



SAPPHIRE DIODE 755  
& CHILLER  
USER MANUAL

*Sapphire*  
Diode 755

## PRECAUTIONS

This manual has been prepared to technical personnel to understand and operate the system. Do not operate the system before reading this manual and gaining a clear understanding of system operation. Any questions, please contact us.



Operator should read this manual before operate this system.



This system can be just operated by operators who were trained.



Never leave keys on the machine when it is not in use.



All personnel must use safety eyewear and must ascertain that the eyewear provides adequate protection for the diode laser module.



Never shoot directly to the eyes.



Clean the skin before treatment.

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## I. INTRODUCTION:

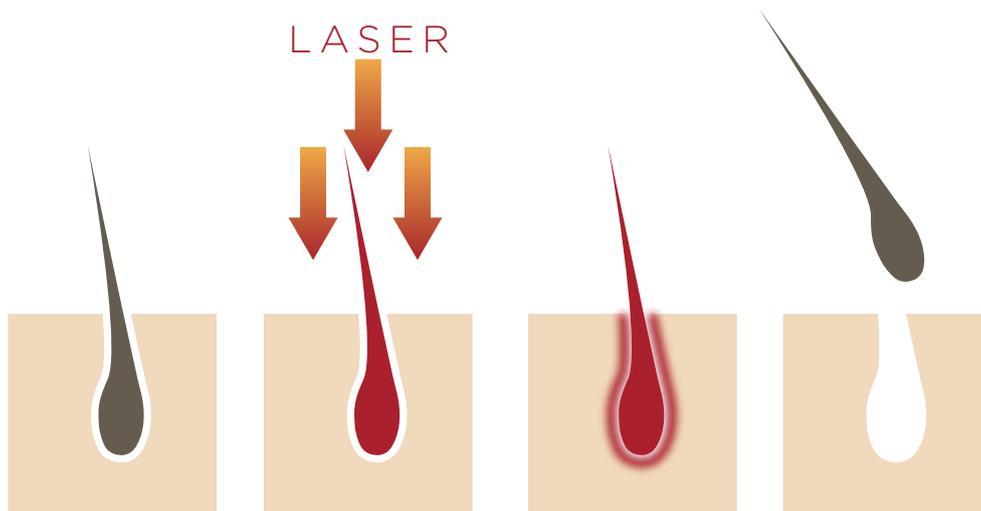
The latest generation of Sapphire 755 Diode ultra-light hair removal system combines all the advantages of traditional freezing point hair removal and semiconductor laser hair removal. It adopts the 755nm (Alex) standard wavelength for the laser. 755nm laser hair removal produces a slight heat sensation when applied to the skin. The cooling system quickly cools the epidermis without causing damage to the skin, making the treatment more comfortable and safer.

Powerful absorption is possible using the Alex wavelength (755nm), combined with the air cooling. The system provides a large treatment area, comfort with low maintenance of the solid-state laser. This provides an ideal solution for the widest range of hair types and color- especially light-colored and thin hair and skin types. The pulse energy is up to 100 J/cm<sup>2</sup>.

### I.1 THEORY

755 nm Diode laser hair removal technology is based on the selective dynamics, of light and heat.

The laser penetrates the skin surface to reach the root of the hair; the light is absorbed and converted into heat, damaging the hair follicle tissue, so that the hair papilla is damaged without injury to the surrounding tissue. No pain, easy operation, the most safe, technology for permanent hair reduction now.



