



USER MANUAL

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1.Introduction

SMARTLUXSLIM is a 'KFDA-cleared class II , CE/MDD class II -a' medical equipment comprising low-powered light system and infrared light unit. Considerable caution should be used when handling this equipment so that it doesn't cause any harm or present a danger. Please be sure to have a full grasp of the manual before operating this system. If you have any questions including ones related to the safety of our product or services, their operation or application, please contact the head office of MEDMIX or one of our agencies.

1.1 Intended use SMARTLUX SLIM is medical device that the energy emitted provides topical heating for acceleration in wound Healing and temporary relief of pain

2.Theory and Technical Information

SMARTLUXSLIM is composed of a head module, a power module, a control module and a touch screen. Each of the 15 head modules has a different wavelength – red (635nm), blue (420nm), IR (830nm), yellow (585nm), green (535nm), FX (635nm/830nm). SMARTLUXSLIM is medical equipment that uses a kind of light. The light is safe and pure to stimulate and heal damaged skin. It can be used for acne treatment, reducing wrinkles, scar reduction and anti-aging treatment.

2.1 Principal of treatment of The light energy of SMARTLUX activates mitochondria, promoting cell regeneration and making cells act younger. It also improves blood circulation and stimulates collagen and elastic production, restoring youthful and healthy skin while delivering powerful anti-inflammatory, wound healing and pain relief benefits.

2.2 Treatment target SMARTLUXSLIM can be applied to the face, head, and body (including the limbs).

3. Transportation

3.1 SMARTLUX SLIM has passed full quality assurance testing before shipment.

Transportation Thus, the unit should be operational upon delivery. The unit should be unpacked only by our agency.

3.1.2 Safe Movement



Move the machine by holding the corner of the HEAD with one hand and back of the TOP COVER with the other hand.

3.2 SMARTLUXSLIM is packed well and reliably before it is transported. Customers which receive the

Unsealing and Examination

product should first check carefully whether the package has been damaged. After that, the recipient should reconcile all the components inside the package and the check list provided. All the documents included should be kept secure as they will be required when the product needs to be returned or repaired.

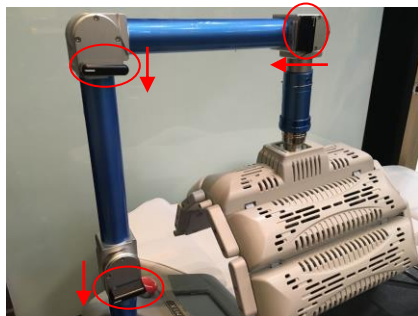
3.3
Preparing
Machine(For
treatment)



* Bend the head in an oval shape.



* Check if the power plug is connected and the machine is pressed to 'I'.



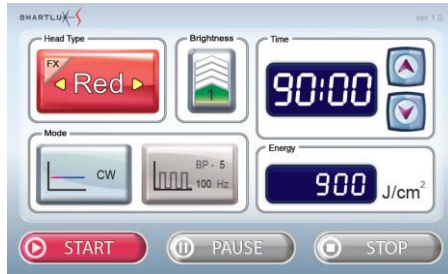
* Adjust the angle by pressing the black lever in the direction of the arrow. (Adjust it depending on the hospital's environment.)



* Place the controlled arm to the areas that should be treated.

<Patient posture>

* Patients should make a posture as the left Image.



* Power on the machine, set the head type / brightness / time to suit each patient's condition and press the 'STRAT' button to start the machine.

3.3.1 Operator location When completing all processes stated in the Clause 3.3, treatment starts and when alarm buzzer goes off (sound that indicates the treatment is done), go to the patients and move the machine away from them and tell the patients the treatment is finished.

3.4 Condition in Operating Humidity : 20 ~ 75%
 in Atmospheric pressure : 70kPa ~ 106kPa
 Operating temperature : 5°C ~ 30°C

3.5 Condition in Delivering and Storing When delivering and storing the machine, make sure it stands on. Use packaging materials for exports (double wall corrugated fiberboard, PE foam, pallet) to protect the products from various environmental factors. Refer to the information stated in the Clause 3.4 when storing the product.

4.Safety

4.1 Overview Because it is a highly advanced system, SMARTLUXSLIM is produced under strict quality management and receives thorough testing before delivery. We recommend that you read this chapter carefully so that using the machine can be safe for both patients and operators for a long period of time. Also, users of this equipment must go through a special training course before operating this system. SMARTLUXSLIM is a KFSA-cleared Class II medical system. Substantial care should be taken that it is operated safe and that there no problems arise. Please make sure to keep combustibles away from the system. When using SMARTLUXSLIM, basic safety precautions should always be followed to reduce the risk of fire, electric shock or personal injury.

4.2 General Safety Warnings



Caution!

- 1) Read and understand all instructions.
- 2) Follow all warnings and instructions marked on SMARTLUXSLIM.
- 3) Unplug SMARTLUXSLIM from the mains before cleaning.
- 4) Do not use SMARTLUXSLIM near water, for example near a sink or bowl etc.
- 5) Place SMARTLUXSLIM securely on a stable surface. Serious damage or injury may result if the

Head Lamp falls.

- 6) Do not cover the openings in SMARTLUXSLIM, they are provided for ventilation. Never place SMARTLUXSLIM near radiators or in a place where proper ventilation is not provided.
- 7) Use only the power source marked on SMARTLUXSLIM.
- 8) SMARTLUXSLIM is supplied with a module mains lead. If the lead is unsuitable contact MEDMIX for a replacement. Do not modify the lead as this may make it unsafe.
- 9) Do not place objects on the mains lead. Install SMARTLUXSLIM where no one can step or trip on the lead.
- 10) Do not overload mains outlets or extension cords. This can result in the risk of fire or electric shock.
- 11) Never push any objects through the ventilation slots.
- 12) Never spill any liquids on SMARTLUXSLIM. This can result in the risk of fire or electric shock
- 13) To reduce the risk of electric shock, never disassemble SMARTLUXSLIM. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly could cause an electric shock when SMARTLUXSLIM is subsequently used.
- 14) Unplug SMARTLUXSLIM from the mains and refer to head office of MEDMIX or authorized representatives in case of any of the following:
 - .The mains lead or plug is damaged.
 - . Liquid has been spilled into the LED Lamp.
 - . SMARTLUXSLIM has been exposed to rain or water.
 - . SMARTLUXSLIM does not work normally by following the operating instructions.
 - . SMARTLUXSLIM has been dropped or physically damaged.
 - . SMARTLUXSLIM exhibits a distinct change in performance.

4.3

Electrical
Protection



Caution!

Any individual who disassembles or repairs the system should have the authorization of our head office or agencies.

- 1) We are not responsible for any problems stemming from disassembly or repair which was unauthorized.
- 2) Check that the system is well grounded when you use this system.
- 3) The procedure room where the system is installed should be clean all the time and the appropriate temperature and humidity should be maintained.

4.4

Eye protection



Caution!

When used correctly for normal treatments the output of SMARTLUXSLIM is less than the maximum recommended Maximum Permissible Exposures (MPEs). Nevertheless it is prudent to ensure that the patient's eyes are closed throughout the treatment. If treatment is on the face, then the use of opaque pads over the eyelids is recommended.

You must not look directly at the light or indirectly at it whether it be in the form of reflected light or a spectrum. In short, you must not look at the output from the light source because it can damage

the retina. Eye protection should be easily locatable in the procedure room. Once the power to the equipment has been turned on, everyone in the room including patients should wear the eye protection. Different types of eye protection should be used depending on the wavelength range.

4.5
Risk of Fire



Caution!

Keep combustibles, inflammable anesthetics and other solvents away from the system and free the area around the system of all paper and plastics. While you are not using the system, for example while waiting for another patient or when taking a break from the machine, you should put the equipment on standby by pushing the STOP button.

