This manual applicable to KN-5000C/ KN-5000D.

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Preface

Dear users, first of all, thanks for your trust and using 308nm Excimer System manufactured by our company.

Please read this manual and attached documentations carefully before your first installation and using this system.

To improve capability and reliability of equipment, we will continuously upgrade our product (including hardware and software). We will announce you immediately if any amendments are made. Thanks in advance if you correct it after finding any mistake or oversight.

Version: V1.1

Important Notice

Please carefully read the instructions in the "safety requirements", "Note" and the special warnings "⚠" part of the content.

If you have any problem or need help in using, please contact our technical service center for help in time. We will give you technical support or arrange professional technical expert for service at the first time.

Use correctly can extend the life of equipment, also make fully usability of equipment by farthest.

Abnormal operation may do harm to equipment or personal safety. Our company is irresponsible for abnormal condition, hazards to equipment or personal injury caused by operations that are absolutely prohibited as specified in this document. Disclaims any responsibility for

safety, reliability or performance of this equipment by not observing the instructions!

Any faults arising from such non-observance will invalidate the warranty!

Contents

1 Safety requirements and precautions

1.1 Safety Information

- Please note that the following conditions should not be treated with UV radiation: patients with solar dermatitis, lupus erythematosus, malignant tumors, xeroderma pigmentosum, Bloom syndrome and dermatomyositis, pregnant women, and other patients that are not suitable for UV irradiation treatment.
- Excessive UV exposure can damage the eyes and skin, and even cause diseases such as cataracts or skin tumors. Patients and operators must wear special UV goggles when using the equipment, and try to avoid looking at the UV radiation source in output state directly. The genital area of the male patient, especially the testicle, should be tightly covered.
- Do not use the equipment in an environment where flammable or explosive materials are placed, such as anesthesia, in order to prevent

fire or explosion.

- In order to prevent circuit hazard, the equipment can only be connected to a power socket that has a protective ground. Do not use the power socket if it is not connected to a ground lead or the integrity of the ground lead is uncertain.
- To prevent electric shock and reduce instrument failure, no water shall be allowed to enter the equipment. If water enters the equipment accidentally, please stop using it immediately and hand it over to a professional technician for maintenance, until it can be re-used.
- The equipment should only be used by trained medical personnel for specified application. Any unauthorized or untrained personnel must not perform any operations on the equipment.
- Instruments can only be used by trained medical personnel in designated use situations. No unauthorized person or trained person shall perform any operation on the instrument. The device can be protected by setting the power-on password and administrator

password. Please keep the password safely to avoid password leakage or forgetting.

- Do not modify this equipment without authorization of the manufacturer.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure
- Do not touch the patient at the same time when touching the fingerprint machine.

1.2 Precautions

- The product is indicated for patients who can be treated with UVB. Confirm the patient meets the treatment conditions, and the indications, contraindications and possible adverse reactions should be fully considered.
- When the supply voltage fluctuates too much, it must be equipped

with an AC regulated power supply with an accuracy of 2%.

- Before using the equipment, inspect the equipment and its connecting cables and accessories carefully to ensure they can work normally and safely.
- Before treatment, the operator should know the MED (minimum erythema dose) test value of the patient.
- The treatment dose should be adjusted by the attending physician depending on the therapeutic response of the patient.
- Do not treat more than once a day.
- Do not sunbathe during phototherapy.
- The operator must activate the light source only after confirming the time or dose has been entered correctly.
- During the treatment, health care personnels should not leave the treatment room, and should monitor the patient carefully and make records.
- If the patient is found to have lumps, pain or pigmented spots on the

skin after phototherapy, the dermatologist should be consulted and appropriate measures should be taken.

- The operator should pay attention to the accumulation of the irradiation dose.
- The equipment will produce a small amount of ozone during use. Please keep indoor ventilation when using it. If you are sensitive to ozone smell, it is recommended to wear a mask.
- The light emission parts in this equipment cannot be repaired by the user and must be repaired by professional technicians.
- Do not touch the inside of the light emission port with your hands, so as to prevent the oil or dust on hands from polluting the inside of the port and affecting the light emission.
- The hood of the treatment handle should be disinfected before each time of treatment. For the specific disinfection method, please refer to the section 5.4.
- When the treatment handle is not used, it should be placed in the

handle holder.

- In order to ensure the safe operation of the equipment, please use the replaceable parts, accessories and various consumables supplied or specified by Kernel for the equipment.
- **Accessories and equipment disposal**

When handling the packaging materials, the relevant local regulations or the waste disposal system of the hospital shall be observed strictly. Packaging materials should be placed out of reach of children.

The equipment can be stored and used for a period of five years. At the end of the period, the equipment, together with its accessories, shall be disposed in accordance with the relevant regulations. If you have any questions about the disposal, please contact our company or local distributor.

- **Instruction for use**

To ensure use of the equipment persistently and safely, the listed

instruction for use must be followed. However, the accepted medical practice experience with patient care must not be replaced by the instruction for use.

Keep this manual near the equipment so that it is available and can be easily accessed when needed.

2 Overview

2.1 Product introduction

- Ultraviolet (UV) phototherapy originated in the 1920s and the technology of artificial light source has developed rapidly due to the development of science and technology. Among them, UVB therapy, as a representative, has become one of the effective methods for treating various skin diseases in developed countries, such as Europe and America.
- 308nm Excimer System, a new type of ultraviolet phototherapy device, can emit high-intensity ultraviolet light and clear the lesions in a short period of time, which further highlight the targeting ability of the treatment, shorten the treatment cycles and reduce the times of treatment significantly.

2.1.1 Indication for use

This system is indicated for the treatment of psoriasis and vitiligo.
Patient group: Adults

2.1.2 Contraindications

Please note that the following conditions should not be treated with UV radiation: patients with solar dermatitis, lupus erythematosus, malignant tumors, xeroderma pigmentosum, Bloom syndrome and dermatomyositis, pregnant women, and other patients that are not suitable for UV irradiation treatment.

Warning!

- **The equipment should only be used by or under the direction of professional clinicians. Professional clinicians using the equipment should be trained and qualified before operation.**
- **Carefully confirm that the patient meets the range of application and does not have the contraindications described**

2.1.3 Features

- High-intensity ultraviolet light can produce a rapid therapeutic response, which can reduce the treatment cycle and frequency.
- The equipment is suitable for treating the small-area, with good targeting, and it is easier to reach the affected sites where traditional light sources are difficult to apply.
- The flexible treatment handle can control the range of irradiation precisely, will not effect on normal skin and thus avoid damage to

normal skin.

- The 8" large color touch LCD screen makes the operation display more convenient.
- The specific built-in UV dosage regimen can conduct six-spot skin phototoxicity testing automatically, as well as manual phototoxicity testing based on the skin characteristics of the patient, making the complex testing procedures simple and easy to apply.
- It can control the output of the light source with one bottom, resulting a safer treatment process.
- Powerful user management features enable doctors with better user information and treatment records management.
- The external storage device can realize the export and review of user information.
- Multiple size of hood of the treatment handle can be selected according to the treatment area to avoid unnecessary irradiation output.

- The fingerprint entry function makes it easy for doctors to quickly retrieve patient information (applicable to KN-5000D).
- The light source calibration system enhances the reliability of the dose emission (applicable to KN-5000D).

2.2 Structural composition

The equipment consists of a host equipment and a treatment handle.