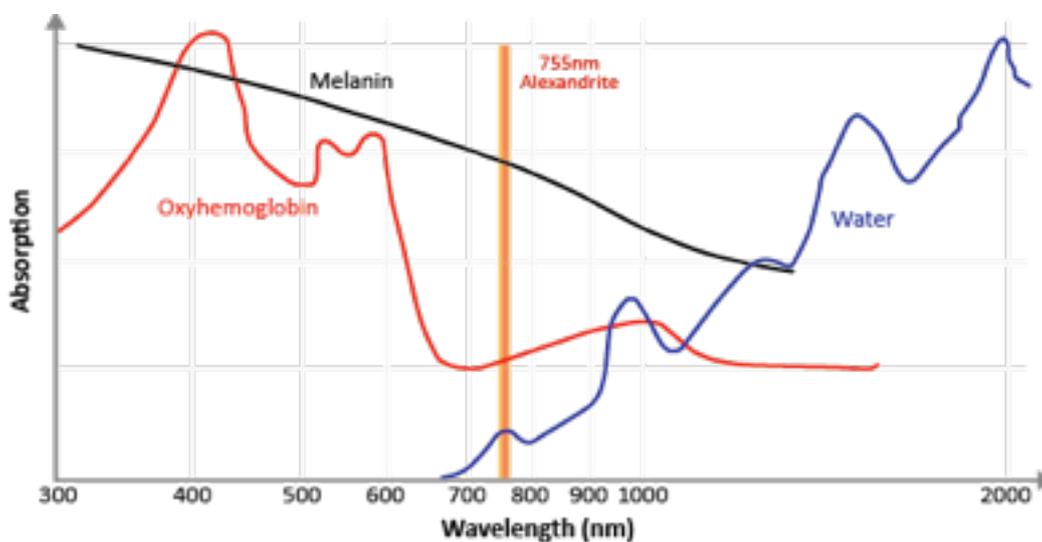
## I.2 TECHNICAL SPECIFICATIONS

PARAMETER	VALUE
Laser Power	2000w
Wavelength	755nm
Energy Fluence	1~100J/cm <sup>2</sup>
Pulse Width	3-200ms
Repetition Rate	1~10Hz
Spot Size	8 x 8mm
Cooling	Dynamic Cooling System
LCD Screen	203mm HD Touch Screen
Power	110/220VAC 50/60 Hz Single Phase 8 to 9 Amps
Dimensions	35 x 78 x 92 cm (Unpacked) 94.5 x 58 x 120 cm (Packed)
Weight	61 Kg (Unpacked) 83 Kg (Packed)

Note:

- 1) Mains input 230 Volts 50/60 Hz Single Phase
- 2) The cooling water must be a good quality Distilled Water.

## I.3 OPTIMUM WAVELENGTH



## 2. DETAILED SYSTEM INTRODUCTIONS



1. Handpiece
2. Screen
3. Emergency button
4. Key switch
5. Handle
6. Water inlet
7. Foot pedal
8. Water overflow
9. Water outlet
10. Laser mark, do not shoot to eyes directly.
11. Protective cover
12. Handpiece window



## 2.1 OPTIONAL CHILLER SYSTEM INTRODUCTIONS

13. Connect with cooling device, Diameter is 19mm



### 3. INSTALLATION

Preparing the system for operation:

1. Unpack the system and position it in the correct position prior for setting up and activation.

Connect the handpiece and foot pedal as follows:



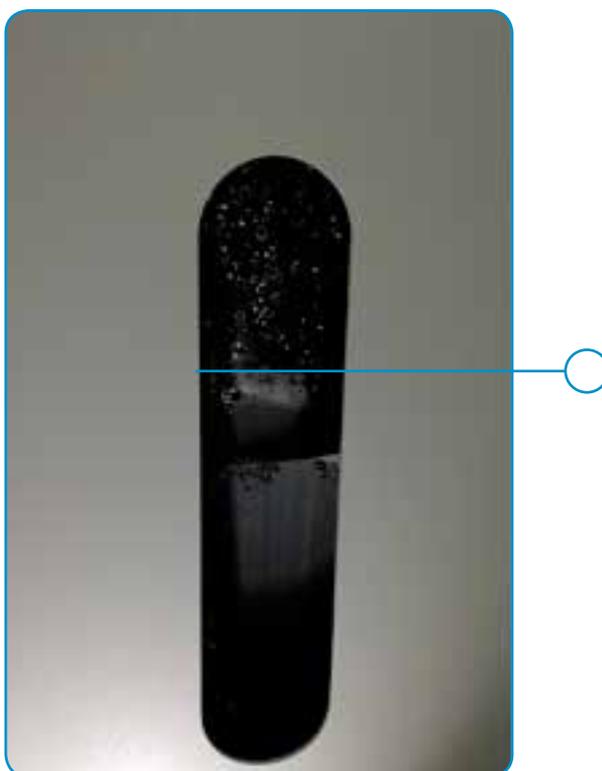
2. Assemble the handpiece's support frame.



