

DRAMIŃSKI

iScan mini

Veterinary Ultrasound Scanner



USER GUIDE

Manufactured by:

DRAMİŃSKI S.A.

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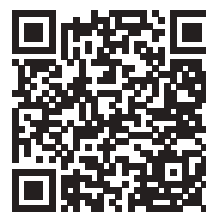
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Declaration of conformity

It can be obtained from our Sales Department:

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We wish you and the users of the product a lot of success in taking care of your patients.
We are sure that with our product you will be able to provide good care for your patients.

DRAMİŃSKI S.A. will be glad to receive your feedback regarding the device and this manual.

Please call the number: **+48 89 527 11 30**
or send an e-mail to: ultrasound@draminski.com

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1. Introduction

1.1. Information about the user guide of the device



The individual sections of the user guide describe design, accessories of the device, preparing it to operation, functions and use of the ultrasound scanner. Before starting to use the ultrasound scanner, please read carefully the user guide.

Reading the content of the user guide does not substitute even basic ultrasonography training. We recommend the user to take an authorised ultrasound training.

1.2. Warnings, comments and symbols used in the user guide

This user guide uses the following distinguishing signs to emphasise important information:



Warning! — Pay particular attention to safety of the patient or of the device user.

Attention! – Pay attention to the safety of the device or its proper operation.

Bold text – To draw attention to important fragments in the user guide or to make the information clearer and more legible.

Descriptions of diagrams and figures – to make details more visible.

The symbols used in the user guide do not provide complete information about safety instructions. Therefore, the safety instructions (section 2) must be read first and followed!

Symbols used in the text:

<x.x.x> – reference to section x.x.x

(option) – availability of the feature depends on the version of the device or its equipment

1.3. Preliminary information about iScan mini – a portable ultrasound scanner

iScan mini is an ultrasound scanner intended for diagnostics of farm animals. Its main uses include diagnostics of the reproductive tract, confirming and monitoring of pregnancy, determination of the sex of the foetus, examination of the lungs and measurement of backfat thickness. The ultrasound scanner is permanently connected to a broad-spectrum linear rectal probe. The device is equipped with cutting edge technologies to facilitate your everyday work. A precise automatic follicle measurement will speed up work, and WiFi will allow easy sharing of photos and videos from the examination. We are sure that iScan mini will become an indispensable tool in your work.

2. Safe use



Warning! User and patient safety depends on the compliance with the following guidelines!

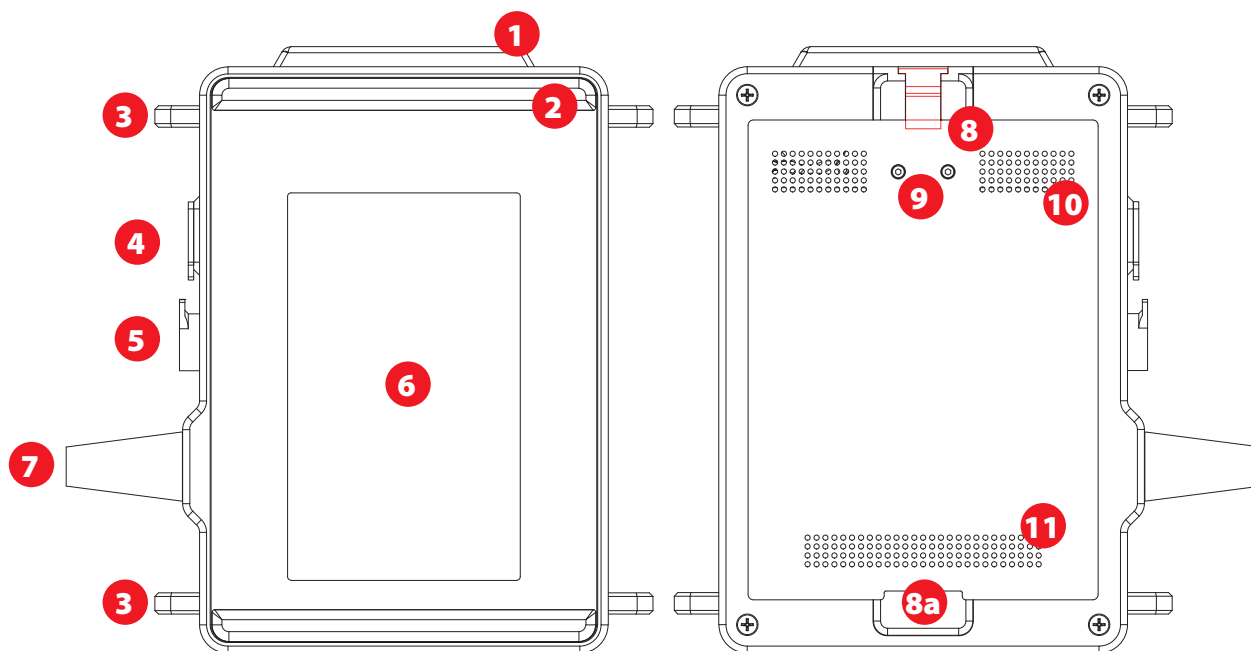
- 1st DRAMIŃSKI iScan mini is a device that should be used only by qualified personnel for diagnostic purposes.
- 2nd The ultrasound scanner and its equipment should be disinfected after their potential contact with contagious substances.
- 3rd The ultrasound scanner cannot be used simultaneously with other high frequency devices (HF).
- 4th The users of the ultrasound scanner are recommended to have regular technical inspections performed by the manufacturer every two years.
- 5th It is forbidden to dismantle the device and perform repairs and adjustments on one's own, except the activities described in the user guide.
- 6th The users of the ultrasound scanner are recommended to regularly check the probe cable and the point where it is connected to the ultrasound scanner against mechanical damage.
- 7th If mechanical damage of the probe or the cable is identified, the device needs to be sent to the service centre.
- 8th The ultrasound scanner has a sturdy design, however, in order to avoid mechanical damage, please, follow the instructions specified in this section of the user guide.
- 9th Avoid exposure of the device to strong sunlight. It is recommended to observe the temperature specified on the labels of the device and its components.
- 10th The user is forbidden to introduce any modifications to the device.
- 11th DRAMIŃSKI iScan mini is an electric device that can be the source of electromagnetic radiation. Its operation can be disturbed by other electric devices, that is why it is recommended to limit the number of electric devices in its vicinity as much as possible.
- 12th When the device and its accessories reach their lifetime, due to the risk for the environment, they should be recycled by specially qualified entities in accordance with the applicable legislation or returned to the manufacturer.

