

VS500



USER MANUAL
Model: VS500

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1. Warnings and Precautions

Pay attention to the following safety instructions (including, but not limited to those listed below) when using the product, to avoid human-caused damages.

1.1 Warnings

- VeinSight™ vein finder helps to find superficial veins, but cannot completely replace medical judgment of finding veins based on vision and touch.
- VeinSight™ vein finder should be used as an auxiliary tool to assist medical practitioners in finding the location of superficial veins.
- VeinSight™ vein finder can only find superficial veins, and due to the physical characteristics of the patient, the depth of the vein search is limited.
- VeinSight™ vein finder is used to find the location of superficial veins, which cannot be used as diagnostic information.
- VeinSight™ vein finder must be kept away from fire to prevent the battery from exploding.
- VeinSight™ vein finder does not contain customer-serviceable parts. All parts and accessories can only be purchased by authorized maintenance agencies.
- Please use the original charging equipment to charge the VeinSight™ vein finder, and the use of non-original accessories may cause safety hazards.
- Please use original accessories for the VeinSight™ vein finder, and the use of non-original accessories may reduce safety.
- Charge the device with the approved adapter IEC60601-1 only.

1.2 Precautions

- VeinSight™ vein finder must be delivered to professionals authorized by the manufacturer for repair.
- Do not expose the beam of the VeinSight™ vein finder to human eyes for a long time.
- Keep the device clean and avoid vibration.
- Keep the device dry to prevent liquid from entering the VeinSight™ vein finder or its adapter.
- Do not perform high-temperature sterilization on the VeinSight™ vein finder. Do not use electron beam or γ radiation to sterilize the device.
- Avoid electromagnetic interference or high-frequency interference in the vicinity of the device to ensure that the instrument is not in an environment of strong sources of electromagnetic interference, such as interference from wireless transmitters or mobile phones, etc.
- Check the device every two months. If any obvious damage is found, it is recommended to replace the damaged parts before using it again.
- Safety checks must be performed by people who have been properly trained and have 1 or 2 years of experiences in the testing and inspection procedures specified by the manufacturer.
- Check whether the safety-related labels are easy to identify, and check whether the function of the equipment conforms to the description in the user manual.

2. Product Overview

2.1 Intended Use











- VeinSight™ vein finder is a portable instrument that assists medical practitioners in finding and locating certain superficial veins.
- VeinSight™ vein finder should not be used as the sole method for locating veins, and should be used by qualified medical practitioners.
- When using the VeinSight™ vein finder, medical practitioners should always follow the appropriate medical protocols and practices required by their medical institution, to exercise sound medical judgment.
- VeinSight™ vein finder can be used in the situation when the determination of vein location is necessary. When used properly, the VeinSight™ vein finder can assist users find the location of superficial veins in specific medical practices, such as venipuncture.














2.2 Product Description

- VeinSight™ vein finder uses near-infrared light to locate veins beneath the skin, then projects the image of the veins on the skin surface directly above the veins.
- Medical practitioners can refer to the projected image to find a vein of the right size and location for venipuncture or other medical procedures.
- VeinSight™ vein finder only displays superficial veins, and the depths of the blood vessel search vary depending on the physical characteristics of different patients.
- The reasons for the different search depths include (but are not limited to) the following: differences in the depth of veins, skin conditions (eczema, tattoos), occlusion of hair, scars or wrinkled skin, obesity, edema, etc.
- It is recommended to place the VeinSight™ vein finder directly above the search area, and the projection can accurately display the center position of the vein.
- Due to differences in patients' physiques and vein widths, the projected vein width may be different from the actual width, but the product can accurately display the center line of the vein.
- VeinSight™ vein finder is powered by a built-in battery and approved for continuous operation.