4.6
Protection of
the System

As mentioned above, the light should not be radiated onto combustibles. A third person should never be allowed to operate the system.

4.7
Power Switch

The power switch on the front of the system is in the form of a key lock switch. Once the key has been inserted, the electronic system starts and automatically runs a test on the system and puts itself in the state of being ready to be used.

4.7.1
Method of fuse



Hang a wrench in the middle of the fuse holder and press.



When the fuse holder comes out, put a wrench into the area and push the fuse.



Pull out the fuse and put a new fuse from the inside while pressing it



Push the fuse holder as hard as possible.

4.8
Safety Switch

The emergency switch is used to stop the machine immediately in emergencies. Once the emergency switch is turned on, the system stops functioning.

4.9
How to Restart

If the system functions abnormally, the power should be cut. To rerun the system, the first step should be to make sure that the key switch is turned off and the power is shut off. 5 minutes after

that, the key switch should be turned on again to operate the system. If the failure occurs repeatedly, please contact MEDMIX immediately.

- 4.10 The side effects found in clinical evaluation report : None
- contraindications General contraindications and side effects
 - Buring
 - Mild Erythema
 - Photodamage

5. Description of Instrument

5.1 The system is composed of three major parts.

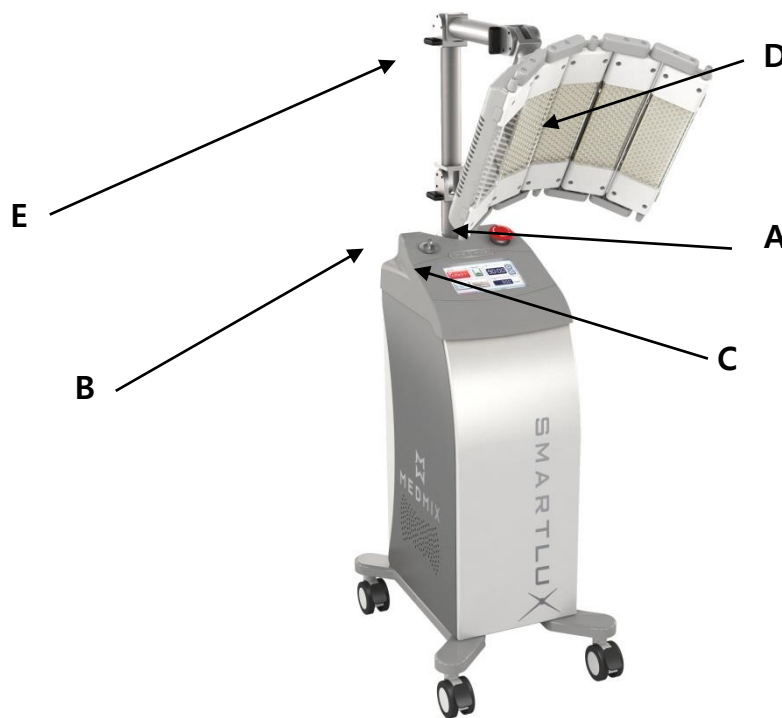
- General 1) Body
- Explanation 2) Head
- 3) Arm

5.2 The body is composed of a power module, a control module and a touch-screen module.

Body

5.3

Front



- A. Emergency Switch
- B. Key Switch
- C. Color Touch Screen
- D. Head
- E. Arm

5.3.1 Without the safety key, you cannot operate the equipment. The key can only be removable when the switch is turned off. If you turn the key right, the power is supplied to the machine enabling you to read the information on the color touch screen. Only properly trained users should have access to the key.

5.3.2 If the system does not function normally or an emergency situation should arise, press the emergency switch to immediately stop it. Once you press the emergency switch, you should turn

Switch off the key switch shutting off the power and turn the emergency switch in the arrow direction. About 5 minutes later, turn the key switch again to ON and operate the system.

5.3.3 The color touch screen is the interface between humans and the machine.

Color Touch Screen You can operate and control the machine using the touch screen.



Caution!

You must not press down on the touch screen with a sharp object nor spray liquid on the screen.

5.4 Head

5.4.1	- Light Source	: LED 420nm ~ 830nm
General	- Body Dimensions (W X L X H)	: 390mm X 540mm X 840mm
Specifications	- Weight	: 33kg (head excepted)
(Excluding Head)	- Total weight	: 40kg
	- Input Power	: 100-240V~, 50/60Hz,
	- Power consumption	: 700VA
	- Cooling System	: Air Cooling
	- Connector operating voltage	: 24V, 6A



- Fuse : 250V, 8A

5.4.2	- Output Wavelength	: 635nm +/- 6nm
RED	- Bandwidth	: 20nm +/- 3nm
	- Total Power	: 80W +/- 8W
	- Output Intensity	: 115mW/cm ²
	- Standard Dose	: 138J/cm ²
	- Treatment Time(Standard Dose)	: 20 minutes
	- Treatment Time(Max)	: 40 minutes
	- Dose Range(Adjustable)	: 1~276J/cm ²
	- Head Overall Dimensions(L X W)	: 320mm X 410mm
	- LED Active Dimensions(L X W)	: 190mm X 375mm
	- Weight	: 4.5kg

5.4.3	- Output Wavelength	: 420nm +/- 5nm
BLUE	- Bandwidth	: 20nm +/- 3nm
	- Total Power	: 46W +/- 4W
	- Output Intensity	: 75mW/cm ²
	- Standard Dose	: 90J/cm ²
	- Treatment Time (Standard Dose)	: 20 minutes
	- Treatment Time (Max)	: 40 minutes

	- Dose Range (Adjustable)	: 1~180J/cm ²
	- Head Overall Dimensions (L X W)	: 320mm X 410mm
	- LED Active Dimensions (L X W)	: 190mm X 375mm
	- Weight	: 4.5kg
5.4.8	- Output Wavelength	: 635nm +/- 6nm, 830nm +/- 5nm
FX(RED/IR)	- Bandwidth	: 20nm +/- 3nm, 30nm +/- 5nm
	- Output Intensity	: RED 55mW/cm ² , IR 45mW/cm ² , R+IR 90mW/cm ²
	- Standard Dose	: RED 55J/cm ² , IR 54J/cm ² R+IR 108J/cm ²
	- Treatment Time(Standard Dose)	: 20minutes
	- Treatment Time(Max)	: 40minutes
	- Dose Range(Adjustable)	: RED 1~132J/cm ² , IR 1~108J/cm ² , R+IR 1~210J/cm ²
	- Head Overall Dimensions(L X W)	: 320mm X 410mm
	- LED Active Dimensions(L X W)	: 190mm X 410mm
	- Weight	: 3.2kg
5.4.10	- Output Wavelength	: 635nm +/- 6nm, 830nm +/- 5nm
FX Plus(RED/IR)	- Bandwidth	: 20nm +/- 3nm, 30nm +/- 5nm
	- Output Intensity	: RED 65mW/cm ² , IR 85mW/cm ² , R+IR 135mW/cm ²
	- Standard Dose	: RED 78J/cm ² , IR 102J/cm ² , R+IR 162J/cm ²
	- Treatment Time(Standard Dose)	: 20minutes
	- Treatment Time(Max)	: 40minutes
	- Dose Range(Adjustable)	: RED 1~156J/cm ² , IR 1~204J/cm ² , R+IR 1~324J/cm ²
	- Head Overall Dimensions(L X W)	: 320mm X 410mm
	- LED Active Dimensions(L X W)	: 190mm X 410mm
	- Weight	: 3.2 kg
5.4.11	- Output Wavelength	: 585nm +/- 5nm, 830nm +/- 5nm
Dual(Yellow/IR)	- Bandwidth	: 20nm +/- 5nm, 30nm +/- 5nm
	- Output Intensity	: YEL 18mW/cm ² , IR 85mW/cm ² , YEL+IR 95mW/cm ²
	- Standard Dose	: YEL 22J/cm ² , IR 102J/cm ² , YEL+IR 114J/cm ²
	- Treatment Time(Standard Dose)	: 20minutes
	- Treatment Time(Max)	: 40minutes
	- Dose Range(Adjustable)	: YEL 1~44J/cm ² , IR 1~204J/cm ² , YEL+IR 1~228J/cm ²
	- Head Overall Dimensions(L X W)	: 320mm X 410mm
	- LED Active Dimensions(L X W)	: 190mm X 410mm
	- Weight	: 3.2kg
5.4.16	- Output Wavelength	: 635nm +/- 6nm, 830nm +/- 5nm
FX Plus – 3	- Bandwidth	: 20nm +/- 3nm, 30nm +/- 5nm
(RED/IR)	- Output Intensity	: RED 55mW/cm ² , IR 70mW/cm ² , R+IR 115mW/cm ²

