



1927nm+1550nm

(Tm Laser System)

User's Manual



型号: BMFR25

Pay Attention To

Dear user:

Thank you for using our company's products. To maximize equipment performance, we sincerely recommend the following:

- Read the instructions carefully and keep them properly for future reference.
- Please install and use this device strictly in accordance with the operating instructions.
- Non-professional personnel are prohibited from modifying or maintaining this equipment without authorization.
- If you encounter any issues during the operation, please contact us.
- This product is not a pharmaceutical product and should not be used for the treatment of diseases!

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Chapter 1 User Guidelines



Before using this device, please read this manual carefully! Ensure the device is in working condition!

If the operator connects the device to other peripheral devices, please read the peripheral device manual carefully. Contact us if you have any questions.

- Do not use this device with other electrical equipment.
- Do not use the device during thunderstorms. (Inductive currents may flow into the device and affect normal power output during thunderstorms.)
- Do not place the device in strong electric currents or magnetic fields, as this may cause malfunctions.
- Do not use the device in high-temperature or humid environments to avoid clicks or malfunctions.
- Do not use outdoors; it is preferable to operate the device in a dry location.
- Do not spray water on the device.
- Do not use modified or altered equipment.
- Only use accessories provided by our company.
- Ensure that the supply voltage is consistent with the required voltage of the equipment and do not exceed 240V.
- Before use, ensure the device is properly connected to power.
- Before use, ensure the circuit and accessories are properly connected.
- Before use, wear professional goggles and eyeglasses to avoid direct light exposure to the eyes.
- Ensure the device uses a dedicated socket and does not share sockets with other devices.
- Wires and hoses should be kept away from heat sources and ignition sources.
- Do not use the device's wires as handles.
- Do not use the device directly if the cable or connection line is damaged, the device falls, water enters, or other damages occur.
- 7 Children under the age of 7 are strictly prohibited from using the

device.

- Children over 11 years of age should not use the device alone and must be supervised by an adult.
- Individuals with disabilities are advised not to use the device while holding their stomach and must be guided by a designated person.
- Contraindicated in pregnant women.

- Do not use on the eyes, ears, oral cavity, glottis, nasal mucosa, nipples, or genital areas.
- Do not use the device if there is any discomfort or injury to the skin.
- If you have any questions, please consult a physician before use.
- Do not shake or bump the device during use.
- Ensure the device power is off before cleaning and maintenance.
- Do not use cleaning agents, solvents, or chemical reagents for equipment cleaning.
- Do not use the device when applying aerosol products.

1.1 Security Notice

- The device is equipped with self-diagnostic functionality.

During device startup, the system processor performs a "safety test". Additionally, while the device is in operation, the system processor conducts "ongoing tests" and "spaced tests".

- In case of an emergency, press the emergency button (red button) to shut down the device.

Note: Technicians who have completed dealer training are authorized to perform internal equipment maintenance. Improper maintenance by non-professionals may void the warranty.

1.2 Operation Study

This equipment may only be operated by personnel who have received professional training. Please ensure proper use of our products, and we recommend carefully reading this manual before operating the device. Prior to treatment, potential therapeutic risks should be eliminated for patients. During treatment, the area must be marked with "No Entry to Unauthorized Personnel," and operators must wear professional protective goggles while patients should wear professional goggles. Do not wear other types of eyewear or goggles without professional guidance. We recommend reaching a treatment agreement: The success of the treatment primarily depends on the operator's experience and understanding of professional knowledge.

1.3 Electrical and Equipment Safety

Power supply requirements for the device:

When the equipment is 220V, the requirements are: 220V+10%; 50/60Hz; single-phase 3 wire socket.

When the equipment is 110V, the requirements are: 110V+10%; 50/60Hz; single-phase 3 wire socket.

The device shall be equipped with three-pin national standard wires and ensure complete grounding of the earth wire.

Only authorized personnel can repair the equipment.