3. List of components of DRAMINŃSKI iScan mini ultrasound scanner

Item	Name and description	quantity
Standard equipment		
1	Ultrasound scanner with a linear rectal probe	1
2	External battery	2
3	Battery charger with a 230 V charging cable	1
4	Carrying belts	1
5	Transport case	1
6	User guide on a USB drive	1
Additional equipment		
7	OLED/LCD goggles	option
8	Linear rectal probe extension for cattle	option
9	Linear rectal probe extension for sheep	option

Any additional accessories for use with the iScan mini ultrasound scanner are available upon agreement with the vendor.

4. Design of the iScan mini ultrasound scanner



iScan mini — front and rear view

1. WiFi antenna
2. Spacer
3. Hooks for carrying belts
4. USB C socket
5. Goggles connection socket
6. Screen
7. Probe cable
8. Battery attachment interlock
- 8a. Battery attachment
9. Power supply contacts
10. Ventilation inlets
11. Ventilation outlets

Attention!

The ultrasound scanner has a sturdy design. However, during operation and transportation, caution is necessary in order not to subject the device to strong impacts to avoid damaging it. Sockets and ventilation openings should be protected against dirt and moisture.

5. Getting started

5.1. How to charge the batteries

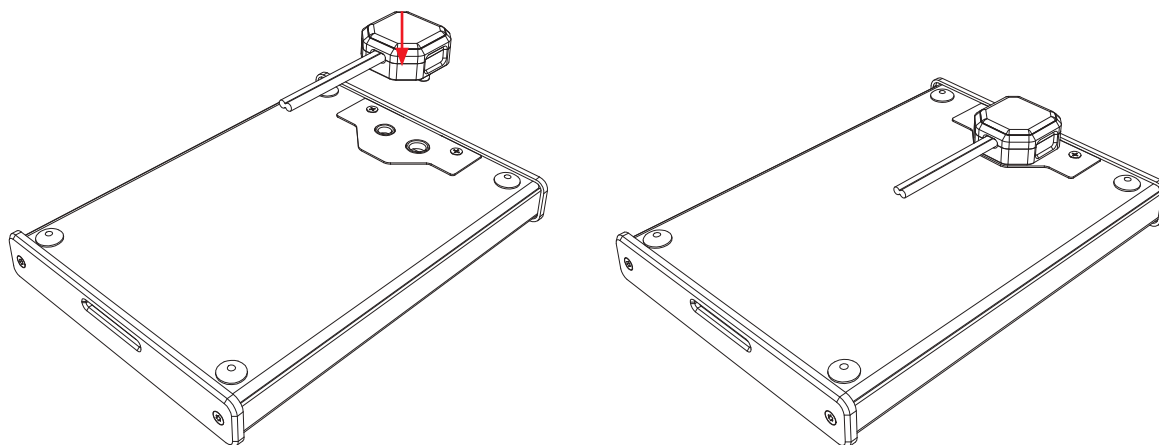
iScan mini is powered by a Li-ion 14.4 V 2.25 Ah rechargeable battery. The battery has an internal thermal fuse protecting it against overheating during charging.

Mascot charger, type 2440, is intended only to charge the batteries of the iScan mini ultrasound scanner. It is adopted to the mains 110-240 V / 60 Hz.

Charging duration: 3 hours.

Operating time: 3h 40 min when fully charged.

In order to charge the battery, connect the charger to the mains, and the plug to the battery in accordance with the diagram:



A colour diode on the charger housing indicates the battery charging level. The red colour means that the battery is discharged, the green colour means that the battery is charged. When the green diode of the charger starts flashing, it means that the battery is fully charged and the charger is in stand-by mode.

Warning! The battery can be charged only with the charger supplied by the manufacturer.



Warning! — It is forbidden to perform any unauthorised repair of the charger nor to dismantle the device.



User safety and reliability of the device require that the charger not be used in humid and wet places.

Before you start using the charger, always check if its main components, including the cables, are not damaged.

Attention! If any damage is detected, disconnect the device from the mains immediately and replace the damaged part with a new one, by contacting an authorised service centre.

5.1.1. Safety measures for handling a Li-Ion battery pack

- Never dismantle the battery pack which forms an integrated unit.
- Never short-circuit contacts in the battery pack casing using metal items.
- Do not throw battery packs into the fire nor heat them up.
- Never expose the battery packs to mechanical impact. Do not throw them.
- If you notice electrolyte leakage, stop using the battery pack immediately.
- Never allow liquid to penetrate the battery pack, it may cause a sudden temperature rise and a danger.
- Battery packs should not be left in high ambient temperature, for example, inside a car directly exposed to sunlight, or near a source of heat. Failure to follow these principles can cause leakage of electrolyte from the battery and its damage or shorten its service life.

5.2. How to connect the batteries to the ultrasound scanner

The battery is to be connected on the rear wall of the ultrasound scanner.

Before connecting, make sure that the contacts of the ultrasound scanner and the battery are dry.