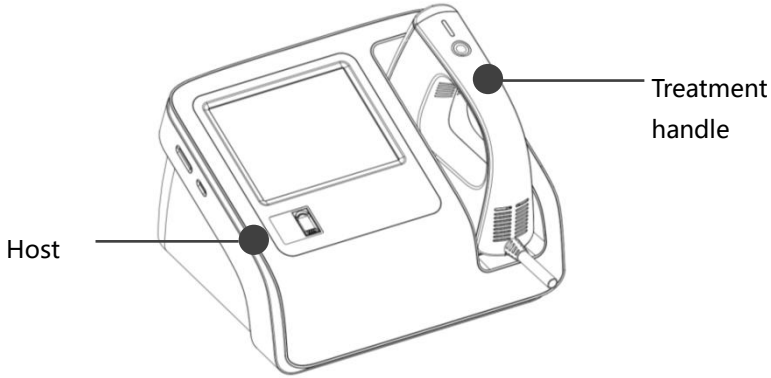


Figure 2-1

2.2.1 Illustration of the complete machine

The illustration of the host equipment is shown in Figure 2-3.

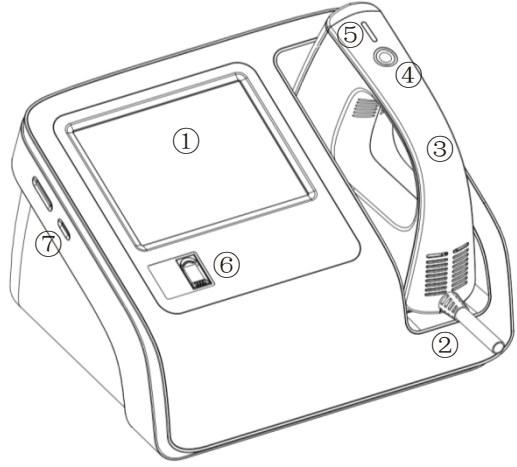


Figure 2-3

①	Touch screen	Tap the screen directly for software operation.
②	Treatment handle holder	Place the treatment handle
③	Treatment handle	Transfer UV light to the skin
④	Power button of the light source	Press to turn on the light source. The blue indicator will light up when the light source is emitting.
⑤	Light source output indicator	The light source output indicator will light up when the ultraviolet light is emitting.
⑥	Fingerprint entry (applicable to KN-5000D)	Enter fingerprints for easier user management.
⑦	micro SD card slot	Insert the micro SD card to store user information

2.2.2 Rear panel

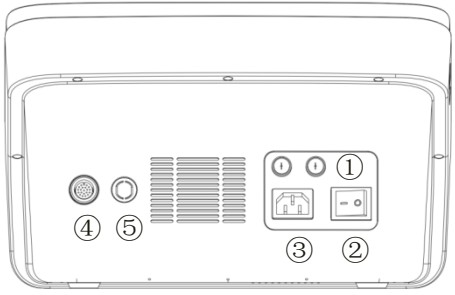
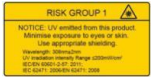


Figure 2-4

①	Fuse	Protects the input power of the equipment
②	Power switch	Power "On" and "Off" control button, when it is set to I, the green indicator will light up
③	AC power socket	Connect to AC power through a three-core power wire
④	Treatment handle holder	Connect to the cable of the treatment handle
⑤	Extension port	

2.3 Identifier declaration

	Note! Please refer to the document supplied with the equ
	Please wear goggles
	Pay attention to ultraviolet radiation protection
|	Turn on the main power
O	Turn off the main power
	Turn on the light source
	Protective ground
	Type B application part identifier
	Please refer to the instruction for use
SN	Product serial number

	Sign of out-of-service electronics recycling
	Production date
	NOTICE: UV emitted from this product. Minimize exposure to eyes or skin. Use appropriate shielding. Wavelength: 308nm±2nm UV irradiation intensity Range≤ 200mW / cm^2 IEC 60601-2-57:2011; IEC 62471:2006

2.4 Characteristic parameters

2.4.1 Classification

- Classification by type of electric shock protection: Class I
- Classification by degrees of electric shock protection: Type B
- Classification by operation modes: intermittent loading and continuous operation (120s of the light source maximum output time, the equipment will adjust the intermittent time according to the handle temperature)

- Equipment that cannot be used when there is flammable anesthetic gas (mixed with air) or flammable anesthetic gas (mixed with oxygen or nitrous oxide).

2.4.2 Main performance indicators

- Power supply: AC 100-240V, 50/60Hz ± 2%
- Input power: KN-5000C: 160VA, KN-5000D: 200VA
- Specification, model and rating of fuse: T3.0AL/250V Φ5*20
- Working environment: temperature: 5～35℃, relative humidity: ≤ 85%, atmospheric pressure: 700hPa～1060hPa
- Structure: desktop
- Irradiation mode: handheld
- Irradiation area: 20cm^2±10%
- UV irradiation spectrum: peak wavelength 308 nm, error ± 2 nm
- Effective UV irradiation:
  UV irradiation intensity range: not more than 200mW / cm^2
  Error between UV irradiation intensity and nominal value: not more than ±20%.
  UV irradiation intensity stability: not more than 5%.
- Software features:
  Light source calibration function.
  MED test function

3 Installation

Warning!

- **The treatment handle is equipped with fragile items such as tubes, so please take it gently.**

3.1 Unpacking inspection

- Before unpacking, please check the packaging box carefully to determine whether the product is damaged during transportation. If any damage is found, please contact the transportation company or Kernel immediately.
- If the package is intact, carefully remove the equipment and its accessories from the box and place them in a safe, stable, and easy-to-observe position.
- Check the product and its accessories carefully according to the packing list. Check if the product and its accessories have any

mechanical damage, and the accessories are complete.

Note! Please save the packaging box and packing materials for later transportation or storage.

Warning!

- **Packaging materials should be placed out of reach of children. When handling the packaging materials, the relevant local regulations or the waste disposal system of the hospital shall be observed.**
- **The equipment may be contaminated by microorganisms during storage, transportation and use. Please confirm that the**

3.2 Environmental requirements

- **The environment in which the equipment is used must meet the following requirements:**

  Temperature: 5 ~ 35℃;

Relative humidity: ≤85%;

Atmospheric pressure: 700hPa ~ 1060hPa

- The environment in which the equipment is used should also reasonably avoid the presence of noise, vibration, dust, corrosive or flammable, explosive materials.
- Allow sufficient space around the equipment and leave at least 30cm of space on the rear panel to ensure proper ventilation.

3.3 Power requirements

The power supply used by the equipment should meet the requirements of AC 100-240V and 50/60Hz ± 2%.

Warning!

- **Please ensure that the equipment works under the specified environmental requirements and power requirements, otherwise it will not be able to meet the normal working requirements, and may lead to unpredictable consequences such as equipment damage.**
- **The equipment must be connected separately to a power socket and the socket must not be shared with other electrical**

3.4 Connection

3.4.1 Connecting AC Power

- Please confirm that the three-core power wire used is in accordance with the factory configuration.
- Insert one end of the power wire into the AC outlet on the rear panel of the equipment.
- Insert the other end into the hospital-specific three-core AC outlet, and ensure that the power requirements of section 3.3 are met.

Warning!

- **The ground lead in the three-core socket must be well grounded.**
- **Do not use the adapter that converts the three-core to**

3.4.2 Connect the treatment handle

Figure 3-1

Insert the cable of the treatment handle into the "treatment handle" slot on the back of the equipment.

Note! The handle should be inserted and removed only after the power is turned off.