3. Filling the system with water. Connect the funnel to the water inlet; add the distilled water until the water flows from the water outlet.



Topping up when the water tank is full, run the system for 30 seconds, then turn off the system. Add water as required until 2/3 full, as shown below. This is visible on the rear panel of the system.



The system is now ready.

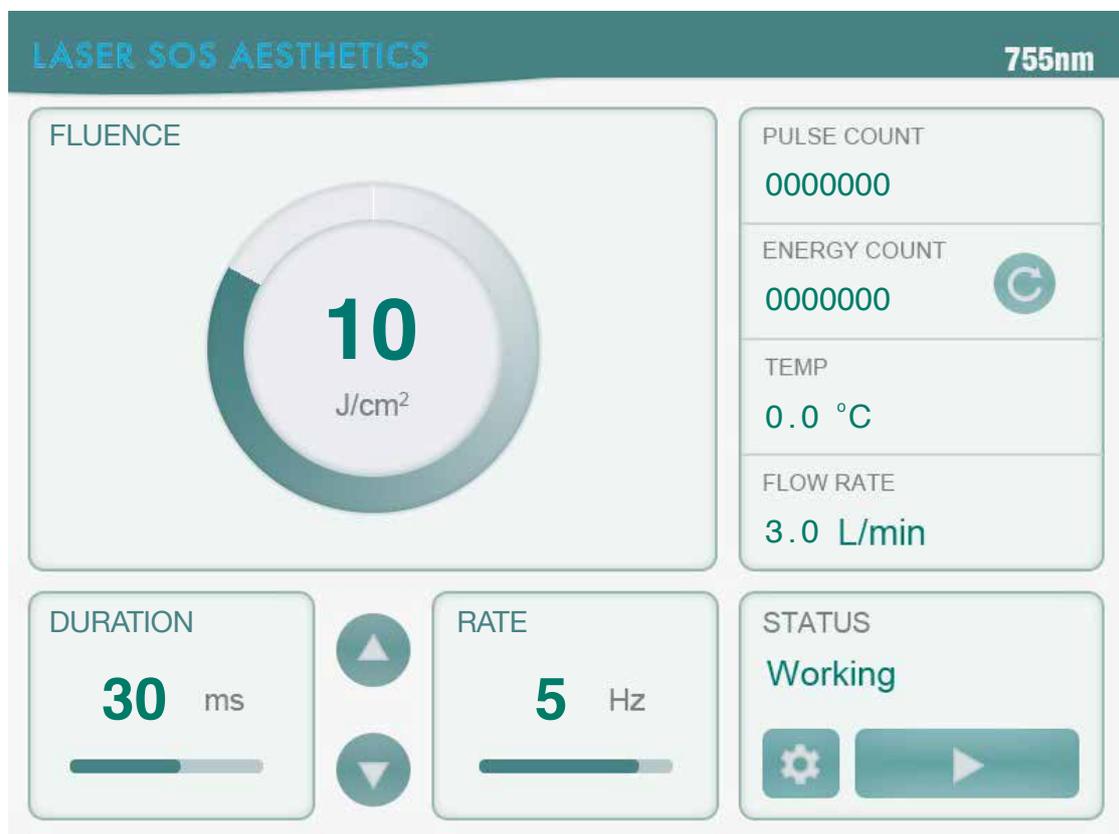
## 4. OPERATIONAL SET-UP

I. Starting the system.

Connect the cooling device; turn on the power supply, and then turn on, using the key switch. You will then automatically enter the welcome page.



