



Rev. O

May 2015

**MyLab**

**GETTING STARTED**

**OPERATOR MANUAL**

*Doc # 81B13EN14*



## Introduction

This manual refers to **MyLabOneVet** and **MyLabSatVET** ultrasound systems, there will be referred to the generic arm-held platform named in the following chapters as **MyLab**. When needed, specific references to the above models will be indicated in the user manual.

This manual is organized in the following chapters:

- Chapter 1: Additional Information on Safety

This chapter provides information about specific safety features of the **MyLab** system.

- Chapter 2: Clinical Applications

This chapter specifies in which clinical applications the **MyLab** can be used.

- Chapter 3: System Components and Installation

This chapter lists the available **MyLab** configurations. Moreover, it contains the installation instructions.

- Chapter 4: Screen Lay-Out

In this chapter one is explained how the information on the screen is organized.

- Chapter 5: General User Interface

This chapter describes the **MyLab** user interface.

- Chapter 6: Performing exam

This chapter explains how an exam on the **MyLab** system is performed.

- Chapter 7: Measurements and Calculations

This chapter explains how measurements on an ultrasound image are performed.

- Chapter 8: Exams Archive

This chapter describes how to use the **MyLab** archive.

- Chapter 9: System Menu

This chapter explains how to configure the **MyLab**.

- Chapter 10: System Maintenance

This chapter lists the maintenance procedure for cleaning the system.

- Chapter 11: Technical Specifications

This chapter lists all **MyLab** technical specifications.

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WARNING

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In this manual a **WARNING** pertains to possible injury to a patient and/or the operator..

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CAUTION

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A **CAUTION** describes the precautions, which are necessary to protect the equipment.

**Be sure that you understand and follow each caution and warning that is mentioned in this manual.**

In this manual the following graphical convention is followed to indicate a key in the user interface:

User interface keys      These are indicated by **BLUE CAPITAL LETTERS** or by a graphical symbol (such as buttons, sliders etc.).

**PATIENT & ARCHIVE**

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# 1 - Additional Information on Safety

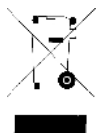


This chapter provides additional information on safety specifically for **MyLab** products. Please read the "Safety and Standards" manual carefully for a complete overview of all safety aspects of **MyLab** products.

## Environmental Safety

*Special waste*

These systems contain a battery. The battery pack contains lithium-ion cells. The fluorescent lamp included in the LCD screen contains mercury. The battery and the LCD screen must be treated as special waste according to the applicable local regulations.



Dispose the equipment as special waste according to applicable local regulations. For further information please refer to the local authority for waste disposal regulations.

## Transport Safety

The system is available on a height adjustable trolley. The four wheels of the height adjustable trolley are equipped with brakes, which can be activated individually.

**WARNING**

**Do not park the system on a slope.**

**Do not use the brakes to park the machine on a slope.**

**If your system is equipped with peripherals, make sure that they are safely attached with double sided tape strips; for transportation in a vehicle, it is strongly recommended to remove the peripheral(s) and follow the device manufacturer guidelines.**



## Electromagnetic Compatibility

This system is designed for use in electromagnetic environments as declared in the following tables, in compliance with the IEC 60601-1-2:2001 standard. The operator must ensure that she/he uses the system in conformance with this standard.


**Electromagnetic Emissions**

Emission Test	Conformity	Electromagnetic Environment
RF emissions CISPR 11	Group 1	MyLab uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The <b>MyLab</b> is suitable for use in all establishments other than domestic, however may be used in domestic establishments and those directly connected to the public network that supplies buildings used for domestic purposes, provided the following caution is heeded:  <b>Caution:</b> This equipment/system is intended to be used by healthcare professionals only. This is a CISPR 11 Class A medical equipment/systems. In a domestic environment this equipment/systems may cause radio interference, in which case it may be necessary to take adequate mitigation measures, such as re-orienting, relocating or shielding the <b>MyLab</b> or filtering the connection to the public mains network.
Harmonic emissions on the electric power supply mains IEC 61000-3-2	Class A	
Voltage fluctuations and flicker emissions IEC 61000-3-3	Conforms	

**Electromagnetic Immunity**

The electromagnetic tests are conducted to simulate the typical transients that can occur in an electromagnetic environment. **MyLab** was tested for immunity to transients and at their typical levels in a domestic, hospital or commercial environment.

Immunity Test	Conformity Levels	Electromagnetic Environment and Measures to Be Taken
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV on contact ±8 kV in air	The floor should be in antistatic material (wood, concrete or ceramic tile...). If covered with synthetic material, the relative humidity should be at least at 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality and mains frequency magnetic fields should be that of a typical commercial or hospital environment.
Pulse IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	If the user of MyLab requires continued operation during power mains interruption, it is recommended that the MyLab is powered through an uninterruptible power supply or through a battery.

Immunity Test	Conformity Levels	Electromagnetic Environment and Measures to Be Taken
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % of rated voltage ( $U_T$ ) (voltage gap >95 %) for 0,5 cycle  40 % $U_T$ (voltage dip 60 %) for 5 cycles  70 % $U_T$ (voltage dip 30 %) for 25 cycles  <5 % $U_T$ (voltage dip >95 %) for 5 sec	
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	
Conducted RF IEC 61000-4-6	3 Vrms  150 kHz to 80 MHz	Mobile or portable radio frequency (RF) communication appliances should be used at longer distances than those indicated on the following table.
Radiated RF IEC 61000-4-3	3 V/m  80 MHz to 2.5 GHz	Interference may occur in the vicinity of equipment marked with the following symbol:  

**Recommended Distances between Radiofrequency (RF) Communication Systems and MyLab.**



As stated in the Safety and Standards manual, it is recommended not to use radiofrequency (RF) transmission systems near the ultrasound system. RF systems can cause interference, which can affect the ultrasound image.

The operator can prevent interference caused by electromagnetic fields by maintaining a minimum distance between the ultrasound system and the RF communication system (mobile telephones...). The table shows the minimum distance in meters which should be maintained, according to the maximum power at the RF system output.

Maximum Power at Transmitter Output [W]	Distance According to Transmission Frequency [m]		
	From 150 kHz to 80 MHz $d = 1.2\sqrt{P}$	From 80 MHz to 800 MHz $d = 1.2\sqrt{P}$	From 800 MHz to 2,5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 As a precaution, always apply the greater distance supplied by the table.

NOTE 2 Electromagnetic propagation is subjected to absorption and reflection in the presence of structures, objects and people. The values in the table are general guidelines.

The operator must remember that the intensity of the electromagnetic fields generated by fixed transmitters (radio-base stations for cellular or cordless telephones, TV and radio transmissions, amateur radio transmissions...) cannot be predicted on a theoretical basis. Consequently, a direct measurement may be necessary of the environment in which **MyLab** is used. If the intensity of the electromagnetic fields exceeds to one that is specified in the previous tables, and the ultrasound system performs incorrectly, additional measurements may be necessary, i.e. by positioning the system in a different location.

## Probe Surface Temperature

**MyLab** has been designed to keep the probes surface temperature within the limits defined by the IEC 60601-2-37 standard. To freeze the system at the end of the exam press the **FREEZE** key to avoid any probe overheating.

## 2 - Clinical Applications

**MyLab** is designed for operators who are qualified in using ultrasound systems.



Carefully read  
Chapter 2 of the  
"Safety and  
Standards" manual.

### Note

The operator must always follow the principle known as ALARA (As Low As Reasonably Achievable). This means that the minimum acoustic power should be used to obtain the desired diagnostic information in the shortest possible time.

### Intended use

**MyLab** can be used for the following applications:

**Do not use MyLabOne for ophthalmic or transorbital applications.**

### MyLab Applications

Application	Notes
General Imaging	Includes ABDOMEN (ABD), OVARY and SMALL ORGANS (testicles...)including transrectal exams
Reproduction	Includes pregnancy studies, measurements, calculations and reporting in small , large and farm animals
Cardiac	Includes measurements, calculations and reporting in small and large animals
Musculo-skeletal	Includes measurement and reporting for equine tendon and musculo-skeletal exams
Animal Science	Includes a measurement package for measuring the hide-, fat- and loin thickness within cattle, sheep and swine and a percentage intramuscular fat calculation for cattle.

## Clinical Applications

Please consult the corresponding chapter for specifications and licenses.

The tables below list **MyLab** probes and their intended clinical use.

	ABD	REP	CAR	SO	MS	AS
<b>LA Probes</b>						
SL3323 Linear probe L40mm	✓			✓	✓	
SL3413 Linear Probe L40mm	✓			✓	✓	
SL3332 Linear Probe L32mm	✓			✓	✓	
SL3235 Linear probe L25mm				✓	✓	
SL3116 Linear probe L20mm				✓	✓	
SL3413 Linear probe L40mm	✓			✓	✓	
<b>CA Probes</b>						
SC3421 Convex probe Radius 40mm	✓	✓	✓			
SC3123 Convex probe Radius 14mm	✓		✓	✓	✓	
SC3121 Convex probe Radius 13mm	✓	✓	✓	✓		
<b>Special Probes</b>						
SV3513 Linear probe vet		✓			✓	
TL5-10 Linear probe vet		✓			✓	
SV3L11 Animal Science						✓
IOT342 Intraoperative probe	✓				✓	
<b>PA Probes</b>						
SP3630 Phased Array Probe			✓			

**ABD:** Abdominal; **REP:** Reproduction; **CAR:** Cardiac; **SO:** Small Parts and small organs; **THY:** Thyroid **MS:** Musculo-skeletal (including equine tendon); **AS** Animal Science;

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**WARNING**

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**Do not use MyLab for ophthalmic or transorbital applications.**

**Cardiac Applications**

The probe applies ultrasound energy through the thoracic cavity to obtain an image of the heart sufficient for evaluating any cardiac abnormalities. In Doppler modes, the probe applies energy through the thoracic cavity to determine the velocity and direction of blood in the heart and vessels.

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**WARNING**

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**This application does not include transorbital or any other ophthalmic application.**

**Small Organs and Small Parts Application**

The probe is placed on the skin to obtain an image of small organs such as thyroid and testicles (scrotal sac) in order to detect abnormalities.

**Musculo-Skeletal Applications**

In the Musculoskeletal Application clinical evaluations are performed on muscular tissues, tendons and nerves.

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**WARNING**

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**This application does not include transorbital or any other ophthalmic application.**

**Abdominal and related Applications**

The probe transmits signals into the patient abdomen to obtain an image of the abdominal organs in order to detect abnormalities (Imaging) and assess the blood velocity, flow and patency of abdominal vessels by using the Doppler. Ultrasound energy is applied through the skin to respectively image the female genito-urinary organs or the kidney and males genito-urinary structures (prostate, bladder, etc). For large animals, an endorectal probe can also be used to image the same organs **transrectally** .

**Reproductive Application**

The probe transmits ultrasound waves into the pregnant abdomen to obtain an image of the fetus(es) to detect structural abnormalities or to visualize and measure anatomic and physiologic parameters of the fetus(es) for the purpose of assessing fetal age. In Doppler modes, the probe transmits signals through the patient's abdomen to detect placental or fetal flow abnormalities. An endocavity probe can also be used for the same purpose (**endorectal** studies in large animals).

**Animal Science**

In B-mode, depending upon the settings of the measurements, the user can calculate Yield Grade, QUIP index and/or QUIP index Lean in Bovine species and Yield Grade in Porcine and Ovine species.

**Intraoperative Application**

The probe, in direct contact with the structures under exam during surgical

operations, allows to identify surgical lesions, blood vessels and eventual anatomical abnormalities and technical imperfections.

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**W A R N I N G**

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**Do not use intraoperative probes in direct contact with the heart, the central circulatory system and the central nervous system.**



## 3 - System Components and Installation

The **MyLab** will be installed by ESAOTE personnel. This person is responsible for opening the packaging and ensuring that the system is correctly installed and is fully operational. This chapter provides an overview of the system's components and the most important operations that can be necessary.

### Configurations

#### MyLab One

- Arm-held
- Basic Stand
- Desk Stand
- Mobile (height-adjustable trolley)

The **MyLab** can be used with or without a height adjustable trolley to support both arm-held and mobile configurations.

#### Arm-held Configuration



The unit contains: the scanner electronics, the LCD with integrated touch screen, microphone, speakers, the probe connector, a Kensington lock, the Desk Stand connector, two USB connectors, ON/OFF button and a touch screen stylus.

The battery handle can be used to carry the system.

*Basic Stand*

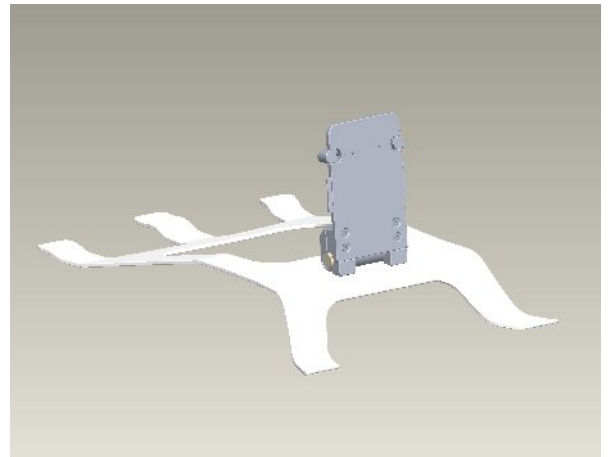
**Basic Stand Operation**

The **MyLab** can be used in combination with a Basic Stand.

The Basic stand for **MyLab** has been designed for environments where a more robust solution is needed.

The Basic Stand offers a very stable positioning allowing still tilting of the system.

The opportunity to close the stand and to block the system safely, makes it possible to carry the stand together with the system in an easy way. This solution can be then very useful especially to bring the system to the patient.



*Desk Stand*

**Desk Stand Operation**

The **MyLab** can be used in combination with the Desk Stand.

The Desk Stand has a power connector, 3 additional USB ports, a LAN connector, footswitch and a DVI (with analog VGA) connector. There are also audio connectors available with line-out and microphone connections.

The **MyLab** can be mounted on the Desk Stand, and locked with a lock button. Additional there is the VESA mount to attach the Desk Stand to a wall mount or articulating arm.



*Height-adjustable  
trolley*

### **Mobile Configuration**

A height adjustable trolley is available to use **MyLab** in a mobile configuration.



The trolley is equipped with the attachment to mount the scanner.

The trolley has four swiveling wheels with brakes.

The pedal at the base of the trolley can be used to unlock the vertical movement of the column.

The cable guide can be used to ensure that a sterilized probe has a secure position.

The sides of the work surface can be used to attach probe holders.

A probe and cable holder are available.

The trolley configuration provides advanced connectivity solutions (as available in the Desk Stand described above).

### **Multicon option for all configurations**

The Multicon is available as option for the MyLabOne platform. The device is a three-transducer module allowing to connect up to three transducers simultaneously to the MyLabOne system and switch the active transducer via software.



The Multicon module can be used with MyLabOne in all configurations: MyLabOne, Desk Stand, Roll Stand, and Wallmount.

## Battery

When no mains power is available, **MyLab** can operate on its internal battery pack.

A fully charged battery allows about 3 hours of operation time.

**CAUTION**

When **MyLab** is equipped with its internal battery, do not leave the system exposed to direct sunlight to avoid overheating of the battery.