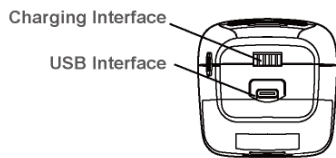
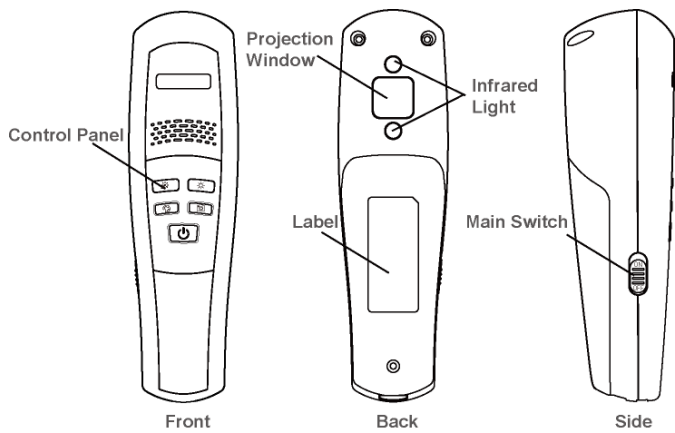
- VeinSight™ vein finder has no waterproof protection. Please prevent water ingress during use and storage.
- No training is required to operate the VeinSight™ vein finder.
- VeinSight™ vein finder requires no routine or preventative maintenance, but needs regular cleaning.

2.3 VS500 Symbol Description

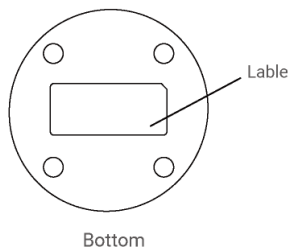
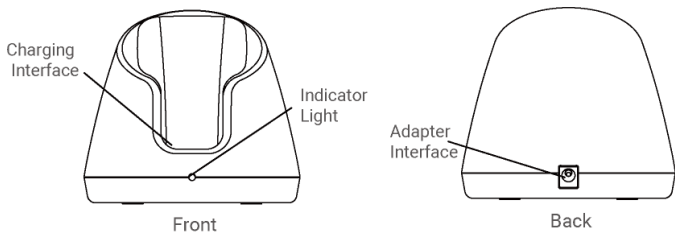
	EU Conformity. This symbol means that the device fully complies with EU Directive 93/42/EEC
	Materials can be recycled
	DC power
	Caution
	Manufacturer
	Date of manufacture
	Refer to the user manual
IPX0	Waterproof grade: Not waterproof
	Must not be directly discarded in the household trash can (The EU Directive Mark on Waste Electrical and Electronic Equipment)
	Contact number of manufacturer
	Serial number

	European Representative
	Charging interface of imaging unit
	Charging interface of charging cradle
	TYPE-C port
	Temperature limit
	Humidity limit
	Atmospheric pressure limit
	Fragile, handle with care
	No rain, keep dry
	Upward direction
	No tumbling
	Stacking limit is 5 layers
	Packaging is recyclable

2.4 Product Diagram



Bottom
Imaging Unit



2.5 Accessories

- VS500 is a portable model of the VeinSight™ vein finder series. VS500 is lightweight with built-in high-capacity rechargeable lithium battery. Medical practitioners can operate the device by hand with ease and rapidly find and locate the veins of patients.
- VS500 comprises the imaging unit and the charging cradle. The imaging unit is used to project vein image.
- Optional supports are available for purchase for VS500. The mobile, fixed and desktop supports can be used to support the device.