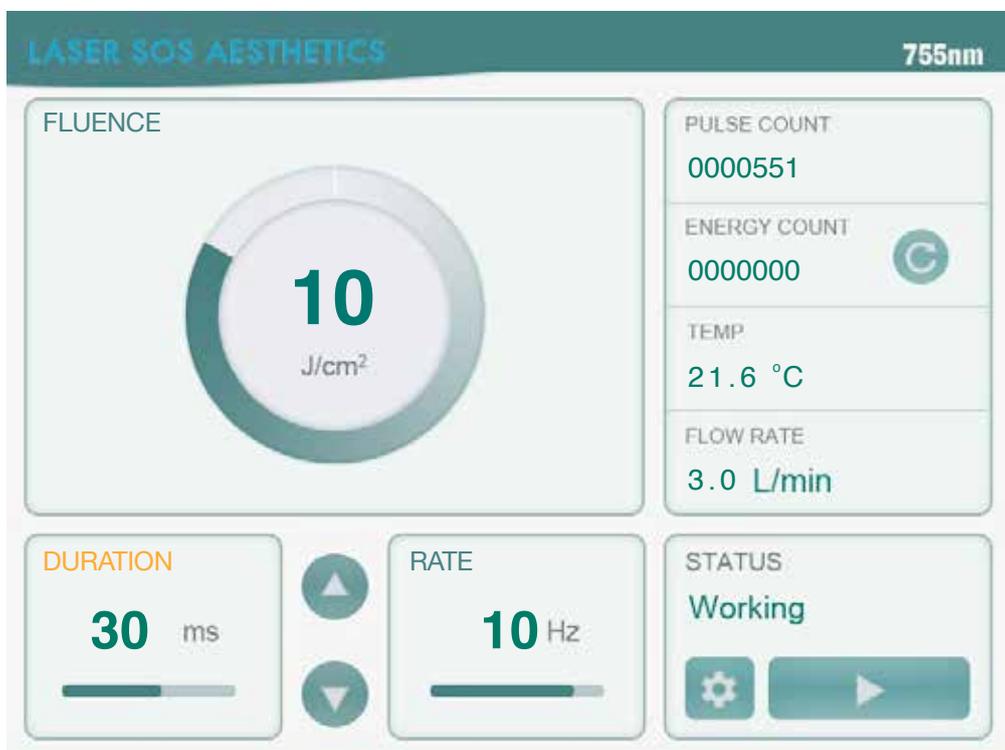
Wait for 5 seconds; it will automatically enter into the operation interface.



Pressing fluence, fluence will then become orange. Then you can adjust the parameter up or down, Duration will automatically change at the same time.



Select Duration, the display will become orange, then you can adjust the parameter up or down, Fluence will automatically change at the same time.



Then select and press rate; rate will then become orange. The rate can then be adjusted either up or down.



Next adjust the parameters for Fluence and Rate. The table below provides parameters for your easy reference. In daily treatment, please adjust according to the patients' feelings, and pain threshold on the day.

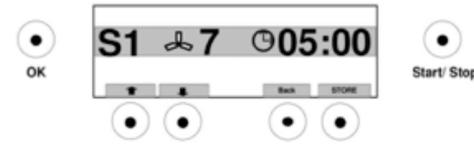
#### 4.1 TREATMENT PARAMETERS

GENDER	AREA	FLUENCE J/cm2	FREQUENCY Hz
FEMALE	UPPER LIP	6	3
	UNDERARM	8	6
	BACK	8	6
	ARM	9	5
	BIKINI	5	4
	LEG	9	6
MALE	WHISKERS	7	3
	BEARD	7	3
	UMBILICUS	8	5
	UNDERARM	8	6
	BACK	8	6
	ARM	9	6
	NAPE	8	6
	LEG	10	5
BIKINI	6	4	

The Pulse Count is the total number of shots fired,  
 The Energy Count is the total amount of energy used in the session.  
 It will start again from 0 at the start of the next session.

The cooling device needs to be adjusted for optimum comfort levels.

Adjust the fan speed and run times consecutively during the treatment session.



After adjusting the parameters, press ready of the system and cooling device. The cooling device fan blows cold air through the treatment tube. After touching the foot pedal, the hand piece will start firing.