Note: The use of flammable substances such as acetone and alcohol is strictly prohibited. If alcohol is used for equipment disinfection, the



equipment may only be used after complete evaporation of alcohol.

Chapter 2 Equipment Description

2.1 Structure of Equipment

The device structure mainly consists of three parts: host, control system, and light guide system.

2.1.1 Main Engine

The host unit constitutes the entire appearance and serves as the carrier for other components. The 1927nm+1550nm laser system's host unit consists of the following components:

- Power module: Provides power to the entire system.
- Control module: As the CPU of the 1927nm+1550nm laser system, it performs different tasks by receiving information input and outputs actual functions according to the operator's commands.
- Display module: A medium for human-computer interaction, which displays system information and accepts operational commands from the operator.
- Cooling module: Reduces the temperature of the equipment to ensure prolonged operational performance.

2.1.2 Control System

The control system mainly completes various device commands through the control module. The control system of the 1927nm+1550nm laser system is mainly composed as follows:

- Power switch: Used to turn the device on and off.
- Emergency button: It allows immediate device shutdown in case of accidents or abnormalities to ensure personnel and equipment safety.
- Display screen: Enter and display system settings.

2.1.3 Light Guide System

The light guide system serves as the primary operational component and is one of the key parts of the equipment.

2.1 Device Performance Parameters

Performance parameter name	Numeric value
Total machine power	1500W



Pulse energy	1mJ-300mJ adjustable
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Laser wave length	1927nm+1550nm
Scanning pattern	Hexagon, Rectangle, Circle, Triangle
Beam transmission	Fibre-optical
Output type	Sequence pattern, random pattern, median split pattern
Coolant passage	Forced air cooling
Focus beam	650nm
Focus on beam power	$\leq 5\text{mW}$
Scanning scope	1.0mm*1.0mm~20mm*20mm
Electrical requirement	220V+10%; 50/60Hz 110V+10%; 50/60Hz
Screen	15.6 Inch display screen

Chapter 3 Installation Instructions

3.1 Installation Steps

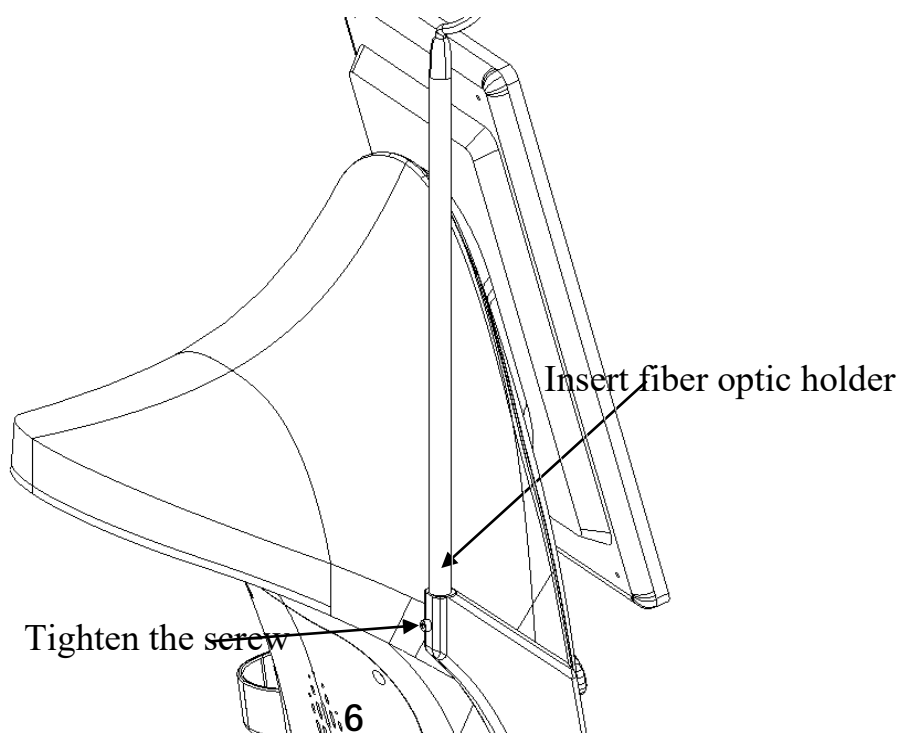
Before opening the device packaging, ensure the working environment meets the equipment's operational requirements. The device should be stored in an environment free from etching gas and with minimal dust exposure. Etching gases can cause severe damage to wires and electronic components, while airborne dust may significantly impair electronic parts and adversely affect internal electrical systems. Additionally, the temperature and humidity levels in the installation environment must comply with specified usage parameters.