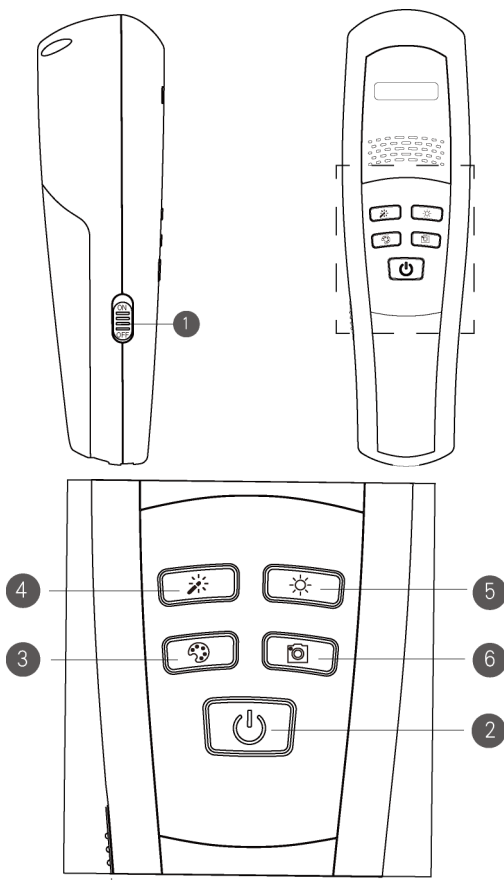
2.6 Package List

No.	Name	Quantity
1	Imaging unit	1
2	Charging cradle	1
3	Power adapter	1
4	User manual	1
5	Product certification	1

3. Instructions for Use

No installing or setting is required before using the VeinSight™ vein finder.

3.1 Operating Instructions



- 1 Main Switch:** Switch to “OFF” to turn the device off. Switch to “ON” and press Power button to turn the device on. Select the corresponding button to realize a specific function.

② **Power:** Power button.

Press Power button for about 0.5 seconds till two beeps are heard, then the VS500 will be power-on.

Off: Press and hold Power button for more than 2 seconds till two beeps are heard and the light of Power button goes out, then the device shuts down.

Standby: When device is power-on and the projector is light-up, short press the Power button (no more than 0.5 seconds) to enter the standby mode and the projector will be turned off.

Wake Up: When device is in standby mode, short press the Power button (no more than 0.5 seconds), the device will beep and the projector will be light-up.

③



Short press this button to change the projection color. There are five colors to choose from, including cyan, green, skin color, red, and blue. The default color is cyan.
Long press this button to inverse the vein image. The projection of the vein is dim by default.

④



Short press this button to switch between the universal mode and enhanced (fine detail) mode.
Long press this button to switch to depth mode.

⑤



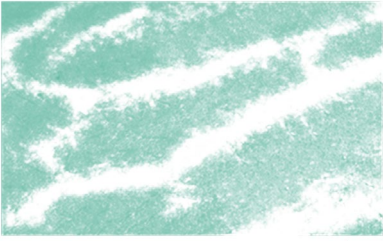
Short press this button to adjust brightness. There are 5 degrees of brightness.
Long press this button to change size of vein image: full size, 2/3 size and 1/2 size. The default size is full size.

⑥



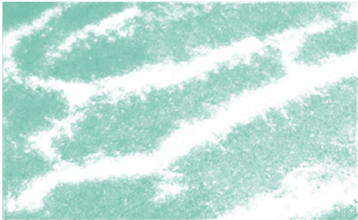
Short press this button to freeze the image, then long press to save the image, and an image number will appear in the upper-left corner as shown in the picture below. Short press the button again to go back to default mode. In freezing, short press the button will not save the image, and the device will go back to default mode.

No.156985743

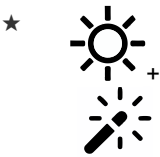



Long press this button to enter the image gallery. In this mode, short press this button to browse the saved images, long press the button again to exit this mode.

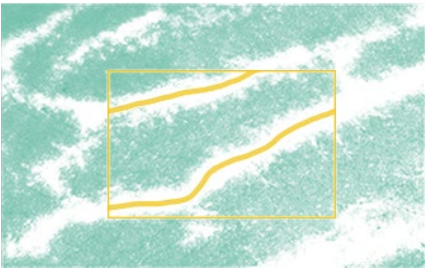
No.156985743



Gallery



Short press these two buttons together to enter the venipuncture hint-point mode, short press  to exit this mode





Short press these two buttons together to turn on or turn off the distance-sensing function. When the distance-sensing function is on, an A will appear at the bottom-right corner of the image, and the device automatically sleeps or goes back on by sensing where there is a change in distance to the object. When the device is in sleep mode, waving a hand beneath the device can wake it up.