3.4.3 Installation of micro SD card

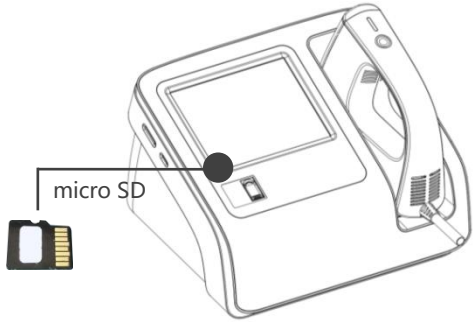


Figure 3-2

- Insert the micro SD card into the "micro SD" slot on the side of the equipment with the direction as shown in the figure.
- When taking out the card, push it inward and the card will pop up automatically.

Note!

- **The micro SD card should be inserted and removed only after the**

power is turned off.

- **If the micro SD card is not installed or installed well, it will affect the use of the user information management function. The micro SD card can only be copied when it is read by a computer. The content in the card is not allowed to modify at will.**

3.4.4 Install the hood of the treatment handle

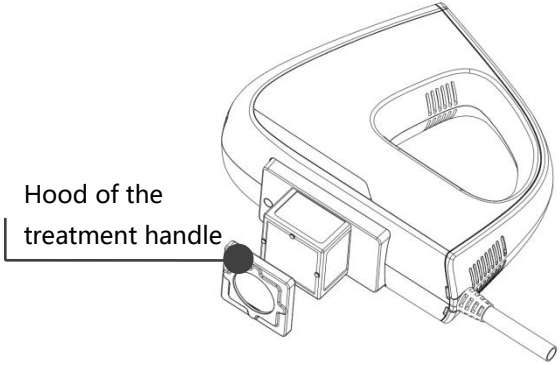


Figure 3-3

Figure 3-4 Specification of the handle hood

The effective irradiation area is a square of 20 cm^2 (45*45 mm) when the hood is not installed. In addition, there are six kinds of treatment handle hoods to choose from. According to the treatment needs, choose the appropriate hood and attach the hood to the front end of the treatment handle, as shown in Figure 3-3.

Note! The hood of the treatment handle should be disinfected before each time of treatment. For the specific disinfection method, please refer to the section 5.4.

4 Operation

4.1 Preparation before treatment

4.1.1 Preparation for treatment

Doctor

The dermatologist establishes a treatment plan based on the patient' s condition to determine the treatment site and the initial treatment dose, duration and interval of phototherapy.

Patient

- Expose the area that needs irradiation and clean the skin.
- Apply a lubricating paste to the area that needs irradiation, if necessary.
- Wear UV goggles. 

Note!

— **For newly diagnosed patients, a skin phototoxicity test should be performed, that is perform the minimum erythema dose (MED) test based on the type of UV band used.**

The MED test

Use the biological dose (MED) as the dosage unit for UV treatment due to significant individual differences in UV sensitivity. The so-called biological dose, that is, the irradiation time of which causing the erythema reaction to be just visually recognized (visible) by the light source irradiated at a certain distance. The results of the test are preferably observed 24 hours after the irradiation. Determining the MED value can help the dermatologist with selecting the appropriate initial

4.1.2 Equipment operational procedure

Operator The operator put on the goggles. .

Check when turn on the equipment

Turn the power switch to the "I" position to check if the equipment can work properly.

Install the hood on treatment handle

Select the hood according to the size of the treatment area, disinfect the hood and install it in the front end of the handle. Please refer to the section 3.4.4.

Phototoxicity test

For patients that take first-visit, a phototoxicity test should be performed to determine the patient's MED value, please refer to the section 4.3.1. For patients that take a follow-up visit, the test can be skipped.

Treatment

Set the corresponding irradiation dose according to the measured MED value, and select a suitable hood according to the shape and size of the treatment area, and attach the light output holes closely to the skin. Please refer to the section 4.3.2 for treatment operations.

Figure 4-1

Calibration

For the equipment with calibration function, enter the calibration interface and follow the steps for calibration. Please refer to the section 4.3.5.

Method of turn off the equipment

If the equipment is not used for a long time, please turn the switch to the "○" position and disconnect the power wire.

Note!

— **If the light source is turned on for a long time, the inside of the treatment handle will generate more heat. So please turn off the power switch after the handle cools down completely.**

Notes: When the equipment is turned on, placed or turned off, the irradiation is not activated and the treatment handle will not emit the UV irradiation.

4.1.3 Treatment instructions

Summary

Phototherapy is an effective therapy. The operating doctor should have certain knowledge and experience in phototherapy. It is absolutely not allowed to take the treatment process as a learning process. The treatment process should be carried out under the guidance of a doctor, and the attending doctor should carry out regular follow-up monitoring.

Hood of the treatment handle

A hood should be installed at the front end of the handle before use. The hood needs to be disinfected before use.

UV protective goggles

Make sure that both the doctor and the patient wear UV protective goggles before starting treatment.

Individual response

The irradiation dose must be adjusted based on the individual response of the patient. The skin response of the previous treatment must be checked and some adjustments should be made accordingly before each new treatment.

Dosage selection

The initial dose of UVB therapy is usually 50% to 75% MED, 3 to 5 times a week. According to treatment frequency and treatment response, determine whether to increase the irradiation dose or not for each continuous treatment and the rate of increased dose. In principle, the increased dose should meet the standard that the erythema is just visible after each exposure. When UVB is used in combination with other therapies such as retinoic acid and calcipotriol, dose and frequency adjustment should be paid attention to. The light sensitivity of the skin on the calves, feet, palms and elbows is generally lower than that of other body parts, thus the dose can be appropriately increased. Treatment continues until the condition is completely relieved or no longer

improved after continuous treatment.

Protection after treatment

UV irradiation treatment can cause dry skin. After treatment, apply some soothing oil to the treatment area and avoid excessive sun exposure.

Solar dermatitis

After the start of phototherapy, if the patient has a large area of solar dermatitis, please check whether the patient receives excessive sunlight, or takes a photosensitizer, or stops using the opacifier. In addition, some cosmetics, perfume in the cleaning products, vegetables and teas that lubricate the intestines may contain photosensitive substances.

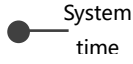
Adverse reactions

Short-term adverse reactions after phototherapy are generally the same as those of excessive sun exposure, including erythema, edema and occasional blisters. Once these occur, some measures can be taken depending on the extent of phototoxic reaction, in addition to adjusting the dose or suspending treatment, such as topical non-steroidal anti-inflammatory drugs or corticosteroids to relieve symptoms. After long-term, repeated phototherapy, the area of irradiation may have

pigmentation changes, dry skin, decreased elasticity, solar keratosis and nevoid lentigo, etc. Therefore, both the doctor and the patient should carefully observe the skin condition and changes in the beginning of and during the treatment, and adjust the treatment plan in time.