3.1.1 Host Installation

- Open the device packaging and check if all accessories are complete and correct.
- Please place the device for 12 hours to avoid damage from high humidity during long-distance transportation.
- Assemble the equipment components and ensure all connections are securely in place.
- Ensure all parts and accessories are properly and securely connected.

3.1.2 Attachment Installation

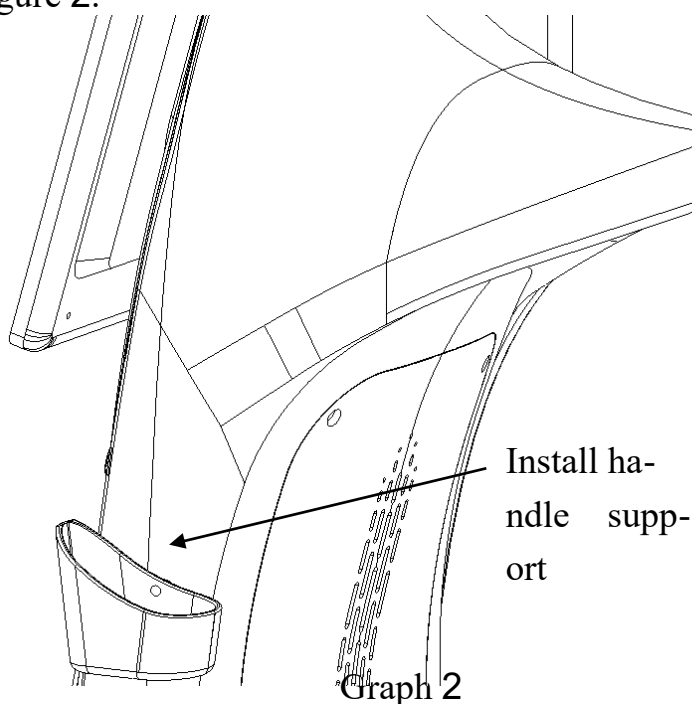
- Install the fiber optic bracket: Insert the fiber optic bracket into the mounting hole of the aluminum alloy handle and secure it with the hexagon socket screw on the handle, as shown in Figure 1.



