SKIN+ACT

IPL Pro
Hair Removal Machine

Contents

Warning

This manual provides users with operation guidance, installation, maintenance and other information. Please read and comply with the safety requirements before operating the machine.

Working principle

Super IPL employs the principle of selective photothermolysis, to make pigments of different colors in the skin absorb corresponding light energy, subsequently undergoing thermal decomposition. These are ultimately metabolised and discharged from the body via the lymphatic system, thereby achieving aesthetic enhancement.

Application

The Super IPL Photorejuvenation Device addresses skin imperfections, minimises pores, enhances skin elasticity and texture, provides long-term hair growth suppression, removes freckles, improves acne and telangiectasia, and is used for aesthetic purposes.

Contraindication

- Individuals with photosensitivity.
- Those who have recently taken photosensitising medication.
- Those with severe keloid-prone skin.
- Those with severe heart disease or hypertension.
- Those who have undergone chemical peels or intense pulsed light treatments within the past six months should not undergo this procedure.

Intense Pulsed Light

This product utilizes intense pulsed light with wavelengths ranging from 430nm to 1200nm. It must be operated strictly in accordance with the user manual.

Product Structure

The numbers in brackets following the product structure names in this manual correspond to the position numbers in the diagram of chapter 2.

Precaution

- Skin must be protected with cold gel.
- Eye protection for patients and operators is required.
- The filter must be inspected before use and should not be used if it is dirty or damaged.
- You must pay attention to the storage and operating environment temperature of the instrument (refer to Chapter 2).
- All operators must pass relevant application technology training and strong light safety knowledge training.
- Operators must always pay attention to the dangers that strong light beams may bring.
- The maintenance and repair of the product must be carried out by our company or ourauthorized maintenance personnel.

Copyright Statement

LCD (Liquid Crystal Display)

If the LCD display is damaged, be very careful with the liquid crystal. If any of the following situations occur, take emergency measures as described:

- If liquid crystal comes into contact with skin:Wipe the area with a cloth, then rinse thoroughly with soap and water.
- If liquid crystal gets into eyes:Wash the affected eye with clean water for at least 15 minutes, then seek medical attention.
- If liquid crystal is swallowed:Rinse your mouth thoroughly with water, drink plenty of water, and seek medical attention.

Electrical Interference Warning

If this product is used in a hospital or beauty salon, it may cause interference to nearby equipment. Please refer to local regulations for details.

WEEE (Waste Electrical and Electronic Equipment)

Environmental Protection and Waste Disposal.

To protect the environment, do not dispose of waste equipment in public trash. Instead, recycle and dispose of your electrical and electronic equipment at a local authorized waste collection station.

Warning

All personnel in the strong light operation area (including patients) must take strong light protection measures.

The strong light window is located at the crystal end of the handpiece. Avoid being exposed to the strong radiation from the window.

Bright Light Harm

For safe use, this product has been designed and manufactured with utmost care to minimize the risk of bright light harming personnel and the surrounding environment. However, improper operation can cause serious harm to the operator, patient, and surrounding environment, potentially resulting in burns, blindness, fire, explosion, and other potential hazards. To ensure safety, please observe the following safety precautions.

High-Light Safety

1. This product's high-light spectrum ranges from 430nm to 1200nm, which falls within the visible and near-infrared wavelengths.
2. This product must be operated by designated, trained personnel. It is strictly prohibited for other personnel to use it.
3. Do not look directly into the strong light beam from the high-light window.
4. Metal instruments can reflect light. Avoid direct exposure to strong light when using them, and use non-reflective instruments whenever possible.
5. Avoid wearing jewelry such as watches, necklaces, and bracelets that reflect strong light while operating.
6. Do not expose any area other than the affected area to treatment and the target surface for adjusting the strong light. If the device is not in use for extended periods, place it in standby mode or turn it off.
7. Flammable and explosive anesthetics, liquids, and gases (such as alcohol, ether, nitrous oxide, and oxygen) should be kept away from strong light radiation areas, and protective measures must be taken.
8. Patients must be provided with strict and effective eye protection, such as wearing high-light protective goggles and eye shields.
9. A high-light radiation warning sign should be posted at the entrance of the high-light therapy room. No one is allowed to enter or exit the room during high-light therapy.
10. Different parts of the body absorb light differently, so the energy (density) required for treatment should be adjusted from low to high.

Eye Protection

1. The intense light energy emitted by this product can cause eye damage. The divergence angle of the intense light emitted from the intense light window is approximately 45°, and the diameter of the light spot immediately adjacent to the intense light window is approximately 8mm*40mm. The device is equipped with interchangeable light spot heads of different sizes.

1. Personnel in the operating area must wear strong light protection glasses. The protection wavelength of the attached strong light protection glasses is 200nm~1200nm, the visible light transmittance is not more than 18%, and the applicable photon energy density is not more than 200J/cm^2.
2. Glare protection glasses may not be able to safely protect against direct strong light or strong light reflected by glass, reflectors, and smooth metal surfaces. Therefore, it is strictly forbidden to look directly at the above direct light and reflected light while wearing glare protection glasses.
3. Wearing strong light protection glasses, protective eye masks, etc. is effective in protecting the patient's eyes.Note: Please wear the protective glasses provided by our company.

