

User Manual of Handheld Portable Infrared Vein Finder

【Product Name】

Handheld portable infrared vein finder

【Structure】

Handheld portable infrared vein finder consists of light source, image processing module, battery and case. The case includes function buttons and indicator lights. As shown in figure 1.

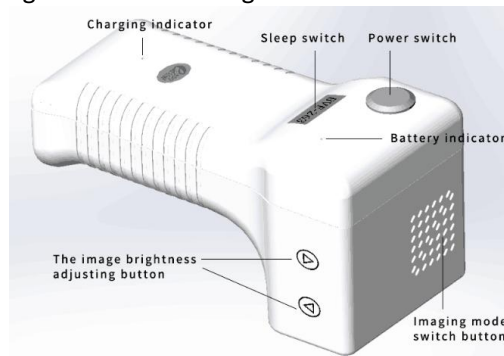


Figure 1. Handheld portable infrared vein finder

【Intended Application】

To find subcutaneous veins.

【Operating Principle】

Handheld portable infrared vein finder acquires image of subcutaneous veins, the image which results from dealing with image signal is projected onto the surface of the skin. Thus, subcutaneous vein image will be displayed on the skin surface of the corresponding position.

【Technical Parameter】

Effective positive projection distance: 29cm ~ 31cm

Light projection: 300lux ~ 1000lux

Active radiation contains wavelength light: 750nm ~ 980nm

Electrical source: lithium ion polymer batteries

Service voltage: d.c. 3.0V ~ 4.2V

Net weight: 0.28±0.02kg

Prevent into the liquid level: IPX0

【Method of Application】

Before using the product, medical staff should be familiar with how to correctly locate in order to get the best detection effect. In the process of use, it is recommended that the medical staff take touch and visual observation information for reference, combined with the projected image results to determine the actual location of veins. Please try to keep the observed of skin smooth and tight, give priority to choose areas of the organization with less scars, spots or hair.



1. Start The Instrument

- a. Press and release the power button of the panel, then the instrument starts.
- b. After the instrument starts up, power indicator lights up. According to the power quantity, the light shows two colors: white, blue. White represents high power, low blue stands for low power.
- c. Please make sure that the power indicator is normal and power is full while the instrument works. Power indicator displaying blue indicates the instrument needs to be recharged in time. When the instrument is charging, charging indicator is flashing white light. If it is fully charged, charging indicator puts out.

2. Repeater Operation

- a. Distance measurement: Let the device light source part to the surface of the skin to be about 30 cm (best distance is 30 cm, and 30±5cm is suitable for using) distance. You can observe instrument square image projected onto the surface of

the skin. The grain of the image is corresponding with subcutaneous vein grain. Medical staff choose the appropriate target vein to complete the venipuncture.

- b. Imaging mode switch: Insert the needle into the hole of projection window, press imaging mode switch button, image can be switched to blue-white, red-green and red-white imaging mode.
- c. Image brightness adjustment: Touch image brightness adjustment button to adjust image brightness."  means brightness enhancement, "" means brightness reduction.
- d. Sleep: The instrument starts sleep mode when touch sleep button. The image is off. Meanwhile, the instrument saves electricity. If you touch the sleep button again, the image restores.

3. Shut down

After using, press the power button, the instrument is turned off and power indicator is extinguished.

4. Suggestions for use

- a. Clinical use: Two methods for clinical use are recommended. The first method is that medical staff begin venipuncture directly while using the instrument. The second one is to draw lines towards along the projection image of targeted veins by a medical skin marker. It is convenient for venipuncture after shutdown.
- b. Sunlight or indicator light illumine: While you are using the instrument, please do not make the measured surface of skin towards to the sun. Otherwise the vein image is incomplete. It is necessary to adjust the indoor illumination which can help medical staff to examine the vein display better.

【Attention and Caution】

1. Handheld portable infrared vein finder is a kind of medical equipment which forms the subcutaneous vein image in situ for contactless.
2. In order to accurately examine the position of the vein, it is suggested put the product at the proper height and angle, and keeps the product located in the center of the target vein.
3. Don't look straight at the light source when it is working.
4. This product belongs to the electronic equipment. There could be outside interference by electromagnetic signal. So please stay away from other equipments when using.
5. It is suggest that the instrument should not be used when it is charging.
6. The instrument has no waterproof function, please keep it from liquid.
7. Please do not open, disassemble or repair the instrument by yourself.
8. If the product is expected to be not used for a long time, please charge the product fully, clean and package it in a dry, shady and cool place to store by the original packaging materials. Please avoid putting the product upside down and under heavy stuff when storing.
9. This product contains lithium polymer batteries; it is strictly prohibited to put the product into the fire. Don't discard at will and contact the manufacturer for recycling.

【Maintenance】

1. It is suggested to maintain regular equipment, ensure it enough clean before use.
2. Attention for instrument maintenance matters:
 - a. The instrument has no waterproof function, please keep it from water and don't operate with wet hands.
 - b. Please do not use the method of ultraviolet irradiation or high temperatures for disinfection.
 - c. It is suggested that do not charge the instrument when it is maintained.
 - d. You can disinfect the instrument by a clean dry cloth which is wet with soap, medicinal alcohol and twisted dry.

【Storage Environment】

Store in the cool, dry, dark place where temperature is between 5°C to 40°C and relative humidity does not exceed 80%.

【Company Information】

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