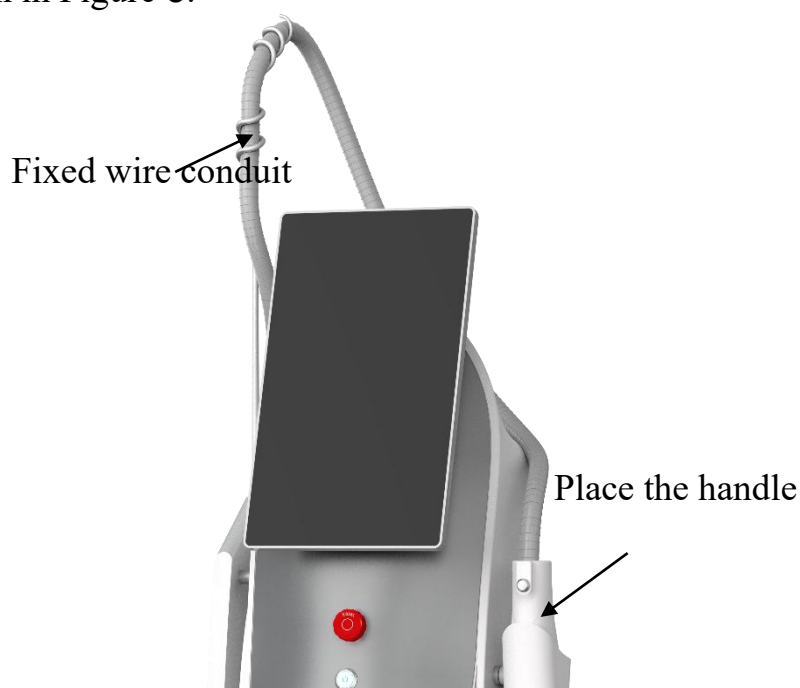


Graph 1

- Install handle bracket: Use the hexagon socket cylinder head screw in the accessory to install the handle bracket onto the main unit housing, see Figure 2.



- Place the handle: Secure the handle tube within the annular ring of the fiber optic bracket, then place the handle into the handle tray, as shown in Figure 3.



Note: When positioning the handle, avoid forcefully bending the fiber optic tube to prevent damage to the internal optical fibers.

3.2 Treatment Protocol

After completing the installation according to 3.1, open the device and test the functions and parameters. Once confirmed to be correct, you can start using the treatment program.

Note: When entering working mode, the laser treatment head must not be directed at a person. The pedal controller can only be pressed after the laser treatment head is aligned with the treatment target. Regardless of whether the device has laser output, the laser treatment head must not be directed at the operator or other non-victims. The laser treatment head must not be directed at the eyes.

3.2.1 Treatment Steps

- Prior to treatment, the operator must first obtain a detailed medical history to exclude any conditions that may contraindicate this therapy and perform a physical examination of the treatment area.
- Turn on the device and enter treatment mode.
- Set treatment parameters based on the patient's condition. Note: The treatment head must not be directed at anyone! Press the working status setting button and click the switch to initiate treatment.
- During treatment, monitor the patient's condition and adjust parameters based on actual circumstances.
- During the treatment process, precautions must be taken to avoid causing harm, and operators must implement appropriate protective measures.
- After treatment, turn off the main power supply and apply cooling gel to the patient's treatment area.
- First, clean the treatment area with a warm, damp towel, then disinfect the treatment area using cotton balls and disinfectant.
- Finally, place the treatment head into the transport container and turn off the power supply of the device.

3.2.2 Nursing Announcement

- During treatment, the treatment head should not remain in the treatment area for extended periods.
- For the treatment area, avoid contact with water for 24 hours and

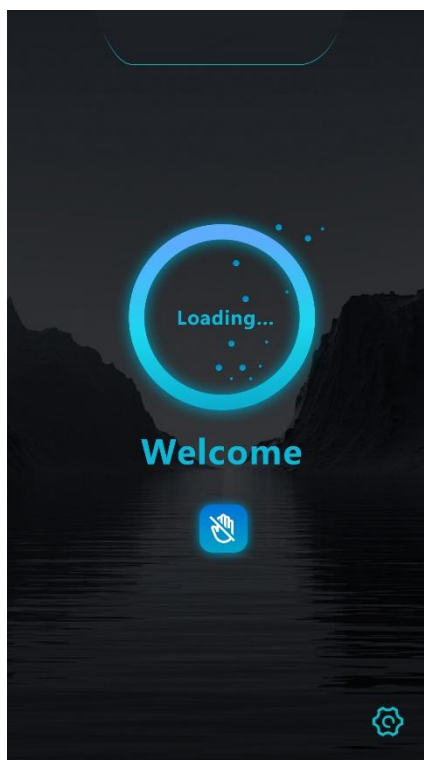
avoid washing with cold water for 3-7 days.