**WARNING**

Stop immediately using **MyLab** and disconnect the mains power if the system functions in an abnormal manner, produces unusual sounds or smell or overheats. In any of these cases please contact your Esaote representative.

**WARNING**

Do **NOT** open or alter batteries.

**WARNING**

If the battery is incorrectly installed it may explode. Replace only with same or equivalent type.

The battery is always recharged if the scanner is connected to the mains power independently from the fact that the system is on or off.

**CAUTION**

The battery will self-discharge over time, the maximum charge retention of a fully charged battery is ninety (90) days. Make sure that a fully charged battery will be re-charged each 3 months. A partially charged battery needs to be re-charged earlier. A Li-Ion battery will be rendered unusable if it is fully depleted.

**CAUTION**

The battery capacity will decrease over time, because of aging of the battery.

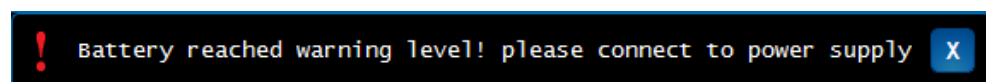
*Refer to next chapter for further information*

### Battery status and charging icon

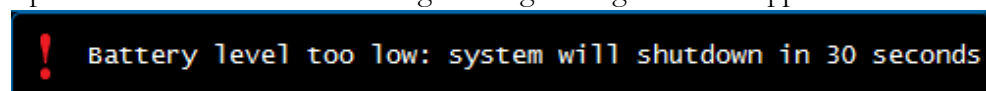
The battery icon on the touch screen is located on the right side of the control tabs. The charge level of the icon and the color indicates the status of the battery.

The residual operating time will be displayed if the battery icon is pressed.

The battery icon will be colored red and an exclamation mark will be flashing on top of the icon when the charge level of the battery pack reaches a certain minimum that is needed for proper operation. The following message will then appear:



**MyLab** automatically switches off when the minimum charge level for proper operation is reached. The following warning message will then appear:



*Charge icon*

The charge icon is located next to the battery icon. If it is visible, **MyLab** is connected to the mains power and the battery pack is recharged.

**Battery status led and ON/OFF button**

A battery status led is located inside the ON/OFF button on the left side of the system. The led color indicates both the status of the battery and status of the mains power connection. There are six possible options:

Led Color and Status	Description
GREEN/BRIGHT	<b>MyLab</b> system is ON and connected to the mains power
GREEN/BRIGHT/FLASHING	<b>MyLab</b> system is shutting down and connected to the mains power
ORANGE/FLASHING	<b>MyLab</b> system is OFF and connected to the mains power (battery fully charged)
ORANGE	<b>MyLab</b> system is OFF, charging and connected to the mains power (battery is charging)
GREEN DIM	<b>MyLab</b> system is ON and not connected to the mains power
GREEN DIM/FLASHING	<b>MyLab</b> system is shutting down and not connected to the mains power

**Battery status LCD indicator**



There is an LCD indicator at the side of the internal battery pack. The LCD indicates the status of the battery even when the system is switched off.

**Charging Procedure**

The most efficient way to charge the battery is to connect the system to the mains power without switching the unit on.

A battery, which has not been used for some time, needs to be recharged before operation.

**CAUTION**

Charge the **MyLab** only with the provided mains adapter  
**Manufacturer/Model:**

**Prottek Power**

**Model: PMP 120F-13-2**

**Class II**

**WARNING**

Charge and discharge the battery only when the environmental temperature is between 15°C and 30°C.

### First Use

A new battery pack could be partially discharged if it is used for the first time, therefore please recharge a new battery pack before operation.

## Installation

### MyLab

#### Location of controls and ports

All the controls and ports are located on the exterior of the console and can be clearly identified. Their description is provided hereinafter:



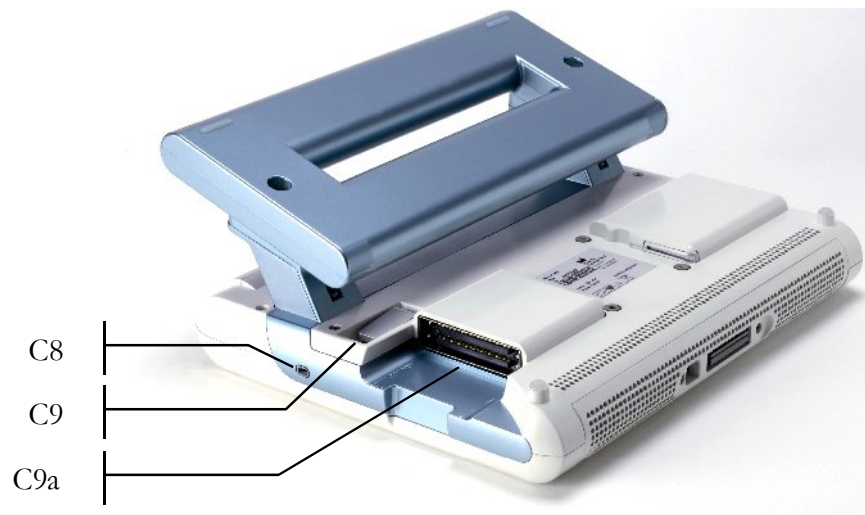
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**CAUTION**

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**When dust and dirt accumulates in the system vents, remove the substance with a low-powered vacuum cleaner.**

The probe connector is located at the right bottom side of the system. The **MyLab** is equipped with 1 Zero Insertion Force (ZIF) probe connector.



The table below lists the connectors and their intended use.

Reference	Items	Use
C1	Speaker	PC/Doppler/Protocol Editor Audio
C2	Touch screen Stylus	Storage of the stylus
C3, C3a	USB connector	USB 2.0 Memory Stick, Printer
C4	Shutdown button	Starts/Shuts down the scanner
C5	Power connector	To connect the adapter cable
C6	Desk Stand connector	To connect <b>MyLab</b> to the Desk Stand
C7	Microphone	Recording for Protocol Editor
C8	Kensington lock	Anti-theft system
C9	Handle for ZIF Connector	Locks the connected probe onto the system
C9a	ZIF Probe Connector	To connect the probe to the system



Refer to the "System Configuration" section of the Advanced Operations manual for further information



The system is equipped with four programmable buttons on the battery handle.

The buttons can be programmed by holding down a button on the handle and any user interface key on the screen simultaneously. The programmed key will get an icon. In this icon the corresponding button is marked.

### Probe Connection

#### Electronic Probes

The probes should be connected to the ZIF-connector. Make sure that the ZIF connector handle is in an open position, align the pins of the two connectors and carefully fit the probe connector. To secure it, lock the handle.

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**WARNING**

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Never disconnect the probe while it is active. Press the **FREEZE** key before disconnecting the probe.

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**CAUTION**

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Do not switch off the machine before the initialization has finished.

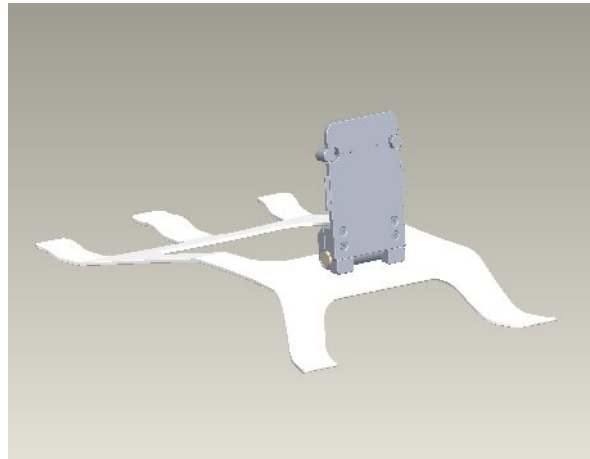
**System  
Connection**

**How-to setup MyLab in Arm-Held Configuration**

Make sure that **MyLab** is placed on a stable and horizontal work surface. Make sure that all four feet of **MyLab** are in contact with the work surface.

If the system is meant to work on mains power, please use the DC adapter.

**Basic Stand**



**How to use the Basic Stand**

To prepare the Basic Stand place it on a flat surface. Hold the stand in order to lift the scanner support plate.

To place the system on the Basic Stand, follow the next steps:

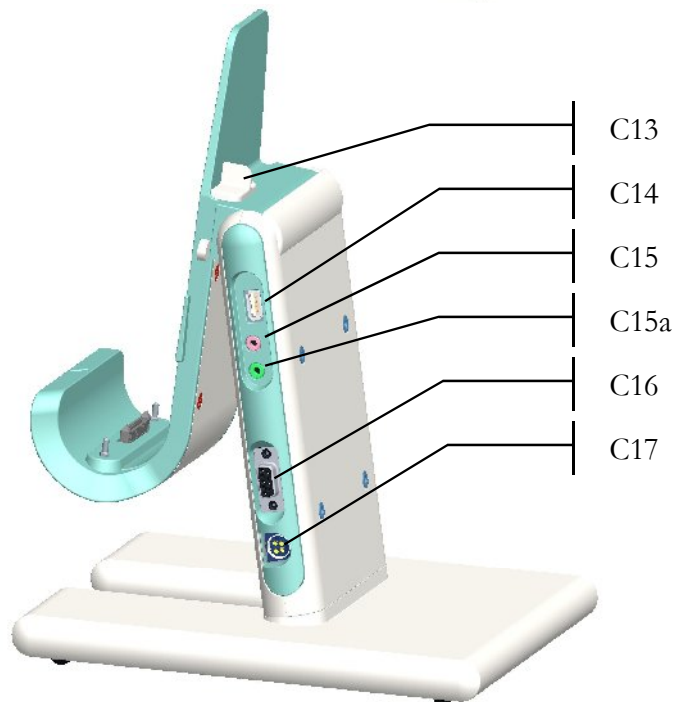
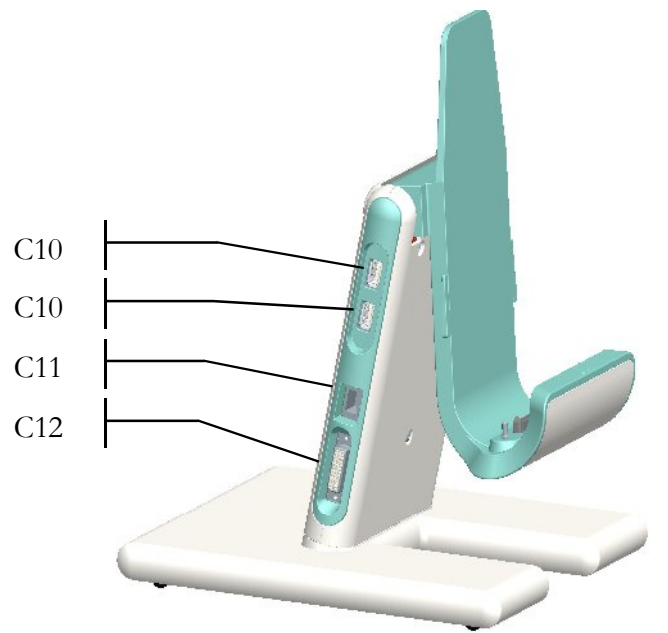
- Position the stand with the scanner support plate in upright position.
- Face the back of the system towards the scanner support plate. Make sure the sides of the scanner support plate slide into the back of the system. Slide the system downwards until it can go no further.
- Press the latches together; the system can now slide further.
- Release the latches and the system is securely fastened.
- 

**Desk Stand**

**Location of controls and ports**

**MyLab** can be used in combination with a Desk Stand. This makes it possible to create a stable work environment when **MyLab** is used on a desk.





Reference	Items	Use
C10	USB connector	USB 2.0 Memory Stick, Printer
C10a	USB connector	USB 2.0 Memory Stick, Printer
C11	LAN connector	To connect to a network
C12	DVI-I connector	Connector with digital and analog signals for X VGA screens
C13	Lock button	To lock the <b>MyLab</b> on the Desk Stand
C14	USB connector	USB 2.0 Memory Stick, Printer
C15	Microphone connector	To connect an external microphone
C15a	Audio line-out	To connect an external active speaker
C16	Footswitch connector	To connect a footswitch
C17	Connector for power cable	To connect the adapter cable

### How to use the Desk Stand

Align the marker on the bottom of the scanner with the marker on the Desk Stand.

Make sure that the flanges on the Desk Stand fit into the sliders on the back of the scanner.

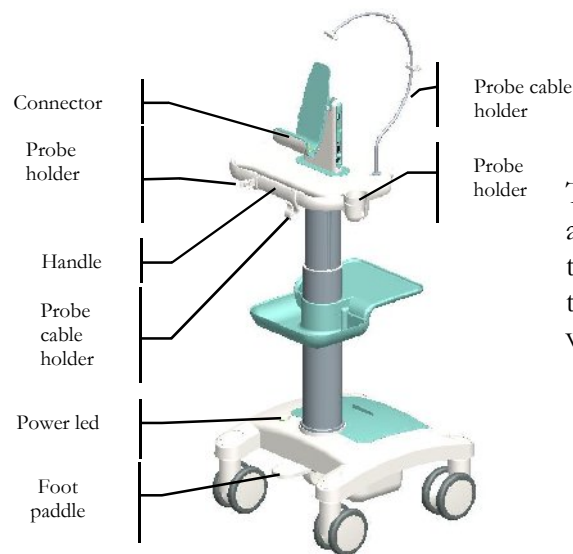
Shift the scanner carefully into the attachment and make sure that the back of the scanner is aligned with the angle of the Desk Stand. Make sure that both docking connectors match carefully.

Finally secure **MyLab** in the Desk Stand, with lock (C13) that is located on top of the Desk Stand.

### Trolley

Installation of the trolley

The trolley is supplied disassembled by ESAOTE. The appropriate assembly instructions are included. ESAOTE personnel will open the package and will ensure that the trolley is correctly assembled.

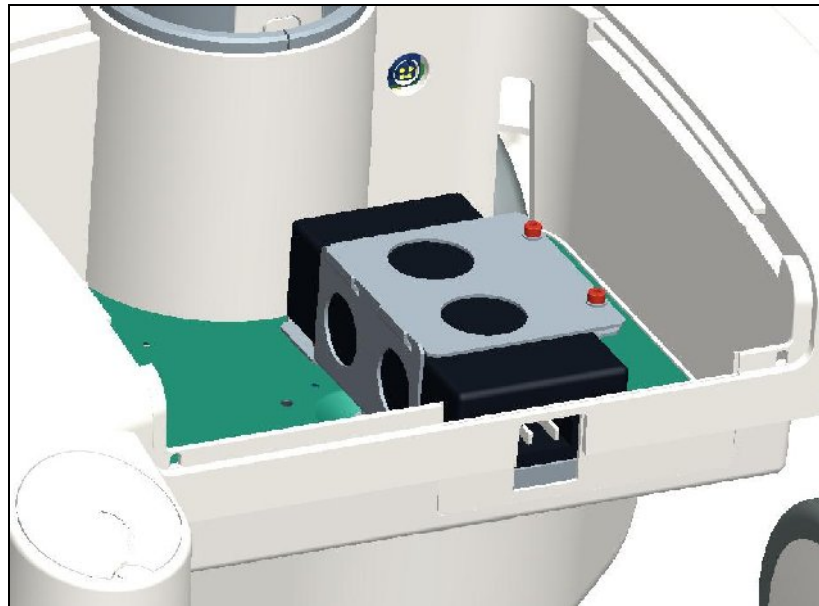


To mount **MyLab** on the height adjustable trolley, please refer to the above instructions. Make sure that **MyLab** is securely locked when it is used on the trolley.