Note: In the universal or fine detail mode, Inverse and image size can be selected. If one mode is selected, the former mode will be replaced immediately

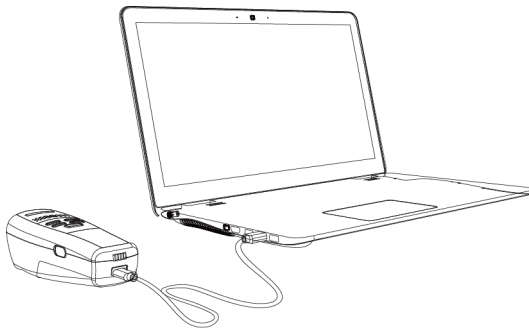
Note: Universal mode: Standard image for all patients.

Note: Fine detail mode: Finer image with more details to find smaller and deeper veins.

Note: The venipuncture point-hint mode serves only as a reference, it cannot be used as the sole method for locating veins, and should be used by a qualified medical practitioner.

3.2 Export Images

- Install the driver on the computer.
- Enter the VS_Image_Viewer software.
- Connect the device with the computer, press Power button to turn on the device.
- Operate according to the prompts of the software.



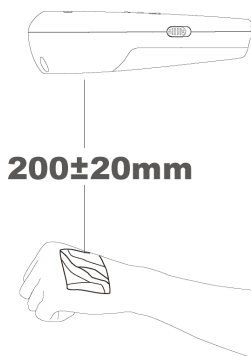
Note: Please download the driver and the VS_Image_Viewer software on our website: www.veinsight.com.

Note: Please connect the device and the computer with a Type-C to USB cable.

Note: VS500 can only store about 20 pictures. When the storage limit is reached, newer images will automatically overwrite older ones in a chronological order.

3.3 Focus

- Hold the imaging unit and place it directly over the observation area from about 7.87 inches (200mm) away.
- Adjust the position of the imaging unit to ensure that the projection window is perpendicular to the observation area.
- Fine-tune the relative distance till the text on the edge of the image appears the clearest and sharpest, and then the focusing process is complete.



Note: The projected vein width might be thicker or thinner than the actual width due to factors such as the distance between the VS500 to the skin, the patient's physical features and even the different observation modes.

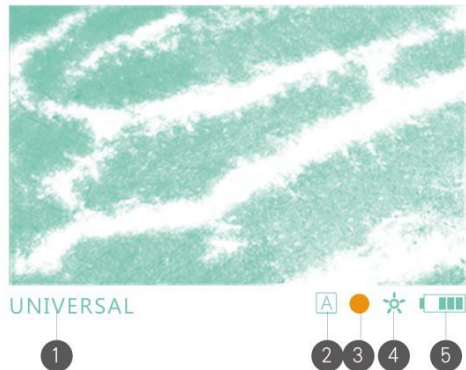
It is recommended to prioritize the judgment of medical practitioners through standard procedures and professional experiences before making a drug injection.

Note: VS500 has a distance-sensing function. When the device is not at the optimal distance to the patient, a yellow dot appears at the bottom-right corner of the projected image, but this should only be auxiliary for judgment.

When the dot becomes same color with the vein image, the distance is at its optimal.

3.4 Projected Image Description

An example of the projected image is shown below. At the bottom area of the image, information such as current mode, battery status, etc. are shown in texts or graphics.



①	Current mode in use
②	Distance-sensing function on/off indicator.
③	Distance indicator. When it turns green, the device is at the recommended distance.
④	Brightness indicator.
⑤	Battery indicator.