In order to connect the battery, follow the figure below:

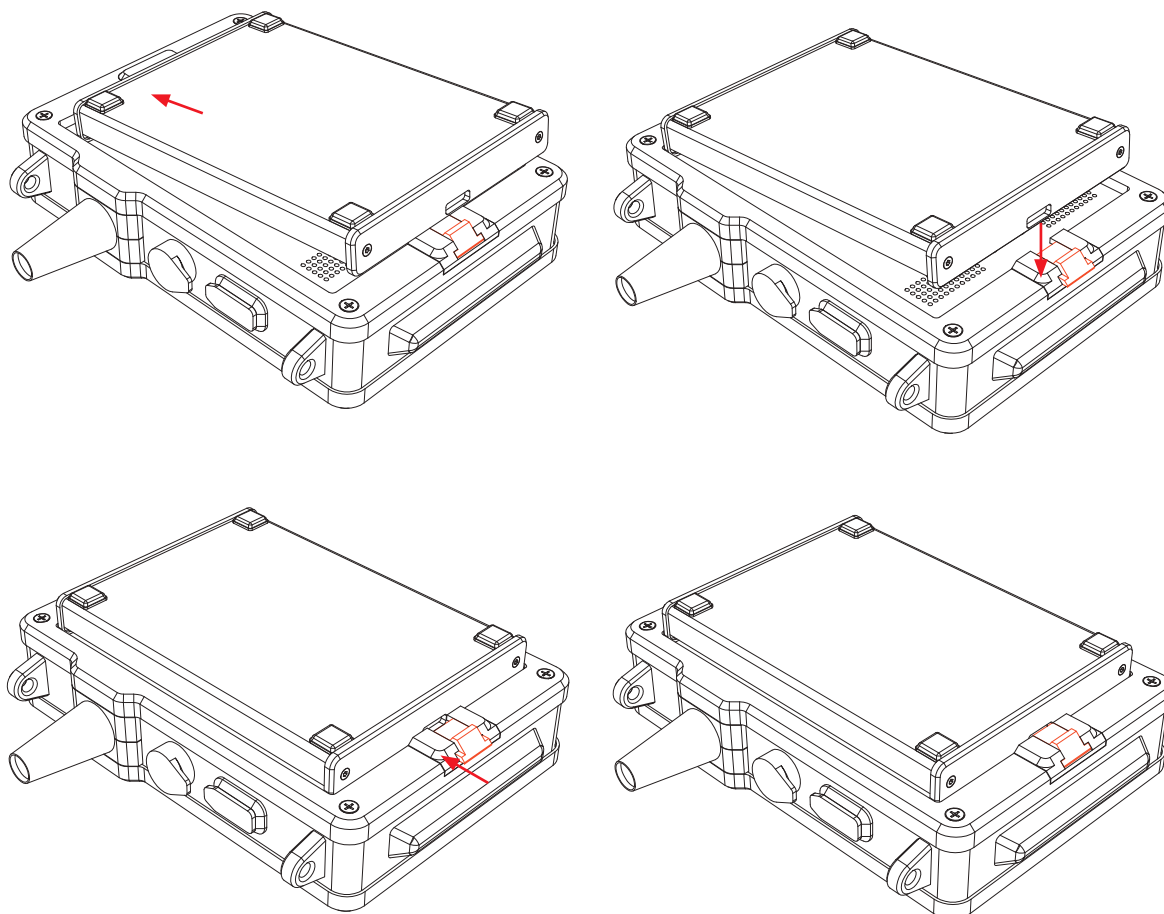


Fig. 9 Connecting the battery

5.3. How to turn the ultrasound scanner on

In order to turn on the ultrasound scanner:

1. Attach the battery.
2. Press and hold the On / Off button until the DRAMIŃSKI ULTRASOUND SCANNERS logo appears on the screen.
3. Wait about 20 seconds. When the image from the probe appears on the screen, the scanner is ready for work.

6. How to end operation of the ultrasound scanner

6.1. How to turn the ultrasound scanner off

In order to turn the ultrasound scanner off, press and hold the On / Off button for approx. 2 seconds.

Remember, pressing the ON/OFF button for a short time will freeze the image.

6.2. Cleaning and disinfection

Remember to clean and disinfect the ultrasound scanner after finishing work with it.

Clean it with a wet cloth or paper towel.

Attention! Never wash the ultrasound scanner under running water!

Attention! Remember not to make the battery contacts wet! Prevent water from penetrating the ultrasound scanner through ventilation slots!

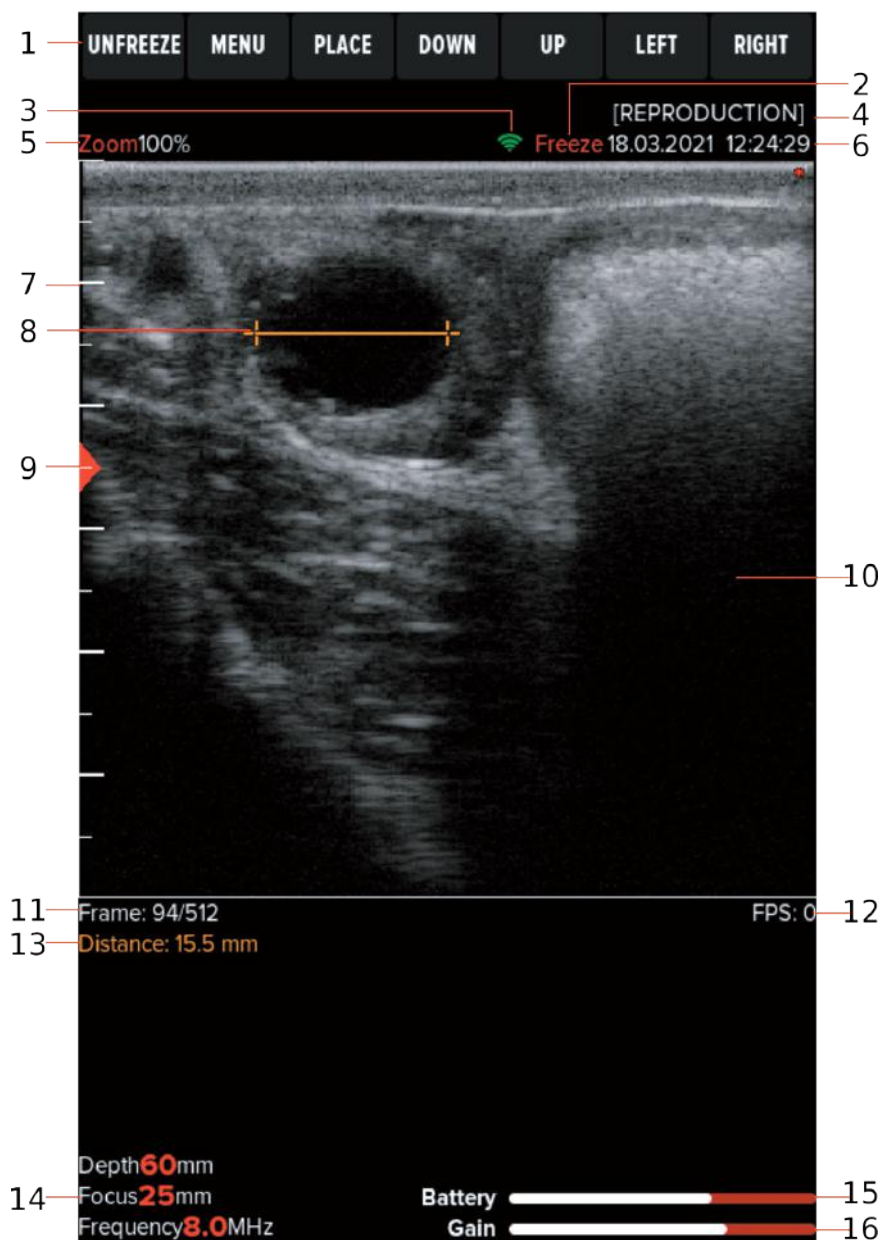
In order to clean the ultrasound scanner:

1. Turn off the device.
2. Disconnect the battery.
3. Put protective plugs into the goggles and data transmission sockets.
4. Wipe the battery, the probe and the ultrasound scanner with a wet cloth or a paper towel.
5. Wipe all elements dry.

To disinfect the ultrasound scanner and its accessories, use the products intended for disinfection of medical devices which do not contain alcohol.

7. User control panel

7.1. User control panel's structure



User control panel

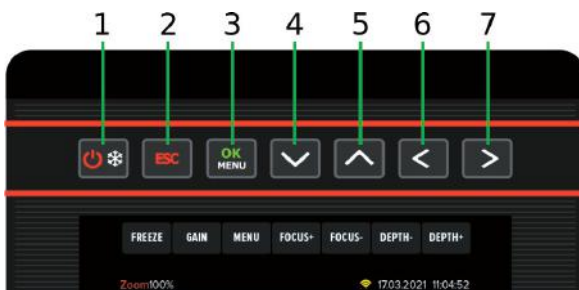
1. Button functions
2. Information about freeze mode
3. Information about active WiFi connection
4. Set preset name (if turned on)
5. Zoom
6. Date and time
7. Centimetre scale
8. Distance measurement
9. Beam focusing level
10. Image sector

11. Cine loop current frame / all frames
12. Image refresh rate
13. Measurement result
14. Current settings
15. Battery charge level
16. Overall gain level

7.2. Button functions

Buttons have various functions, depending on the ultrasound scanner's operation mode. Below are the default uses of the buttons in scanning and freezing mode. Button functions may be modified using the Personalise <8.1.> option

Imaging mode



Frozen mode



1.	ON/OFF, Freeze	1.	ON/OFF, Unfreeze
2.	Gain	2.	Automatic follicle measurement
3.	OK/Menu	3.	Menu
4.	Focus +	4.	Save image
5.	Focus -	5.	Save cine
6.	Depth -	6.	Frame back
7.	Depth +	7.	Frame forward

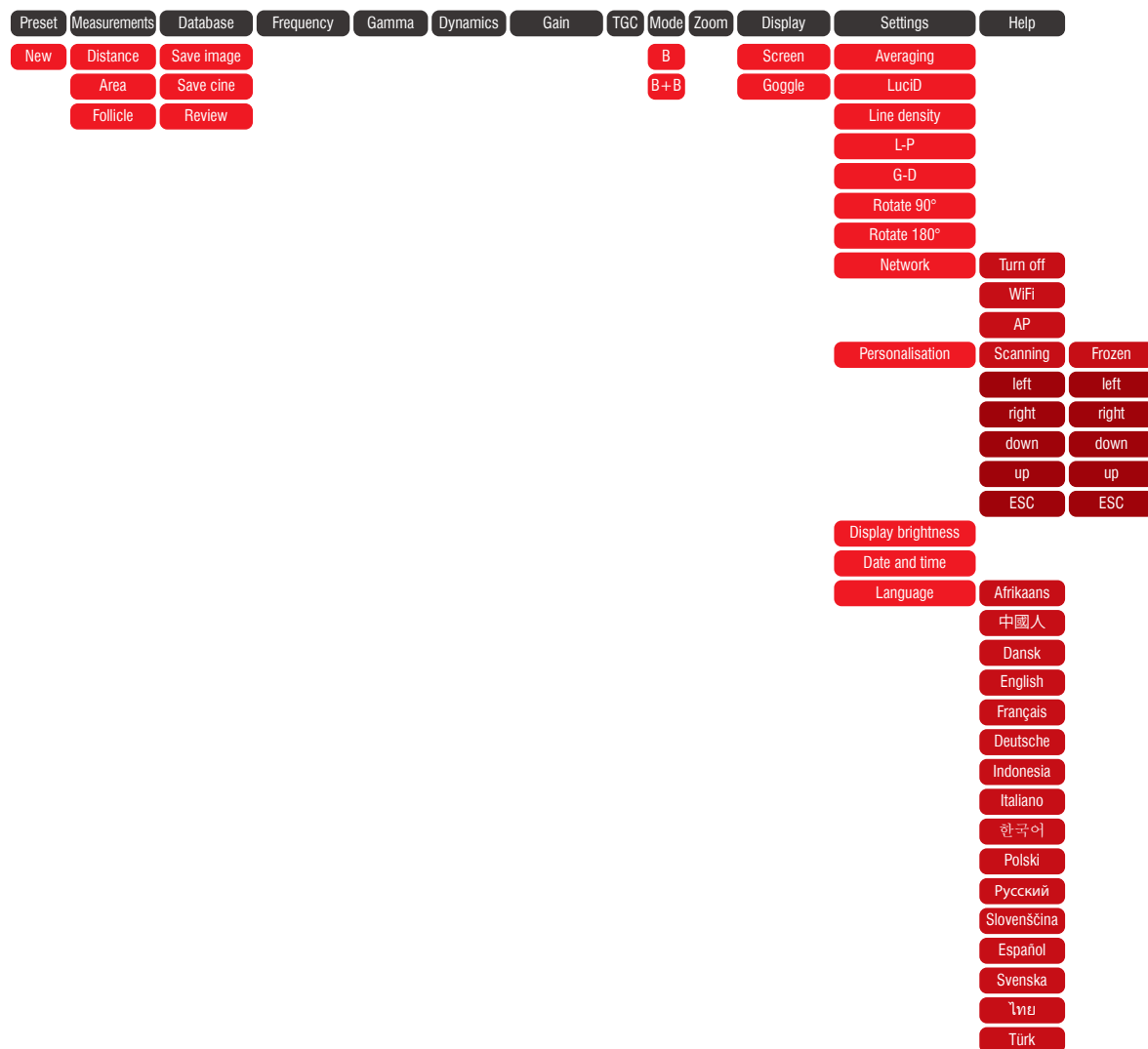
8. Menu structure of the ultrasound scanner

In order to open the Menu, press OK.