- Avoid hot and humid environments.
- Avoid spicy foods, seafood, and irritant foods, and reduce intake of photosensitive vegetables (such as celery, radish, spinach, and coriander).
- Pay attention to sun protection .
- 3 months of prohibition on the use of high-efficiency cosmetics.

Chapter 4 Operating Instructions

4.1 Boot Screen Interface

After the system starts, the startup screen will display as shown below. Wait a few seconds to enter the standby screen.



4.2 Function Interface

After the device display function interface appears, you can choose between two different working modes or select to enter the system interface. As shown in the figure below: Click area 1 to select the 1927nm working mode, click area 2 to select the 1550nm working mode, or click 3 to enter the system interface.



4.3 Work Interface

4.3.1 1927nm Operating Mode

This mode outputs 1927nm laser for various shapes, areas, and densities



For treatment modalities, clients may configure relevant parameters based on actual conditions.

1. In the 1 area, click the shape graphic to set the output shape. The output shapes include: hexagon, rectangle, circle, and triangle.
2. In the 2 area, click the up, down, left, and right arrows to set the area size of the selected shape, and the specific length value will be displayed in the upper left corner of the area.

The size setting ranges for various shapes and graphics are as follows:

- Hexagon:1.0mm~20mm;
- Rectangular:1.0mm~20mm;
- Circle:1.0mm~20mm;
- Triangle:1.0mm~20mm.

Using the numeric keys at the 2 position in the area allows you to quickly save the current drawing and settings. The numeric keys 1~4 represent 4 commonly used drawings and their parameters. Example: After pressing numeric key 1, configure the drawing and parameters, then click the save icon to save the current settings. Subsequent presses of numeric key 1 will automatically output the stored configuration parameters.

3. In Region 3, three distinct scanning modes are available (automatically switching with each click), arranged from top to bottom as follows: Central Scanning Mode (outputting sequentially from the center of the selected area in both vertical and horizontal directions); Random Scanning Mode (outputting randomly within the selected range); and Sequential Scanning Mode (outputting in a left-to-right and top-to-bottom sequence).
4. Select the **Single** option to enter single light emission mode.
5. Select the **Cont** option to enter continuous light output mode.
6. In the 4 area, you can choose to turn the aiming laser on or off. Click the **Close** button to turn off the aiming laser, and click the **Start** button to turn it on.
7. The pulse width can be adjusted in the region 5 by using the upper and lower ends of the region.  、  The button can

adjust the pulse width. Adjustment range:0.1ms~10.0ms.

8. The point spacing can be adjusted in the 6 area, using the upper and lower ends of the area. 、 The button can be adjusted to the interval distance between points. Adjustment range:0.2mm~2.0 mm.
9. Power adjustment can be performed in the 7 area. Use the sliding buttons in this area to adjust the transmission.

Output power.

10. The single-point energy is displayed to the right of the power adjustment option, in mJ.
11. After setting, click the (Standby) button to preview the aiming laser pattern; click the (Ready) button to enter preparation mode. In preparation mode, press the foot pedal switch or handle button to emit the laser.
12. Click the VRL button in the upper right corner to enter private mode. The working interface is shown in the figure below. The basic operation is similar to the above operation instructions.



13. Click the back button in the upper left corner of the screen to return to the previous screen.

4.3.2 1550nm Operating Mode

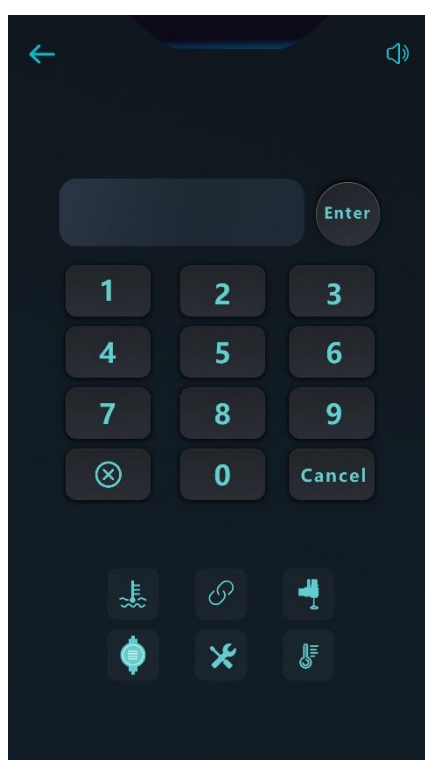
In this mode, the 1550nm laser output is used for various treatment methods with different shapes, areas and densities. Customers can set relevant parameters according to actual conditions.