4.2 Control panel

The main interface is shown in Figure 4-2:



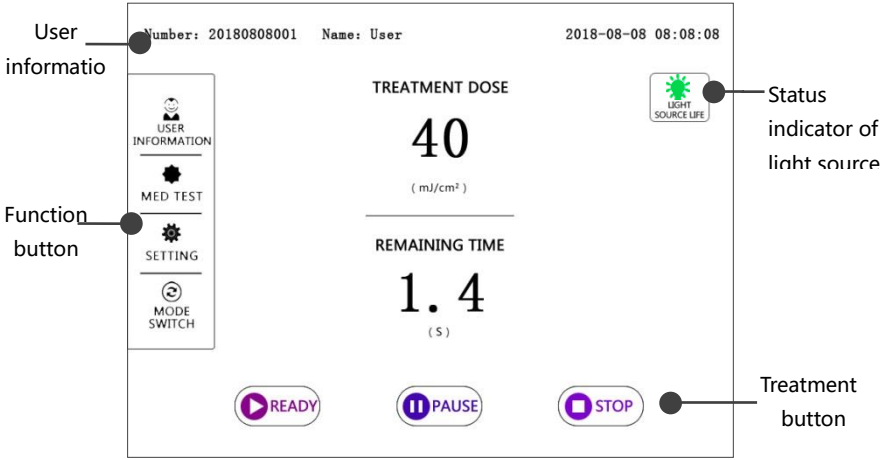


Figure 4-2

After the equipment is turned on, it will enter the preparation interface, and enter the main interface after 15 seconds. The software operation adopts the touch screen technology, and the corresponding operation can be performed by directly touching the button in the

interface.

- **Definition of the operation buttons:**

Review and manage the user treatment information. Please refer to the section 4.3.3. for details.

Press the button to enter the MED test interface. Please refer to the section 4.3.1. for details.

Press the button to enter the setting interface. Please refer to the section 4.3.4. for details.

Click the button to switch over the free treatment mode and the user treatment mode. Please refer to the section 4.3.5. for details.

Press the button to prepare for turning on the UV output. Please refer to the section 4.3.2. for details.

Press the button to pause the UV output. Please refer to the section 4.3.2. for details.

Press the button to stop the UV output. Please refer to the section 4.3.2. for details.

- **Light source working life:**
  - **Green**: The working time of the light source is ≤300 hours and the light source can be used normally.
  - **Yellow**: The working time of the light source is >300 hours and ≤ 500 hours. The light source has a certain attenuation and the light source replacement is recommended.
  - **Red**: The working time of the light source is >500 hours, which means the light source service life has expired and can no longer be used and should be replaced in time.
- **User information:**

  The user's information will be showed when a user starts a treatment.
- **Keyboard operation method:**

- Numeric keypad: Click numbers directly to enter numbers, click "←" to backspace, click "√" to save the input and exit the keyboard.

Figure 4-3

- **Full keyboard:**

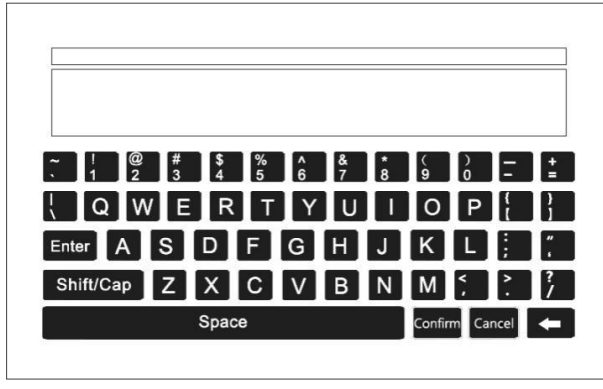


Figure 4-4

- ✓ Click the button directly to enter the characters showed on the lower part of the button.
- ✓ Press the "Shift/Cap" button and then click the corresponding characters to enter capital letters and the characters showed on the upper part of the button.
- ✓ Enter Chinese characters: Enter the full spell, select the desired

Chinese characters. Click the "←", "→" button to perform the page turning operation when selecting characters.

- ✓ Enter English characters: Click the English characters and press "Enter" to confirm.
- ✓ If the input is completed and the cursor still flashes, press "Enter" to cancel the cursor.
- ✓ Click "Cancel" to not save the input and exit the keyboard, click "Confirm" to save the input and exit the keyboard.
- ✓ Click the "·" button to delete characters.

4.3 Software operation

4.3.1 Phototoxicity test

The MED (minimum erythema dose) test is required before UVB treatment. This test can help doctors determine the appropriate UVB

treatment dose.

- **Phototoxicity test steps:**

① Determine the patient's skin type according to Table B-1 in Appendix B and select the appropriate skin type.

② Doctors and patients should wear the UV goggles during the test.

③ Install a hood of ϕ16mm for the treatment handle.

④ Place the treatment handle on the forearm flexion side of the upper limb of the patient as shown in Fig. 4-5, and irradiate the six sites at same distances with different doses. The output doses required for the test predefined by the equipment are given in Appendix C. The equipment will emit six doses automatically in the order of 1 to 6 in Table C-1 or Table C-2 according to the selected skin type. Replace an irradiation site when completing an irradiation dose.

Figure 4-5

⑤ Mark the position of each hole with a marker or by other means.

⑥ For the next 24 hours, the test site should be protected from any artificial and natural UV light source.

⑦ After 24 hours, the patient should go back to the hospital.

⑧ After the irradiation, six irradiation spots will gradually show on the skin, as shown in Fig. 4-6. According to the mark, determine the test spot (No. 1 to 6) for each irradiation doses.

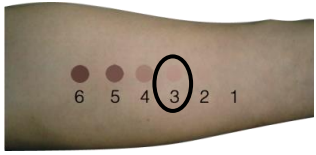


Figure 4-6

⑨ Determine the dose that first cause erythema, and the dose is the minimum phototoxic dose or the minimum erythema dose of the patient.

⑩ If there is severe erythema or blisters in the test site, topical corticosteroids can be used.

For example, in Figure 4-6, the patient's skin type is III, and the patient accepted the MED automated test by the equipment that emitting six different doses of UVB automatically (for dose values, please refer to the Table C-2 in Appendix C). After the test, it was judged that the third spot is the first one to generate erythema, and the dose of the erythema is 150 mJ/cm^2, that is, the MED value of the patient is 150 mJ/cm^2.

- **Phototoxicity test method:**

The equipment provides the following two methods of test, i.e. automatic test and manual test. Press the "MED Test" button on the main interface to enter the MED test. As shown below:

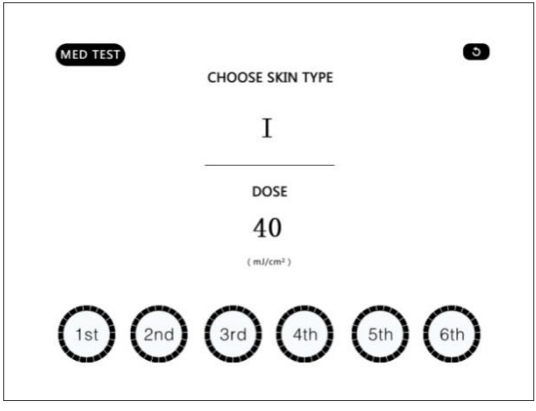


Figure 4-7

- **Automatic test**

Depending on the type of skin selected, the equipment will perform

the test according to the preset six output doses. (For specific preset doses and irradiation sequences, please refer to the Appendix C)

Click the "CHOOSE SKIN TYPE" box and press the "◁" or "▷" button to select the skin type (I~VI) according to the sun reaction and skin color (please refer to the Appendix B).

Test method: Align the treatment handle head with the test skin, press the "ON" button on the handle. There is a sound when the light source is turned on and off, indicating that there is UV output, and the indicator light will turn on until the test dose output is completed. 1st to 6th corresponds to the test dose of 1 to 6, and the aperture around the corresponding dose will flash when the equipment emitting the light.