In order to leave the Menu, press ESC.

When you select certain functions, a tip is displayed on the screen which explains how to change their settings.

The graphics below presents the menu structure:



8.1. Menu personalisation

You may decide what functions will be assigned to the buttons during scanning and when the image is frozen.

The buttons that may be assigned various functions are: ESC, Left, Right, Up, Down.

Functions that may be assigned to buttons during scanning:

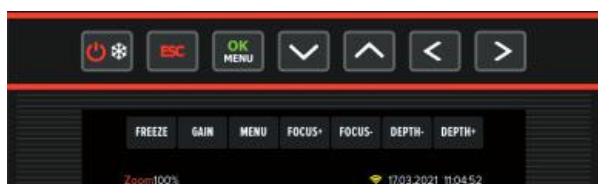
Depth +/-, Focus +/-, Gain, Frequency, Gamma, Dynamics, TGC, B+B, Zoom.

Functions that may be assigned to buttons with a frozen image:

Frame back / forward, Cine back / forward, Distance, CRL, HD, HL, TD, ED, Save image, Save cine, Follicle.

Default key settings

Examples of personalisation during scanning



In order to personalise the menu:

1. Open the menu and move to the settings tab.
2. Select Personalise.
3. Select mode: scanning / frozen.
4. Select the button the function of which you want to change.
5. Confirm with the OK button.

9. Description of the ultrasound scanner's functions

9.1. Setting the parameters of imaging

9.1.1. Gain adjustment

Signal gain may be adjusted completely or in six horizontal image zones. It makes the structures displayed on the screen lighter or darker.

In order to adjust gain completely:

1. Press ESC button.
2. Use the UP / DOWN arrows in order to adjust gain.
3. Confirm with the OK button.

In order to adjust gain in zones:

1. Open the menu and select TGC.
2. Use the UP / DOWN arrows to select the gain zone.
3. Use the LEFT / RIGHT arrows to adjust gain.
4. Confirm with the OK button.

9.1.2. Scanning depth adjustment

In order to adjust the scanning depth, use the LEFT / RIGHT arrows, where LEFT means scanning of shallowly located organs, and RIGHT means scanning of deeply located organs.

The maximum scanning depth is 12 cm.

9.1.3. Focusing

The ultrasound scanner can change the level on which the ultrasound beam is focused the most. In order to obtain the best effect, set the focusing level at the depth of the examined structure. In the focus the signal is strongest, and image resolution is highest.

In order to set the beam focusing on the selected area, use the UP / DOWN arrows, where UP makes the beam focus shallower, and DOWN — deeper.

9.1.4. Frequency

The probe connected to the iScan mini ultrasound scanner is a broadband, multi-frequency probe. Changing the frequency of operation influences the image resolution and the depth to which the ultrasounds penetrate the body.

It is necessary to remember about the following principle:

1. Higher frequency = better resolution = lower efficient depth of scanning.
2. Lower frequency = worse resolution = higher efficient depth of scanning.

In order to change the frequency:

1. Open Menu and choose Frequency.
2. Use the UP / DOWN buttons to choose the most efficient frequency.
3. Confirm with the OK button.

9.1.5. Gamma

Gamma adjustment changes the way the grayscale is displayed on the screen.

Uniform display of all shades

High / low contrast



*Predominant
light shades*

*Predominant
dark shades*

In order to change Gamma settings:

1. Open Menu and choose Gamma.
2. Using the arrows, select a proper setting.
3. Confirm with the OK button.

9.1.6. Dynamics

Dynamics is the setting which adjusts the image contrast.

The higher the setting, the higher the contrast.

In order to change dynamics settings:

1. Enter the Menu and choose Dynamics.
2. Using the arrows, select a proper setting.
3. Confirm with the OK button.

9.1.7. Zoom

Zooming can be adjusted at 20% increments, in the range: 100–160%

In order to change Zoom:

1. Enter the Menu.
2. Select Zoom.
3. Using the arrows, select a proper setting.
4. Confirm with the OK button.

9.2. Presets

This option enables saving your favourite imaging parameters with a selected name.

9.2.1. Creating a preset

In order to create a preset:

1. Optimise the parameters of the examination: gain, TGC, frequency, scanning depth, focus, zoom and gamma.
2. Open the Menu and select Presets.
3. Select New preset.
4. Name the preset.
5. Confirm with the OK button.

9.2.2. Loading presets

In order to load the settings saved in the preset:

1. Open the Menu and select Presets.
2. Select an appropriate preset.
3. Confirm with the OK button.

9.3. How to freeze the image

In order to freeze the image, press Freeze or ON/OFF.

The FREEZE message will appear in the upper zone of the screen.

Once the image is frozen, you can go up to 512 frames back.

In order to view the cine loop frame by frame, briefly press the left or right arrow. In order to view the loop continuously, press and hold the left or right arrow. In order to stop the cine loop in a selected moment, again use the left or right arrow.

Pressing one of the buttons again unfreezes the image.

9.4. Measurements

The ultrasound scanner is equipped with tools for measuring of: distance, area, automatic follicle measurement.

9.4.1. Distance

In order to measure distance:

1. Freeze the image.
2. Open the Menu.
3. Go to Measure.
4. Select Distance.
5. A red marker will appear on the screen. Set it in a selected area using the arrows.
6. Confirm the position of the marker by pressing OK.
7. Another marker will appear on the screen. Follow the steps 5 and 6.
8. The measurement result will be shown in the bottom left corner of the screen.