Medical Device Safety

1. Super IPL is classified as Class I, Type B, general medical electrical equipment.
2. Super IPL uses a single-phase 220V power supply with a power capacity of no less than 1500VA.
3. The mains power supply connected to the Super IPL must use a single-phase three-wire power socket that complies with national standards and is well grounded, with a specification of 10A.
4. During Super IPL operation, the charging voltage of the high-voltage energy storage capacitor can reach up to 450V, and the energy can reach 1000J. After the power is turned off, the high-voltage device may still have residual voltage.Warning: Opening the protective cover of the machine without authorization may cause electric shock.

System Safety Devices

To ensure safe operation, the Super IPL is designed with the following safety features:

1. Standby/Ready Control: In standby mode, strong light output is disabled, which is a safe state for the system. In ready mode, strong light output is permitted.
2. Strong Light Radiation Warning: An audible warning sound is emitted when strong light is about to be emitted.
3. Lock Switch: Operator qualification restrictions are set.
4. Emergency Stop Switch: Emergency shutdown is enabled in the event of an unexpected situation.Note: When the device is not in use, remove the key from the lock switch and keep it in the care of a professionally trained, designated operator.

Instrument Overview

Machine Introduction

1. Structure and Function

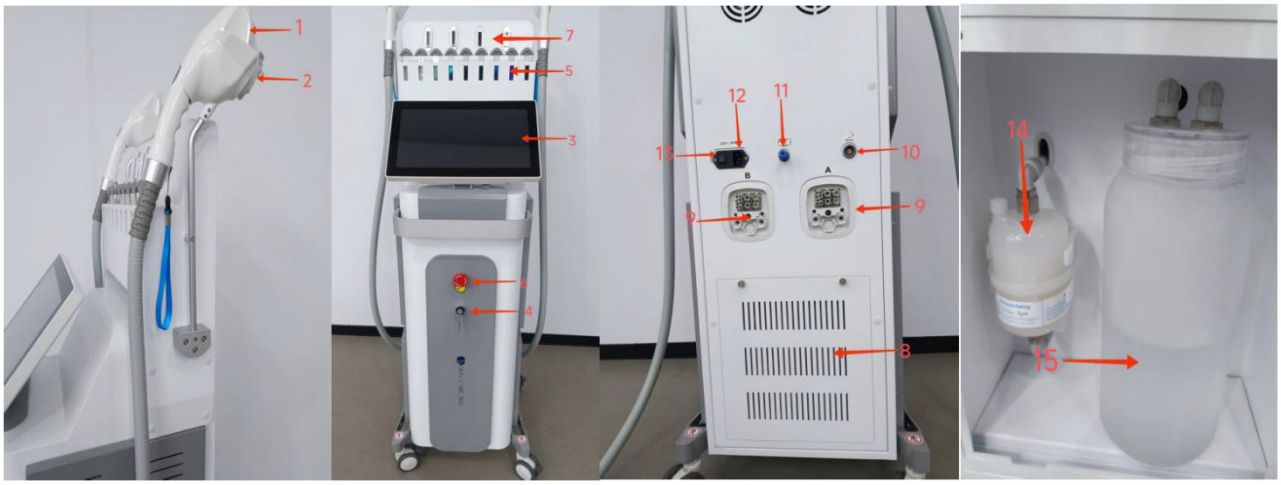


Figure 1 Product structure

1) Handpiece: Contains internal optical components that generate intense therapeutic light.
2) Waveguide (intense light window): Outputs intense pulsed light.Note: A waveguide is sometimes also called a light spot head.
3) Display screen: Displays the selected handle, system status, energy density, pulse width, pulse interval, number of pulses, cooling level, etc.
4) Lock switch: Turn the key clockwise to the horizontal position to turn on the machine; turn the key counterclockwise to the vertical position to turn off the machine.
5) Filters: Choose different filters to solve different skin problems, which are more targeted and effective.
6) Emergency switch: If the red emergency switch is pressed down, the power will be shut off immediately. Turn the red emergency button clockwise and it will bounce up, which indicates that the machine is unlocked.
7) Replaceable spot: Choose different specifications of treatment heads for different treatment parts and different problems.
8) Drain: Drain port, used to drain cooling water.
9) Hand tool interface: To connect the optical head and the host. This device is equipped with 2 hand tools.

10) Foot switch interface: Used to connect the foot switch to control light emission.
11) Interlock: Used to power on the whole machine. If the interlock is not installed, the device cannot start.
12) Power socket: Used to connect the machine to the mains power supply.
13) Power switch: The main power switch of the whole machine, used for on-off control of the host and the network power supply; there is a fuse holder here, which is used to install the fuse of the machine circuit, specification 10A Φ5*20mm.
14) Filter element: Used to filter impurities in water, ensure water quality safety, and extend the service life of xenon lamp.
15) Water tank: A device for storing cooling water, which can be disassembled to fill and drain water.

Foot switch interface: Used to connect the foot switch to control light emission.

Figure 2 LCD UI screen

16) Current count: Displays the number of laser shots currently used on this interface.
17) Standby button: Click it to put the system into standby mode.
18) Ready button: Click it to put the system into ready state.
19) Energy density: Energy per unit area, automatically generated by adjusting the Pulse width and .
20) Pulse width: The pulse width of the light output can be set from 1ms to 10ms; the step value is 1ms.
21) : The number of light output pulses, 1 to 3 adjustable.
22) Pulse interval: The interval between sub-pulses, adjustable from 10 to 50 ms, with a step value of 1ms.