4. Cleaning and Maintenance

4.1 Cleaning

- Don't clean the VS500 when it is fixed to the supports. Please remove it from the supports before cleaning.
- Please unplug power cable and make sure the VS500 is turned off before cleaning.
- We suggest cleaning the lens window for every month. Please use dust-free cloth and alcohol of a 95% concentration to wipe it, then air dry naturally or wipe it with a dust-free cloth.
- It is recommended that the body of the imaging unit be cleaned every two months. Use a dust-free cloth dipped in 70% alcohol to wipe it, then air dry naturally or wipe it with a dust-free cloth.

Note: Please follow the instruction to clean the device and avoid scratching the lens window.

Note: Please follow the above precautions when cleaning the VS500, otherwise the device may be damaged.

Note: VS500 needs regular examination. Please follow the requirement of your institution to clean and sterilize the device every time before using.

4.2 Maintenance

- Please do not immerse the device in any liquid or leave liquid on it.
- Do not try to sterilize the device by heating or pressurizing.
- Do not use other organic solvents or rough cleaning tools to wipe any parts of the device to avoid damage.

Note: If there is abrasion or dirt on the lens window, please don't use the VS500. If the window is damaged or broken, please contact the authorized dealer or manufacturer for repair.

5. Battery

5.1 Built-in Battery

- The built-in battery is inside the imaging unit.
- Before using device for the first time, please charge the battery fully.
- Avoid completely discharging of the battery, and recharge in time when the battery is not completely used up.
- When the battery enters the protection mode because of output short circuit or over-discharge, the battery needs to be charged to recover.
- Check the battery every 2 months to see if the charging and discharging work properly. If there is any abnormality, please contact the dealer or manufacturer in time.
- The used batteries should be properly disposed of according to local regulations.
- Please use the original adaptor to charge the battery.

Note: When the battery is less than 3%, the device beeps continually. Short press any button (about 0.5 seconds) will stop the beep. If device is rebooted in low battery, the “beep” sound will start again before the battery is charged.

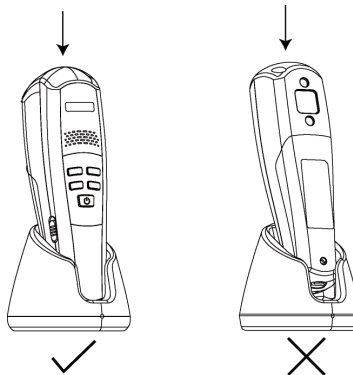
5.2 Charging

The battery indicator is on the bottom right corner of projected image. The device needs to be charged when battery is low. The charging procedures are as follows:

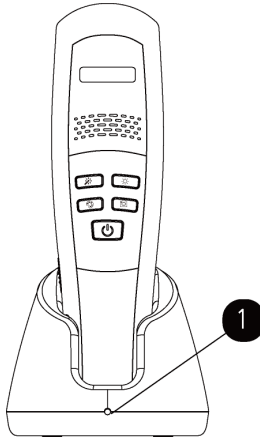
- (1) Use the adapter to power the charging cradle.
- (2) Switch the main switch on the imaging unit to "OFF".
- (3) Mount the imaging unit onto the charging cradle.
- (4) The indicator light is blue when the device is charging.

Note: Make sure to mount the imaging unit in the correct direction otherwise it may be damaged.

Note: During charging, do not put your hand or any part of your body on the adapter for more than 1 minute as the high temperature may cause burns.



(5) Determine the charging status by light colors of the indicator.



When the indicator light ❶ is blue, the battery is not fully charged, and needs to continue charging.

When the indicator light ❶ turns green, the battery is fully charged; it is recommended to remove the imaging unit from the charging cradle.

When the indicator light ❶ flashes, the battery temperature may be abnormal or the battery may be over-discharged. Please check the imaging unit, the charging cradle and the power adapter, and re-plug the adapter to solve the problem.