The user can perform up to 4 measurements in one image.

9.4.2. Area

The area is calculated based on two sections, according to the formula: $P=A \times B$.

The result is presented in cm².

In order to measure area of a structure:

1. Freeze the image.
2. Open the Menu and move to the Measure tab.
3. Select Area.
4. Set two measuring sections as in section <9.7.1>.

Attention! When using a mobile application, you can draw an outline around any shape and measure its area.

9.4.3. Follicle

The measurement is used to automatically determine the largest dimension of a follicle. For a correct measurement as clear image of the follicle as possible has to be obtained.

The result is presented in mm.

In order to measure a follicle:

1. Freeze the image.
2. Open the Menu and move to the Measure tab.
3. Select Follicle.
4. By using direction arrows place the cursor in the centre of the follicle.
5. Confirm the position of the cursor with OK.
6. If needed use the UP / DOWN arrows to adjust sensitivity and LEFT / RIGHT to adjust the shape of the outline.

9.5. How to save data

The ultrasound scanner has internal memory able to save 200 cine loops and 200 images.

9.5.1. Saving images

In order to save the image:

1. Freeze the image and open Menu.
2. Move to the Database tab and select Save Image.
3. A message will be displayed on the screen: "Do you want to add description? Yes / No."
4. If you decide to add a description, enter the characters using the Up / Down arrows and the Left / Right arrows. Approve by pressing "V".

Attention! The image can be saved with the marked measurements. The measurements are described in the section: <9.5>.

9.5.2. Saving cine loops

In order to save the cine loop, follow the steps described above, selecting Save Cine loop in the Database Menu.

9.6. How to load the data onto the screen

9.6.1. Loading an image

In order to load the image:

1. Open the Menu and move to the Database tab.
2. Select Browse.
3. Select a file from the list in order to display it. Each file has a thumbnail of the image.
4. Confirm with the OK button.
5. After loading the image, you may move to a previous / next image by using the LEFT/RIGHT arrows. Loops will not be loaded in this mode.

9.6.2 Loading a cine loop

In order to load the cine loop, follow the steps described above, selecting Load Cine loop in the Database Menu.

Once the cine loop is loaded, start the video playback on the screen using the UP/DOWN arrows.

9.7. How to export data to an external data storage device

The ultrasound scanner enables exporting data to an external data storage USB device.

The images are exported in .BMP format, and cine loops are exported in .AVI format. The files are saved directly on the external data storage device.

In order to export the data:

1. Connect the pen drive to receive the data to the USB C socket.
2. Open the Menu and move to the Database tab.
3. Select Browse.
4. Chose the image which you want to export and open Menu.
5. Select Send to USB.
6. A dialog box will appear showing the progress of the operation.
7. When the transmission is completed, the dialog box disappears.

9.8. Exporting data by WiFi to mobile devices

For exporting data by WiFi an app is needed, which may be downloaded here:

<http://update.draminski.com/iScan2MULTI/android/app-release.apk>

The application works on mobile devices with an Android operating system. It enables, among others, browsing of images in the memory of the ultrasound scanner, downloading and sharing them.

To download the images and loops onto the mobile device:

1. Open the menu and move to the Network settings tab.
2. Select AP.
3. In the phone's WiFi setting select the Dramiński Ultrasound Scanner network.
4. Turn on the application on the mobile device.
5. Select Browse to see the list of available images and loops.
6. Select the images and loops and press Download.

The app will create a folder on the phone with images from the ultrasound scanner. Permission for the app to access network and multimedia settings may be required.

9.9. How to delete data from the internal memory

In order to delete data from the internal memory:

1. Open the Menu and move to the Database tab.
2. Select Browse.
3. Open the Menu and select Tick.
4. Tick the desired files in the list using the Left / Right arrows.
5. Open Menu and choose Delete.
6. The screen will show a dialog box with the question: Delete? Are you sure? YES / NO.
7. Once confirmed, the data will be deleted from the memory.

Data from the ultrasound scanner may also be deleted using the phone app. You only have to select the images and choose Delete when browsing the ultrasound scanner's database.

10. Imaging modes

The ultrasound scanner operates in B and B+B modes.

10.1. B Mode

This is the standard mode of ultrasound scanner operation. It enables observing the cross-section of tissues on a real-time grayscale image.

10.2. B+B Mode

This mode is used to compare even structures (e.g. ovaries), volume measurements, or showing the structures in different cross-sections.

It consists of displaying two windows on the screen, of which the image in one window is frozen, and on the other one may be unfrozen or frozen.

In order to compare structures in B+B mode:

1. Freeze the image with the desired structure in the middle.
2. Open the Menu and move to the Mode tab.
3. Select B+B.
4. The image will be moved to the right box.
5. Unfreeze the image — the left box will be activated.
6. Continue examination.

Attention! Measuring structures in both boxes is similar to B mode. There is no need to switch the boxes. The measuring point can be marked anywhere on the screen.

11. System settings

11.1. Frame averaging

This function enables anti-aliasing by super-imposing every two or every four neighbouring frames and displaying them simultaneously.

In order to change the frame averaging:

1. Enter the Menu and choose Settings.
2. Select Frame averaging.
3. Using the arrows, select a proper setting.
4. Confirm with the OK button.

11.2. LucID

LuciD is a tool which causes: smoother structure edges, enhancement of parenchymal structures, improvement of contrast.

In order to turn LuciD on/off:

1. Enter the Menu and choose LuciD.
2. Using the arrows, select a proper setting.
3. Confirm with the OK button.

11.3. Interleaving

The function enables choosing between an image composed of 128 lines (faster refresh rate, lower resolution) and 256 lines (higher resolution, but lower refresh rate — default setting).

In order to change the interleaving setting:

1. Enter the Menu and choose Settings.
2. Select Interleaving.
3. Using the arrows, select a proper setting.
4. Confirm with the OK button.

11.4. Change left/right, up/down

This option enables setting the image so that the marker on the screen corresponds to the side of the marker on the probe. It is meaningful for right- and left-handed people during rectal examination. The image may also be reversed upside-down.

1. Enter the Menu and choose Settings.
2. Select L-R or U-D.
3. Using the arrows, select a proper setting.
4. Confirm with the OK button.