**Attachment of probe holders**

Slide the probe holders onto the edge of the working surface, starting from the corner of the table.

*Adapter in trolley*



**Installation adapter**

The same DC adapter used for **MyLab** in normal operation is also used to power **MyLab** if the system is mounted on the trolley. Open the cover on the base of the trolley, place the DC adapter in the middle and mount the bracket that is used to hold the adapter into position. Then connect the DC adapter cable to the socket inside the base. Finally connect the mains cable to the adapter.

**CAUTION**

**Charge the MyLab only with the provided mains adapter or equivalent type, specified by the manufacturer.**

Installation **MyLab** on trolley

*Trolley connection – Basic*

If the trolley is equipped with the standard connector, **MyLab** can be installed on the trolley just by fixing the four screws on the connector to the back of the system.

*Trolley connection – Docking Station*

If the trolley is equipped with the optional docking station:

- Please align the marker on the bottom of the scanner with the marker on the docking station.
- Make sure that the flanges on the docking station fit into the sliders on the back of the scanner.
- Shift the scanner carefully into the attachment and make sure that the back of the scanner is aligned with the angle of the docking station. Make sure that both docking connectors match carefully.
- Finally secure **MyLab** in the docking station.

**WARNING**

Secure the lock button on top of the docking station to fix MyLab firmly. If the MyLab is not firmly secured it can fall down during movement of the trolley

**Working position**

Near the bottom of the trolley there is a pedal to adjust the working height. Carefully press on the pedal to unlock the vertical movement of the column. Use the table to position the console at the desired height.

The trolley has brakes on all the wheels.

**Don't park the system on a slope.**

**Don't use the brakes to park the system on a slope.**

**WARNING**

## Acclimation Time

If the system has been left exposed to temperatures, which are outside the range given for its correct working (15÷35°C), it must acclimate, before being switched on. The following table indicates the necessary waiting times:

T (°C)	60	55	50	45	40	35÷15	10	5	0	-5	-10	-15	-20
Hours	8	6	4	2	1	0	1	2	4	6	8	10	12

## Adjusting the LCD Screen

### Brightness

The most important adjustment is the relative orientation of the screen vis-à-vis the operator. The LCD orientation affects the chromatic perception of light. Consult the grey tones or color scale (on left of image) to correctly position the LCD screen.

### Calibration

The calibration of the touch screen can be done from the **SETTINGS** tab and the **MENU** button. In **SYSTEM SETUP** choosing the **CALIBRATE TOUCHSCREEN** key, the calibration mark will be activated for 10 seconds. Pressing on the mark will activate the procedure, if not pressed, the system will go back to the initial screen.

### Note

It is important to make use of the touch screen stylus for accurate calibration.

Use the touch screen stylus to point out the calibration marks on the screen and follow the procedure according to the system. When the procedure is finished, the system returns to the initial screen.

## Installing the Peripheral Units



The "Safety and Standards" manual provides the safety requirements and standards to be observed for using peripheral units that are certified to be used together with MyLab.

### USB Printers

MyLab can be connected to USB printers. The ports available for USB connectors are **C3** and **C3a** on the scanner **C10**, **C10a** and **C14** on the Desk Stand and docking station. The peripheral units must have a B-Type USB connector, to be able to use the available USB cable.

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#### WARNING

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The maximum current supplied by the USB ports of MyLab is 500mA. Peripherals requiring more power and exceeding this limit can be connected to MyLab ONLY IF powered by their own external power supply.

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#### WARNING

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Do not unplug USB media during the system operation. Please make use of the safety removal procedure or unplug the USB device when the system is off.

### Power Feed to the Peripheral Units

- Use one of the additional cables supplied with the trolley connecting the unit to the trolley socket (indicated with symbol **J2**).

---

#### CAUTION

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Do not exceed the maximum output power limits indicated for insulated socket. There is a risk of blowing the trolley fuses.

- Switch on the switches of the peripheral unit/s.

At this point, the system can be connected to the mains, and the entire configuration can be powered.

---

#### WARNING

---

The system must be powered to satisfy the electrical safety requirements, as specified in the "Safety and Standards" manual. ESAOTE recommends running a current leakage (patient and environment) test when installing in order to check whether the applicable limits of standard EN60601-1 are not being surpassed.

---

#### WARNING

---

If the peripherals are not powered through the trolley, do not place them within the patient's area (1.5 m distance - 2.5 m height).

In this latter case, peripheral units must be powered ensuring compliance with the medical security standards: please contact Esaote Service department to correctly install them.

### Note

When peripherals units are not powered by the trolley, it is good practice not to touch simultaneously the patient and the peripheral unit.

### Installation on a Trolley

- Lock the trolley by acting on the brakes.
- Place the peripheral unit on the peripherals tray of the trolley and please make sure it is safely secured.

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### WARNING

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**Make sure peripherals are safely secured on the peripherals tray; if not, the peripherals could fall down out of the trolley.**

To correctly power the peripherals, follow the manufacturer instructions.

---

### WARNING

---

**If the peripheral units are not powered through the trolley, do not place them within the patient's area (1.5 m distance - 2.5 m height).**

The peripheral units must be powered ensuring compliance with the medical security standards: to correctly install them please contact Esaote Service department.

### Note

When peripherals units are not powered through the trolley, avoid touching the patient and the peripheral unit simultaneously.

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### WARNING

---



**The system must be powered in accordance with the electrical safety requirements, as specified in the "Safety and Standards" manual. ESAOTE recommends running a leakage current (patient and enclosure) test during installing in order to check whether the applicable limits of standard EN60601-1 are not being surpassed.**

As a further precaution, the operator is recommended to position these peripheral units, whenever possible, outside the patient's area. In this case, peripheral units must be powered ensuring compliance with the medical security standards: please contact Esaote Service department to correctly install them.

## Additional Connectors

### XVGA Monitor

**MyLab** can be connected to an external XVGA monitor. Connect the monitor's signal cable to the **C12** connector of the side panel of the Desk Stand .

### Footswitch

A footswitch can be connected to **MyLab**. The footswitch can be configured to be used with most buttons on the screen. It can be used e.g. to manage the Freeze button or to control the real-time modes. The footswitch should be connected to connector **C16** on the side panel of the Desk Stand (or Trolley).

The footswitch is available as an optional accessory.



Refer to the “System Configuration” section of the Advanced Operations manual for further information

### Connection to a DICOM Server

If **MyLab** has a DICOM license, it can be connected to a DICOM network, by using the **C11** LAN port.

## Moving and Transporting the System

### Transport of a Mobile Configuration

When **MyLab** is mounted on the height-adjustable trolley, the wheels and the handle allow the user to easily move the unit. The following precautions must be observed:

- Switch the system off and unplug the power cable.
- If the probes are connected, be sure that they are properly placed in the suitable **MyLab** probe-carriers (on the trolley) and that the cables do not reach the floor.
- If the peripherals are also placed on an external additional platform, be sure they are disconnected from **MyLab** before moving the ultrasound unit.
- Make sure that **MyLab** is properly and safely locked on the connection or docking station of the trolley.
- The wheels of **MyLab** trolley are equipped with brakes; be sure the brakes are disabled before moving the ultrasound apparatus.
- Avoid any unnecessary mechanical shocks to the system while moving it.

---

### WARNING

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Be sure that the probes are locked with the connector-securing lock in the appropriate holders and the probe cables are properly hung in the cable hooks during the movement of the system.

To lock the system in a stable way it is necessary to lock at least two wheels.

**With height adjustable trolley, do not use the handles to lift the system.**

**Transportation**

When transporting the system on a vehicle, remember to:

- Disconnect and remove all probes and peripherals.
- Use the brakes to lock the system.
- Remove the system from the trolley.
- Protect the system with suitable packaging during transportation.

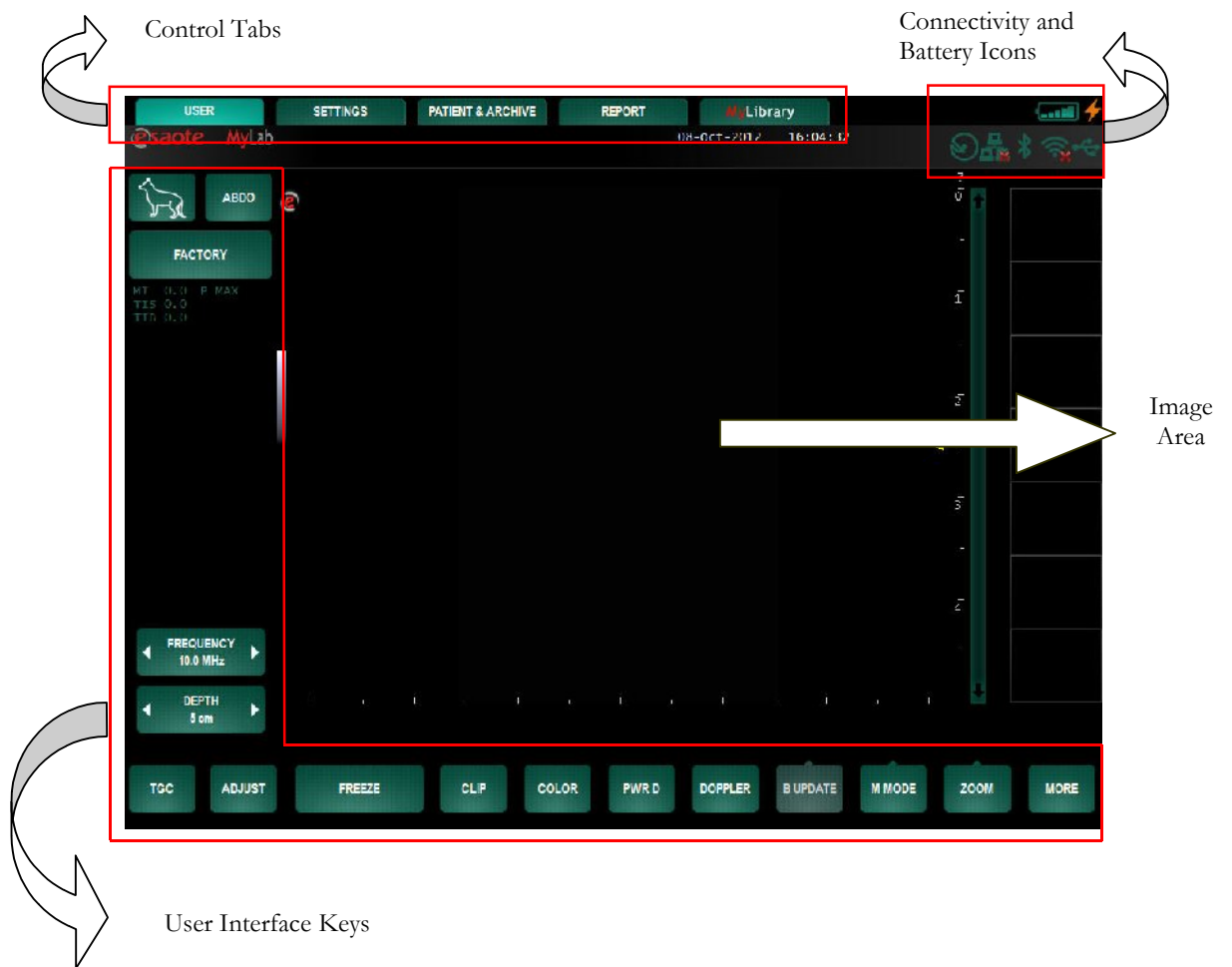


## 4 - Screen Lay-Out

This chapter provides a brief description of the information on the **MyLab** screen.

### Information about the Screen

The screen is subdivided into four main areas:

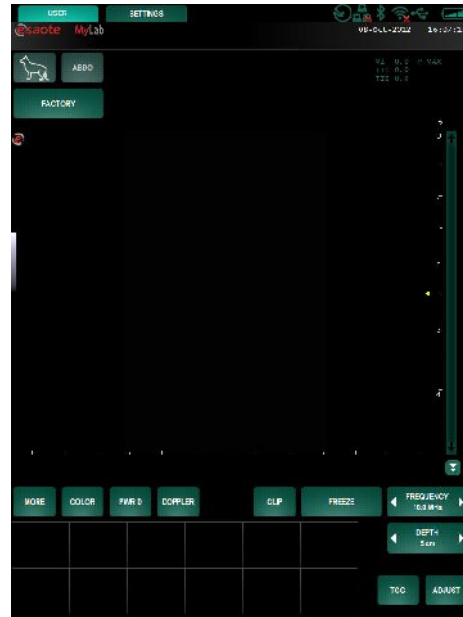


## Control Tabs

Control tabs select and open different environments in the software.

Available control tabs are: **USER**, **SETTINGS**, **PATIENT & ARCHIVE**, **REPORT** and **MYLIBRARY**.

According to the environment activated by control tabs, the configuration of the keys and the user interface can vary to suite different functions and tasks.



When used in arm-held configuration, the user can turn over the **MyLab** to the left, right (portrait mode) or even upside down. The screen will adapt automatically the user interface to the current orientation.

This feature improves the usability of the system; the information on the screen will always be readable.

## Connectivity and Battery Icons



### Archival Systems

The archival system icons are shown at top right. The icon is shown with an exclamation mark whenever there are management problems involving the specific archival system.






For more details on data archival, consult the relevant chapter and the Advanced Operations manual.

### Battery

When the battery pack is installed, the battery icon changes depending on its charging status.



Battery Icon

Fully charged battery	Partially charged battery	Discharged battery
		

The residual charge (indicated in percentage) appears below the battery icon when it is pressed. The residual charge icon is continuously updated.



Once the minimum level that is needed for proper operation is reached, the residual operating time, indicated in minutes, is displayed next to the icon.



If the battery is charging, a charge icon appears next to the battery icon. Once the battery is fully charged or the main power cable is disconnected, the charge icon disappears. When the battery is not fully charged, a warning appears that the device is disconnected from the external power supply.



### Wireless connectivity

**MyLab** is equipped with 2 wireless interfaces, for networks and wireless devices. The interfaces are used to exchange data over wireless networks and to connect wireless devices (a keyboard for example) to the scanner. The status of both interfaces can be verified by pressing on the specific icons at the top right of screen. Both interfaces can be enabled or disabled.

---

### WARNING

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**MyLab is equipped with Wireless Connectivity generating RF signals. Attention needs to be paid to possible interferences with other devices and equipments in the vicinity.**



### Peripheral Units

The icons of the peripheral units will appear and are shown at top right of the screen. If no peripheral unit is connected, no icon will be visible.

An exclamation mark on the icon is shown whenever there are management problems involving the specific peripheral unit.

## User Interface Keys

The user interface keys provide the buttons to operate the system and perform actions in the system.

The configuration of this area varies according to the active environment (selected by the control keys) and the active operating mode.