## 5. TREATMENT PRECAUTIONS

1. The treatment of hair removal needs experienced professionals. Do not use the system if you have not been trained and have experience using this sort of laser device.
2. Operators and patients must all wear laser safety goggles to protect the eyes from any threat of laser damage.
3. Please note that this is a high-power laser device and if the patients find it very painful, please stop the laser and check if anything has happened to the patients' skin. Adjust it to a lower power that the patients can stand, and continue with the treatment.
4. The skin must be shaved before treatment.
5. The handpiece is best operated in SCANNING mode. It provides faster treatment.
6. Skin contact gel is not necessary for treatment. It does not make the treatment better or improve the skin feeling.
7. Never fire the laser pulses towards the eyes, or observe the laser directly.

## 6. CLINICAL TREATMENT



Before and After First Treatment

Before and After Fourth Treatment

## 7. SIDE EFFECTS OF TREATMENT

This system is similar to other laser system, and the usual use of such systems can result in controllable or uncontrollable damage to the human tissue. Including:

1. Severe erythema and edema within 2-24 hours after treatment, which may last for several weeks.
2. 48 hours after surgery, allergies, itching, mild burning sensation or pain symptoms in the treatment area.
3. Postoperative blisters, epidermal necrosis or peripheral skin pigmentation, this can last for several days or weeks.
4. Due to prolonged use Standard A tected glare or laser exposure to damage the eyes, so throughout the treatment should wear appropriate protective goggles to protect the eyes.
5. It is very important to observe the skin's response during treatment, and improper screening or excessive energy may cause thermal damage and lead to side effects.

## 8. MAINTENANCE

1. The water must be changed after every 1~2 months.
2. Before using the handpiece, take off the protective cover. After treatment, put on the protective cover, to protect the handpiece tip.
3. The ambient temperature must never be allowed to go below ZERO, or the ice will damage the water tanks and water channels inside the system and the handpiece.
4. No need to use gel. If gel is used it must not be allowed to go inside the handpiece window.
5. Do not bend the umbilical of the handpiece sharply, or this may cause reduced water flow and may cause a water flow ERROR.
6. Do not disconnect the handpiece connectors frequently. This may cause bad electrical connections and may cause water leakage and intermittent electrical connections.
7. Never fire the laser at random targets.  
It may cause the start of a fire, burning of fibre, wood, plastics etc.

## 9. WARRANTY NOTICE

Please take all necessary precautions before operating the system and handpiece. Also take note that following situations cannot be warranted:

1. Operation of the system without water.
2. Powering up the system without connecting the handpiece.
3. Regular drops of the handpiece.
4. Incorrect Mains Input Voltage - VAC.
5. Other manual operating mistakes

## COMPONENT LIST

Model: Ales-755

No.	Name	Quantity
1	Main Machine	1 Set
2	Handpiece (2000w)	1 Pc
3	Goggles for (755nm)	1 Pc
4	Pedal	1 Pc
5	Key	2 Pcs
6	Power line (British Standard)	1 Pc

## 10. (OPTIONAL) COOLING DEVICE USER MANUAL

### 10.1 SAFETY PRECAUTIONS

Before powering on, running, and maintenance inspections, you must be familiar with the contents of the manual to ensure proper use. You must also be familiar with the condition of your equipment and all safety related precautions when using it.



AFTER RECEIVING THE DEVICE, IT SHOULD BE PLACED UPRIGHT FOR  
**MORE THAN 3 HOURS** AND THEN TURNED ON.



IT SHOULD BE PLACED A FLAT EVEN SURFACE TO REDUCE VIBRATION.



HANDLING SHOULD PREVENT THE SYSTEM FROM TILTING MORE THAN 30°,  
AND SHOULD NOT BE PLACED HORIZONTALLY OR INVERTED.

## 10.2 PRODUCT INTRODUCTION

This Skin Cooling Instrument uses a variable frequency air compression fan device to compress the air and then spray cold air through the cooling device. The cold air cools the skin to protect the epidermis, reduce pain and allow high energy density to act on the target without damaging the epidermis.