After the first dose is irradiated, align the handle head with the second site, and press the "ON" button on the handle, and the equipment will emit the second test dose. Repeat the above steps until the test of six output dose is completed. After the MED test is completed, press the "↺" button to return to the main interface.

➢ **Manual test**

In the manual test, the doctor can set the six output doses manually.

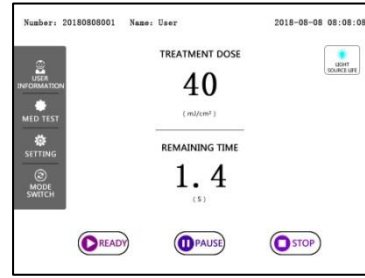
Set the "CHOOSE SKIN TYPE" to "Manual", click the "Dose" box, the keyboard will be showed, and enter the dose value. The input range is from 80mJ/cm^2 to 600mJ/cm^2.

The test method is the same as "automatic test". After the MED test is completed, press the "↺" button to return to the main interface.

4.3.2 Treatment

Defining the therapeutic range for skin lesions:

During the treatment, the doctor needs to know which lesion has been treated with radiation. Repeated exposure is absolutely not allowed on one site, otherwise it will lead to excessive exposure. Therefore, doctors are advised to mark the skin. If the treated area has both lesions and normal skin, it is recommended to cover the normal



"Time" treatment mode "Dose" treatment mode

Figure 4-8

- Treatment mode selection: Click the "Setting" button and select the treatment mode on the "Setting" interface (please refer to the section 4.3.4).
  - ✓ Time treatment mode: Click the "TREATMENT TIME" value and press the "◁" or "▷" button to set the irradiation time.
  - ✓ "Dose" treatment mode: Click the "TREATMENT DOSE" value, the numeric keypad will be showed, and enter the irradiation dose.

- ✓ Due to the different intensity, the upper limits of "time" and "dose" can be set are different. The "time" is not more than 120 seconds, and the "dose" is not more than 5000 mJ/cm^2.

- ➢ Press the "Ready" button and prepare to start the UV light output. Press the "ON" button on the treatment handle, and the indicator light on the handle will light up, "TREATMENT TIME" or "TREATMENT DOSE" starts counting down. When the treatment is completed, press the "ON" button again, the equipment will emit the light again according to the previous setting.

Note: After pressing the light source "ON" button on the handle, the screen will display "System in preparation..." as shown in Figure 4-9. Please wait for 15 seconds. If the light source is still not turned on and the screen displays "The device is not ready, please press the 'Ready' button again", click the "Ready" button and then press the light source "ON" button on the handle again.

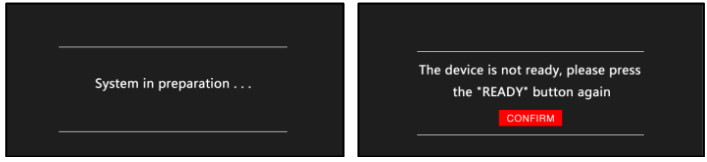


Figure 4-9

- Press the “Pause” button to pause the UV light output and the “TREATMENT TIME” or “TREATMENT DOSE” counting down. Press the “Ready” button and the “ON” button on the handle to continue the UV light output and “TREATMENT TIME” or "TREATMENT DOSE" counting down.
- Press the "Stop" button to end the UV light output and the "TREATMENT TIME" or "TREATMENT DOSE" counting down will be cleared.

Note: In order to protect the light source, the cooling fan inside the handle will be turned off for 10s delay after the light source stops working. If the temperature inside the handle is too high, the fan will continue to

work until the temperature drops to a safe temperature.

- In the stop state, if you need to recall the last set irradiation time, press the "Ready" button to directly recall the last set dose or time. Press the "ON" button on the handle to start the light output.

4.3.3 User information

Press the "User Information" button in the main interface to enter the user information interface.

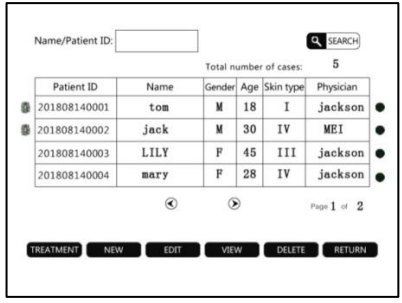


Figure 4-10

- Search: Click the blank space after "Name/Patient ID" to enter the keyword in "Name" or "Patient ID", and click "SEARCH" to display the result of user information in the list.
- Treatment: Select a piece of user information, click "Treatment", the equipment will directly recall the last treatment record of the user to start a new treatment. The user information will be displayed in the upper left corner of the main interface.
- New: Click "New" to enter the following interface, enter user information, and click "Confirm" to save.

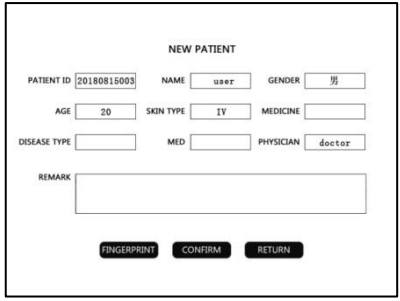


Figure 4-11

*** Fingerprint entry (only applicable to KN-5000D models): Click "Fingerprint", the user places his/her finger on the fingerprint recorder according to the prompts. The equipment will save the fingerprint information after three times of entry are made correctly. After completing the fingerprint entry for the user information, a fingerprint icon will be shown in front of the information.

- Edit: Select an user information to modify the user's information.
- View: Select an user information, click "VIEW" to view the user's treatment record. Select a record and enter the permission password or fingerprint to delete the record.
- Delete: Select an user information, enter the permission password or fingerprint to delete the user information.

4.3.4 Setting

Press the "Setting" button in the main interface to enter the setting

interface. In the interface, the date, time, screen brightness, sound, calibration reminder and treatment mode can be modified. Click the "Date", "Time" or "Screen Brightness" display box, the "△" and "▽" symbols will appear on the upward and downward side, click "▽" and "▽" to modify. Click "↩" button to return to the previous page.

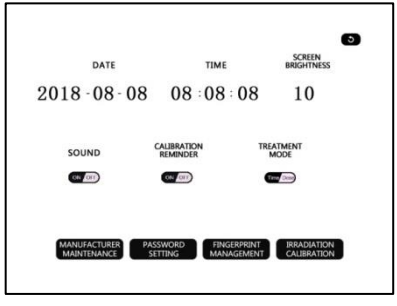
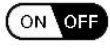


Figure 4-12

- **Sound**



Turn on the sound

Turn off the sound

Turn the button sound on or off.

- **Calibration reminder**

Open the reminder Close the reminder

Select "On" to remind the user to calibrate the equipment each time it is turned on. This feature is only available for equipment with automatic calibration function.

- **Treatment mode**

Time mode Dose mode

Select the "Time" treatment mode or the "Dose" treatment mode.

- **Manufacture maintenance**

The function can only be used during maintenance by manufacturer and cannot be used by the user.

- **Password setting**

✓ Login password setting: Set the password for power-on login. The

default password is "654321". You can turn on or turn off and change the password.

- ✓ Permission password setting: Set the administrator password. The default password is "500021".

➢ **Fingerprint management (applicable to KN-5000D)**

Click "Fingerprint Management", enter the password and enter the following interface to manage the advanced user fingerprint. You can create and delete new advanced users, manage permissions and fingerprints.