11.5. Rotate image by 90°

The option enables rotating the image by 90°. In order to use this function more comfortably, attach the carrying belts so that the orientation of ultrasound scanner matches the orientation of the image.

In order to rotate the image:

1. Open the Menu.
2. Go to Settings.
3. Go to Rotate image by 90°.
4. Confirm with the OK button.

When the image is rotated, all the data are shown at the bottom part of the screen.

Attention! The navigation buttons show the direction in accordance with the image orientation!

11.6. Mirror image

This function allows the mirroring of the ultrasound scanner image upside-down.

In order to mirror the image:

1. Open the Menu.
2. Go to Settings.
3. Go to Mirror image.
4. Confirm with the OK button.

11.7. Network settings

In network settings you may turn on the WiFi to connect to a router or commence broadcasting a signal to connect to a mobile app.

11.7.1. WiFi

Connecting to a WiFi network enables updating of the ultrasound scanner software.

In order to connect with a WiFi network:

1. Open the Menu.
2. Go to Settings.
3. Go to Network settings.
4. Select WiFi.
5. The system will show a list of available networks. Select a network and accept.
6. Should a password be required, use the keyboard displayed on the screen.
7. An icon which denotes an active network connection will appear in the main window.

11.7.2. WiFi HotSpot

The function enables broadcasting a WiFi signal to other devices in order to connect them to the ultrasound scanner. Turning on the HotSpot is necessary to use the mobile app.

To broadcast the WiFi signal:

1. Open the Menu.
2. Go to Settings.
3. Go to Network settings.
4. Select WiFi HotSpot.
5. The ultrasound scanner will broadcast a network named Dрамиński Ultrasound.
6. An icon which denotes an active network connection will appear in the main window.

11.8. LCD brightness

Adjust the display brightness depending on current lighting conditions.

Adjustment is possible in a scale of 1–15 degrees.

In order to adjust brightness:

1. Open the Menu.
2. Go to Settings.
3. Go to LCD Brightness.
4. Use arrows to set the value.
5. Confirm with the OK button.

11.9. Date/Time

This option enables updating date and time in accordance with the calendar used by the user.

When this option is selected, a dialog box appears in which you can set date and time successively. Subsequent field is activated after confirming the previous one.

11.10. Brightness

This option is used to adjust brightness of the display screen. You should remember that the level of brightness influences the time of battery operation. The range of adjustment is within 10% to 100%.

11.11. Language

After the language has been selected and the OK button has been pressed, the system automatically changes to the selected language version.

11.12. Factory settings

This option enables restoring default settings for certain parameters of the image if they were changed by the user and there is a need to restore standard settings. Selecting this option causes resetting the scanner and restoring all of the saved settings. Images and cine loops which were saved are not deleted.

11.13. Automatic shutdown

This option enables setting the time after which the system automatically turns off: never, 5 min., 15 min., 30 min., 60 min.

In 60 seconds before the automatic shutdown, the screen will display the following message: "Auto power OFF, 60 seconds" — the system will count down 60 seconds until shutdown. The message disappears if any of the buttons is pressed, and the system will count down the set time again.

12. Accessories

12.1. Goggles

The system of the Dramiński Head Goggles Displays guarantees clear image in sunny days with great contrast. With 5-step adjustment, every user can set the displays according to their preferences, while observing the safety rules.

In order to connect the goggles:

1. Remove the plug protecting the goggles socket.
2. Connect the plug of the goggles cable to the socket.
3. The system will display information: "Goggles detected. Do you want to switch image?"
4. Confirm with the OK button. The image will be displayed in goggles. The ultrasound scanner display will turn off.

Removing goggles plug will automatically turn on the ultrasound scanner display.

To switch the image to display when the goggles are connected to the ultrasound scanner:

1. Enter the Menu and choose Display.
2. Select Screen.
3. Confirm with the OK button.

Attention! Remember to disconnect the goggles and protect the goggles socket with a plug before cleaning the ultrasound scanner!

Attention! Protect the goggles against water! It is permitted to clean the goggles with a slightly wet cloth.

12.2. Linear rectal probe extension

The extension is used for a quick endorectal test for pregnancy without the need for the examiner to insert their arm into the rectum of the animal. There are two types of extension available:

- long — for examination of cattle,
- short — for examination of sheep.

In order to secure the rectal probe to the extension, place the probe at the top of the extension and route the cable in the groove.

13. Maintenance of the device and the probes

13.1. Cleaning and disinfection

Attention! In view of the biological security, it is recommended to clean and disinfect the ultrasound scanner after you finish working with it.

During use, the device may become strongly contaminated, including contagious material. Immediately after finishing work, the scanner should be cleaned with a wet soft cloth or a paper towel with mild detergent.

The device surface should be disinfected with appropriate substance intended for disinfection of medical and veterinary product surfaces.

Attention! The ultrasound probe should be carefully disinfected after every use.

After wet-cleaning, the probe and the ultrasound scanner should be wiped dry with a soft paper towel, if necessary.



Warning! It is forbidden to use highly concentrated, aggressive and abrasive agents. Such agents can permanently damage the surface of the probe, the display screen and the casing.

During wet-cleaning, protect the casing sockets and ventilation slots against humidity.



Warning! Use alcohol-free agents to disinfect the probe.

In order to wash the ultrasound scanner after work has been finished:

1. Protect the goggles and data transmission sockets with plugs.
2. Disconnect the battery.
3. Disconnect the carrying belts.
4. Wipe the ultrasound scanner with a damp (water or mild detergent) cloth or paper towel. Do not wash the ultrasound scanner under running water!
5. Wipe the ultrasound scanner dry.
6. For disinfection, use a proper agent intended for disinfection of surfaces of medical and veterinary devices. Follow the instructions on the label.
7. Clean and disinfect the battery and the probe using damp paper towels or tissues.
8. Let the ultrasound scanner, probe and battery dry in a safe place.

Attention! The transport case has a vent valve to control the air pressure in the closed case. It is not moisture-permeable. Do not close a wet device in the case. If humidity accumulates in the case, we recommend using car desiccants available in stores and petrol stations.