## TREATMENT RANGE

Widely used in 755/808 nm lasers diode systems, pixel (dot matrix) laser, blasting laser, cold compress, orthopedic rehabilitation treatment

## PRODUCT ADVANTAGES

All 755/808 nm lasers, pixel lasers, enamel pigments and other cosmetic procedures need protection of the epidermis. The epidermis cooler can provide cold protection to the epidermis before, during and after surgery, so that the epidermis is protected from photothermal Thermal damage. The thermal damage that has already occurred after surgery can also be mitigated by the cold protection provided by the epidermis cooler to alleviate the possible blackening effects.

1. The epidermis cooling fan increases the tolerance of the epidermis to thermal damage by pre-surgery cooling, thus reducing the risk of thermal damage to the epidermis.
2. The epidermis cooler protects the epidermis with strong intraoperative cooling, making high energy density possible for deep target tissue.
3. The epidermis chiller protects the dermis and subcutaneous tissue by providing a strong protective effect on the epidermis, thus ensuring better skin rejuvenation, weight loss and sputum.
4. The epidermis cooling fan recovers after the operation, which reduces the risk of thermal damage to the epidermis and greatly improves the customer's treatment experience and comfort, which is conducive to improving customer satisfaction.

## SPECIFICATIONS:

Model	Cooling-I
Power supply	220V/110V 50/60 Hz Single Phase
Air volume	0-2 m <sup>3</sup> /min Five-speed transmission
Power	800W
Noise	<70dB
Refrigerant	R404A environmental protection
Min.Temp	-25°C (ambient temperature 25°C, humidity 30%)
Weight	55kg
Dimensions	330x530x730 mm

## 10.3 OPERATION GUIDE

### OPERATION PANEL



⑤ STOP

1. Air volume adjustment button
2. Bellows temperature
3. Defrost
4. Switch button
5. Power switch

## COMPONENT PARTS



1. Holder

2. Cold air hose

3. Hook

4. Gasket

5. Power cable

INSTALL AS PER THE PICTURE BELOW:



1. Holder

2. Cold air hose

3. Gasket

4. Power cable

## **BOOT PROCESS**

Press the power switch button, the touch screen starts to work, then click the touch screen switch button to start the machine, set the air volume switch to 1st speed, when the temperature is below -20°C, you can start to use the system.

## **ADJUST AIR SPEED**

According to the patient's tolerance to the cold air and the requirements of the procedure, select the appropriate air speed, and adjust the air volume adjustment button on the panel to the highest 5 speed.

As the air speed increases, the noise will increase slightly. Generally, start using a speed between 2 and 4. The higher the speed position, the higher the air volume, and the lower the coldness that the customer feels.

## **DEFROST**

When the cooling device works continuously for about 2 hours (the humidity of the air may cause change of the working time), if there is no change of the fan speed, and the bellows temperature is higher than -10° C or the air volume is significantly reduced, defrosting is required. Press the defrost button, the machine will enter the defrost mode, and it will no longer be cooling.

When defrosting, be sure to select the air volume is set to either 0 or 1, defrosting time needs about 5 minutes. The device stops defrosting and automatically starts cooling again.

## **DRAW OFF THE WATER**

When the cooling device is turned on or the defrosting is completed, the water level of the water storage box will reach a certain level, an alarm will be shown on the screen. Turn off the device, unscrew the water discharge port on the lower left side of the machine, and drain off the water in the water storage box. Then tighten the outlet to prevent air leakage from affecting the cooling effect.

## 10.4 USE OF PRECAUTIONS

1. Do not blow the same part for a long time so as to avoid frostbite.
2. The height of the air outlet from the skin should be above 8 cm to prevent frostbite.
3. Always drain the water before transport and ensure that the angle of inclination is no more than 30 degrees.
4. Do not scrub the panel with alcohol so as to prevent the writing from being removed.
5. Do not switch on and off frequently.
6. DO NOT SWITCH THE POWER ON FOR LESS THAN 3 MINUTES.



# Sapphire Diode 755

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