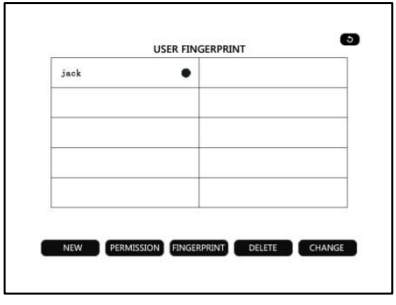


Figure 4-13

- ✓ New: Create a new advanced username.
- ✓ Permission: Select the advanced user to set the permissions of the advanced user, such as "Enable Power on Password", "Delete Treatment Records", and "Delete Cases". "ON" means the permission is turned on and "OFF" means the permission is turned off.
- ✓ Fingerprint: Select an advanced user to create, modify and delete the fingerprint of the user. The user places his/her finger on the fingerprint recorder according to the prompts. The equipment will save the fingerprint information after three times of entry are made correctly. Each advanced user can enter three fingerprint information.
- ✓ Delete: Delete the selected user information.

➢ **Irradiation intensity calibration**

The calibration status is used to calibrate the accuracy of the output irradiation intensity and determine if the light source is working properly.

Click "Irradiation Intensity Calibration" to adjust the calibration value manually or automatically.

✓ **Manual adjustment calibration (applicable to KN-5000C):**

Measure the irradiation intensity at the light output holes with a professional irradiation intensity measurement tool at the source output state. Click "Irradiation Intensity Calibration", enter "**Intensity setting password**" **(123456)**, enter the following interface, enter the new irradiation intensity value, click "Confirm" to save.

Figure 4-14

Warning!

- **The factory setting of irradiation intensity values are shown in Appendix A. The irradiation intensity value should be corrected according to the measurement results. Please do**

✓ **Automatic calibration (applicable to KN-5000D):**

Click "Irradiation calibration", input "**Intensity setting password**" **(123456)**, following the instructions of the equipment to put the treatment handle into the handle holder correctly. Press the "ON" button on the handle, the equipment will enter the automatic calibration procedure. After the calibration is finished, the equipment will show the calibration result.

Figure 4-15

Warning!

- **During the calibration process, the interface will show "Calibrating" with voice prompt, and the equipment will have**

✧ **Successful calibration:**

After the calibration is successful, the equipment prompts that the calibration is complete, click "Confirm" to exit. If the prompt "Low Light Source Intensity" is displayed, it is recommended to replace the light source in time to avoid affecting the use.

✧ **Failed calibration:**

If the handle is skewed and not properly inserted (as shown below), calibration will fail or be inaccurate after the calibration is initiated.

Figure 4-16

If the prompt "Calibration Failed" is displayed, adjust the handle position as shown in Figure 4-14 to restart the calibration procedure.

The result of the calibration performed without the handle being properly inserted, is not accurate, even if the calibration is passed. Readjust the handle position according to Figure 4-14 and perform the calibration procedure again.

If the treatment handle has been inserted correctly and the

calibration still fails, it may be caused by uncleanness in the handle or loss of light source. Please clean the handle according to section 5.3 and calibrate again. If the calibration still fails, the treatment handle needs to be replaced. Please contact the supplier or manufacturer in time to avoid affecting the normal use.

4.3.5 Mode switch

Click "Mode Switch" on the main interface to switch between the free treatment mode and the user treatment mode. The recording for the free treatment will not be saved by the equipment.

5 Maintenance

In order to ensure the normal operation and extend the service life of the equipment, please pay attention to the daily check and maintenance of the equipment.

5.1 Inspection

In order to ensure the normal and safe operation of the equipment, the equipment and its accessories should be subjected to a preventive inspection (including performance inspection and safety inspection) and maintenance, before the equipment is used and used for 6 months, after maintenance or upgrades, to confirm that the equipment can work normally, under good working conditions, is safe for medical staff and

patients, and meets the accuracy required for clinical use.

The items to be inspected should include:

- ✓ The environment and power supply meet the requirements.
- ✓ The shell of the equipment is clean and free of stains.
- ✓ There are no mechanical damages to the shell, buttons, connectors and accessories.
- ✓ The treatment handle is free of wear and stains.
- ✓ The power wire and connecting cable have no wear and have good insulation performance.
- ✓ The earth ground should be connected well.
- ✓ Use specified consumables and accessories only.
- ✓ The equipment software is functioning normally.

If any damage or abnormality is found, stop using the equipment immediately, and contact the hospital electrical engineer or after-sales service department of our company immediately.

5.2 Maintenance

- Pay attention to the local grid voltage fluctuations. If it is outside the allowable range, it is recommended to add voltage regulator equipment.
- The shell of the equipment should not be opened without permission, to avoid undue malfunction that may affect the normal use.
- Accessories provided to the equipment should be handled gently. Drop, touch and pull are not allowed. Do not wipe with corrosive chemicals.
- The connecting cables should be stored with the equipment to reduce the frequency of insertions and removals to extend their service life.
- When the treatment handle is not used, it should be placed in the handle holder.

- When the service life of the equipment and accessories expires, it should be handled in accordance with the relevant provisions of electronic product waste.

5.3 Cleaning

Warning!

- **Before cleaning the equipment, turn off the power switch and disconnect the power wire from the outlet.**

- The equipment should be cleaned regularly, and the frequency of cleaning should be increased in regions with serious environmental pollution or large wind and sand.
- Clean the surface of the equipment by using a soft and clean cloth with appropriate amount of water.
- If the surface of the equipment is stained, it can be wiped with appropriate amount of soapy water until the stains are removed.

- Dry the surface with a soft and dry cloth after wiping.
- Place the equipment in a cool and ventilated environment.
- If the transparent baffle of treatment handle is contaminated with dust, wipe it with a soft and lint-free cloth, and then clean the surface with a clean and soft cloth. If there are oily stains, wipe it by using a soft cloth with a mild detergent, and then dry the surface with a clean and soft cloth. Pay attention to the wiping force to avoid scratching during cleaning.

Note:

— **Do not use high-effective cleaner such as acetone.**

— **Abrasive materials such as wire brushes or metal polishes are prohibited.**

— **Do not pour liquid on the equipment while cleaning. Make sure that no liquid enters the inside of the equipment.**

5.4 Disinfection

- The hood of the treatment handle should be disinfected before treatment. It can be immersed into 75% alcohol for 30 minutes, and then dry the surface with a clean and soft cloth.
- If the hood is not installed, wipe the outer surface of the transparent baffle for 30 minutes to have it disinfected by using a soft cloth with 75% alcohol.
- If the equipment or the handle accidentally contact with the patient's affected part of body, wipe the contaminated part for 30 minutes to have it disinfected by using a soft cloth with 75% alcohol.

5.5 Storage

If the equipment is not used for a long time, it should be wiped clean and covered with a dust cover. The storage environment should be kept dry and ventilated.

5.6 Transportation and storage

Transportation

The equipment should be protected from rain and snow, and transported by any means of transportation without mixing with corrosive substances or gases.

Storage

Completely packaged products should be stored in a warehouse which is dry, ventilated, free of corrosive materials and strong magnetic fields.

Environmental conditions of transportation and storage

Ambient temperature: -40 ~ 55℃

Atmospheric pressure: 500～1060hpa

Relative humidity: ≤90%

5.7 Fuses replacement

Warning!

- **Before replacing the fuse, turn off the power switch and disconnect the power wire from the outlet.**

Figure 5-2 Figure 5-3 Figure 5-4

As shown in Figure 5-2, turn the fuse holder counterclockwise with a screwdriver to remove the fuse (as shown in Figure 5-3). Replace it with a new fuse and turn it clockwise into the fuse holder, as shown in Figure 5-4.