- Standard Dose	: RED 66J/cm ² , IR 84J/cm ² , R+IR 138J/cm ²
- Treatment Time(Standard Dose)	: 20minutes
- Treatment Time(Max)	: 40minutes
- Dose Range(Adjustable)	: RED 1~132J/cm ² , IR 1~168J/cm ² , R+IR 1~276J/cm ²
- Head Overall Dimensions(L X W)	: 320mm X 246mm
- LED Active Dimensions(L X W)	: 190mm X 246mm
- Weight	: 1.9kg

5.5 Arm An arm with three joints is installed onto the system to smoothly locate the head over the correct site for the procedure.

5.5.1 General Specifications	- Arm Dimensions (L)	: 1,090mm
	- Weight	: 4.5kg
	- Wed Joints	: Three

5.5.2 How to adjust the position of the arm

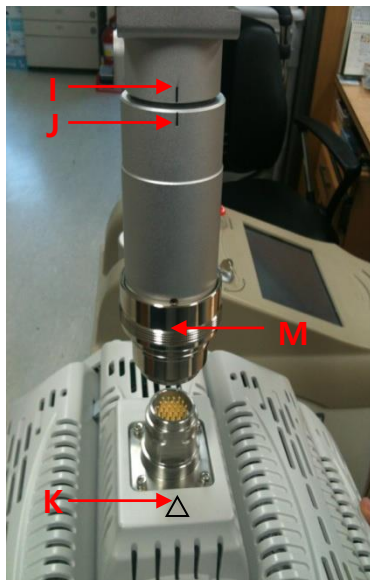


To move the arm up, manually raise the arm and it will hold into position.

To move the arm down, turn the black lever to the left and slowly adjust the position downwards. Please be very careful because the lamp head is heavy. Make sure to hold it when lowering its position.

● Attaching the Head Lamp

5.5.3 How to attach and detach the head piece



There are various different types of head pieces. They are all attached the same way. First, make sure to align pieces “I” and “J”. Next, make sure the triangle in “K” is also aligned correctly. Then, push the head piece into the connector. After you push it in, you will hear it attach to the arm. Finally, make sure to lock the head piece into position. To lock the head piece firmly into position, turn knob “M” clockwise until it is tightly fastened.

● Detaching the Head Lamp

First, unfasten knob “M” by turning it counter clockwise. Make sure to hold the head piece so it does not fall. Then, pull the “N” piece upwards and you will hear it disconnect from the arm. Finally, remove the head piece and store it somewhere safe.



Make sure to hold the head piece when attaching and detaching the head pieces



6. Specifications

Model Name	SMARTLUXSLIM
Body Dimensions (W X L X H)	: 267mm X 387mm X 840mm
Head Dimensions (L X W)	: 320mm X 410mm, 320mm X 246mm
Output Intensity	: Refer to the specifications of each head
Operation	: 7 Inch Color Touch Screen LCD
Interface	
Input Power	: 100-240V~, 50/60Hz
Power consumption	: 700VA
Cooling System	: Air Cooling
Weight	: 33kg (head excepted)
Total weight	: 40kg
Connector operating voltage	: 24V, 6A
Fuse	: 250V, 8A
Software version	: 1.0

7. Operating the Instrument

7.1

Introduction



Caution!

This system must be operated only by the users who have been trained how to operate the machine. This manual only explains how to operate the system technically without offering any medical descriptions.

You should check the following before using the system.

- Is the main power connected?
- Is eye protection available to operators and patients in the procedure room?

7.2

Start

Turn the key switch on by turning it to the right to start the system. The machine itself runs a self-test for about one minute. If there is a problem, a message regarding the problem is displayed on the touch screen.

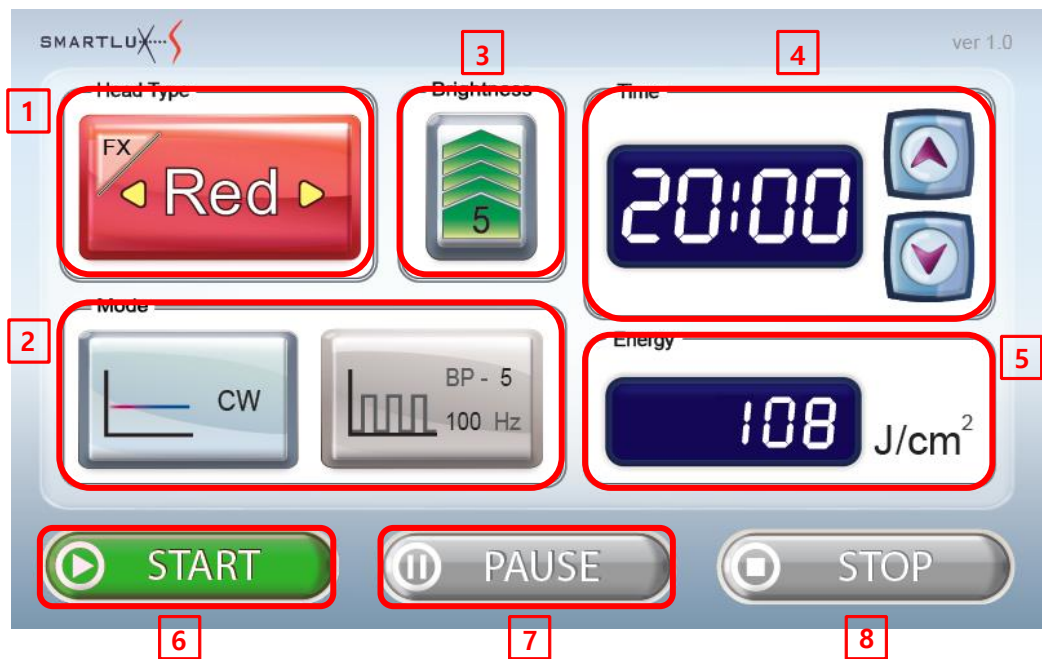
7.3

Color Touch Screen

The system provides a highly sensitive touch screen. You can use your finger or a stylus to control buttons on the touch screen. By controlling these buttons, you can preset variables used in treatment.