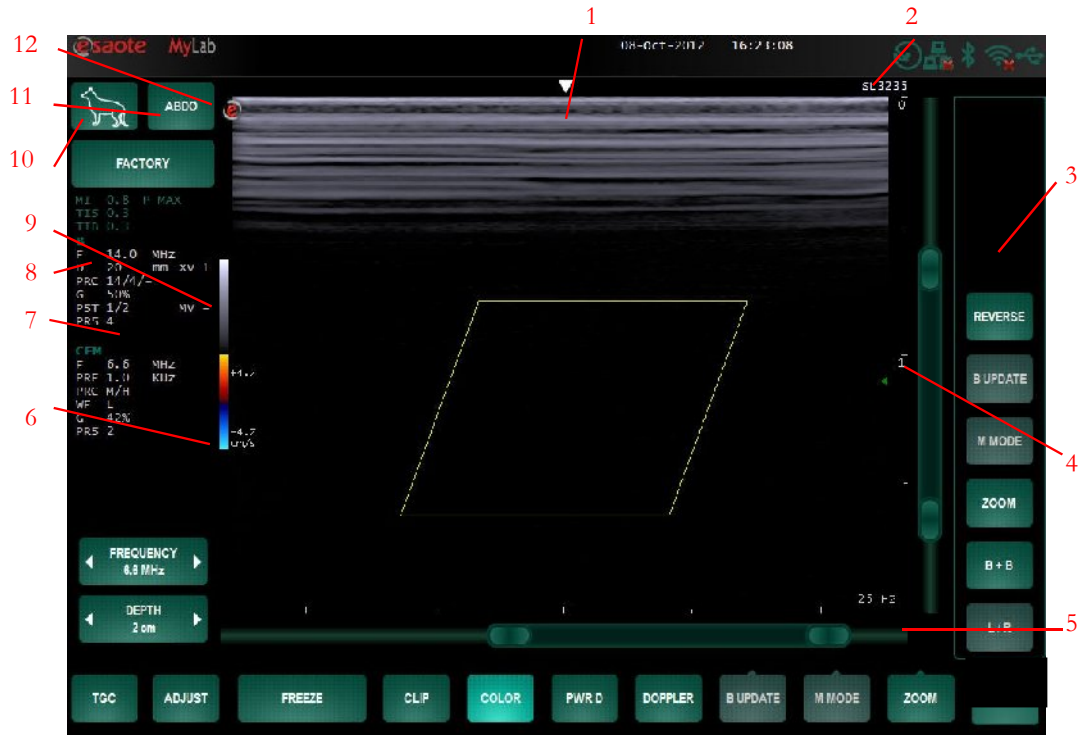
In freeze mode the following buttons will be then visible in the system: **MARK**, **MEASURE**, **CALIPER**, **IMAGE**, **CLIP**, **PRINT**, **ANNOT**, **ZOOM** and **CINE**. The cine function is already active together with a scroll bar, begin/end and stop/forward buttons. The frame number is also displayed.

In live mode other functions will be available to support the functionalities for real time scanning.

In the user interface keys area the application and preset buttons are present too. They permit to select the application suitable for the procedure and the preferred preset with the preferred settings.

## Image Area

Different elements and icons in the image area will vary according to factors such as active mode, selected application, and transducer. The following figure shows and describes the elements.



Legend:

Number	Icon
1	Image centre
2	Active probe
3	Thumbnails of stored images
4	Focal zone
5	Frame Rate
6	CFM scale
7	System parameters
8	Acoustic output data
9	BW Imaging scale
10	Active species
11	Active application
12	Orientation probe icon

Box (zoom or color/power) movement and resize: by dragging by the center of the sliders on right side and below the ultrasound image it is possible to position the box; by the extremities of the sliders it is possible to resize the box.

**Machine Parameters**

These parameters can be set visible. In the **SYSTEM SETUP** menu, press on the **DISPLAY** key and choose the **SCREEN** tab. The Display Real Time Parameters option can be enabled.

**Imaging**

Parameter	Quantity	Description
F	<i>nnn</i> MHz	Transmission frequency or TEI mode (Resolution or Penetration), when enabled
D	<i>nn</i> cm	Depth
PRC	<i>n-n-l</i>	Dynamic range, Sharpness, Density (L: Low, H: High)
G	<i>nn</i> %	Image Gain (Min, %, Max)
PST	<i>n</i>	Post -processing curve (Grey Map - Ambient Light)
PRS	<i>n</i>	Persistence
SV	<i>nn-nnn</i> mm	Sample volume Size and Depth (PW)
⊖	<i>nn</i> °	Doppler correction-angle

SV and ⊖ are displayed only if the relevant cursor is active.

**CFM/ PWR D**

Parameter	Quantity	Description
F	<i>nnn</i> MHz	CFM/ PWR D frequency
PRF	<i>nnn</i> kHz	Pulse Repetition Frequency
PRC	<i>n-l-l</i>	Sensitivity, Density (L: Low, M: Medium, H: High),
WF	<i>n</i>	Wall Filter (L: Low, M: Medium, H: High)
G	<i>nn</i> %	CFM/ PWR D gain (Min, %, Max)
PRS	<i>n</i>	Persistence

**Doppler**

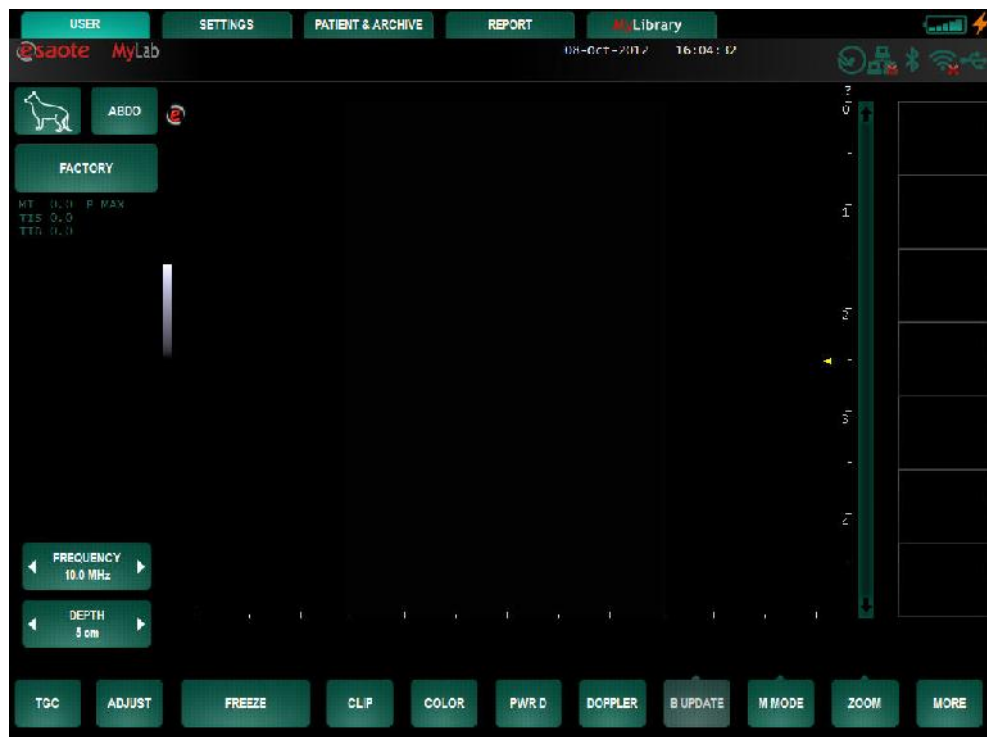
Parameter	Quantity	Description
F	<i>nnn</i> MHz	Doppler frequency
PRF	<i>nnn</i> kHz	Pulse Repetition Frequency (kHz)
PRC	<i>n-n</i>	Pre-processing curves (Dynamic range, Rejection)
WF	<i>nnnn</i> Hz	Wall filter
G	<i>nn</i> %	Doppler gain (Min, %, Max)
PST	<i>n</i>	Post-processing curve



## 5 - General User Interface

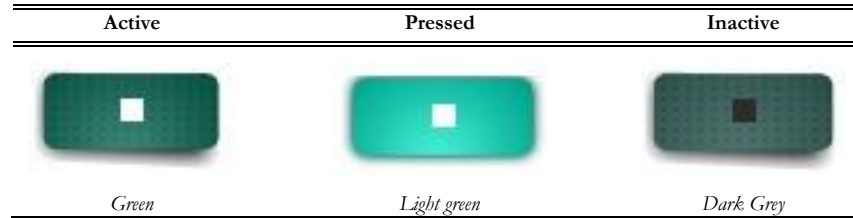
This chapter provides a brief description of the system controls.

### The User Interface



The user interface is touch screen based and consists of keys, sliders and tabs. It is also possible to enable a keyboard on screen when text has to be edited in text fields.

Please note that the look of the buttons on the screen is related to their status and the availability of the buttons related to function. If the button is active, pressing the key enables the displayed function.



**User section**

This is the default environment active at start up level with preset list. The **USER** tab activates a B-Mode image (bi-dimensional BW image) in real-time.

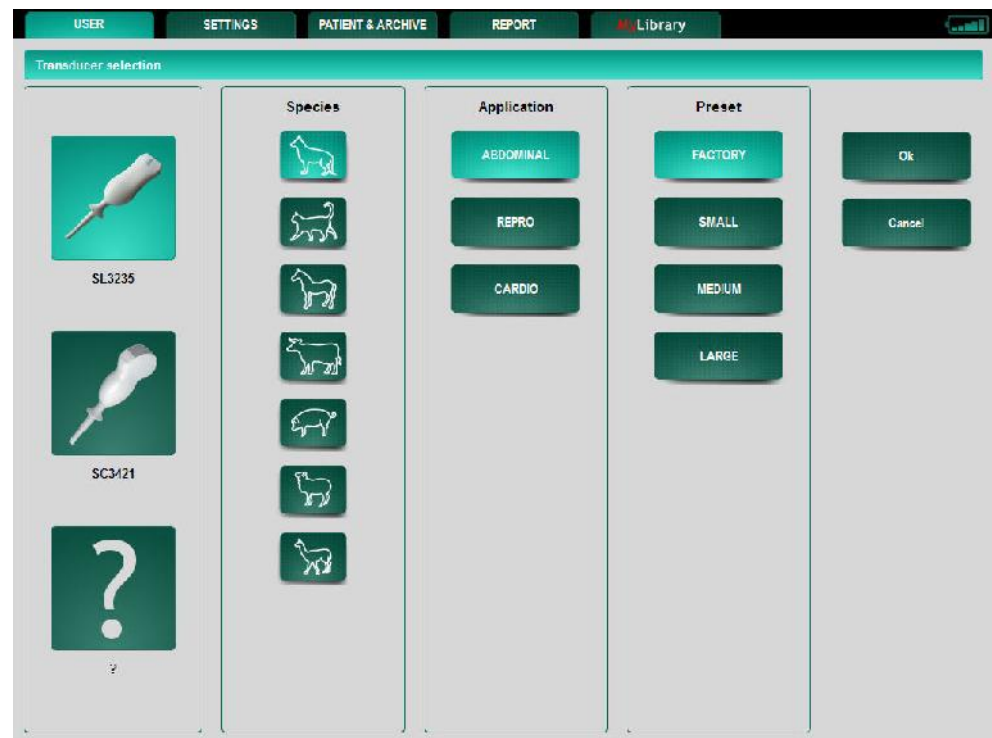


On the left part of the screen, three buttons are related to species, application and preset selection, respectively.



When these buttons are pressed pull-down menus are activated and it is possible to select the species, application and preset in order to optimize the functions and settings of the system for the desired procedure.

When a probe icon is displayed in the preset button the Multicon is connected. In this case when the preset button is pressed the system will display the “transducer selection” screen. On this screen the user can select the probe, application and preset.





**Gain Controllider is used for adjusting the amplification of the echo signal. Gain is increased by sliding rightwards and reduced by sliding to the left.**

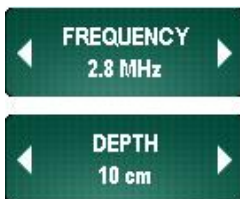
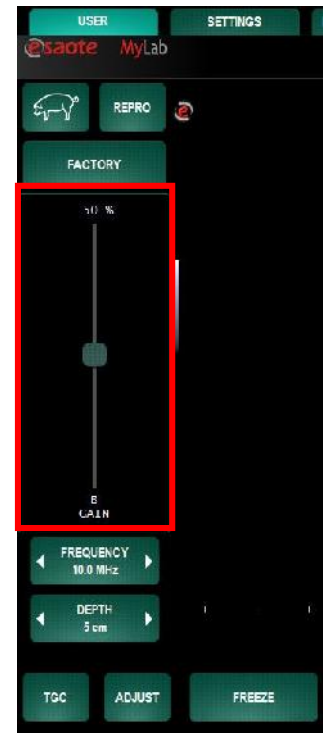
The gain slider will appear when the area beneath the presets is touched.

This slider is used for adjusting the amplification of the echo signal. Gain is increased by sliding upwards and reduced by sliding downwards.

The slider indicates also the active function and the percentage value of gain in the corresponding active image mode. According to the active mode, there will be one or two Gain sliders indicating: B-Gain in B-Mode, CFM-gain in Color Mode, PWR D-Gain in Power Doppler Mode and PW-gain in Doppler mode. In case of duplex or triplex mode, the sliders correspond always to the last two activated modes.

The sliders disappear after 3 seconds.

The position of the Gain sliders can be saved for each probe under preset: set the Gain sliders position and then press **SAVE** followed by **STORE SETTING**.



The **FREQUENCY** key allows the selection of the imaging frequency (higher frequency to optimize resolution, lower frequency to increase penetration).

The **DEPTH** key increases or reduces scanning depth in all bi-dimensional imaging modes.

**TGC Control**

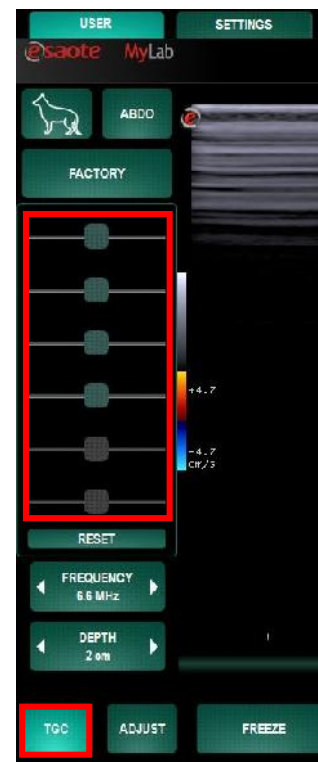
The same area as for the Gain sliders will also be used for TGC setting. With the knob TGC one can switch between Gain or TGC to be active in the left mid position of the screen.

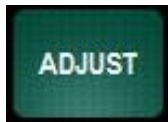
The sliders disappear after 3 seconds.

The **RESET** button repositions all sliders in their center position.

The TGC potentiometers control signal amplification in individual zones of the image. The potentiometers are used to adjust the signal zone by zone.

The position of the TGC sliders can be saved for each probe under preset: set the TGC sliders position and then press **SAVE** followed by **STORE SETTING**.





The **ADJUST** mode can be used to adjust the gain settings of the image, in case the image is too bright or too dark. The auto-adjust function will bring back the setting of the Gain and the TGC to a level to generate a good image. This means that the Gain value will be taken from the stored setting level. This can be the standard factory setting or the user defined level (done by a **STORE SETTING** action). Also the TGC will be set to the stored setting level. Again this can be the factory or user setting.



The image controls must be adjusted in such a way to ensure the minimum possible level that gives an acceptable image (**ALARA principle**). Carefully read the "Safety and Standards" manual, which gives a reference to the guidelines on the ultrasound safety.