6 Common failures analysis and exclusion

The analysis and exclusion methods for common failures of the equipment are shown in Table 6-1. If you are unable to judge or solve the equipment failure, please call the after-sales service center of our company (please refer to the Chapter 7 for details).

Table 6-1 Failures analysis and elimination

SN	Failures	Possible reason	Method of exclusion

1	The power indicator is off after power on.	Incorrect external power connection.	Check if the power connection of the network is correct and the power wire is intact.
2	The indicator on the power switch is on after the power is turned on, but the screen is not displayed.	Fuse breakdown	Replace the fuse
		Internal power supply error	Please contact the manufacturer for maintenance.
3	The treatment handle switch can not be started	Button breakdown	Please contact the manufacturer for maintenance.
		Internal detection circuit error	Please contact the manufacturer for maintenance.
4	Shows "Memory card failure"	Micro SD card is not installed.	Reinstall the Micro SD card after shutting down.
		Micro SD card breakdown	Please contact the manufacturer.

5	Shows "The lamp is not lighted up or the lamp is off during irradiation" .	The cables of the handle are not connected	Reconnect the cables of the handle after shutting down the equipment
		The button of the handle is breakdown	Please contact the manufacturer.
		Lamp breakdown	Please contact the manufacturer.
6	Shows "The lamp is not turned off normally or the lamp is lighted up when the irradiation is not started".	Software failures	Shut down and restart
		The cables of the handle are not connected	Reconnect the cables of the handle after shutting down the equipment
		Equipment or handle failure	Please contact the manufacturer.
7	Shows "Abnormal overheating inside the fixture".	The temperature inside the lamp is too high.	Shut down and cool down for a while before reusing.

8	Shows "The lamp ballast system is overheated abnormally"	The temperature of the lamp ballast is too high.	Shut down and cool down for a while before reusing.
9	Shows "The temperature sensor value is incorrect"	Software failures	Shut down and restart
		The cables of the handle are not connected	Reconnect the cables of the handle after shutting down the equipment
		Temperature sensor failure	Please contact the manufacturer.
10	Shows "Calibration failed! The light source is low, please change the light source immediately".	The handle is not placed correctly	Reload the handle
		Light source intensity is too low	Please contact the manufacturer for light source replacement.
11	Stop at the boot screen after power on	Micro SD card is not installed.	Reinstall the Micro SD card after shutting down.

7 After Service

1. In case of any special requirements for the services, the user can consult relevant issues with the After-sales Service Center of the Company
2. Relevant technical data of the instrument can be provided to the technical service staff authorized by the Company as necessary.
3. The Company will not offer free warranty services for faults as a result of the following causes:

- Faults due to disassembly & assembly or modification of the instrument without permission.
- Faults due to accidental break or drop during use or handling.
- Faults due to lack of reasonable maintenance or failure to meet the environment requirements for use.
- Faults due to failure to conduct proper operation as required in the user manual.

- Damage to the instrument and accessories due to human causes.
- Faults due to maintenance without permission of the Company.
- Faults or damage due to force majeure such as fire or earthquake.

Appendix A Irradiation intensity

The nominal values of the irradiation intensity before leaving the factory are recorded in the table below.

Table A-1 Irradiation intensity nominal value

Band type	Irradiation intensity (mW/cm^2)
UVB	

Note: The working life of the light source is not less than 500 hours. After a period of use, the irradiation intensity value will be correspondingly attenuated. Irradiation intensity values should be adjusted in time according to the use of the light source (for example: after using for every 100 hours or less, when the intensity is significantly attenuated, after the replacement of the light source, or other conditions that may cause changes of the irradiation intensity value). The equipment with intensity acquisition function can detect the irradiation intensity value automatically. If the accuracy of the irradiation intensity value can not be determined by the equipment without intensity acquisition

function, please contact the distributor or manufacturer. The light source is not allowed to be replaced by the user. If you need to replace the light source, please contact the distributor or manufacturer.

Appendix B Skin type

According to regional and population differences, the human skin all over the world can be roughly divided into six types (I to VI). Determine the skin type I to IV by asking the patient about the skin reaction after 30 minutes sunlight exposure at noon in the early summer. The determination of the skin type V and VI depends on the skin color (please refer to the Table B-1).

Table B-1 Skin type

Skin type	Sunlight exposure	Skin characteristics
I	Easy to have sunburn but never have tanning	Blue eyes, red hair, white skin
II	Easy to have sunburn and have tanning occasionally	Blue/green/grey eyes, less skin spots, golden or brown hair, white skin
III	Have sunburn sometimes, easy to have tanning	Gray/brown eyes, no skin spots, dark brown hair, white to light brown skin

IV	Never have sunburn, easy to have tanning	Dark eyes, no skin spots, dark brown hair, light brown skin
V		Brown skin
VI		Black skin

Appendix C Preset output dose of the MED skin test

During the MED test, the equipment will output the UVB dose with the doses sequence in Table C-1 automatically, according to the selected skin type.

Table C-1

Irradiation dose (mJ/cm²) / **Skin type** / **Sequence of the hole site**	**Ⅰ**	**Ⅱ**	**Ⅲ**	**Ⅳ**	**Ⅴ**	**Ⅵ**
1	80	170	220	250	300	330
2	110	200	250	280	330	360
3	140	230	280	310	360	390

4	170	260	310	340	390	420
5	200	290	340	370	420	450
6	230	320	370	400	450	480

The above data is the six groups of doses that are automatically emitted for different skin types during automatic MED test (for reference only). If different doses are required, it should be decided by the doctor according to the specific clinical requirements, please refer to the operation method of manual test in section 4.3.1 Phototoxicity Test.

Appendix D Conversion of irradiation dose/irradiation time

The irradiation time and the irradiation dose can be converted by the following equation:

1. If the unit of the irradiation dose is J/cm^2, please choose Equation 1:

$$\text{Irradiation time[s]} = \frac{\text{dosage[J/cm}^2\text{] X 1000}}{\text{Intensity [mW/cm}^2\text{]}}$$

2. If the unit of the irradiation dose is J/cm^2, please choose Equation 2:

$$\text{Irradiation time [s]} = \frac{\text{dosage[mJ/cm}^2\text{]}}{\text{Intensity [mW/cm}^2\text{]}}$$

For example: suppose that the irradiation intensity of the equipment is 45mW/cm^2 (please refer to the Appendix A for actual values)

1) If the required irradiation dose is 4.0J/cm^2, it can be calculated using Equation 1:

$$\text{Irradiation time} = \frac{4.0\text{J/cm}^2 \times 1000}{45\,\text{mW/cm}^2} \approx 89\ (\text{s})$$

That is, the required irradiation time is about 89 seconds.

2) If the required irradiation dose is 200 mJ/cm^2, it can be calculated using Equation 2:

$$\text{Irradiation time} = \frac{200\text{mJ/cm}^2}{45\text{mW/cm}^2} \approx 4\ (\text{s})$$

That is, the required irradiation time is about 4 seconds.

Appendix E Patient log

Patient ID:_____ Name: _____ Age:_____

Irradiation date	Prescription dose (J/cm^2)	Irradiation time (minutes/second)	Doctor's assessment	Irradiation site	Skin reaction	Medical examination date	Cumulative irradiation time (hour/minutes)	Comments

Record the patient log can help the attending doctor to understand the treatment process in time and provide a reference for the next treatment. The log table given in Appendix E is for reference only and can be modified by the user according to the actual usage.