1) A Handle B Handle : Select the handpiece you need for treatment here.

24) Frequency: The speed of light output; it is adjusted according to the treatment area and the operator's proficiency. The larger the number, the faster the light output, and the less safe it is.

25)  : Adjust according to the patient's skin color and season. Adjustment principle: The darker the skin color, the stronger the cooling required. The hotter the weather, the stronger the cooling required. However, it is not recommended to use the strongest cooling to avoid cold anesthesia. Patients cannot perceive the intensity of the energy used well, which may cause burns.

Figure 3: Number of laser shots reminder

Figure 4: Number of laser shots reminder

Figure 3: Available pulse number prompt: This prompt will appear on the interface when the number of pulses on the handle is less than 5000. Please be sure to prepare a new handle in time to prevent the treatment from being affected due to the number of pulses being used up during operation.

Figure 4: This prompt will appear when the handle counter is not connected or the handpiece life has expired. Please check it in time.

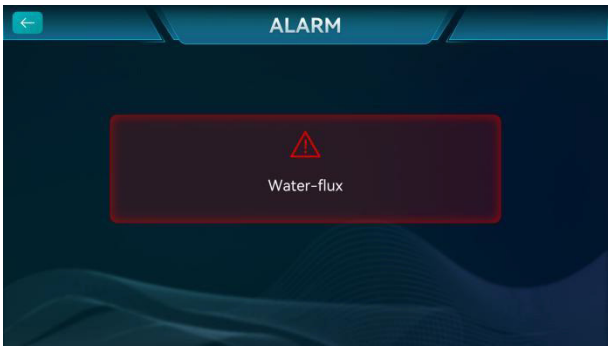


Figure 5 Water flow alarm

Figure 6 High water temp alarm

Figure 5: If this prompt appears, check that the handle is properly installed or that the internal water pipes are not bent.

Figure 6: If this prompt appears, check that the water level in the water tank is normal and that the instrument is properly cooling. If none of these conditions are present, consider whether the cause is prolonged operation.

3. Power on, Power off, Standby, EMG-Stop

Turn on the machine

- Turn the emergency switch (6) to the right at an angle of about 45° to put the emergency stop switch in the raised state.
- Turn the power switch (12) on the back of the machine to “I” to turn on the power.
- Turn the key (4) clockwise to the horizontal position. The water pump in the machine will start running and the system will enter the “standby” state.

Put the machine in standby mode

- Press the “Standby” button to place the system in standby mode. In this state, pressing the foot switch will not activate the intense light output. Ensure the machine remains in standby when not in use to prevent accidental activation.

Turn off the machine

- Click the “Standby” button to place the system in standby mode;
- Rotate the key switch (4) to the vertical position to switch off the equipment;
- Set the power switch (12) at the rear of the machine to the “O” position.

Emergency Stop Button

- Turn the red emergency button (6) clockwise and it will bounce up, which indicates that the machine is unlocked. It should be released when you are trying to start the machine.
- In the event of any emergency, press the emergency stop switch (6) to halt the machine. If the red emergency switch is pressed down, the power will be shut off immediately.

Note

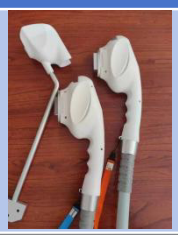
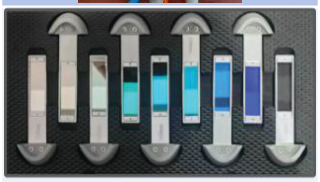
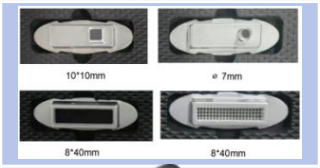
- Before powering down, press the standby button (17) to place the system in standby mode.
- This unit incorporates anti-interference measures within its software. When transitioning from standby to ready state upon power-up, or in the event of excessive external interference, the machine may automatically reset and restart the system.
- In the event of an unexpected power failure, the unit's software features a protection function. It will typically resume operation after approximately one minute when powered up again.

4. Filters and Spot Heads

Figure 7 Filters and spot heads

26) Filters: Different wavelengths have different therapeutic targets. Please refer to the parameter recommendation section.
    - 430nm: Pimples removal
    - 480nm: Acne removal
    - 515nm: Spots and pigmentation removal
    - 550nm: Skin firming, acne removal
    - 560nm: Skin rejuvenation
    - 590nm: Red blood vessels, spider veins treatment
    - 640nm: Hair removal
    - 690nm: Hair removal
    - 750nm: Hair removal (Dark skin)
27) 8*40mm, this treatment head has a wavelength of 420nm and is specially used to treat acne. No filter is required when using this treatment head.
28) 8*40mm, honeycomb dot matrix spot, commonly used for sensitive skin/sensitive parts treatment.
29) 10*10mm, suitable for small areas treatment (upper lip, around eyes, between eyebrows, etc.).
30) 7mm, commonly used for small areas of pigmentation or intensive treatment of individual parts.

Parts List

Image	Name	Quantity	Unit
	Handles, Brackets	2, 2	pieces
	Optical filters	9	pieces
	Replaceable light spot heads	4	pieces
	Foot Pedal	1	piece
	Power Line	1	piece
	Protective Glasses	1	pair
	Protective Goggles	1	pair
	Keys	2	pieces
	Safety Locks (spare)	2	pieces
	Inter Lock	1	piece

Note: Subject to the actual delivery of accessories.