7.4

Main Menu (Standard)



1. Head Type

2. Mode

3. Brightness

4. Time Select

5. TOTAL Energy

6. START

7. PAUSE

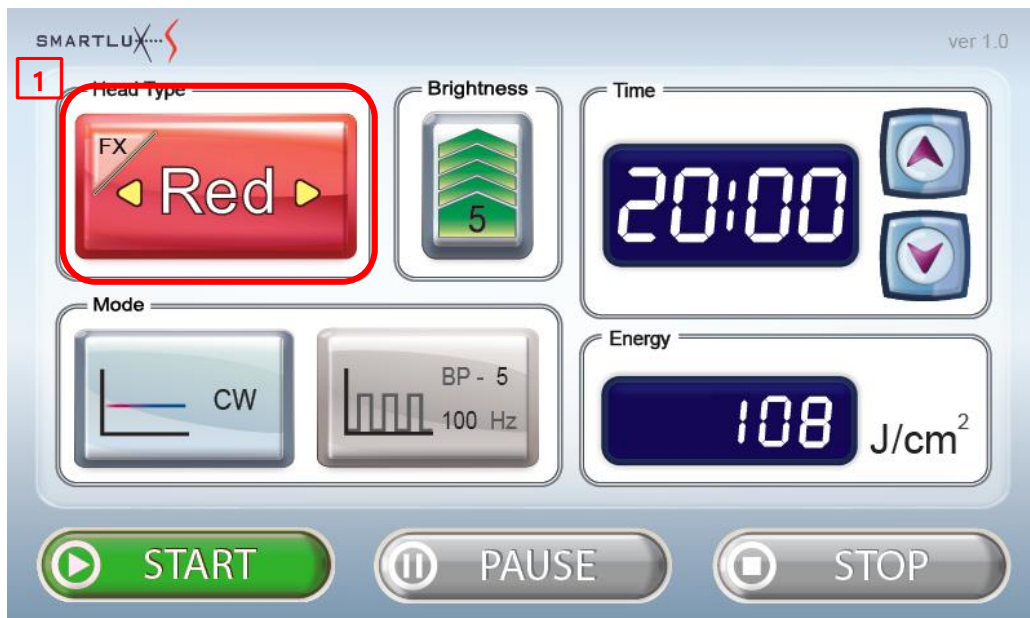
8. STOP

7.4.1

START/STOP /PAUSE

When the equipment is in the stopped state and off, you can control all features. In other words, once you press the 'STOP' button, you can reset the system and operate it as you want. If you press the 'PAUSE' button while it is working, the system stops immediately. In order to change a mode, you should stop the system first by pressing the 'STOP' button.

7.4.2
Head Type

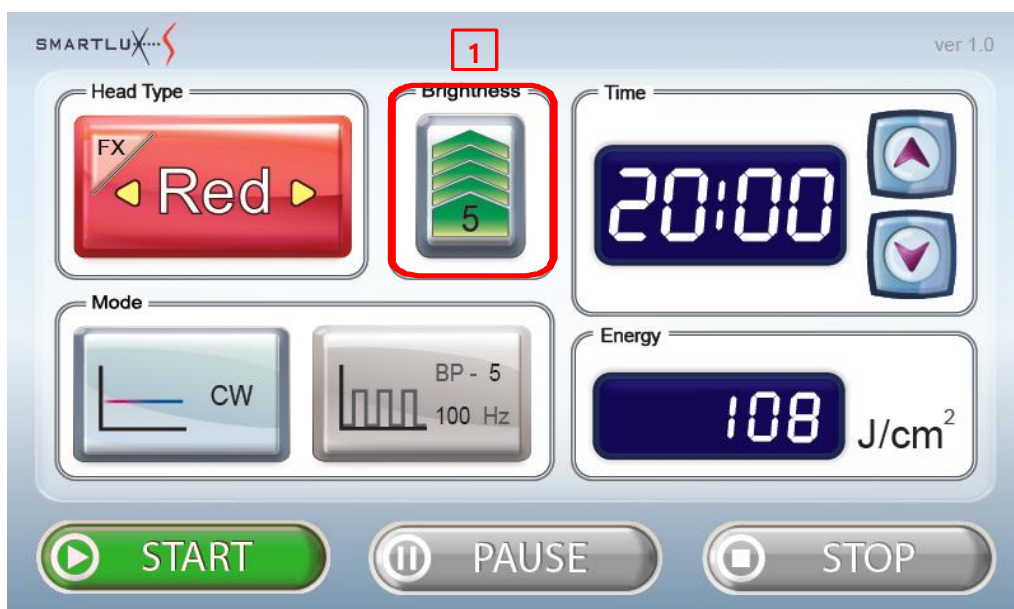


1. Buttons by head type: Once you install a head onto the arm, the proper button that matches the head type is automatically activated. Therefore the operator can intuitively recognize which head type is installed.



Once a head is installed, the button matching the head type is automatically activated.

7.4.3
Brightness

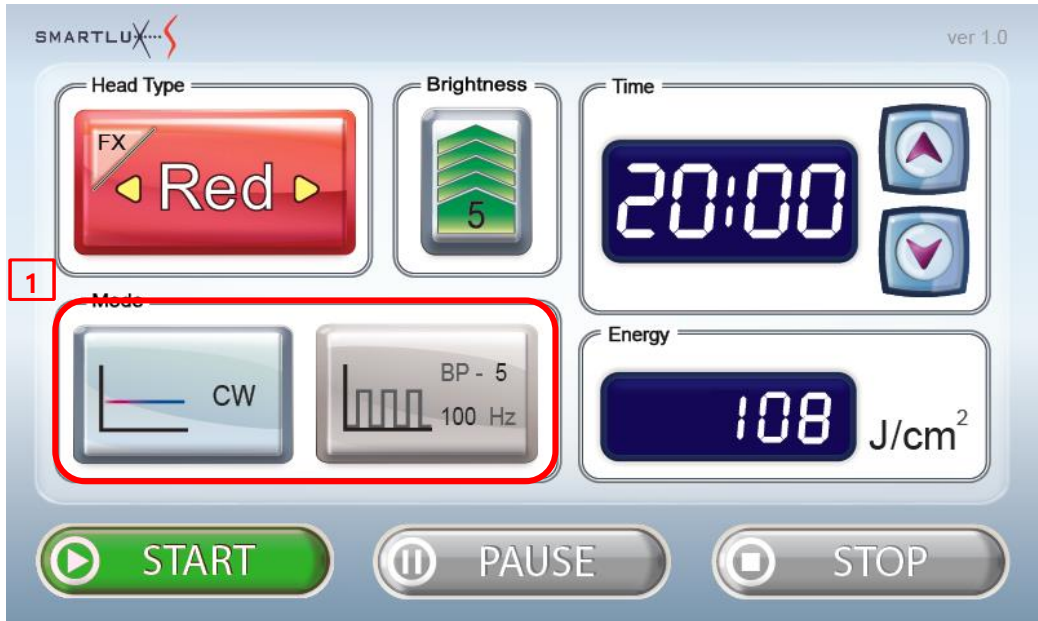


1. 'Brightness': You can adjust the brightness levels from 1 to 5 by touching the 'Brightness' button.



This button can control the brightness of a head lamp. There are 5 levels—The bigger the number is, the brighter.

7.4.4
Mode



1. Mode button: By touching the three buttons, you can switch a lamp mode to 'CW', 'H-Pulse or B-Pulse mode. 'CW' mode is programmed as a basic setting. The lamp mode changes each time that the buttons are touched.

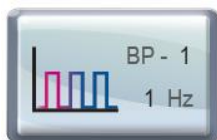
7.4.4.1
CW(Continuous
Wave) Mode

2. 'CW': The 'CW' button refers to continuous wave mode. The brightness of the light can be adjustable using the Brightness button.



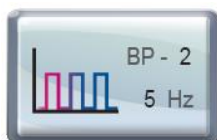
7.4.4.2
B-P(Burst Pulse)
Mode

3. 'B-P': The Burst Pulse mode has 8 levels (1, 2, 3, 4, 5, 6, 7 and 8). In the 1st level, on and off occurs once per second. In the 2nd level, five times per second and in the 8th level, five hundred times per second. Unlike in 'H-P' mode, all the light is blocked during off-time in 'B-P' mode.
- In the 1st level, on and off occurs once per second and in the 2nd level, five times per second.



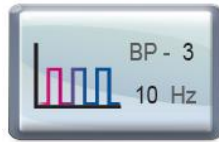
Level 1

- On Time : 0.5 Sec.
- Off Time : 0.5 Sec.



Level 2

- On Time : 0.1 Sec.
- Off Time : 0.1 Sec.