Appendix F Electromagnetic compatibility statement

1 Precautions:

- This equipment is intended to be used only by health care professionals. The equipment may cause radio interference or disrupt the operation of nearby equipment. If there is any interference, please adjust the direction or position of the equipment.
- The equipment can only use the supplied light source and power wire (2 meters in length), otherwise it may lead to increased emission or reduced immunity to interference of the equipment.
- Other equipment used at the same time near the equipment must meet the electromagnetic compatibility requirements. X-ray machines or magnetic resonance equipment can generate high-intensity electromagnetic radiation and can be a source of interference. At the same time, portable and mobile RF communication devices may affect

the equipment, so the equipment on using state should not close to mobile phones, microwave ovens and other devices that can generate strong magnetic fields. If the equipment is intended to be used in an electromagnetic environment where the radio frequency disturbance can be controlled, place the equipment according to the recommended minimum distance to the portable and mobile RF communication devices in the last table of this appendix, depending on the maximum output rating of communication devices. Keep away from communication devices as much as possible to prevent electromagnetic interference.

- The equipment should not be used in close to or stacked with other devices. If it must be used close to or stacked with other devices, observe and confirm that the equipment can work properly under its configuration of using.
- Electromagnetic compatibility requirements should be considered when installing and operating the equipment. Please refer to the data

provided in the table below to ensure a normal working environment.

2 Basic performance:

- UV radiation spectrum: Peak wavelength 308 nm, error±2 nm
- UV radiation intensity range: not more than 200mW / cm^2

Guidance and manufacturer’s declaration - electromagnetic emission - for all equipment and systems

1	Guidance and manufacturer’s declaration – electromagnetic emission		
2	308nm Excimer System is intended for use in the electromagnetic environment specified below. The customer or the user of 308nm Excimer System should assure that it is used in such an environment.		
3	**Emissions test**	**Compliance**	**Electromagnetic environment - guidance**
4	RF emissions EN 55011	Group 1	308nm Excimer System uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
5	RF emissions EN 55011	Class A	308nm Excimer System is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies
6	Harmonic emissions EN 61000-3-2	Class A	
7	Voltage fluctuations	Complies	

	/flicker emissions EN 61000-3-3		buildings used for domestic purposes.

Guidance and manufacturer’ s declaration - electromagnetic immunity - for all equipment and systems

Guidance and manufacturer’ s declaration — electromagnetic immunity			
308nm Excimer System is intended for use in the electromagnetic environment specified below. The customer or the user of 308nm Excimer System should assure that it is used in such an environment.			
Immunity test	**EN 60601 test level**	**Compliance level**	**Electromagnetic environment-guidance**
Electrostatic discharge (ESD) EN 61000-4-2	± 8 kV contact ± 15kV air	± 8 kV contact ± 15kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst EN 61000-4-4	±2kV for power supply lines ±1kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge EN	±1 kV differential mode	± 1 kV differential mode	Mains power quality should be that of a typical

61000-4-5	±2 kV common mode	± 2 kV common mode	commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines EN 61000-4-11	< 5 % UT (>95 % dip in UT) for 0.5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles < 5 % UT (>95 % dip in UT) for 5 sec	< 5 % UT (>95 % dip in UT) for 0.5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles < 5 % UT (>95 % dip in UT) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of 308nm Excimer System requires continued operation during power mains interruptions, it is recommended that 308nm Excimer System be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field EN 61000-4-8	30A/m	30A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE:UT is the a. c. mains voltage prior to application of the test level.			

Guidance and manufacturer’ s declaration - electromagnetic immunity for equipment and system that are not

life-supporting

Guidance and manufacturer’ s declaration - electromagnetic immunity			
308nm Excimer System is intended for use in the electromagnetic environment specified below. The customer or the user of 308nm Excimer System should assure that it is used in such an environment.			
Immunity test	**EN 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF EN 61000-4-6 Radiated RF EN 61000-4-3	3 Vrms 150 kHz to 80 MHz 6V m in ISM and amateur radio bands between 10V/m 80 MHz to 2.7 GHz	3 V 6 V m in ISM and amateur radio bands between 10 V/m	Portable and mobile RF communications equipment should be used no closer to any part of 308nm Excimer System, including cables, than the recommended separation distance calculated from the equation applies to the frequency of the transmitter. **Recommended separation distance** $d = [\frac{3.5}{V_1}]\sqrt{P}$ $d = [\frac{3.5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2.7GHz where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).b Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, a should be

			less than the compliance level in each frequency range.b Interference may occur in the vicinity of equipment marked with the following symbol: 
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic is affected by absorption and reflection from structures, objects and people.			
a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which 308nm Excimer System is used exceeds the applicable RF compliance level above, 308nm Excimer System should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating 308nm Excimer System. b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.			

Recommended separation distances between portable and mobile RF communications equipment and the EQUIPMENT or SYSTEM - for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING

Recommended separation distances between portable and mobile RF communications equipment and 308nm Excimer System
308nm Excimer System is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of 308nm Excimer

System can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and 308nm Excimer System as recommended below, according to the maximum output power of the communications equipment

Rated maximum output of transmitter (W)	**Separation distance according to frequency of transmitter (m)**		
	150 kHz to 80 MHz $d = [\frac{3.5}{V_1}]\sqrt{P}$	80 MHz to 800 MHz $d = [\frac{3.5}{E_1}]\sqrt{P}$	800 MHz to 2.5 GHz $d = [\frac{7}{E_1}]\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (m) can be estimated using the equation applies to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

KN-5000C Packing List

NO.	Name	Quantity	Unit
1	Mainframe	1	pcs
2	Therapeutic handle	1	pcs
3	Therapeutic Handle Mask (6 sizes)	1	set
4	Goggles	1	set

5	Power cord	1	pcs
6	Fuse	2	pcs
7	micro SD card	1	pcs
8	Mainframe Dust Cover	1	pcs
9	Cleaning cloth	1	pcs
10	Hand Strap	1	pcs
11	Instructions	1	pcs

KN-5000D Packing List

NO.	Name	Quantity	Unit
1	Mainframe	1	pcs
2	Therapeutic handle	1	pcs
3	Therapeutic Handle Mask (6 sizes)	1	set
4	Goggles	3	set

5	Power cord	1	pcs
6	Fuse	2	pcs
7	micro SD card	1	pcs
8	Mainframe Dust Cover	1	pcs
9	Cleaning cloth	1	pcs
10	Hand Strap	1	pcs
11	Instructions	1	pcs

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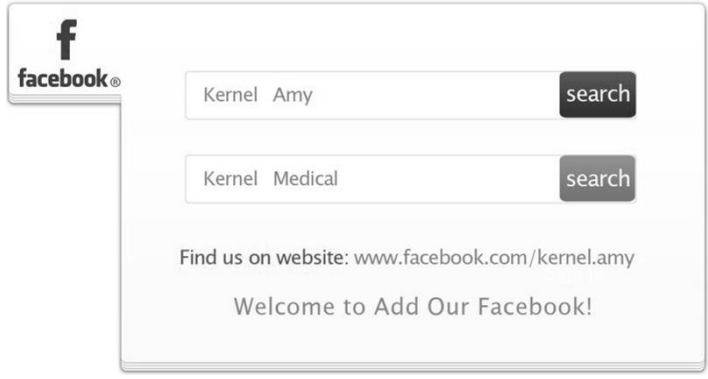
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