Installation Instruction

First carry out an appearance inspection.

The appearance should be intact and undamaged. When observing from the strong light window (2), there should be no dirt or damage. If there is any doubt about the safety performance, stop using it and contact the supplier or manufacturer for confirmation.

1. Handle Bracket Installation

Install the two brackets on the left and right sides of the machine respectively.

2. Handle Installation

Install one end of handles A and B into the reserved slots (9) marked A and B on the back of the machine respectively, and place handles A and B on the brackets.

3. Interlock Installation

Plug the interlock into (11) port.

4. Foot Switch Installation

Plug the foot switch into (10) port.

5. Power Cord Connection

The power supply connected to the Super IPL Machine should be no less than 1500VA.

6. Filter Replacement

Take the required filter, perpendicular to the light guide port, and gently install it in place.

7. Spot Head Installation

Slowly move the spot head closer to the spot head slot, and it will be automatically installed by magnetic attraction.

8. Adding and Draining Water

a. Unscrew the protective cover of the water tank.

b. After filling the tank with water, switch on the machine to activate the water pump.

c. Finally, tighten the water tank plug and the rear cover of the device. Observe through the waveguide port (2) on the handpiece to confirm the optical cavity is filled with water and contains no visible air bubbles.

Note:

- ✧ Distilled water must be used for cooling (hospital-grade distilled water is recommended). Failure to do so may cause scale formation on internal optical components, adversely affecting laser intensity.
- ✧ Empty the water tank when the machine is not used for a long time. Unscrew the water tank and pour out the remaining water directly.

Technical Specification

Product Category	Class I, Type B, Mobile Device
Light Source	Intense Pulse Flash Lamp
Output Wavelength	430nm~1200nm
Maximum Output Energy Density	50J/cm²
Energy Density Output Tolerance	±20%
Output Energy Instability	Better than ±15%
Output Spot Size	0.38cm²/1cm²/3.2cm²/1.6cm² ±10%
Operation Mode	Intermittent Loading, Continuous Operation
Cooling Method	Built-in distilled water circulation cooling
Pulse Width	1ms~10ms
Number of Pulses	1~3 adjustable
Pulse Interval	1ms~50ms (Adjustment interval: 1ms)
Input Power	1500VA
Minimum Head Cooling Temperature	≤10°C
Optical Head Cooling Adjustment range	-4°C to room temperature (°C)

Transportation and Storage Conditions

- Ambient temperature: -20°C to 55°C (with cooling water drained) or 4°C to 55°C (with cooling water)
- Relative humidity: ≤93%
- Atmospheric pressure: 500hPa to 1060hPa
- Case dimensions: 160*70*70mm
- Gross weight: 157kg

Working conditions

- Ambient temperature: 10°C to 30°C
- Relative humidity: ≤70%
- Atmospheric pressure: 860hPa to 1060hPa

Clinical Operation

Basic Introduction

The Concept of OPT

OPT stands for Optimal Pulse Technology, meaning optimal pulsed light technology. The core of OPT's perfect pulse technology is a hardware improvement to traditional IPL. This technology achieves uniform energy balance throughout the entire pulse process, precisely controlling each pulse so that the energy of each pulse reaches the skin without any attenuation. This results in perfect pulse energy, eliminating the technical drawbacks of E-light and IPL, such as the high energy peak in the first pulse and the gradual energy attenuation of each sub-pulse. This significantly improves both the effectiveness and safety of OPT treatments. OPT-IPL is a next-generation pulse technology.

Advantages

Technical advantage: Through precise control of energy, pulse width, and pulse wave-form, each pulse delivers smooth, undiminished energy throughout. Sapphire cooling technology also significantly enhances treatment safety and effectiveness.

Equipment advantage: The Super IPL system adopts cutting-edge American technology and a highly intelligent control system, making the system more user-friendly, improving the convenience of operation and reducing the cost of the instrument.

Effect advantage: Fully intelligent control software, integrating multiple functions such as skin whitening and rejuvenation, pigmented lesions, vascular treatment and hair removal, avoiding the invalidity of pulse end energy attenuation and improving clinical effectiveness.

Safety advantage: Early IPL had energy peak and attenuation problems. The energy peak of the pulse could easily cause skin burns and pigmentation, while the energy after attenuation was lower than the set value, making it difficult to achieve the therapeutic effect. OPT can output a stable square wave, completely solving the series of problems of unstable energy. It has significant therapeutic effects and reduced side effects. Compared with traditional IPL, OPT technology is safer and more comfortable.

Pigmented lesions: Epidermal hyperpigmentation, stable melasma.
Vascular lesions: Reduction of redness, flushing, acne scars, and scars.

Indications

- Skin improvement: Anti-inflammatory, acne treatment, sensitivity improvement, skin brightening, photoaging treatment, fine line reduction, and accelerated skin metabolism.
- Hair removal: Removal of unsightly hair anywhere on the body, excluding white hair.

Working Principle

Hair Removal

The melanocytes in the hair follicles absorb light of a specific wavelength, causing the hair follicles to heat up and shrink, thereby inhibiting hair growth.

Pigmentary Lesions

Using the principle of selective photothermolysis, melanin absorbs light of the corresponding wavelength, causing thermal decomposition. The decomposed pigment particles are metabolized by the lymphatic system or decomposed outside the body.