During the exam, the operator can save individual images or sequences (for systems having the clip license). The **IMAGE** key saves still images while when the clip license is active the **CLIP** button saves sequences of frames. The recording of a real time clip can be done from the **USER** environment in live mode and can be started with the **CLIP** button. After the recording, the clip will be automatically stored in the thumbnail overview on the right side of the screen. The length of this clip can be set to 1 s, 3 s, 5 s, 10 s, 20 s or 30 seconds. This length setting can be done under the tab **SETTINGS** and then in the settings menu through the parameter **CLIP DURATION**.



Color Doppler (CFM) is activated or disabled by pressing the **COLOR** key. In Color Mode, a Region of Interest (ROI) indicates where the color analysis is performed and displayed. The ROI's dimensions and position can be varied with the sliders, activating the ROI.



The **PWR D** key activates the Power Doppler mode (Angio).

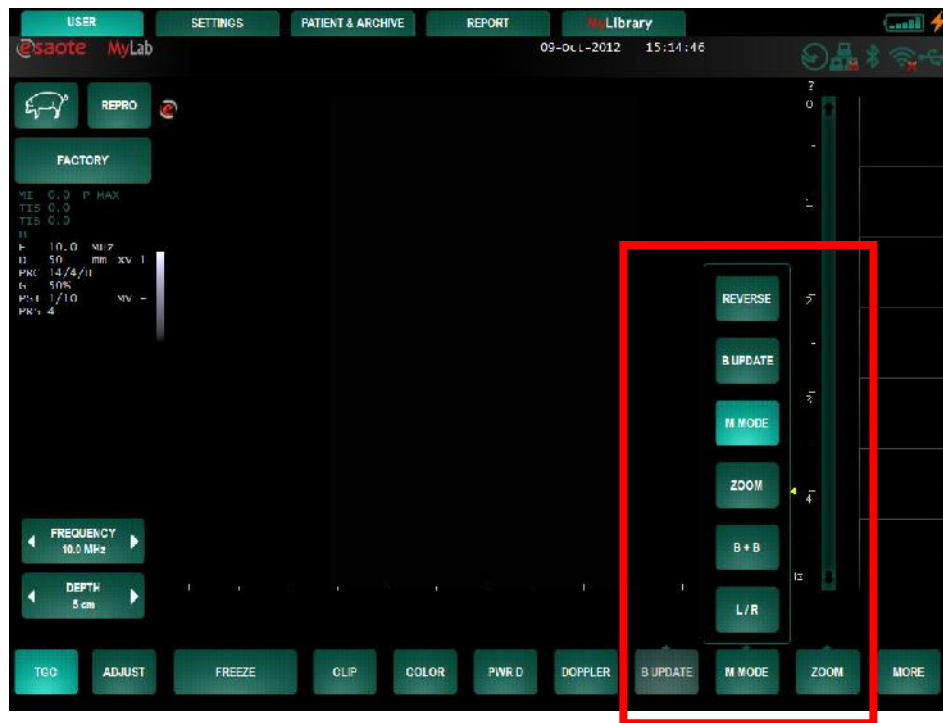


The **DOPPLER** key is used for activating the Pulsed Wave Doppler (PW); the key activates the Doppler positioning gate and then the PW mode. The viewing format available is the split format.

#### Programmable buttons

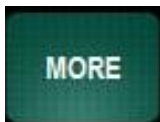
The three most right buttons can be programmed having a function selected out of the **MORE** submenu. These three programmable knobs are indicated with a small triangle on top. Programming can be done by holding the selected button for two seconds. A selection menu appears and the selection can be made.

# MyLab - GETTING STARTED



## Note

The programmable button must have an active function to be able to select it..



The **MORE** button will open a submenu containing several functions. These functions will be described hereinafter. The **CLOSE** button closes the submenu.





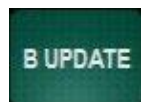
The **IMAGE** key saves still images.



The **BIOPSY**<sup>1</sup> key enables the biopsy environment used for biopsy procedures



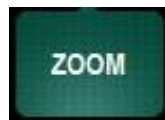
The **REVERSE** key changes right/ left or left/ right orientation.



During the exam the **B UPDATE** key freezes the trace acquisition and the reference 2D is temporarily re-activated



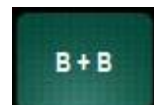
The **M-MODE** key activates the M-Mode and the selection of B-Line on the image. The viewing format available is the horizontally screen split, with the reference 2D above and the M-Mode trace below.



The Zoom function is used to selectively enlarge a zone of the image in B-Mode or in CFM. The **ZOOM** key activates a window that can be positioned on the screen; with the zoom factor key the level of zoom can be set. Pressing **ZOOM** again enlarges the selected area of the image.



Zoom can be applied on real time images as well as on frozen images. Press **ZOOM** again to return to a normal format.



The **B+B** key activates dual B-Mode imaging in real-time. If pressed in M-Mode, Doppler or Freeze, it restores a full screen bi-dimensional image.



When **B+B** mode is active the **L/R** key switches between left and right image.

The selected image will be in real-time while the other image is in freeze mode.

#### Freeze Mode Section



The **FREEZE** button stops the current analysis or scan and puts the system into Freeze mode. To re-activate in real-time, press **FREEZE** again.

Measurements can be executed by mean of the **CALIPER** and **MEASURE** key.



**CALIPER** key activates the general measurements, while the **MEASURE** key the specific application measurements.



When the required key is pressed, the list of available measurements is shown to the right of the image.

---

<sup>1</sup> Probe dependant. Further details are described in the "Advanced Operations" manual.



The **MARK** key allows adding bodymarks to the current image.



Further details on how to use them are described in the "Advanced Operations" manual.

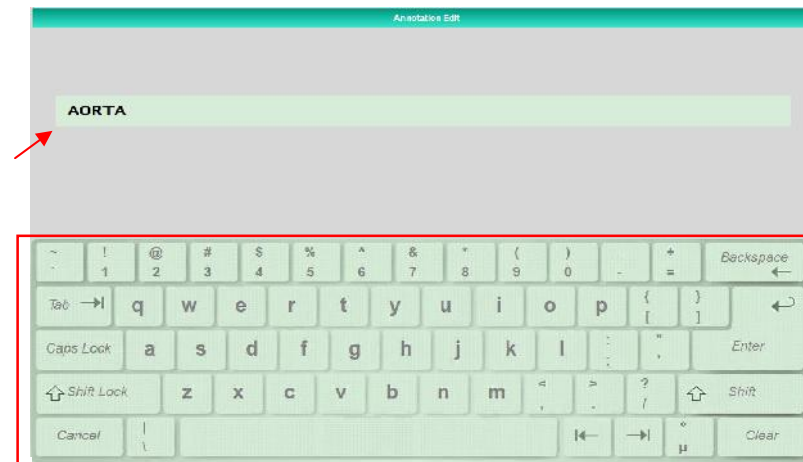


The **ANNOT** key allows to access a glossary, which can be configured by the user. Refer to the "Advanced Operation" manual for more information on text entry.

**Text Entry**

This section includes the alphanumeric keyboard. The keyboard is touch screen based and appears whenever a text field is touched and text has to be edited. The keyboard can also be activated with the **KEYBOARD** key.

*This figure shows an example of the keyboard appearing on screen when text data can be added in the edit field*



In the above picture the keyboard layout is QWERTY (English).



Further details on how to change the keyboard layout is described in the "Advanced Operations" manual, section "System Configuration".

The alphanumeric keyboard is based on the QWERTY standard. The alphanumeric keys are used to input text data in the suitable fields and windows. The **Caps Lock** key presets the keyboard to upper case characters.

The **Shift (lock)** key is used for typing in lower case or upper case characters (according to how the keyboard is set) or the characters indicated in the top section of some keys.

**Note**

The **SHIFT** key function can only be used for one character at a time. The **SHIFT- LOCK** key function can be used for more characters.



The **IMAGE** key saves still images. The **CLIP** key is used to save sequences of frames (for systems having the clip license). The length of the clips depends on the length of the cine loop and on actions of the user. The following procedure can be used to make clips:

- Freeze the system and select the first frame of the clip by scrolling the cine loop bar.
- Press the **CLIP** button to start acquiring the frames in the loop to make the clip.
- The cine loop will progress.
- If the user waits for the end of the loop, the clip will include all the frames from the first selected image up to the end of the loop.
- If during the frames acquisition the user presses the **CLIP** button again the acquisition stops and the clip will include the frames from the first selected image up to then.

The stored images and sequences are displayed as thumbnails on the right of the screen.

Pressing a thumbnail displays the stored image on screen for further analysis. To access the data archive, press the **PATIENT & ARCHIVE** key.



#### Settings Section

The **SETTINGS** Tab displays the system menu and several application settings for image optimization. The menu is explained in detail in the Advanced Operations manual



The **MENU** key displays the system menu for all configurations/settings (center name, preset...). The menu is explained in detail in a dedicated chapter.



#### Patient & Archive Section

The **PATIENT & ARCHIVE** menu is used for entering the patient data, archiving the exams and managing the database. The menu is explained in detail in a dedicated chapter.



#### Report Section

Pressing the **REPORT** tab will open the Report environment. Procedural subjects are listed in a report environment that also allows to include ultrasound images taken in the current exam.



#### MyLibrary Section

The **MYLIBRARY** tab contains a training and information page with clinical information and illustrations about the active application.

## 6 - Performing an exam

This chapter describes the operations usually carried out while an exam is being performed and how to turn the system off at the end of the session.



**Read the Safety and Standards Manual carefully: all the safety characteristics, cautions and warnings listed apply to all exams.**

Remember that it is necessary to be familiar with the mechanical and thermal indices display and the ALARA principle (**A**s **L**ow **A**s **R**easonably **A**chievable) before using any probe. The patient must be exposed to ultrasound for as short a time as possible and only for as long as it takes to achieve the diagnostic information

---

**WARNING**

---

MyLab is equipped with Wireless Connectivity generating RF signals. Attention needs to be paid to possible interferences with other devices and equipments in the vicinity.

### Exam Start and End

#### Start Exam

The system by default starts with active real time 2D imaging. The selected application and presets automatically determine specific settings for the operating modes available.

As the system starts up, the B mode ultrasound image is available on screen and it is possible to start scanning. At this stage the exam is automatic labeled and assigned to an auto-follow number (Date + Number). The assignment can be override by the real patient name any time during the examination by selecting the **PATIENT & ARCHIVE** tab and entering patient and/or exam data.

---

**CAUTION**

---

**Do not turn the system off during the initialization phase: the hard disk could be damaged by this operation.**

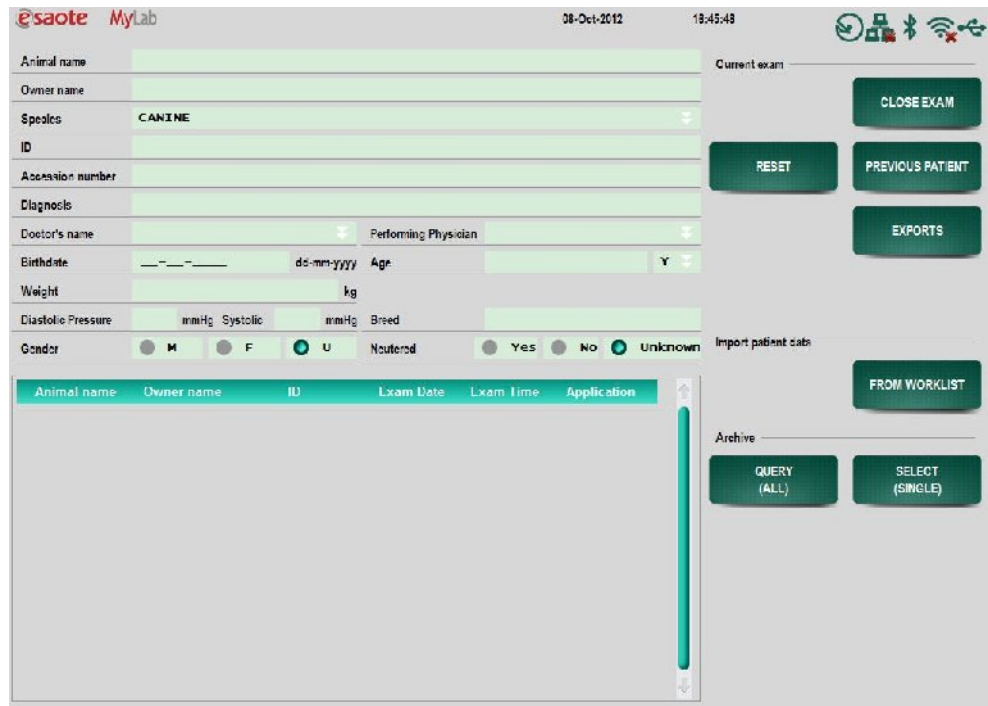


**Note**

To guarantee data integrity and confidentiality, the system configures a list of users allowed to work on the system. In this case to access the system the user needs to log in and type a password. See the “Advanced Operations” manual for further information.

The Patient & Archive window is used to enter patient data or recalling stored exams.

*The system will not allow to enter simultaneously birth date and age.*



To select fields and options touch them by finger or stylus.

**How to Input Patient Data**

- Select a field on the screen.
- The alphanumeric keyboard appears and the patient's data can be edited in the specific field. Key ← **Back Space** is used to clear input characters.
- To move rapidly through the different items, use the **Tab** ⇌ key.
- Press **ENTER** key on the keyboard to close the keyboard and confirm the edited text in the selected field.



**Note**

The system will generate a temporary unique patient identification number. At all times, the temporary data can always be overwritten with real patient name and ID. The data can also be stored under the temporary number making it permanent when stored in the database.



*Query in database*

At any time during the exam, the operator can view the patient's data by pressing **PATIENT & ARCHIVE**. The operator can modify the patient's data during the examination.



Refer to the "Archiving" section of the Advanced Operations manual for further information

At any point during the exam, the user can reload the data of the previous patient with the **PREVIOUS PATIENT** button. This action will only reload the name and data but will not open the previous exam anytime.

Patient data can also be imported by the 'Import Patient Data' section. With the **FROM ARCHIVE** or **FROM WORKLIST** button the user can reimport correspondingly the patient data from the systems database or from DICOM sever.

Pressing then **CLOSE EXAM** closes the current exam, which is saved in the database together with eventual images and clips stored during the exam. Pressing the **CLOSE EXAM** button will clear out all data in the patient exam fields and a new exam can be initialized.

### Battery Powering

When the battery pack reaches the minimum threshold of its working condition, an exclamation mark will be flashing on the battery icon. In this case, connect the system to the main power or refer to the residual working time that is displayed when pressing the battery icon, to be sure to end the exam on time.