Level 3
 - On Time : 0.05 Sec.
 - Off Time: 0.05 Sec.



Level 4
 - On Time : 0.01 Sec.
 - Off Time : 0.01 Sec.



Level 5
 - On Time : 0.005 Sec.
 - Off Time : 0.005 Sec.



Level 6
 - On Time : 0.0033 Sec.
 - Off Time : 0.0033 Sec.

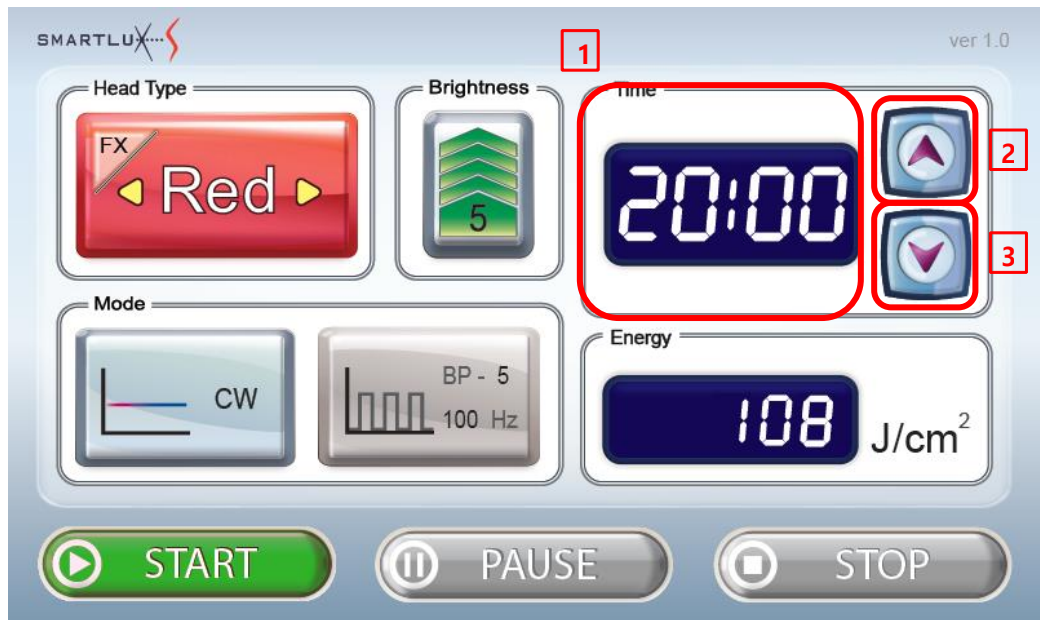


Level 7
 - On Time : 0.0025 Sec.
 - Off Time : 0.0025 Sec.



Level 8
 - On Time : 0.001 Sec.
 - Off Time : 0.001 Sec.

7.4.5
 Time



1. Time Display: The time you have set is displayed on the screen. After inputting the time setting, press the START button. The timer then starts to display the time left by the second. When the timer shows zero, the system stops working. Basically the maximum runtime you can set is 40 minutes and the time setting is minute-based.

2. UP



: Increase by minute intervals

3. DOWN



: Decrease by minute intervals

7.4.6

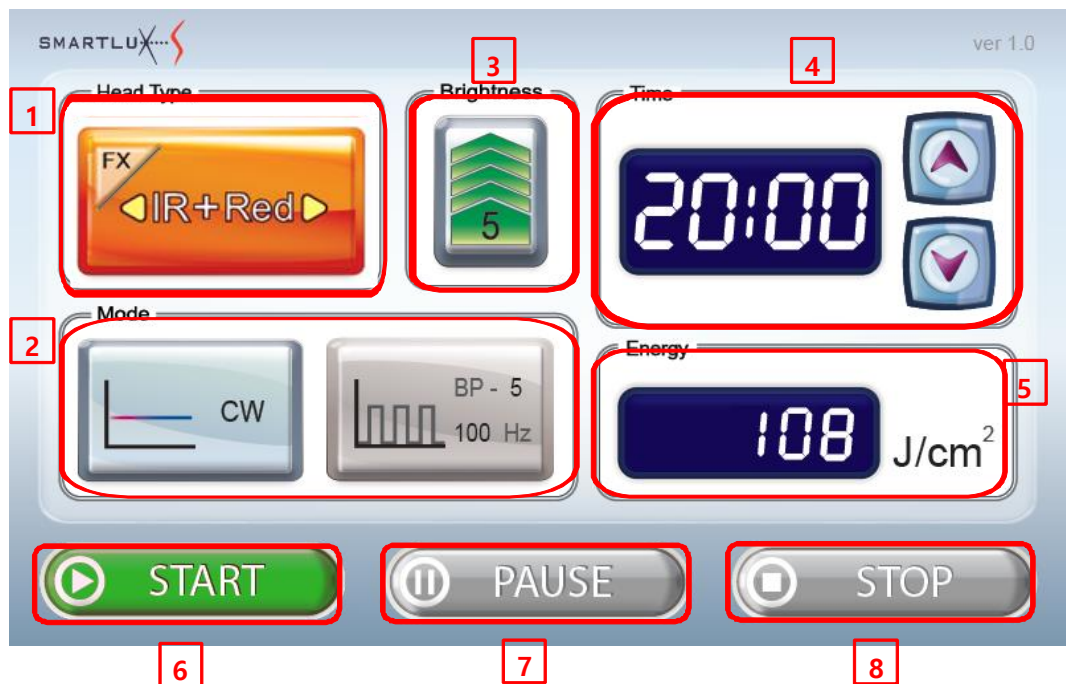
TOTAL Energy

After all the setup has been done and before the system is working, you can activate the system by pressing the 'START' button. Starting from that time, the total energy produced is displayed on the screen, which is determined by the spot size of the head, the brightness and the treatment time.

$$\text{- Total Energy} = \text{Spot Size of the Head Lamp} \times \text{Brightness} \times \text{Time}$$

7.5

Main Menu FX(RED/IR)



When the FX head is attached, the main display changes as above.

1. FX Select

5. TOTAL Energy

2. Mode

6. START

3. Brightness

7. PAUSE

4. Time Select

8. STOP

7.5.1

FX(RED/IR) Select



If you press the 'R' part of the FX Select button, only red light is emitted.



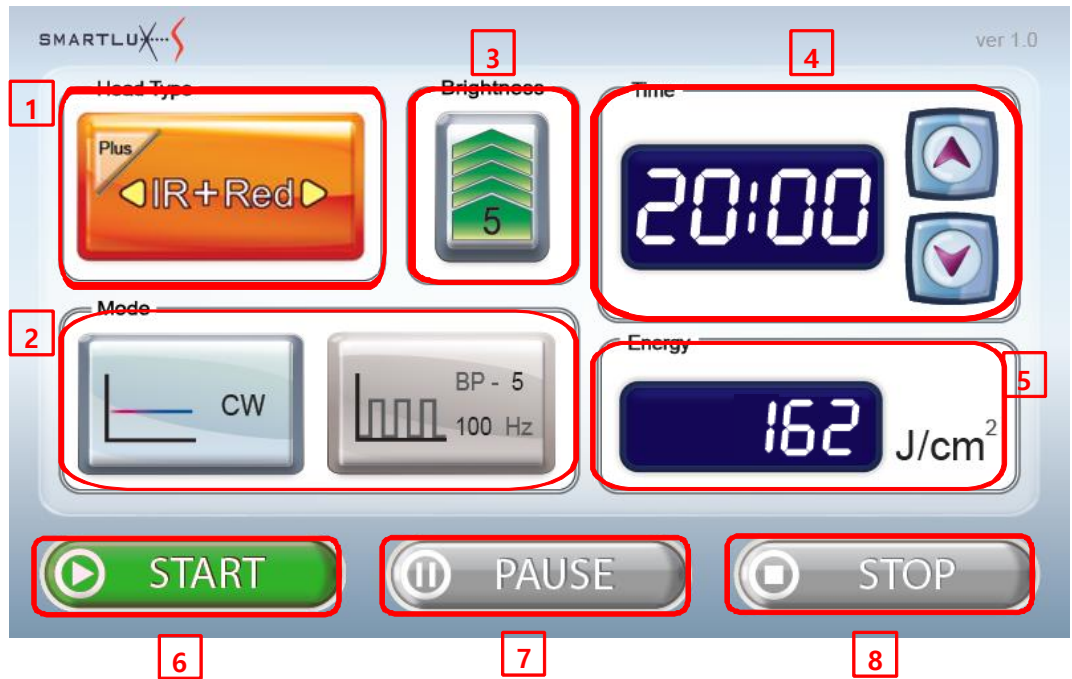
If you press the 'IR' part of the FX Select button, only 'IR' light is emitted.