Vascular Lesions Improvement

Utilizing the principle of selective photothermolysis, hemoglobin and HGB in diseased tissue absorb energy from the corresponding spectrum, generating photothermal activity. This heat increases the blood temperature and is then transferred to the blood vessel walls, causing swelling of endothelial cells, tissue hypoxia, and atrophy and necrosis until the cells are absorbed by the tissue.

Skin Improvement

Utilizing the biostimulatory effects of light, intense light exposure can stimulate collagen production in collagenous tissue, thickening it and enhancing skin elasticity. Intense pulsed light can also regulate sensitive skin, while photothermal therapy can improve inflammatory skin conditions.

Treatment Setting

Please refer to the recommended parameters table.

Preoperative Preparation

Contraindication

Absolute Contraindications:

- Those with photosensitive skin or conditions related to photosensitivity.
- Those with precancerous lesions or malignant tumors in the treatment area.
- Those with severe scar tissue.
- Those with severe hypertension, hyperlipidemia and hyperglycemia.
- Those with acute skin infections, herpes, frostbite, or skin allergies.
- Those who have taken photosensitizing medications within the past month.

Relative Contraindications

- Patients with weakened immune systems or currently taking glucocorticoids or immunosuppressants.
- Patients with other serious systemic diseases.
- Skin that has been tanned or sunburned within the past week.
- Those who will be exposed to excessive sunlight (e.g., trips to the beach or grasslands).
- Pregnant or breastfeeding women.

Make Preparation

- Take photos and create a file.
- Sign the informed consent form.
- Prepare supplies: Protective goggles, eye mask, cold gel, disposable mask, hat, gloves, skin preparation knife, scraper, cleansing wipes, ice pack, medical cold compress, etc.

Recommended Parameter

For skin I, II

Indications	Step	Filter (nm)	Energy Density (J/cm^2)	Sub Pulse (unit)	Pulse Width (ms)	Pulse Interval (ms)	Treatment Area	Post-treatment Reaction
Acne & skin brightening	Step1	690	24-30	3	6-10	20-30	Full face	Reddish or unresponsive skin
	Step2	550/590	23-28	2/3	6-8	20-30	Areas outside acne	Reddish skin
	Step3	430	22-26	2/3	7-9	20-30	Acne areas	Acne becomes slightly darker/grey
Acne & Pigmentation	Step1	690	24-30	3	6-10	20-30	Full face	Reddish or unresponsive skin
	Step2	590/640	23-30	2/3	5-7	20-30	Pigmentation areas	Slight redness, darkening of pigmented areas
	Step3	430	22-28	2/3	6-8	20-30	Acne areas	Acne becomes slightly darker/grey
Acne & Acne scars	Step1	690	24-30	3	6-8	20-30	Full face	Skin slightly reddened or no reaction
	Step2	560/640	24-32	2/3	3-5	20-30	Areas outside acne	Skin is slightly red, acne marks deepen
	Step3	430	22-26	2/3	4-5	20-30	Acne areas	Acne slightly darkened
Epidermal pigmentation	Step1	690	24-26	3	4-6	20-30	Full face	Skin slightly reddened or no reaction
	Step2	550/590	20-24	2/3	3-5	20-30	Full face	Slightly reddened skin, unreactive or darkened and raised pigmented areas
	Step3	515 (part)	18-22	2/3	3-5	20-30	Pigmentation areas	Slight redness of the skin, pigmented scabs raised
Melasma	Step1	690	22-25	3	4-6	20-30	Full face	Slight redness of the skin or no reaction
	Step2	590/640	22-24	3	3-5	20-30	Pigmentation areas	Slight redness of the skin, no reaction or darkening of pigmented areas
Sensitive skin	/	590/640/690	20-23	3	3-5	20-30	Full face	Slight redness or no reaction
Scar redness removal	Step1	550/590	25-30	2/3	3-4	20-30	Scar areas	Redness/darkening of the area
	Step2	480	20-25	2/3	4-6	20-30		Redness/darkening of the area
Capillary	Red static	550/590	25-30	2	3-5	20-30	Blood vessel areas	Blood vessels become thicker and darker, and redder
	Purple static	550/640	15-20	2	3-5	20-30		
	Red dynamics	480	20-28	2	4-6	20-30		
	Purple dynamics	480	15-23	2	4-6	20-30		
Photoaging (pigment vessels)	Step1	690	16-25	3	6-8	20-30	Full face	Reddish or unresponsive skin
	Step2	550/590	16-22	2/3	6-8	20-30	Full face	Reddish skin, darker pigmentation
Photoaging (rough fine lines)	Step1	690/750	26-35	3	6-8	20-30	Full face	Reddish or unresponsive skin
	Step2	590/640	20-32	3	6-8	20-30	Full face	Reddish skin
Hair removal	/	640	30-35	2	6-8	20-30	/	Small red spots, goose bumps