### End Exam

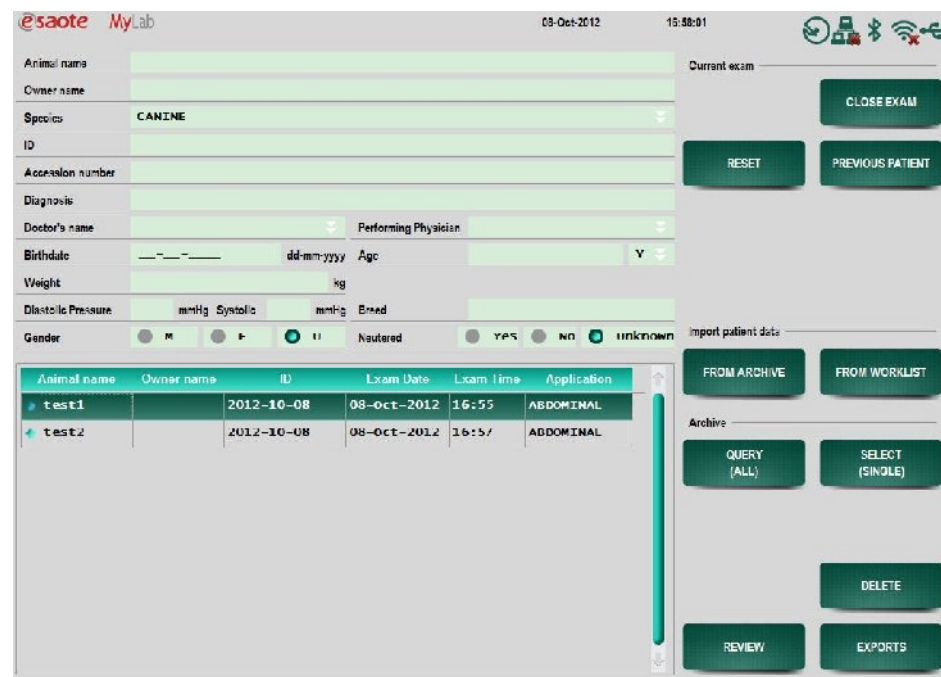
#### Patient Database enabled

### End Exam

To end the exam, press the **CLOSE EXAM** key. The window displayed at the end of the exam is used to archive the exam.

*Further details are provided in the data archival chapter.*

Before archival, the patient data can be made anonymous. The exam can be simultaneously archived and exported and the corresponding report can be saved on an external medium.



**Exam not closed**

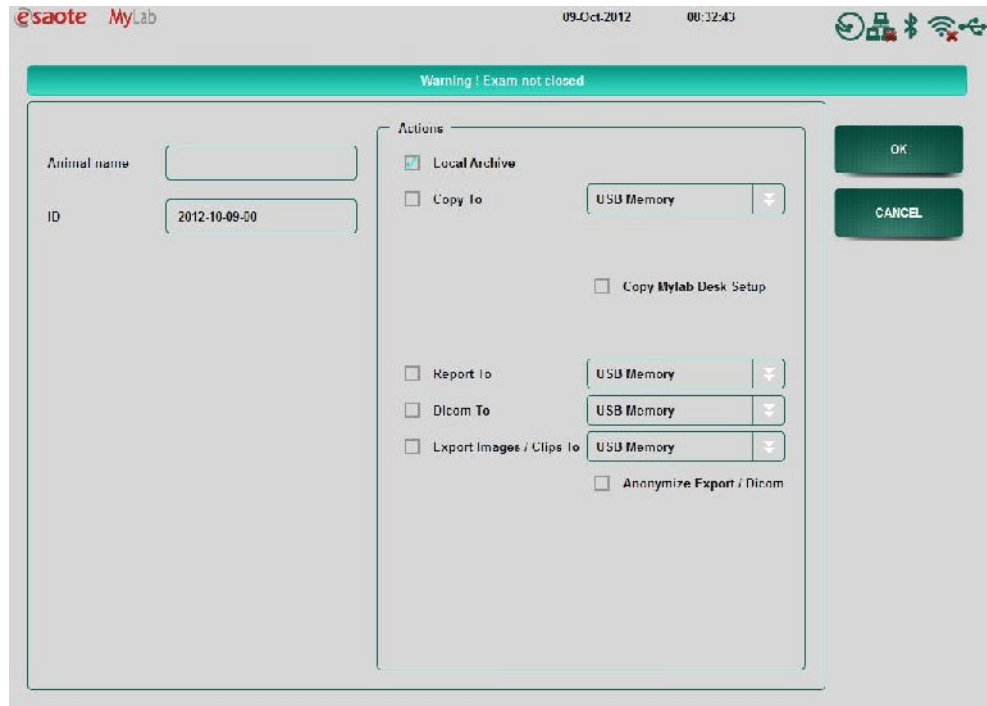
The **QUERY** key allows a search operation of stored exams through the database. If a patient is already in the archive, it is possible to retrieve the patient's data from an archived exam without having to enter them again.

*Exam review*

On the **PATIENT & ARCHIVE** screen, select the patient from the list of archived exams and then press **REVIEW** to load data on the screen.

**Exam not stored**

When pressing the **CLOSE EXAM** key whenever the previous data is not stored, a warning message appears. The message screen is as follows:



The user can:

- Close the exam by filling in the name of the patient, select an option to archive the data collected in the exam and press **OK**.
- Press **CANCEL** to go back to the exam (if possible).

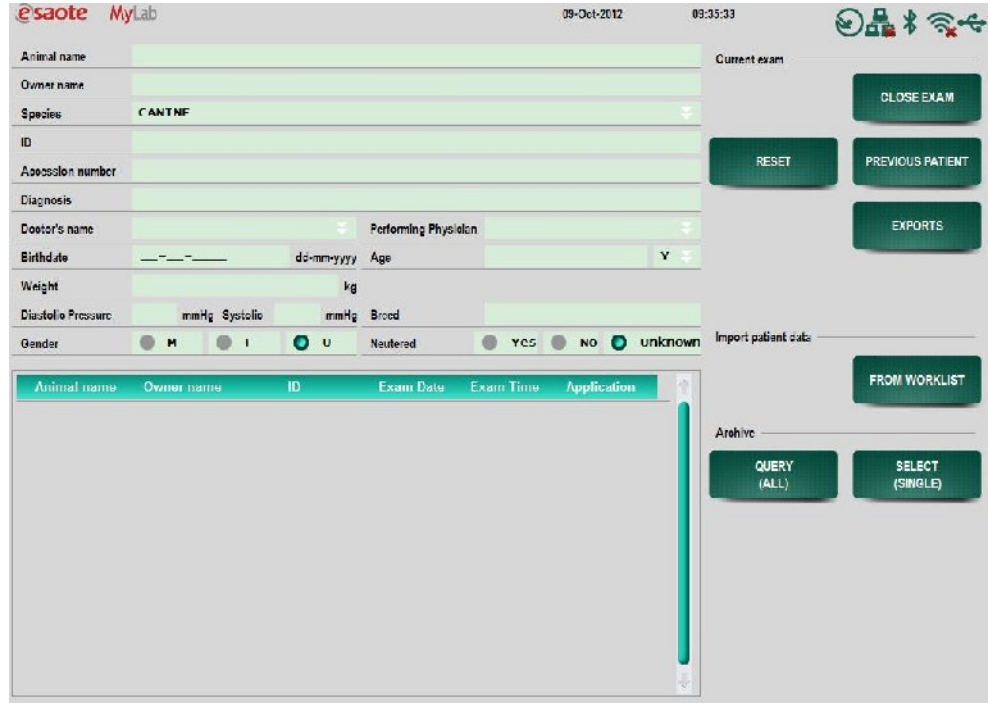
**Note**

When automatic archiving actions are enabled in the Archive & Export menu of the System Setup, the warning page “Exam not Closed” will not appear when pressing the **CLOSE EXAM** button and the specified archive actions will be executed.

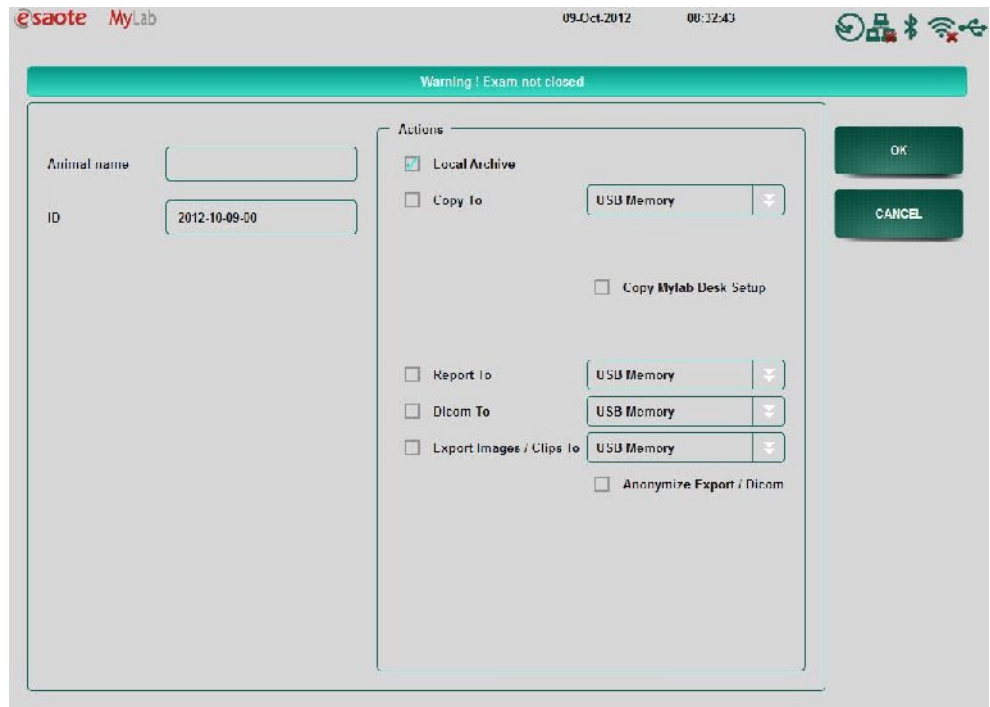
**Patient Database disabled**

When the Patient Database is disabled the system does not have a database for local storage. The ‘Import patient data’ and ‘Archive’ sections are also not activated and not visible.

During an exam the user can export the current exam to external media by the **EXPORT** button.



When the previous data is not stored and the **CLOSE EXAM** is pressed, a warning message appears. The message screen is as follows:



The user can:

- Close the exam by entering the name of the patient.
- Press **CANCEL** to go back to the exam (if possible).

*Further details are provided in the data archival chapter*

When no Patient Database is enabled the user only has the possibility to export the current exam on external media. The data of the exam cannot be stored in the Local Archive of the system.

### Note

When automatic archiving actions are enabled in the Archive & Export menu of the System Setup, the warning page “Exam not Closed” will not appear when pressing the **CLOSE EXAM** button and the specified archive actions will be executed.



The **LOG OFF** key is visible. Pressing this key will prompt the user to save the current exam and afterwards the system will open the User Login screen. Another user can access the system by entering user name and password and perform an exam.



*Refer to the “System Configuration” section of the Advanced Operations manual for further information*

### Note

This key appears when the Access Control is enabled in the Security Settings in the menu.

## Select an exam through DICOM



Patient data can be accessed over the DICOM server. In the **PATIENT & ARCHIVE** menu press the button **WORKLIST** and select the patient of choice.

Search for a patient by entering the search criteria under **UNIT** and **DATE**. Press the **QUERY** button in order to retrieve a list of exams. An example of this query can be seen below:

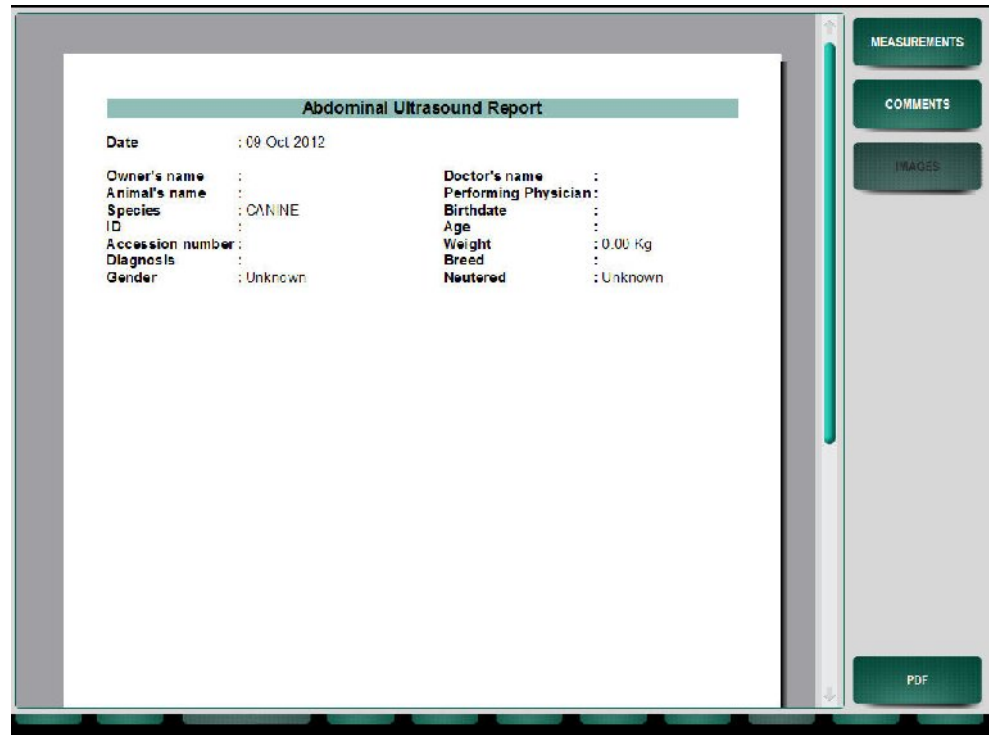
The screenshot shows the MyLab software interface. At the top, it displays the 'esaote MyLab' logo, the date '09-Oct-2012', and the time '09:59:07'. Below the header are several input fields for search criteria: 'Animal name', 'Owner name', 'ID', 'Accession no.', 'Req. proc. ID', 'Unit' (with radio buttons for 'This unit', 'All units', and 'Unit (AF Title):'), 'Date' (with radio buttons for 'today' and 'range:'), 'Perf. last name', and 'Perf. first name'. To the right of these fields are five buttons: 'BACK', 'RESET', 'CANCEL QUERY', 'DETAILS', and 'SELECT EXAM'. Below the input fields are three checkboxes: 'Refresh data when starting an exam', 'Automatic query', and 'Perform procedure as requested'. At the bottom, there is a table with the following columns: 'Animal', 'Owner', 'Gender', 'Perf phys', 'Start date', 'ID', 'Acc#', and 'Status'. The table is currently empty.

With the **SELECT EXAM** button, patient data can be accessed over DICOM and this data can directly be used as input for a new exam.

The following buttons and their uses are described:

- Refresh Data: when selecting this box the opened exam will always be checked to be certain it is the last updated version.
- Automatic Query: when activated the computer will automatically created a query if the worklist environment is accessed
- Perform procedure as requested: select this box to add a notation to the images that are going to be created, which states the requested procedure was performed. This information will only be visible when the stored images are opened on a computer and the folder DICOM info is reviewed.

If the button **DETAILS** is pressed, a report will appear with patient data and previous exam data. An example is displayed below:



## Performing the Exam

By pressing the different mode keys, the specific mode is activated in real time.

### WARNING

**Before beginning the exam, make sure that the active probe displayed on the screen matches the requirements for the procedure to be performed.**

A preset should be selected according to the type of examination to be performed. The selected preset provides a configuration of settings optimal for the procedure.

Further image improvements and modifications on the presets can be performed starting from the settings enclosed in the **SETTINGS** tab. Description of the settings in that environment is provided in the Advanced Operations manual.

For further information about clip formats, consult the next chapters.

In the formats with a trace, M-Mode and Doppler, respectively an M-Mode line or sample volume will be visible for adjusting the positioning in the 2D reference.

The **IMAGE** key saves still images (2D, Color or Doppler) in real time and in Freeze. Single images can be saved in BMP, PNG or JPEG format.