If you press the 'R/IR' part of the FX Select button, red light and IR light are emitted simultaneously.

Other instructions about the screen ranging from Brightness to STOP are the same as explained above (7.4).

7.6
Main Menu
FX Plus(RED/IR)



When the Plus head is attached, the main display changes as above.

7.6.1
FX Plus (RED/IR)
Select



If you press the 'R' part of the Plus Select button, only red light is emitted.



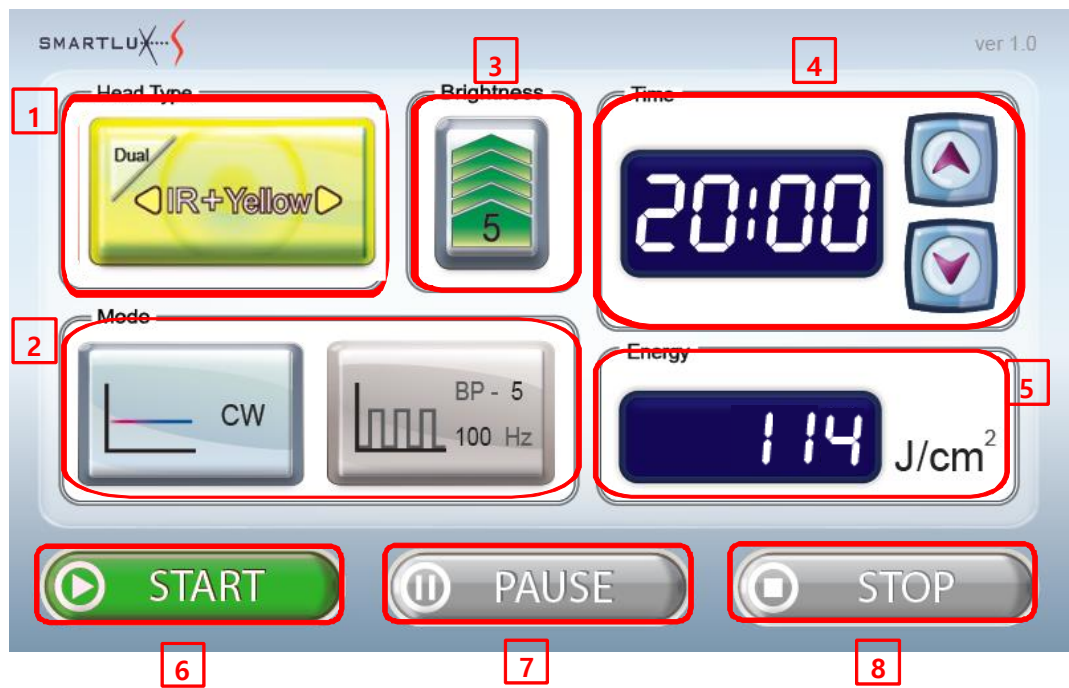
If you press the 'IR' part of the Plus Select button, only 'IR' light is emitted.



If you press the 'R/IR' part of the Plus Select button, red light and IR light are emitted simultaneously.

Other instructions about the screen ranging from Brightness to STOP are the same as explained above (7.4).

7.7
Main Menu
DUAL(Yellow/IR)



When the Plus head is attached, the main display changes as above.

7.7.1
Dual (Yellow/IR)
Select



If you press the 'Yellow' part of the Dual Select button, only red light is emitted.



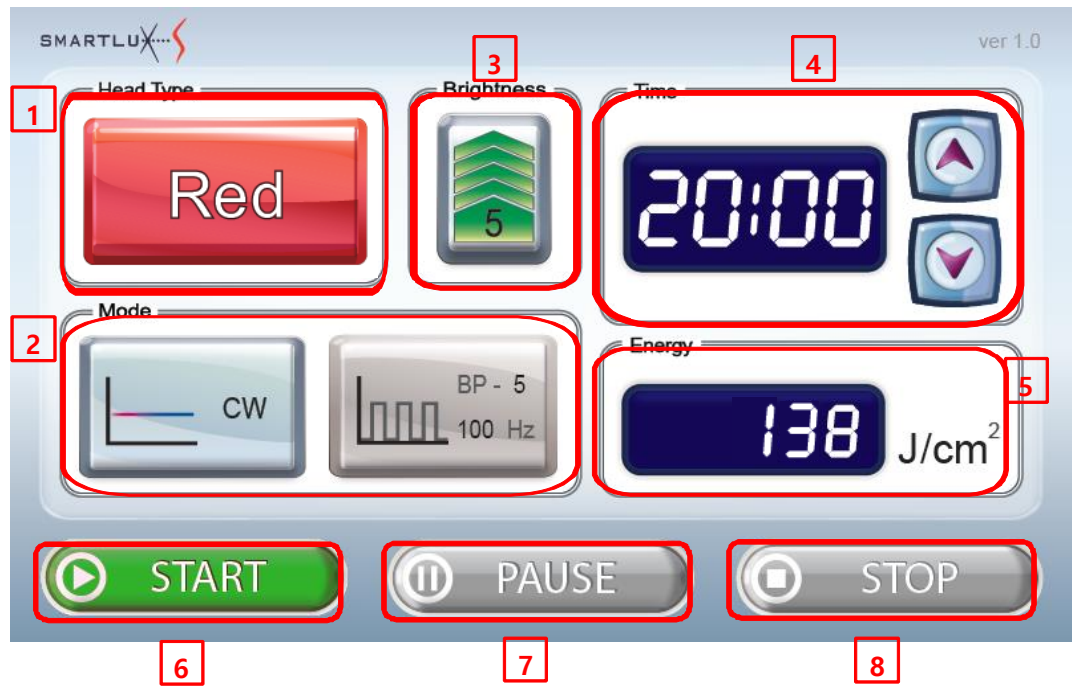
If you press the 'IR' part of the Dual Select button, only 'IR' light is emitted.



If you press the 'Yellow /IR' part of the Dual Select button, yellow light and IR light are emitted simultaneously.

Other instructions about the screen ranging from Brightness to STOP are the same as explained above (7.4).