For skin III, IV

Indications	Step	Filter (nm)	Energy Density (J/cm²)	Sub Pulse (unit)	Pulse Width (ms)	Pulse Interval (ms)	Treatment Area	Post-treatment Reaction
Acne & skin brightening	Step1	690	14-18	3	4-6	30-40	Full face	Reddish or unresponsive skin
	Step2	550/590	13-17	2/3	3-5	30-40	Areas outside acne	Reddish skin
	Step3	430	12-16	2/3	4-5	30-40	Acne areas	Acne becomes slightly darker/grey
Acne & Pigmentation	Step1	690	14-18	3	4-6	30-40	Full face	Reddish or unresponsive skin
	Step2	590/640	13-17	2/3	3-5	30-40	Pigmentation areas	Slight redness, darkening of pigmented areas
	Step3	430	12-16	2/3	4-5	30-40	Acne areas	Acne becomes slightly darker/grey
Acne & Acne scars	Step1	690	14-18	3	4-6	30-40	Full face	Reddish or unresponsive skin
	Step2	560/640	14-18	2/3	3-5	30-40	Areas outside acne	Skin is slightly red, acne marks deepen
	Step3	430	12-16	2/3	4-5	30-40	Acne areas	Acne becomes slightly darker
Epidermal pigmentation	Step1	690	14-18	3	4-6	30-40	Full face	Reddish or unresponsive skin
	Step2	550/590	13-18	2/3	3-5	30-40	Full face	Slightly reddened skin, unreactive or darkened and raised pigmented areas
	Step3	515(part)	10-18	2/3	3-5	30-40	Pigmentation areas	Slight redness of the skin, pigmented scabs raised
Melasma	Step1	690	12-18	3	4-6	30-40	Full face	Reddish or unresponsive skin
	Step2	590/640	12-17	3	3-5	30-40	Pigmentation areas	Slight redness of the skin, no reaction or darkening of pigmented areas
Sensitive skin	/	590/640/690	12-18	3	3-5	30-40	Full face	Slight redness or no reaction in the treated area
Scar redness removal	Step1	550/590	15-23	2/3	3-4	30-40	Scar areas	Redness/darkening of the area
	Step2	480	15-20	2/3	4-6	30-40		Redness/darkening of the area
Capillary	Red static	550/590	9-16	2	3-5	30-40	Blood vessel areas	Blood vessels become thicker and darker, and redder
	Purple static	550/640	5-12	2	3-5	30-40		
	Red dynamics	480	10-16	2	4-6	30-40		
	Purple dynamics	480	14-19	2	4-6	30-40		
Photoaging (pigment vessels)	Step1	690	13-18	3	6-8	40-50	Full face	Reddish or unresponsive skin
	Step2	550/590	8-13	2/3	6-8	30-40	Full face	Reddish skin, darker pigmentation
Photoaging (rough fine lines)	Step1	690/750	12-19	3	6-8	30-40	Full face	Reddish or unresponsive skin
	Step2	590/640	12-19	3	6-8	30-40	Full face	Reddish skin
Hair removal	/	690/750	20-31	2/3	6-8	30-40	/	Small red spots, goose bumps

For skin V, VI

Indications	Step	Filter (nm)	Energy Density (J/cm²)	Sub Pulse (unit)	Pulse Width (ms)	Pulse Interval (ms)	Treatment Area	Post-treatment Reaction
Acne & skin brightening	Step1	690	7-8	1	4-6	40-50	Full face	Reddish or unresponsive skin
	Step2	550/590	6-7	1	3-5	40-50	Areas outside acne	Reddish skin
	Step3	430	6-7	1	4-5	40-50	Acne areas	Acne becomes slightly darker/grey
Acne & Pigmentation	Step1	690	7-8	1	4-6	40-50	Full face	Reddish or unresponsive skin
	Step2	590/640	6-7	1	3-5	40-50	Pigmentation areas	Slight redness, darkening of pigmented areas
	Step3	430	6-7	1	4-5	40-50	Acne areas	Acne becomes slightly darker/grey
Acne & Acne scars	Step1	690	6-7	1	4-6	40-50	Full face	Reddish or unresponsive skin
	Step2	560/640	7-8	1	3-5	40-50	Areas outside acne	Skin is slightly red, acne marks deepen
	Step3	430	6-7	1	4-5	40-50	Acne areas	Acne becomes slightly darker
Epidermal pigmentation	Step1	690	7-8	1	4-6	40-50	Full face	Reddish or unresponsive skin
	Step2	550/590	6-7	1	3-5	40-50	Full face	Slightly reddened skin, unreactive or darkened and raised pigmented areas
	Step3	515 (part)	5-6	1	3-5	40-50	Pigmentation areas	Slight redness of the skin, pigmented scabs raised
Melasma	Step1	690	6-8	1	4-6	40-50	Full face	Reddish or unresponsive skin
	Step2	590/640	6-7	1	3-5	40-50	Pigmentation areas	Slight redness of the skin, with no reaction or darkening of pigmented areas.
Sensitive skin	/	590/640/690	6-7	1	3-5	40-50	Full face	Slight redness or no reaction in the treated area
Scar redness removal	Step1	550/590	7-9	1	3-4	40-50	Scar areas	Redness/darkening in the treated area
	Step2	480	7-10	1	4-6	40-50		Redness/darkening in the treated area
Capillary	Red static	550/590	6-10	1	3-5	40-50	Blood vessel areas	Blood vessels become thicker and darker, and redder
	Purple static	550/640	5-9	1	3-5	40-50		
	Red dynamics	480	5-8	1	4-6	40-50		
	Purple dynamics	480	5-8	1	4-6	40-50		
Photoaging (pigment vessels)	Step1	690	6-8	1	6-8	40-50	Full face	Reddish or unresponsive skin
	Step2	550/590	6-8	1	6-8	40-50	Full face	Reddish skin, darker pigmentation
Photoaging (rough fine lines)	Step1	690/750	6-8	1	6-8	40-50	Full face	Reddish or unresponsive skin
	Step2	590/640	6-8	1	6-8	40-50	Full face	Reddish skin
Hair removal	/	690/750	6-8	1	6-8	40-50	/	Small red spots, goose bumps

Note: Patients with skin types V and VI should use with caution to avoid burns or discoloration.