13.2. Technical inspections

Remember to always check the ultrasound scanner, the battery, the probe and its cable for mechanical damage before starting to work. If you notice anything disturbing (for example, discontinuity of the cable), contact the service centre immediately.

The users of the ultrasound scanner are recommended to have regular technical inspections performed by the manufacturer every two years. It will guarantee the highest safety and durability.

14. Transportation of the device

It is recommended to transport the device in the provided transport case. The arrangement of the elements in the case is shown in the following figure:



Placement of the iScan mini system elements in the transport case

1. Ultrasound scanner
2. Probe and carrying belts
3. Charger
4. Additional battery
5. Charger cable with battery plug
6. Charger cable with mains plug
7. Service manual (pen drive)

15. Operational and technical notes

It is necessary to shave fur and use ultrasound gel in order to carry out abdominal examination. Proper layer of the gel will definitely improve penetration of the ultrasound beam and will enable obtaining proper and legible images.

During and after the examination, protect the head of the probe and the cable against mechanical damage. Remember:

1. To arrange the cable of the probe properly. Improper placing or excessive bending of the cable can cause damage to the wire.
2. To put the probe in the case properly. To avoid squeezing the cable with the cover of the case, as it may cut the wire.
3. To store the probe properly and safely.

Attention! If the storage temperature happens to fall below 5°C, it is necessary to warm the probe up before turning on the device. Using the ultrasound scanner in extreme temperatures alternatively is unfavourable and can lead to damages.

15.1. Troubleshooting

Symptoms of improper operation of the device	CONTROL ACTIVITIES
The device does not turn on	<ol style="list-style-type: none"> 1. Check if the battery is properly attached. 2. Check if the battery is charged. 3. Check if the device operates with another battery for iScan mini, if available. <p>Remember that repeated attempts to turn on the ultrasound scanner with a discharged battery may lead to deep discharge and thus to damage to the battery!</p>
The image is disturbed	<ol style="list-style-type: none"> 1. Check if the ultrasound scanner is not located near other devices emitting electromagnetic field. 2. Check if the probe cable has no mechanical damage.
The image is too bright or too dark	<ol style="list-style-type: none"> 1. Check the settings of brightness, gain, gamma and MHz. 2. Restore the factory settings.
No charging indication on the battery charger	<ol style="list-style-type: none"> 1. Check if the charger is properly connected to the mains. 2. Check the power supply in the mains.
The battery works too short	<ol style="list-style-type: none"> 1. The battery was not charged. 2. Low ambient temperature. 3. The battery is worn out.

If none of the actions presented in the table is successful, please, contact the service centre of the DRAMINŃSKI company, phone No: **+48 89 527 11 30** or e-mail: **ultrasound@draminski.com**.







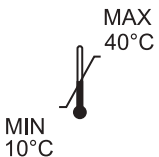

16. Technical specification

Dimensions	140 x 170 x 52 mm (width x height x depth)
Weight of the device	1350 g with the probe and the battery
Weight of the battery	292 g
Purpose	Ultrasound diagnostics of farm animals: Diagnostics of the reproductive tract Confirmation and monitoring of pregnancy Determination of sex of foetus Determination of age of foetus Measurement of backfat thickness Ultrasound examination of the lungs Uses other than specified above are not excluded
Image display modes	Screen Goggles Image rotated by 90° Image rotated by 180°
Image refreshing	Up to 58 FPS
Greyscale	256 shades
Gamma	10 settings
Display screen	5.0" diagonal IPS LCD LED 500 cd/m ² 480 x 800 px
Probe	Electronic, broadband 7 MHz, 60 mm.
Method of connecting a probe	Permanent
Keyboard	Membrane, water resistant
Imaging mode	B Mode B+B Mode
Image management	Freezing the image Dimensioning Zoom 100–160% at 20% increments Saving to internal memory Exporting to external storage device Exporting to mobile devices with the use of WiFi
Measurements	Distance Follicle (automatic) Area (from 2 measurements)
Saving data to the memory	Image with measurements Cine loop (max. 512 frames)
Image memory	200
Cine loop memory	200
Data transmission	USB-C WiFi (to Draminski App)

Presets	May be created by the user
Power supply	Li-Ion, 14.4 V, 2.25 Ah
Continuous operation when the battery is fully charged	Up to 3:40 hours
Charging of the battery pack	3 hours
Battery charge indicator	Automatic — graphic indicator
Protection class	IP32 Protection against objects larger than 2.5 mm Protection against water dripping at an angle of a maximum of 15 degrees
Operating temperature	From 0°C to +40°C
Recommended storage temperature	From 0°C to +40°C

17. Labels

Symbols used on labels attached to this product and their packaging are explained below.

	CE marking which indicates conformity of the product with Directives in force
	Note, read the user guide
	Warnings about hazards which concern user safety
	Date of manufacture of the product
	Name of the product's manufacturer and its address
	Dispose of separated with other household waste in accordance with the 93/86/EEC Commission Directive or local regulations.
IP30	The level of resistance of the housing to external factors – ingress of solid foreign bodies and dust, and the degree of protection against water.
SN–	Product serial number for identification purposes
	Product storage temperature
	Take care, fragile

18. Warranty

The manufacturer gives a 24-month warranty and guarantees trouble-free operation of the device used in accordance with this user guide.

The battery is covered with a 6-month warranty.

In case of a technical defect, which was not caused by the user, the manufacturer is obliged to repair the delivered device within no more than 14 business days from the date of delivery of the device to the service centre (Owocowa 17, 10-860 Olsztyn, Poland) and send back the operational device to the user at the manufacturer's cost.

The warranty does not cover mechanical damage, damage caused by improper use, storage and self-made repairs.

The warranty is honoured on the basis of a proof of purchase (invoice). In order to claim under this warranty, notify Draminski about the alleged defect within a reasonable period of time since the defect has been noticed, however, no later than the expiry date of the warranty.

In order to submit a warranty claim, you need to provide:

1. The device.
2. The copy of the purchase document which determines the name and address of the seller, date and place of the purchase, type of the product and the serial number of the product.

The warranty is provided by **DRAMIŃSKI S.A.**

Owocowa 17, 10-860 Olsztyn, Poland

phone +48 89 527 11 30,

e-mail: serwis@draminski.com

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