6. Storage and Transportation

- For storage and transportation of the device, don't place it in an environment where the temperature and humidity is too high or too low, or that is dusty.
- Please comply with the storage and transportation conditions specified as follows: humidity: 10-90% RH (non-condensing), temperature: -20°C to 50°C.
- Please keep the device away from flammable and explosive gas source and handle with care to avoid impact or vibration when transporting.

7. Technical Specifications

7.1 Classification

Item	Category
Protection against electric shock	ME equipment with built-in power supply, without application parts
Protection against ingress of water or particulate matter	IPX0
Method(s) of sterilization	By methods validated and described by the manufacturer
Mode of operation	Continuous operation

7.2 VS500 Specifications

Item	Specification
Weight (the imaging unit)	420g
Dimensions (the imaging unit)	60x60x210mm
Battery	Lithium-ion Battery, 3.6V, 4.3Ah
Battery life	5 hours
Charging time	3 hours
Adapter specifications	Model: FJ-SW328U0502000N Rated Input :100-240V AC, 50-60Hz, 0.4A Rated Output: 5V DC, 2A
Peak wavelength of infrared light	About 850nm
Valley wavelength of visible light	About 530nm
Atmospheric Pressure (working and storage)	700hPa to 1060hPa
Working environment humidity	10~90% RH (non-condensing)
Working environment temperature	10°C ~ 30°C
Storage humidity	10~90% RH (non-condensing)
Storage temperature	-20°C to 50°C

8. Common Faults and Solutions

Fault	Reason	Solution
No boot display	Low battery	Charge battery
	Power error	Reboot by main switch
Boot failure	System error	Power off and reboot
		Reboot by main switch
No image display	Operation error	Reboot by main switch

Note: If you find other faults that cannot be solved, please contact the manufacturer to provide essential circuit diagrams, list of components, descriptions, and calibration instructions to assist the service person in parts repair.

9. Disposal

- The service life for the device is five years (from the manufacture date). To properly dispose of used device after the expiry date, please contact the dealer or the manufacturer and follow local regulations.
- The proper disposal of packaging materials should follow local regulations and the country's environmental protection law.

10. Warranty

10.1 Warranty

- The working temperature range of VS500 is 10°C ~ 30°C. Malfunction may occur outside of this range.
- When the VS500 does not work properly, please turn off the device.
- If any unknown fault appears, please stop using the VS500 immediately. Then turn off the device and contact the dealer or manufacturer for support.
- The warranty period for VS500 is: 18 months for the imaging unit and 6 months for the battery after the purchasing date. The device is of high-quality materials, workmanship and conforms to the manufacturer's specifications.
- Within the warranty period, the defective parts can be repaired or replaced free of charge. The replaced parts will come with a Return of Material Authorization (RMA) number. The newly repaired or replaced parts will enjoy a 90-day warranty period from the date of receipt.
- Any damage caused by disassembling the machine without the permission of the manufacturer is not covered by the warranty.

Note The warranties do not cover damages caused by misuse, abuse or force majeure.

10.2 Liability Statement

- In no circumstance shall either our company or the customer be held liable to the other for any incidental, indirect, special or collateral damages (including but not limited to loss of profits or loss of business opportunities).
- Regardless of how such liabilities may be claimed, including contract breach, tort (including negligence) or any other ways, the above restrictions still apply.

BOTTOM PAGE

Manufacturer:

BLZ Technology (Wuhan) Co., Ltd.

Address:

Room 2166, 2176 Building E, Cyberport Dongxing Road, East Lake New Technology Development Zone, 430074, Wuhan, China

European Representative:

MedPath GmbH

Address:

Mies-van-der-Rohe-Strasse 8, 80807 Munich, Germany

VEINSIGHT

www.veinsight.com



BLZ Technology (Wuhan) Co., Ltd.

TEL: +86-27-6552 0255

ADD: Room 2166, 2176 Building E, Cyberport Dongxing Road, East Lake New
Technology Development Zone, 430074, Wuhan, China.