Clinical Operation

Precautions for Operation

- Check whether the selected filter is appropriate.
- Check whether the optical filter is intact.
- Adjust the cooling according to your needs (The cooling should be increased for dark skin and hot weather). Do not adjust the cooling too high to avoid cold anesthesia.

Treatment Principles

Superficial Pigmentation

1. Choose a short-wavelength filter. For lighter pigments, increase the pulse width and number of pulses, thereby increasing the energy density.
2. Treatment endpoint: Darkening of the spots with a slightly reddish edge.
3. For superficial melasma-related pigmentation, use a long-wavelength filter with a lower energy density to avoid irritation and worsening the spots.
4. Select the appropriate light spot head based on the size of the affected area to avoid damaging non-treated areas.

Vascular Lesions

1. Select a long-wavelength filter. The lighter and finer the blood streaks, the shorter the pulse width and pulse number can be, but the energy density can be increased.
2. Treatment endpoint: The blood streaks darken or turn purple, thicken compared to before treatment, and the patient experiences a strong tingling sensation.
3. Observe the treatment response during treatment. Continuously inquire about the patient's experience and adjust parameters promptly. Treatment for these skin conditions can easily cause blisters, so be careful.
4. Use a small spot size to treat only the target area, avoiding skin damage in non-treated areas.
5. Apply cold compresses after surgery, preferably for 30-60 minutes.

Operating Procedures

1. Clean the patient's face and put on protective eyewear for the patient.
2. Adjust treatment parameters.


Set energy parameters

- Click or to increase or decrease the pulse width, 1ms to 10ms, with a step value of 1ms.
- Click in sequence to set 1 to 3 sub-pulses.

When adjusting the pulse width and number of pulses, the value in the energy density (19) displayed will change accordingly. The larger the pulse width and the more sub-pulses, the greater the energy density value.

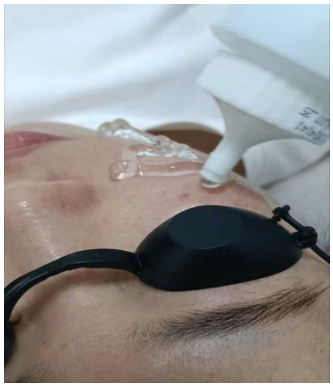
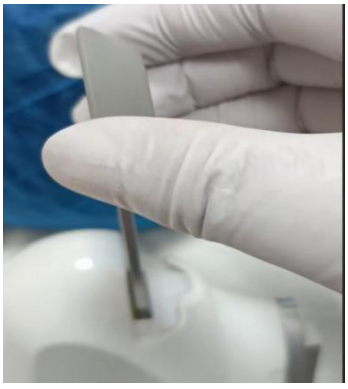
Set pulse interval

Click or to set the pulse interval, which can be adjusted from 1 to 50ms, and the adjustment interval is 1ms.

Apply the gel with a thickness of about 1~2mm to the treatment area, ensuring that the gel is evenly on all treatment areas (The areas have been shaved in advance and 1mm stubble is left).

Select the appropriate filter and insert it into the slot at the top of the handle; Select the appropriate spot head and attach it to the spot slot. Make a decision according to the patient's skin condition and treatment needs.

It's recommended to do a test behind the ear and observe for adverse reactions, so the operator has to keep communicating with the patient to adjust the energy in time (Too low an energy level will result in ineffective treatment, while too high an energy level will cause thermal burns.

Observe the results after 20 minutes:

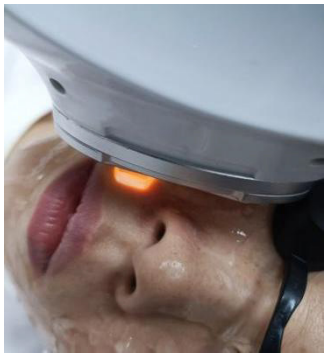
- ✧ If no significant reaction occurs, proceed with the treatment.
- ✧ If marked redness and swelling are present, reduce the energy level before proceeding.

6. Make the treatment head vertically (The treatment head should not be tilted or suspended in the air in order to avoid causing burns to the skin) against the cold gel, but do not squeeze the gel.

First, perform a full-face treatment from bottom to top. If there's no noticeable redness, swelling, or stinging, perform a second treatment on more problematic areas. Full face operation, recommended to do 2-3 times. Patients will feel a warm sensation, but it is not painful.

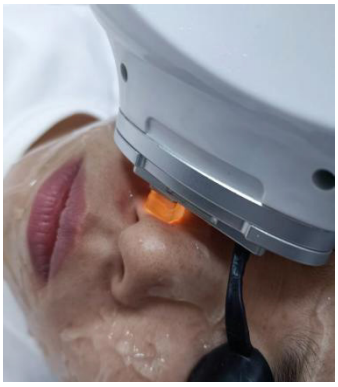
Note:

- ✧ Align the light spots closely, avoiding gaps, omissions, or overlap, as this can cause burns.
- ✧ It is recommended to reduce the energy in the basic parameters by 1-2 j/cm^2 when operating on the areas with thin fat layers, such as around the eyes, the forehead, and the front of the calves.