7.8
Main Menu
RED

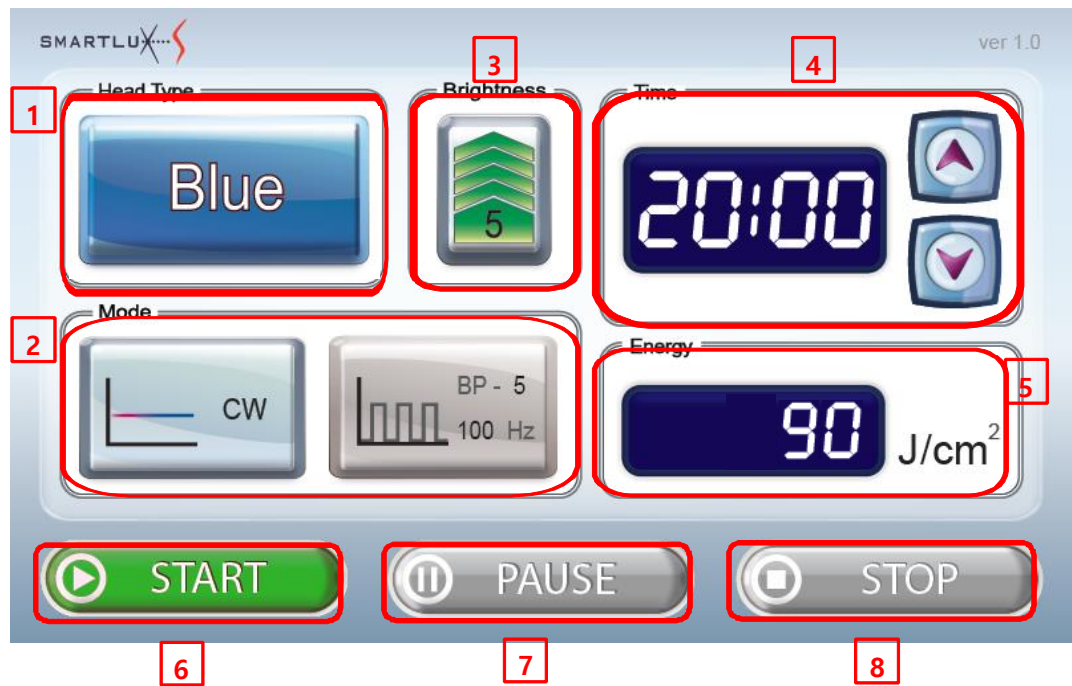


Red only.

- | | |
|----------------|-----------------|
| 1. RED Display | 5. TOTAL Energy |
| 2. Mode | 6. START |
| 3. Brightness | 7. PAUSE |
| 4. Time Select | 8. STOP |

Other instructions about the screen ranging from Brightness to STOP are the same as explained above (7.4).

7.9
Main menu
Blue



BLUE only.

- | | |
|-----------------|-----------------|
| 1. BLUE Display | 5. TOTAL Energy |
|-----------------|-----------------|

- 2. Mode
- 3. Brightness
- 4. Time Select
- 6. START
- 7. PAUSE
- 8. STOP

Other instructions about the screen ranging from Brightness to STOP are the same as explained above (7.4).

8
Care and
Maintenance
Safety Warnings



This system is special medical equipment. Therefore only properly trained users should be allowed to handle the equipment.

The safety of this technology for the treatment of children, pregnant women and in patients with light sensitive conditions has not been confirmed. An alternative treatment is recommended for these patients. And this system should not be applied to patients with heart disease, mental disorder or hypertension or those who have been determined to be inappropriate for the procedure. Clients are advised to rest for 5 minutes after treatment.

8.1
Method of service

The service of SMATLUXSLIM is conducted by skilled engineers.



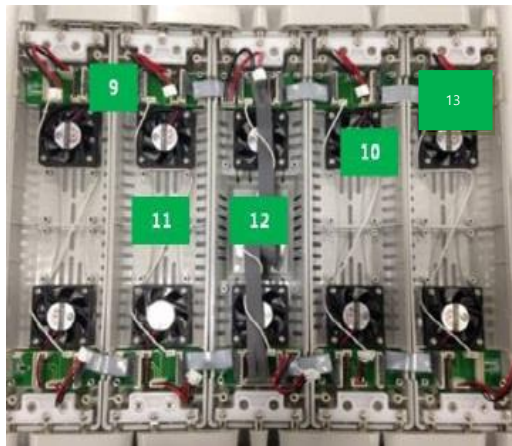
- 1. BACK PANEL BOARD
 - Areas where all circuits pass through
- 2. FET BOARD
 - LED Output, FAN Power
- 3. CPU BOARD
 - Control of All SMARTLUXSLIM Programs
- 4. INVERTER BOARD
 - Power Conversion(LCD 5V)
- 5. SMPS BOARD
 - Power Supply



- 6. GEAR BOX
 - ARM motion control
- 7. ARM CONNECTOR
 - LED Output, Fan motion, HEAD ID recognition
 - Six Angle Wrench is used for replacement.



8. LCD
- Monitor control



9. HEAD TO HEAD CABLE
- LED, FAN Motion
10.FAN
11. JUMPER CABLE
- Fan Motion
12. CENTER CABLE
- LED, FAN Motion
13. LED AC CABLE
- LED BOARD Power

8.2 Regular Monitoring Monitoring should be conducted on a regular basis in order to maintain the accuracy of the pulse and output value. A qualified engineer examines the pulse and output value using a calibrated instrument once a year.

- 8.3 Cleaning
- 1) Make sure to put a cleaner you want to use on a soft cloth and wipe. Use the cleaner by diluting it with water in the ratio 1:10.
 - 2) If the dust is on the power plug pin and the contact area, thoroughly wipe with a dry cloth.
 - 3) Pull out the plug when cleaning the machine.



CAUTION

You need to be cautious as it can cause color change, cracks or LCD panel peeling in the product when using a surfactant that contains large amounts of alcohol and solvent or strong substances.

8.4 Shooting Trouble Troubleshooting must be carried out by skilled engineers. SMARTLUXSLIM not displayed error messages on the LCD touch panel. Please call MEDMIX or authorized agency technician except to user action information below.

Problem	Advised Action
POWER doesn't work	Check the following points. 1. Check that AC cord is plugged into the AC POWER socket. 2. Check the fuse embedded in the AC POWER socket. (Refer to 5.4.1.2) If the problem still exists, call to MEDMIX or sales agents quickly.
LCD Touch screen doesn't be displayed.	Check the following points. 1. Check the Emergency switch. 2. Check that Interlock Switch is plugged in body. If the problem still exists, call to MEDMIX or sales agents quickly.

8.5
Ordinary
maintenance

The unit should be maintenance and serviced to maintain it in optimum condition.
A recommended routine inspection and maintenance schedule are in the table below.

Inspection/Service	Frequency	Performed By
▪ Before using Smartlux SLIM, please check if the arm is working properly	Before every operation	Staff
▪ Before using Smartlux SLIM, please conduct visual check to ensure that LED light is working properly.	Before every operation	Staff
▪ Before using Smartlux SLIM, please inspect system exterior to ensure that there are no loose electrical connections or damage	Before every operation	Staff
▪ Please make sure there is a correct reaction to the safety catch of Smartlux SLIM. (ERGENCY SWITCH, INTERLOCK)	At least once a month	Staff
▪ Please check if the image display and touch pad of LCD are working properly	Before every operation	Staff

. If you find some problem, please ask for a repair to Medmix or an authorized technician.

9. Order

When you place an additional order of SMARTLUXSLIM, check the followings and then proceed to purchase.