The **CLIP** key saves sequences (2D and Color) in Freeze mode. The output file formats for clips are AVI Codec: Microsoft® MPEG-4 V2 and MS-Video1.

Clips are compressed for digital storage. Compressed files involve a minimal loss of information (see Technical Specifications Chapter 11). The Compression algorithm used by **MyLab** ensures the preservation of the image features for the reporting functions.

### Note

Digital data storage is typically slower than the ultrasound frame rate; the clip frame rate may therefore be lower than the original one. It may occur that the frame rate drops if new clips are saved.

A preset should be selected according to the type of examination to be performed. The selected preset provides a configuration of settings optimal for the procedure.

The thumbnails of the saved data are shown downward in chronological order. A maximum of seven thumbnails are shown: the arrows beneath the thumbnail column allows scrolling to the next set of stored images and clips.



The Advanced Operations manual provides a detailed description of all the software keys that are active in the different modes.

## Freeze Mode and Scrolling Memories

The **FREEZE** key freezes the image. The system displays the scroll bar of the memories, where the images acquired just before Freeze are temporarily saved.

### How to Scroll through the Memories

Scroll through the images one by one can be performed by the scroll bar. Use the **BEGIN** and **END** button to automatically move to the start or end of the sequence.



*End Button*



*Play button*

In Freeze Mode, the sequence of stored images can be seen in cine mode if the **PLAY** key is active.

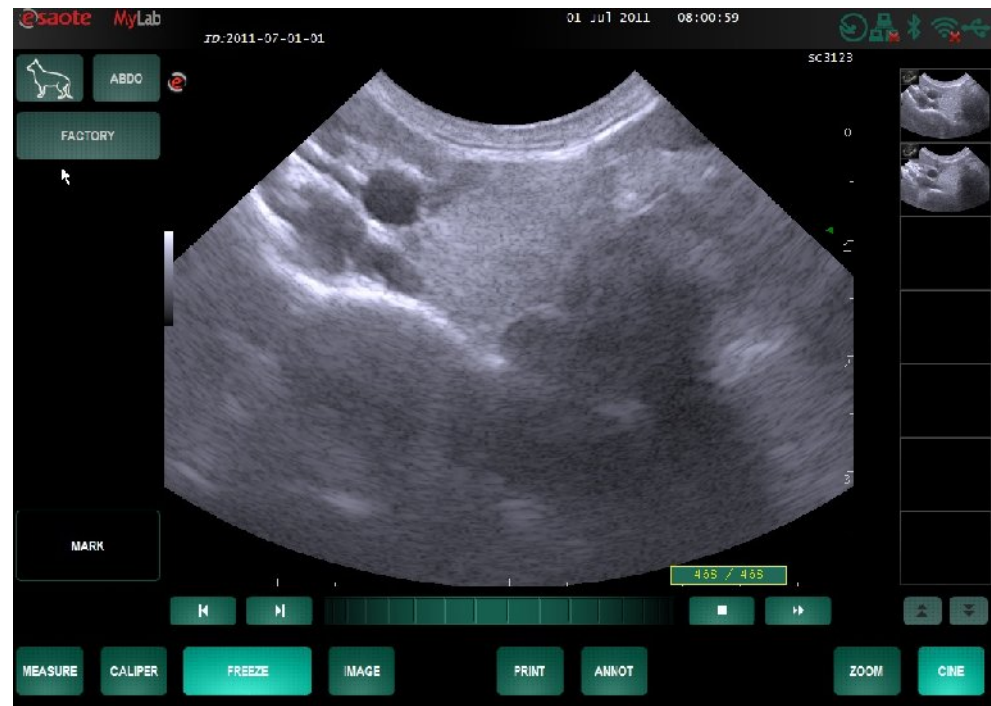


The Advanced Operations manual provides a detailed description of all the software keys active in Freeze Mode.

## Exam Review

During the exam, it is possible to review the saved image by selecting the thumbnail on the right column of the screen.

If there are more than seven saved images and clips, the arrows beneath the thumbnails column allows the operator to quickly scroll the thumbnails: the next seven thumbnails are displayed when the key is pressed.



The selected image is shown on the screen.



To clear a saved image or sequence, select the thumbnails and press the **DELETE** key.

### Note

Images are usually compressed, with some loss of information. Please see the technical specifications for more information.

## Annotations

All writing operations are managed by the alphanumeric keyboard, which appears when a text field or window is selected on touch screen.

The **ANNOT** key provides access to a user-settable glossary. The Advanced Operations manual describes how to create and use the glossary.





## System Shut Down

---

**CAUTION**

---

This is a PC based system; data loss may occur due to power loss or after emergency shutdown (by pressing the shutdown button for 3 seconds). It is important that the system stores all images, setting etc. on disk prior to shutdown.

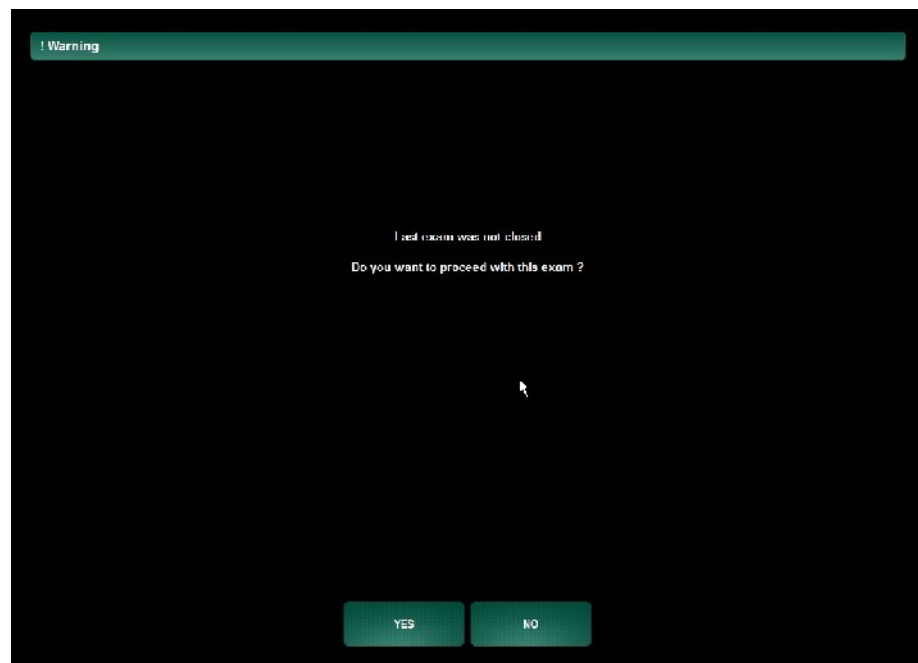
Press the ON/OFF button for shutting down the system.

**Note**

If the system is not correctly shut down, a message will be shown the next time it is switched on.

When the system has been switched off without saving the last exam, the user will have the option to proceed with the last not saved exam or discontinue resulting in deletion of the exam.

The message screen is as follows:





## 7 - Measurements and Calculations

This chapter describes how to access the generic measurements and the specific application measurements.

### General Information

Measurements can be made on frozen images. The available measurements are listed on the right side of the screen. The system provides messages on the screen in order to help the user during the measurement procedure. The results are shown on the left side of the screen.

**The operator is urged to act according to current medical practice and to adhere to the instructions of specialists when selecting views and positioning the points.**

#### Note

Always enlarge the image size as much as possible. This maximizes the structures/signals that are measured and minimizes measurement errors.

The system cannot be used to measure images with ambiguous calibrations. In these situations an error message will appear.

### Generic Measurements

The generic measurements allow the user to perform the following measurements: distance, area, volume and angle.



This key activates the generic measurements menu, which lists the available measurements. The list is configured according to the enabled operating mode. Additionally, the user can configure this list by application (please refer to Chapter 9 System Menu).

The measurements can be arranged in groups (identified by the symbol +), with corresponding main measurements including sub-parameters. To display the measurements included in a group, press the symbol + and the measurements will be visible.

The measurement selected in the list is immediately operational.

Use the touch screen stylus for accurate measurement. The **UNDO** key is used to restart a measurement or undo the latest action. The **FINISH** key is used to end the current measurement. The value being measured is displayed in real time on the left side of the image.

The **ADD TO REPORT** key adds the generic measurement to the report.

### Selective Deletion of a Measurement

- Position the stylus on the measurement to be deleted (the measurement is displayed in white).
- Press the **DELETE** key to delete the measurement.

The **CLEAR** key deletes all measurements on screen and the results on the screen.



## Specific Calculation Packages

The specific calculation packages are intended for measurements on identified anatomical structures.

To access the specific calculations, press the **MEASURE** key. The system automatically activates the correct calculations package according to the selected mode and application.

The list of executable measurements is shown on the right side of the screen. The measurements can be arranged in groups (identified by the symbol +), corresponding to either specific anatomical structures or main measurements including sub-parameters. To display the measurements included in a group, press the key and the measurements will be visible.

### How to Select a Measurement

- Freeze the image and press **MEASURE**.
- Select the required measurement of a group by pressing the key or using the touch screen stylus (the selected group is displayed on top of the list).
- To follow the entire measurement procedure specified by the group, press the selected group.

- To measure a specific parameter from a measurement group, press the + symbol to expand, and then press the required item.

At the bottom of the screen, the system displays operating instructions to guide the user during the measurement. The touch screen stylus is used to position the measuring points.

To delete an unconfirmed measurement, follow the same instructions provided for the generic measurements.



The “Advanced Operations” manual provides a detailed description of the specific application measurements.



## 8 - Exams Archive

This chapter describes how to archive images and to access the relevant archive.

### Archive

The database with the saved exams is available under the **PATIENT & ARCHIVE** tab.

### Data Archival



#### AO

Refer to the "System Configuration" section of the Advanced Operations manual for further information

**MyLab** has an internal hard disk in which the exams can be archived (local archive). The data can be also saved on external supports and on DICOM® format (for systems having a DICOM license), and exported in BMP, PNG, JPEG, format or AVI format (see specification for codec information). Exported data cannot be reviewed by the system.

The **IMAGE** key saves single images (with compressed or full resolution). When the **CLIP** key is pressed, the system stores sequences. The length of the clips can be adjusted as described in chapter 5 of this manual.

#### Note

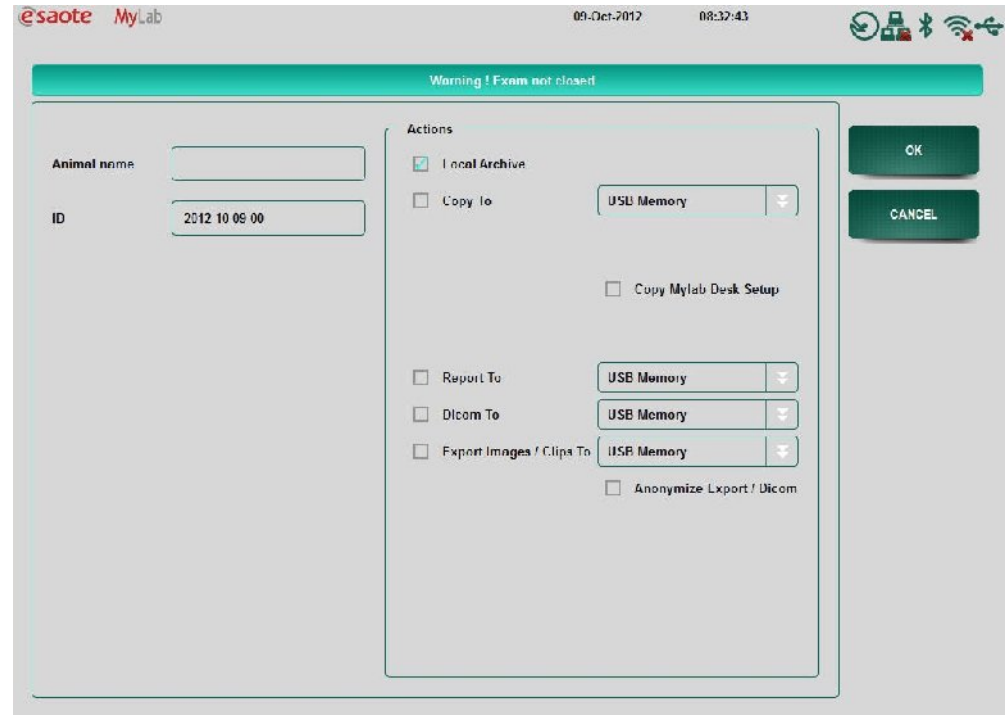
Do not switch off the system or remove the archiving medium during the saving of data. The data could be damaged.

#### Note

Make sure to perform regular back-ups of the exams stored in the database. Back-ups can be made on external media.

**Close Exam**

An exam can be archived and stored on the system after pressing the **CLOSE EXAM** key. When the previous data is not stored and the **CLOSE EXAM** is pressed, a warning message appears. The message screen is as follows:



If preferred, the last name of the patient can be edited. Press on the text field and the keyboard will appear.

Select an archive option and press the **OK** key to store the exam. Each exam will be stored with a unique ID. To go to the initial Patient & Archive overview, press **CANCEL**.

The exam can also be archived on USB. Connect a USB memory medium to the system, select USB Memory in the archive menu and press the **OK** key.

**CAUTION**

Do not switch off the system nor remove the archiving medium while data is being saved. The data and the hard disk could be damaged. If necessary, you may run the Shut Down procedure to interrupt and safely power off the system.

**WARNING**

The maximum current supplied by the USB ports of MyLabOne is 500mA. Peripherals requiring more power and exceeding this limit can be connected to MyLabOne ONLY if powered by their own external power supply.



## Review of Archived Exams

The operator can reload and review exams saved in the database. The images can be reloaded and a specific exam can be reviewed for each patient.

Selecting **PATIENT&ARCHIVE** tab displays the following page.

The screenshot shows the MyLab software interface. At the top, it displays the logo 'eSaote MyLab', the date '08-Oct-2012', and the time '16:58:31'. Below this is a patient information form with fields for Animal name, Owner name, Species (set to CANINE), ID, Accession number, Diagnosis, Doctor's name, Birthdate, Weight, Diabetic Pressure, and Gender. To the right of the form are buttons for 'CLOSE EXAM', 'RESET', and 'PREVIOUS PATIENT'. Below the form is a table of archived exams with columns: Animal name, Owner name, ID, Exam Date, Exam Time, and Application. The table contains two rows: 'test1' and 'test2', both dated 08-Oct-2012 at 16:55 and 16:57 respectively, with the application 'ABDOMINAL'. To the right of the table are buttons for 'FROM ARCHIVE', 'FROM WORKLIST', 'QUERY (ALL)', 'SELECT (SINGLE)', 'DELETE', 'REVIEW', and 'EXPORTS'.

Animal name	Owner name	ID	Exam Date	Exam Time	Application
test1		2012-10-08	08-Oct-2012	16:55	ABDOMINAL
test2		2012-10-08	08-Oct-2012	16:57	ABDOMINAL

*The image shows the archive consultation window.*

The system displays the list of archived exams and enables the operator to selectively choose the exams to be reviewed,

The user can also perform a search through the database as follows:

- Select the fields to edit and use as search keys (for example editing patient name, exam date, etc). The alphanumeric keyboard appears when the text fields are selected.
- Press on **QUERY** and then choose the **BY FIELDS** key to activate the search. A result will be visible if the criteria matches the data input.

