 MHz
- Weight: 96 g

ST2612

- Application: Transesophageal Adult
- Bandwidth: 3 – 7 MHz
- Depth:22-177 mm
- Field of view: 18° - 90°
- B-Mode Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- TEI Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- CFM Frequencies: 3.3 – 3.6 – 3.8 MHz
- PW Frequencies: 3.3 – 3.6 – 3.8 MHz
- CW Frequencies: 3.6 – 5.0 MHz
- Weight: 1500 g
- Dimensions:1100x14x12 mm Endoscope length 110 cm, endoscope diameter 10.5 mm

Endo

TLC 3-13

- Type: Linear/Convex Transrectal
- Operating Bandwidth: Convex 3-9 MHz; Linear 4-13 MHz
- Technology: Biplane Wideband Electronic Linear-Convex Array
- Field of view: Convex 48°-199°; Linear 15-58mm (4°-36° Tp-View)
- Tip size: 20.2 mm
- Depth: Convex 17-162 mm; Linear 15-118 mm
- B-M Frequencies: PEN-H, PEN-L, GEN-M, RES-H
- TEI-MTEI Frequencies: Convex PEN-H, PEN-M, PEN-L, GEN-L, GEN-M, RES-L, RES-M, RES-H
- Linear PEN-H, PEN-L, GEN-L, GEN-M, RES-H
- CFM–PW Frequencies: Convex 3.8, 5,0, 6.3, 7.1 MHz
- Linear 4.2, 5.6, 6.3, 7.1 MHz
- CW: Not Available
- Steered Angle: Convex: Not Available; Linear: Maximum 21° (in Color mode) B
- Biopsy: 90°
- Weight: 540g transducer head excluding cable and system connector; 950g complete transducer
- Dimension: 353,4 x 12,4 x 47,8mm

SE3133

- Technology: Wideband Electronic end fire Microconvex
- Operating Bandwidth: 3 – 10 MHz
- Depth:23-156 mm
- Field of view: 50° - 200°
- B-M Modes Frequencies: PEN–H, PEN–L, GEN–M; RES-L
- TEI Frequencies: RES – M, GEN – M, PEN – L, PEN - M
- CFM–PW Frequencies: 3.8 – 4.2 – 5.0 – 5.6 MHz

- Radius of curvature: 10 mm
- Weight: 195 g transducer head excluding cable and connector, 565 g complete transducer
- Dimensions: 48 x 304.8 x 31.8 mm
- Biopsy angles: 0°/3.8°

SB3123

- Technology: Volumetric Wideband Electronic end fire Microconvex
- Bandwidth: 3 – 9 MHz
- Depth: 27-159 mm
- Field of view: 50° - 151°
- B-Mode Frequencies: PEN–H, GEN-L, GEN-M, RES-L
- TEI Frequencies: PEN–H, PEN-L, GEN-M, RES-H
- CFM-pw Frequencies: 4.2 – 5.0 – 6.3 -7.1 MHz
- Weight: 300 gr transducer 1000 gr complete transducer

Non – Imaging Pencil Probes

S2MCW – Doppler

- Number of elements: 2
- Doppler Frequencies: 2 MHz
- Footprint: 18mm diameter
- Weight: 55 g complete probe
- Dimensions: 126 x 78 x 18 mm

S5MCW – Doppler

- Number of elements: 2
- Doppler Frequencies: 5 MHz
- Footprint: 10mm diameter
- Weight: 55 g complete probe
- Dimensions: 90 x 10 mm

SHFCW - Doppler

- Number of elements: 2
- Doppler Frequencies: 8 MHz
- Footprint: 8mm diameter
- Weight: 55 g complete probe
- Dimensions: 90 x 8 mm

Compatible probes

SL1543

Operating Bandwidth: 3 – 13MHz
Max Depth: 103mm
Footprint 55mm
Field of view: 17 – 47 mm
B-M Modes Frequencies: RES – H, GEN – M, GEN – L, PEN - H
TEI Frequencies: RES – H, GEN – M, GEN – L, PEN - H
CFM–PW Frequencies: 4.2 – 5.0 – 6.3 – 7.1 MHz
Steering angles: 8 angles
Weight: 100 g
Dimensions: 88.4 x 58.1 x 27 mm
Biopsy angles: 40°/60°