9.1 Order number

Product Name	P/N	Product Name	P/N
SLIM BODY	SLS		
RED	HR	BLUE	HB
FX	HF	FX PLUS	HP
DUAL	HD	FX PULS-3	HPS
eye-protector	MSC1	shield	MSC2

*P/N:Product Number,



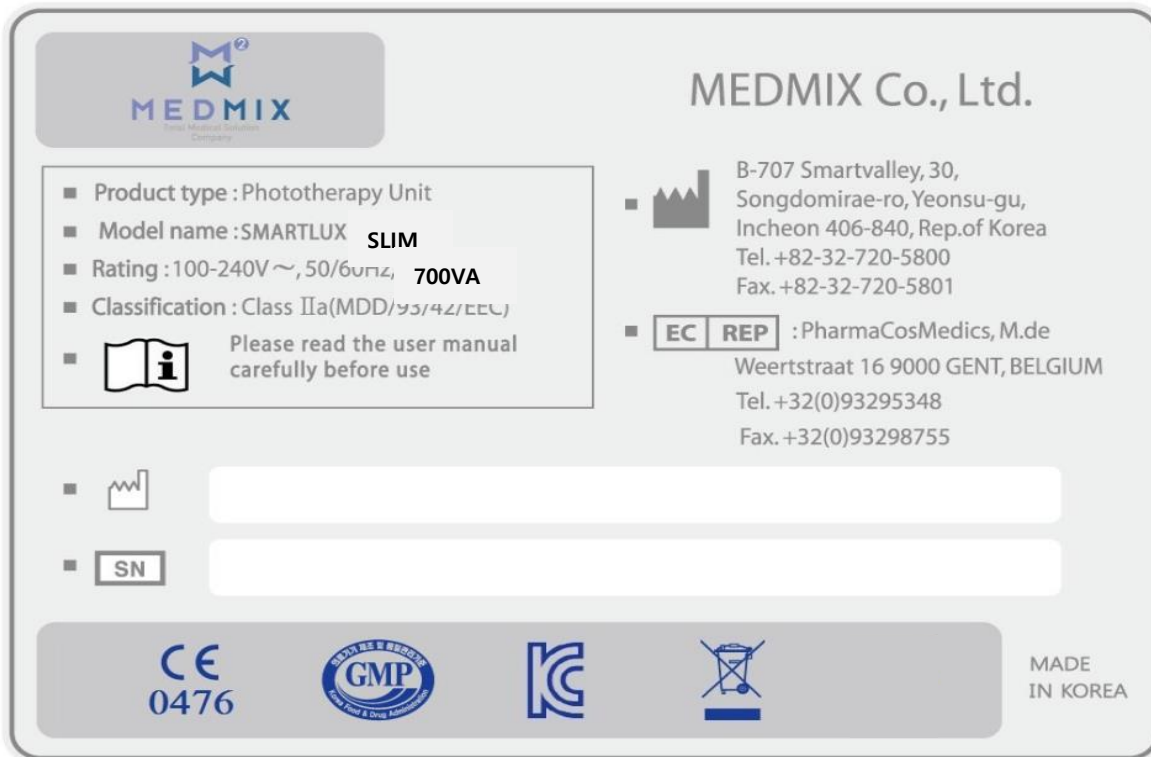
Caution!

The following cautions apply to the use, care and maintenance of SMARTLUXSLIM.



- 1) This User's Manual should be read and understood entirely before using SMARTLUXSLIM for the first time.
- 2) SMARTLUXSLIM must not be used in the presence of flammable liquids or gases due to the possible danger of explosion.
- 3) SMARTLUXSLIM produces diverging high intensity visible light. Do not look directly into the lamp when the lamp is operating. The blink response of the eye prevents the user receiving a hazardous light dose above the Maximum Permissible Exposure (MPE) for this type of source.
- 4) SMARTLUXSLIM does not emit any ultraviolet radiation and so does not burn the skin even after prolonged exposure.
- 5) Do not block the air vents. Be aware of objects, items of clothing or material that may accidentally drape over and be drawn into the air vents. Adequate cooling is essential for safe operation of the lamp.
- 6) Provide a minimum 15cm(6in.) free air space on the sides and rear of SMARTLUXSLIM.
- 7) Reliable grounding (earthing) of SMARTLUXSLIM is achieved when it is connected to an earthed mains socket.
- 8) Correct operation of SMARTLUXSLIM can only be guaranteed if it is used with the correct accessories. NEVER use the lamp with any accessories other than those supplied by MEDMIX, as original equipment or as replacement parts.
- 9) The LED heads should not be placed face down on a hard surface to avoid scratched. Care should be taken in preserving the plastic covers.
- 10) Care should be taken when switching the LED heads to avoid the falling down to the floor.
- 11) Should be sure to replace the LED heads of the body must turn off the power.
- 12) If FAN is malfunction, user turns off power and do not touch a head. After grabbing the ARM, user moves the equipment to safe place. Please ask to manufacturer or sales agents quickly.

10.

Label Information



10.1 Label for safety	Used symbol	Description	Used symbol	Description
		Symbol for 'Manufacturer'		Symbol for 'CE marking approved by
		Symbol for 'Authorized Representative in the EC'		Serial number
		Symbol for 'Manufacture Date'		Read usage instructions
		Korea good manufacturing practice symbol		Korea certification mark
		Dispose in accordance with European Community Directive 2012/07/EC (WEEE)		Symbol for Caution Crush hazard
		Laser safety label		Laser safety label

		Protective Earthing connector	P.E	pole earthing mark.
		Emergency STOP	Fuse Ratings 55T, 250V 8A	Fuse Ratings

10.2
Label location



11. Declaration of Conformity – Electromagnetic Compatibility

Guidance and manufacturer' declaration –electromagnetic emissions		
The SMARTLUX SLIM is intended for use in the electromagnetic environment specified below. The customer or the user of the SMARTLUX SLIM should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment-guidance

RF emissions CISPR 11	Group 1	The SMARTLUX SLIM use 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.
RF emissions CISPR 11	Class A	The SMARTLUX SLIM is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies building used for domestic purposes. Warning : This equipment is intended for use by healthcare professionals only. This equipment may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, re-orienting or relocating the Triple 1470 or shielding the location
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Class A	

Guidance and manufacturer' declaration –electromagnetic immunity

The SMARTLUX SLIM is intended for use in the electromagnetic environment specified below. The customer or the user of the SMARTLUX SLIM should assure that it is used in such an environment.

Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge SMARTLUX SLIM IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC 61000-4-2	±2 kV for power supply lines ±1 kV 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 IEC61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment
Voltage dips, short interruptions and voltage variations on power	<5% UT (>95% dip in UT) for 0.5 cycle	<5% UT (>95% dip in UT) for 0.5 cycle	Mains power quality should be that of a typical commercial or hospital environment

supply lines IEC6100-4-11	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 seconds	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 seconds	If the user of the SMARTLUX SLIM requires continued operation during power mains interruptions, it is recommended that the SMARTLUX SLIM be powered from an uninterruptible power supplied or a battery
Power frequency (50/60Hz) Magnetic field IEC61000-4-8	3 A/M	3 A/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 the application of the test level			

Guidance and manufacturer' declaration –electromagnetic immunity

The SMARTLUX SLIM is intended for use in the electromagnetic environment specified below. The customer or the user of the SMARTLUX SLIM should assure that it is used in such an environment.

Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment-guidance
Conductive RF IEC61000-4-6	3Vrms 0.15MHz to 80MHz	3Vrms	Should be used no closer to any part of Triple1470 including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. $d = 1,2\sqrt{P}$ $d = 1,2\sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2,3\sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p style="text-align: center;">Recommended separation distance</p>
Radiated RF IEC61000-4-3	3V/m 80MHz to 2,5GHz	3V/m	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). Field strengths from fixed RF transmitters, as determined by an electromagnetic 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 80MHz and 800MHz 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.

a Field strengths from fixed transmitted, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment in the location due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the SMARTLUX SLIM is used exceeds the applicable RF compliance level above, the SMARTLUX SLIM should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the SMARTLUX SLIM

b Over the frequency range 150kHz to 80MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile communication equipment and the SMARTLUX SLIM

The SMARTLUX SLIM is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the SMARTLUX SLIM can help prevent electromagnetic interference by maintaining a SLIM distance between portable and mobile RF communication equipment (transmitters) and the SMARTLUX SLIM as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter (m)		
	150kHz to 80MHz $d=1.2 \sqrt{P}$	80MHz to 800MHz $d=1.2 \sqrt{P}$	800MHz to 2.5GHz $d=2.3 \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1.0	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

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

Note 1. At 80MHz and 800MHz 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.

- Manufacturer License Number : 3183
- Product License Number : 12-1746
- Product Type : Phototherapy Unit
- Model Name : SMARTLUXSLIM

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