At the end of the search, a list of the exams matching the set criteria is displayed on the screen. The scroll bar enables the operator to scroll the list and select the specific exam.

To open an exam the user can select one item in the exam list and then press the **REVIEW** key. The exam will be opened and a list of thumbnails will be visible on the right of the screen.



The Advanced Operations manual provides a detailed description of the possible operations and of the active user interface keys.

## End of Review

Pressing one of the control tabs or pressing the **FREEZE** key closes the archive review environment and switches to scanning mode.

---

### CAUTION

---

**Do not switch off the system nor remove the archiving medium while data is being saved. The data and the hard disk could be damaged. If necessary, you may run the Shut Down procedure to interrupt and safely power off the system.**

## Exporting Exams

The operator can export one or more exams with the **EXPORTS** key. Pressing the **EXPORTS** key opens a list of options which offers different types of format the exam(s) can be exported. The exam(s) can be exported in native, Windows or DICOM format.



*Refer to the  
"Archiving" section  
of the Advanced  
Operations manual  
for further  
information*

## Archival Media Management

### USB Memory Drive

The USB memory media are managed in multi-sessions. Data can be added to data already on the device.

---

### WARNING

---

**The maximum current supplied by the USB ports of MyLab is 500mA. Peripherals requiring more power and exceeding this limit can be connected to MyLab ONLY IF powered by their own external power supply.**

---

### WARNING

---

**Do not unplug USB media during the system operation. Please make use of the safety removal procedure or unplug the USB device when the system is off.**

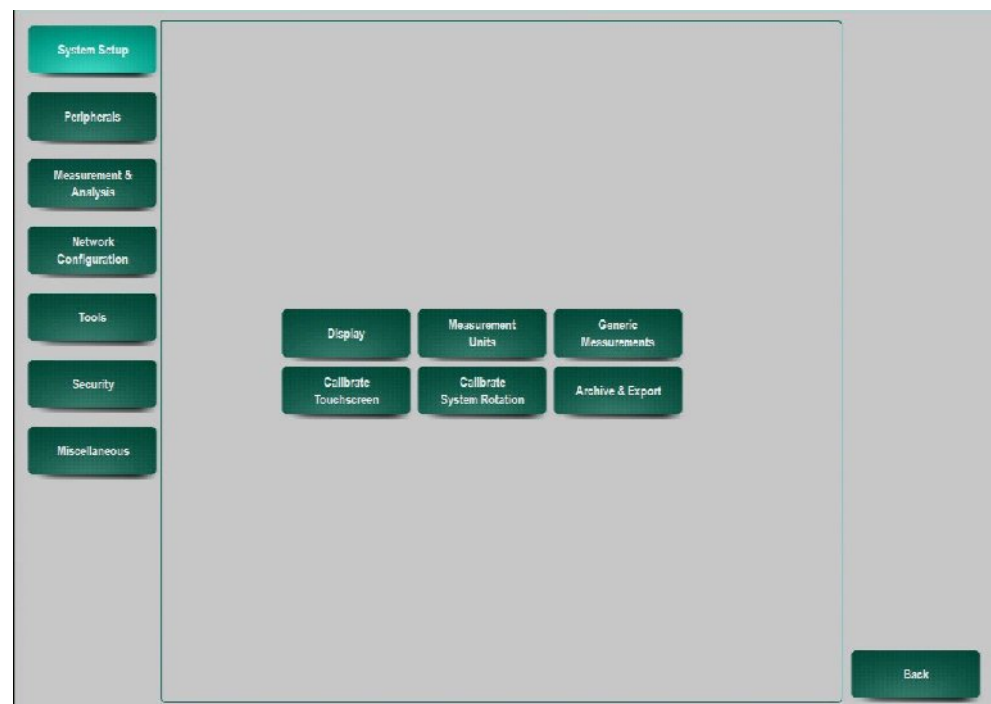
## 9 - System Menu

### Configuration Menu

A green rectangular button with the word "MENU" in white capital letters.

The **MENU** key provides access to the system menu. The **MENU** key is available by accessing the **SETTINGS** tab. The system will give the user access to the menu structure with all configurable parameters and related items.


### General Configuration Menu



The main menu keys or roots of the menu are located on the left side of the screen. Each root contains different sub-menus. When the sub-menus are selected dedicated pages with options will be displayed.

## Main Menu Sections


The menu is organized by a tree structure. The main roots are the following:



System setup

### System setup


The configuration includes display options for the user interface as well as the calibration of the touch screen. Different measurement options regarding the measurement units and the generic aspects can be modified. This menu also allows the user to alter the archive and export services.



Peripherals

### Peripherals

All the peripheral devices that can be connected to **MyLab** can be configured in this menu environment. Types of peripherals are from DICOM to the digital printer and the wireless.



Measurement &  
Analysis

### Measurement & Analysis

This menu encloses the set up of the available calculation application packages (measurements and report environments) and lists the available measurements.



Network  
Configuration

### Network configuration

This page encloses settings for system configuration in the network and configuration of network directory and wireless.



Tools

### Tools

In this page it is possible to edit a step-wise protocol. This way the user can define a procedural protocol with actions and instructions to follow during exams.



Security

### Security

This option allows the user to define security settings and change the password.



Miscellaneous

### Miscellaneous

This page encloses information about the system configuration (including hardware, software and licenses available in the system). Setup of the body marks and annotations is also available in this setup environment.

Inside each of the previous roots, sub-environments are available giving access to setup pages.



AO

Further details about the setup and specific settings in the menu are given in the Advanced Operations manual.

## 10 - System Maintenance

This chapter describes the system's main maintenance operations.

### Cleaning of System and Peripheral Units

Periodic cleaning of the system and any connected peripheral units is important. The system in particular may contain dust sensitive parts of which the reliability could be compromised in case of poor maintenance.

To clean the peripheral units, follow the instructions provided by the manufacturer.

### Veterinary Applications

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**WARNING**

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Due to the specificity of the veterinary working place, Esaote recommends the ultrasound machines used in veterinary applications should be thoroughly cleaned at least once every 6 months. Please contact your Esaote distributor/ dealer for further help in this matter.

---

**WARNING**

---

Turn off the system before any cleaning operation. Liquid, also spray, may cause electrical shock.

**Cleaning the system**

To clean the system, use a soft cloth slightly dampened with water. If necessary, apply a small amount of ammonia- and alcohol-free, not abrasive detergent onto a clean, soft cloth and then wipe the surface. Switch the system off and rub the outside with the cloth.

---

**WARNING**

---

Make sure that the detergent has completely evaporated before turning on the equipment.

---

**CAUTION**

---

Do not use any type of ammonia-, alcohol- or benzene-based cleaners on the screen and the scanner housing because they may cause severe damage.

**LCD screen**

To clean the LCD screen, use a soft dry cloth, lightly rubbing the display surface.

---

**CAUTION**

---

**Do not use detergents or other liquids directly on the screen. Immediately dry any drops of water that may fall on the screen as they could stain the screen.**

*To clean the screen*

- Wipe any excess gel and residues with a soft lint free cloth.
- Gently wipe the screen with a slightly damp (not wet) soft cloth to remove dust and other particulate matter.
- Gently rub the front of the scanner (including the screen) with the wipe included as accessory (Sani-Cloth Active), until the light haze formed on the screen disappears. This will ensure the correct contact time for low-level disinfection.

*To clean the housing*

- Use a soft, dry cloth to wipe the surface of the housing.
- If necessary, apply a small amount of ammonia- and alcohol-free, not abrasive detergent onto a clean, soft cloth and then wipe the surface.

---

**CAUTION**

---

**When dust and dirt accumulates in the system vents, remove the substance with a low-powered vacuum cleaner.**

**Cleaning the Probe and Gel Holders**

These items (available in the mobile configuration) are easily removed from their location for cleaning and can be washed in a mild soap solution. Make sure they are completely dry prior to replacing them.



**To clean the transducers, refer to the manual entitled "Transducers and Consumables".**

# 11 - Technical Specifications

This chapter describes the technical specifications<sup>1</sup> of the **MyLab**.



## Note

For detailed information on how to operate the scanner please refer to the Advanced Operations manual.

## Product Information and Optional Licenses

**Veterinary Use** including General Imaging Vet, Cardio, TEI, X-View, TP-View, MyLibrary<sup>2</sup>, Animal Science and Reproduction small and large animals.

General Imaging Vet license includes Abdominal imaging and abdominal report for canine, feline and equine.

Reproduction small and large animals license includes Reproductive studies measurement, calculation and reporting package for canine, feline, equine and bovine studies.

Optional licenses:

- CFM/Angio license
- Doppler license
- M-View license
- Clips license

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<sup>1</sup> The specifications can be modified without prior notice.

<sup>2</sup> One Library comes standard in the configuration of MyLabOne/SatVet. Additional Libraries can be activated as optional licenses

- Dicom license
- MyLibrary licenses
  - MyLibrary Equine Tendon Mattoon License
  - MyLibrary Equine Reproduction-Mare Hendriks-Stout License
- Patient Database license<sup>3</sup>
- Animal Science IMF license
- Application licenses
  - Reproduction Porcine Ovine Llama license
  - Equine MSK/Tendon License

## MyLab Technical Characteristics

This section provides technical information of the system; please refer to the previous paragraph for possible configurations.

### Display

- 12" TFT LCD Touch screen

### Probe connectors

- 1 x ZIF probe connector

### Connectors

- 2 x USB 2.0<sup>4</sup>
- Docking station connector
- Power connector for DC adapter

### Connectivity

- Wireless connectivity for networks and wireless devices
- LAN (Optional, with desk stand or docking station on trolley)
- USB 2.0<sup>4</sup>

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<sup>3</sup> Default in MyLabSatVet

<sup>4</sup> The maximum current supplied by the USB ports of **MyLab** is 500mA. Peripherals requiring more power and exceeding this limit can be connected to **MyLab** ONLY IF powered by their own external power supply.



## Image Files

- Formats
  - Standard output file formats (BMP, PNG, JPEG, AVI)
  - Native and DICOM formats
- Clips characteristics
  - AVI Codec: Microsoft® MPEG-4 V2 and MS-Video1
  - Compression: lossy JPEG compression (quality level is approximately 70%)

## Single frames / BMPs are stored at full resolution Software

- Operating system: Windows XP Professional
- Multi-lingual
- Software/Firmware upgrades are performed by DVD

## Biometry

- Basic and advanced measurements and calculations, general and application-dependent
- Annotations, Body marks

## Peripherals

- Via USB connection, for e.g. Thermal/Inkjet printers, memory sticks etc.

## Dimensions

- 115 (H) x 340 (W) x 315(D) mm

## Weight

- Approximately 6 kg for full configuration
- Probe: approx. 0.5 kg

## DC Power Jack

- Contact rating: 7.5A max. @ 20V DC

## Battery

- Li-ion 14.4 V
- Life expectancy: min. 300 charge/discharge cycles

## Operating requirements

- Temperature: 15÷35°C
- Humidity: 15÷95 % (without condensation)
- Pressure: 700÷1060 hPa

## Storage requirements

- Temperature: -20 ÷ +60°C
- Humidity: 5÷95 % (without condensation)
- Pressure: 700÷1060 hPa

## Basic Stand

### Dimensions

- 85 (H) x 310 (W) x 420 (D) mm
- Scanner support plate in upright position: 200 (H) x 310 (W) x 420 (D) mm

### Weight

- Approximately of 1,1 kg

## Desk Stand Pro

### Connectors

- 3 USB 2.0<sup>4</sup>
- LAN RJ45
- Footswitch
- DVI-I
- Audio line-out
- Microphone
- Docking station connector
- Power connector for DC adapter

### Dimensions

230 (L) x 200 (W) x 290 (H) mm

### Weight

- Approximately 3.8 kg

### DC Power Jack

- Contact rating: 7.5A max. @ 20V DC

### Operating requirements

- Temperature: 15÷35°C
- Humidity: 15÷95 % (not condensing)
- Pressure: 700÷1060 hPa

### Storage requirements

- Temperature: -20 ÷ +60°C
- Humidity: 5÷95 % (not condensing)
- Pressure: 700÷1060 hPa

## Desk Stand Basic

### Connectors

- Power connector for DC adapter

### Dimensions

230 (L) x 200 (W) x 290 (H) mm

### Weight

- Approximately 3.6 kg

### DC Power Jack

- Contact rating: 7.5A max. @ 20V DC

### Operating requirements

- Temperature: 15÷35°C
- Humidity: 15÷95 % (not condensing)
- Pressure: 700÷1060 hPa

### Storage requirements

- Temperature: -20 ÷ +60°C

- Humidity: 5÷95 % (not condensing)
- Pressure: 700÷1060 hPa

## Mains Adapter

### Specifications

- Voltage operative range: 100 ÷ 240 Vac
- Mains frequency: 47 ÷ 63 Hz
- Power consumption: 1.4-0.6A
- Output 120W max.
- 19V DC, 6.32A max.

### Operating requirements

- Temperature: 15÷35°C
- Humidity: 15÷95 % (not condensing)
- Pressure: 700÷1060 hPa

### Storage requirements

- Temperature: -20 ÷ +60°C
- Humidity: 5÷95 % (not condensing)
- Pressure: 700÷1060 hPa

## Trolley Configuration Pro

### Connectors

- Docking connector

### Dimensions

- Height: approx.: Min. 1060 – Max. 1300 mm
- Height with **MyLab** installed: approx. Min. 1130 – Max. 1370 mm
- Base dimensions: approx. 570 (L) x 470 mm (W)
- Printer tray: approx. 390 (L) x 280 (W) x 470 (H) mm
- Work surface: approx. 300 (L) x 410 (W) mm

### Weight

- Approximately 26 kg

### DC Power Jack (in trolley base)

- Contact rating: 7.5A max. @ 20V DC

### Connectors (on Docking Station Pro)

- 3 x USB 2.0+
- LAN RJ45
- Footswitch
- DVI-I
- Audio line-out
- Microphone
- Docking station connector

## Trolley Configuration Basic

### Connectors

- Docking connector

### Dimensions

- Height: approx.: 1210 mm
- Height with **MyLab** installed: approx. 1280 mm
- Base dimensions: approx. 570 (L) x 470 mm (W)
- Work surface: approx. 300 (L) x 410 (W) mm

### Weight

- Approximately 18 kg

### DC Power Jack (on Docking Station)

- Contact rating: 7.5A max. @ 20V DC

### Connectors (on Docking Station Basic)

- Docking station connector
- Power connector for DC adapter

## Multicon

### Probe connectors

- 3 x ZIF probe connector

### Dimensions

- 150 (L) x 260 (W) x 50 (H) mm

### Weight

Approximately 1.2kg

## Safety Standards

**MyLab** is designed to be compliant with the following standards:

- EN 60601-1
- EN 60601-1-1
- EN 60601-1-2
- EN 60601-1-4
- EN 60601-2-37
- EN 61157
- EN ISO 10993-1

## Probes

Probe ID	Modes	TEI
SC3421	All	Yes
SC3123	All	Yes
SC3121	All	Yes
SL3323	All	Yes
SL3235	All	Yes
SL3116	All	Yes
SL3413	All	Yes
SV3513	All	Yes
TL5-10	All	Yes
SL3332	All	Yes
IOT342	All	Yes
SP3630	All	Yes

MyLab - GETTING STARTED

SV3L11      All      Yes