7. It is recommended to treat small areas with a small spot head. The treatment is over.

8. Wipe off the gel and observe the facial reaction. The treated area may appear slightly red and swollen, but this is normal. Apply medical cold compress if necessary.




Post-operative Care Instructions

1. Cleanse the cold gel thoroughly.
2. Apply a cold compress or cold spray. If redness or swelling is noticeable, extend the cold spray or cold compress until the patient no longer experiences discomfort.
3. Use rhEGF epidermal growth factor for 7-10 days of repair.
4. After treatment, the skin is dry and dehydrated. It is important to strengthen hydration and use hyaluronic acid to lock in moisture and moisturize with moisturizing cream.
5. Apply aloe vera gel to the hair removal area 3-4 times a day to relieve postoperative reactions and prevent folliculitis.
6. After removing the spots, let the scabs fall off by themselves, do not rub them, and do not use facial masks before the scabs fall off. Pay attention to replenishing water in large quantities, and use facial masks only after the scabs fall off.
7. Patients with red blood streaks should use rhEGF epidermal growth factor for a long time to repair and thicken the epidermis. Pay attention to hydration, use hyaluronic acid to lock in moisture and moisturize with cream, and use a facial mask 2-3 times a week.
8. Do not eat spicy food, seafood and other irritating foods, as well as photosensitive vegetables such as celery and radish within one week.
9. Do not use any functional cosmetics during and after the treatment to avoid redness, swelling, acne and other hormone-related phenomena.
10. Use sunscreen with an SPF greater than 25.
11. Use warm or cold water, not hot water, for cleaning within one week after each treatment.
12. Avoid all heat sources, strenuous exercise, and strong friction within one week after treatment.

Adverse Reactions and Solutions

Erythematous papules: These rash appear immediately after treatment and may last for 1-3 days. They are common in sensitive individuals with fair skin.

Blisters: Small blisters do not require special treatment and will absorb on their own within 2-3 days. Large blisters can be drained with a disposable syringe, but do not tear off the skin to ensure that the skin is intact.

Purpura: It is often caused by using too short a pulse width and overly aggressive energy treatment. Observe the skin reaction in time during the operation and adjust the energy parameters according to the reaction. If purpura is found, apply cold compress in time.

Edema: It may appear in sensitive treated areas or thin skin for about 2 days, and it will recover quickly if you apply cold compress and hydrate the skin in time.

Acne: Common in inflammatory skin, heat stimulation triggers the skin's own inflammatory response, which disappears in 5-7 days in general. It is recommended that those with blackheads, whiteheads or fat plugs should first undergo needle removal treatment, and then laser treatment.

Post-inflammatory hyperpigmentation or hypopigmentation: Medium risk for dark skin types, caused by excessive energy selection or too many repetitions.

Effect Comparison

Skin Brightening

Freckles removal

Acne Treatment

Hair Removal

Closed Comedomes

Hormonal Dermatitis

Melasma

Facial Flushing

Maintenance & Repair

This product is a precision device. During transportation, installation and use, care should be taken to prevent damage from collision and severe vibration, and avoid getting wet in the rain.

Always switch off the machine and disconnect the electrical power cord from the AC supply before performing any of the cleaning or maintenance procedures described below.

Cleaning and Disinfecting

- Accessories can be sterilized with 75% alcohol, UV radiation, etc.
- The equipment itself can be cleaned daily with a soft cloth.

Note: If the filter lens is contaminated, please use a cotton swab moistened with alcohol to wipe it gently. Do not use metal materials to avoid scratching the lens. Serious contamination, please hand over to the manufacturer to deal with. Never allow the parts with the lens to be sterilized by soaking in liquid, otherwise it will lead to serious damage to the lens.

Other Parts Maintenance

- Foot switch: Pay attention to dust prevention to avoid poor contact. Do not step on it too hard to avoid damage. Do not immerse it in water. Avoid frequent plugging and unplugging of the foot switch and power cord to avoid poor contact or damage.
- The machine should be stored in a dry and ventilated place to keep it hygienic. When cleaning the surface of the machine, you can not use skimmed cotton or soft cloth with a large amount of liquid, so as to avoid liquid leakage into the machine caused by the internal circuit failure.
- For other questions, please contact the seller or manufacturer.

Troubleshooting

Problem	Possible Cause	Solution
The machine won't start	1. It is not plugged correctly 2. The power cable is not well connected 3. The power button is off 4. The fuse is damaged 5. The electrical circuit is damaged 6. The power cable is broken	1. Check the plug 2. Check the power cable 3. Press the power button 4. Change the fuse 5. Contact the technical service 6. Change the cable/Contact the technical service
The buttons don't work	Defective buttons or damaged circuit	Contact the technical service
The machine won't start or dissipate heat	1. Defective connections 2. Defective handle cable or badly connected handle 3. Breakdown of electrical circuit	1. Check the connection 2. Connect the cable correctly 3. Contact the technical service
The machine works, but the effectiveness has diminished	1. Bad connection of handle 2. Piezoelectric transducer damaged 3. Mechanical damages in handle or machine	1. Connect the handle correctly 2. /3. Contact the technical service