The working interface of 1550nm is shown in the figure below, and the basic operation steps are the same as those in 1927nm working mode.



4.4 System Interface

To access the password interface, click the Settings button on either the standby or working interface (refer to **Section 4.2** for standby interface details). As shown below, to prevent user errors, all passwords, subsequent interface configurations, and parameters are pre-set by the supplier. Customers cannot modify these settings at this stage.



Chapter 5 Maintenance Instructions

Note: Maintenance and repairs must be performed by qualified technicians. Do not open the chassis to avoid electric shock.

5.1 Clean Host

After daily use of the host device, turn off the power switch, unplug the power cord from the network outlet, and clean the host with a damp soft towel.

5.2 Lens Cleaning

Inspect the surface of the optical output lens for contamination. If present, clean it using a cotton swab and cleaning agent.

5.3 Corrective Maintenance

- The device is internally designed with a laser, so non-professional maintenance personnel should not perform repairs or replace parts.
- Maintenance must be performed by qualified professionals, and strict protection of the laser device must be ensured. Otherwise, our company shall not be liable for any personal injuries or equipment damage resulting from such negligence.
- When maintaining the device, unplug the power cord from the network outlet.
- When performing inspection and maintenance under live conditions, prioritize the safety of personnel and equipment, followed by connecting the power cord plug of the equipment to a network outlet.
- Equipment maintenance (e.g., power supplies, lasers, etc.) must utilize parts provided or authorized by our company. Otherwise, we shall not be liable for any resulting personnel injuries or property damage.

5.4 Alarm Alert

Warning symbol	Meaning
 pay attention to	Incorrect use may result in personnel injury or property damage.

 warn	Incorrect use may cause personnel injury.
 danger	The device is equipped with high-voltage components and high-voltage output terminals, posing high-voltage hazards.

5.5 Contraindication

 warn	Use under professional supervision in the following situations: ➤ women during menstruation; ➤ children ; ➤ Hemorrhagic diseases or trauma, inflammation, dermatological conditions, and skin infections; ➤ Patients experiencing numbness and no response to temperature changes; ➤ Individuals with compromised immune systems, a history of scar formation, or systemic infectious diseases; ➤ Areas with artificial fillers following cosmetic surgery.
 danger	Use is contraindicated in patients with the following symptoms: ➤ Individuals who have implanted cardiac rhythm regulators or pacemakers, or are currently using electrocardiogram (ECG) scanners; ➤ Individuals using artificial bones; ➤ silicotic ; ➤ Patients who have consumed alcohol or are experiencing high fever; ➤ For patients with highly sensitive psychiatric disorders and epilepsy; ➤ Patients with severe hypertension and severe cardiovascular or cerebrovascular diseases; ➤ Patients with metallic foreign bodies in the body, pregnancy, cachexia, or malignant tumors.

Note: Consult healthcare professionals to determine suitability.

Chapter 6 List of Appendices

The attachment list is as follows:

Accessory name	Quantity	Accessory name	Quantity
Optical fiber support	1 Set	Foot pedal	1 individual
Handle rest	1 individual	Working head	2 individual
Eyeglass	1 assistant	Power line	1 root
Eye mask	1 assistant	Hexagon spanner	1 To

Note: All accessories not listed in the attachment list have been assembled with the main device.

Optional private suite.