

nu**CORE** **8:1**

Multi-functional Laser System

Parameters

(Version: 1.0)

7.6 Treatment Parameters

7.6.1 IPL treatment parameter 7.6.1.1 Brief introduction

The parameters are settings or set of instructions given by the user to the computer in order to modulate the light produced by the Xenon flash lamp. The therapeutic effect of this device depends on the proper selection and use of these parameters.

7.6.1.2 Parameters

1. Wavelength: Refers to the spectrum of light emitted by the xenon flash lamp (between 400 to 1200 nm).
2. Fluence: The intensity or level of power emitted by the flash lamp measured in joules/ cm². Generally, the greater the fluence the greater amount of light and heat is produced.
3. Number of pulses: The energy of the each pulse can be divided into into 1~15 pulses. This method of treatment prevents epidermal burns by allowing the target chromophores to cool between pulses.
4. Pulse width: The duration of light exposure (T1, T2) measured in nanometers (ms). T1, T2 ,T3 set from 1~20ms, T4,T5...T15 set same as T3. The Max is not longer than 40ms. This is the duration of time that the target chromophores absorb filtered light energy from the xenon flash lamp.
5. Pulse delay: The duration (D1 & D2) between Pulse widths measured in ms. D1, D2, D3,...D5 set from 1~100ms. This is the interval between pulse widths when the target chromophores are not exposed to the intense pulsed light. The pulse delay allows the target chromophores to remain heated and the surrounding epidermis to cool down before exposure to the next intense pulsed light.

7.6.1.3 Parameter Principles

The darker the skin	<ol style="list-style-type: none"> 1. Decrease the fluence 2. Increase the pulse delay (allow more cooling) 3. Increase RF Power
The lighter the skin	<ol style="list-style-type: none"> 1. Increase the fluence 2. Decrease the pulse delay 3. Lower temperature of treatment probe
The darker the hair / pigmented lesion	<ol style="list-style-type: none"> 1. Decrease the fluence 2. Increase the pulse delay (allow more cooling)
The lighter the hair / pigmented lesion	<ol style="list-style-type: none"> 1. Increase the fluence 2. Decrease the pulse delay
Fine blood vessels	<ol style="list-style-type: none"> 1. higher fluence 2. Decrease the pulse delay 3. Decrease the pulse width
Thicker blood vessels	<ol style="list-style-type: none"> 1. Increase pulse delay (allow more cooling) 2. Increase the pulse width
The smaller the target size / lesion	<ol style="list-style-type: none"> 1. Decrease pulse delay
The larger the target size / lesion	<ol style="list-style-type: none"> 1. Increase pulse delay (allow more cooling)
Bony prominences (forehead, malar area, shins)	<ol style="list-style-type: none"> 1. Decrease the fluence by 10-20% 2. Decrease the RF Power by 30~50%

During the interval of active treatment (Pulse Width T1, T2) the target chromophores is exposed to the Intense Pulsed Light, it then absorbs light energy and produces heat. This heat is then dissipated during the passive treatment phase (Pulse Delay D1& D2) to allow for the surrounding epidermis to cool down and to prevent burns. Therefore, this method of selective photothermolysis makes use of time and light modulation to ensure that the target chromophores remains heated, as the surrounding epidermis is cooler.

7.6.1.4 Parameter Selection

Dark hair	Shorter pulse width
Light hair	Longer pulse width
Deep hair	Longer pulse width
Superficial hair	Shorter pulse width
Thick hair	Longer pulse delay & lower fluence
Thin hair	Shorter pulse delay & higher fluence
Dense hair growth	Lower fluence
Sparse hair growth	Higher fluence
Darker Skin color	Longer pulse delay & Lower fluence
Lighter skin color	Shorter pulse delay & Higher fluence
More sensitive skin	Lower fluence
Less sensitive skin	Higher fluence

Start with a lower energy around 2~3 Levels from initial parameter suggestion after proper setting of basic data request from system. Evaluate patient response then gradually increase the energy one by one. Please note that treatment over bony areas such as the malar area, forehead and shins produces more discomfort so reduce the fluence by 2-3 levels. When treating very densely pigmented areas reduce fluence by 2-3 levels.

7.6.2 Diode laser treatment parameter

Table of Pulse Width v.s Energy :

1Hz: 1 shots per second

Pulse width	EnergyJ/cm ² in 12x23mm, certain pulse width per shot
100ms	2~26 J/cm ²
200ms	5~43 J/cm ²
300ms	10~62 J/cm ²

2Hz:2 shots per second

Pulse width	EnergyJ/cm ² in 12x23mm, certain pulse width per shot
50ms	2~15 J/cm ²
100ms	2~26 J/cm ²
150ms	5~35 J/cm ²

3Hz: 3 shots per second

Pulse width	EnergyJ/cm ² in 12x23mm, certain pulse width per shot
40ms	1~13 J/cm ²
80ms	2~22 J/cm ²
100ms	2~26 J/cm ²

5Hz: 5 shots per second

Pulse width	EnergyJ/cm ² in 12x23mm, certain pulse width per shot
20ms	1~9 J/cm ²

40ms	1~13
60ms	J/cm ²
	2~17
	J/cm ²
Pulse width	EnergyJ/cm ² in 12x23mm, certain pulse width per shot
20ms	1~9 J/cm ²
30ms	1~11 J/cm ²

7.6.3 Picosecond Nd:YAG Laser treatment parameter

7.6.3.1 Brief introduction

The Picosecond Nd:Yag module provides the flexibility to adjust the treatment parameters according to patient and lesion characteristics, in order to achieve optimal clinical results. The treatment parameters appear in the user interface consist of: Energy density: derived from spot size. Frequency: to match user's expertise. Wavelength: Select according to the color of pigmentation.

7.6.3.2 Parameters

1. Wavelength: Refers to the spectrum of light emitted by the xenon flash lamp and focus tip. (532nm or 1064 nm). 2. Energy density: The intensity or level of power emitted by the flash lamp and YAG BAR measured in joules/ cm². Generally, the greater the energy density the greater amount of light and heat is produced, when the spot size is at the focus point, the energy density reaches its max. When the distance between treatment tip and treatment surface is bellow 6 cm, when the distance is near, the energy is lower. When the distance between treatment tip and treatment surface is above 7 cm, when the distance is farther, the energy is lower. 3. Frequency: The number of pulses emitted by one trigger or one second. The frequency range is (1Hz to 10 Hz).

7.6.3.3Parameter Principles

Indication	Wavelength
Tattoo:	
● Black, blue tattoo	1064nm
● Dark Ink tattoo	
● Red, pink, purple, brown	532nm
● Light Ink tattoo	532nm
Vascular lesions	
● Port wine birthmarks	532nm
● Telangiectasis	
Epidermal Pigmented lesions	
● café-au- lait birthmarks	
● solar lentiginos	
● senile lentiginos	
● Becker's nevi	
● Freckles	
● nevus spilus	
● Melasma (integument)	532nm

Treatment tip with focus adjustment function can adjust the spot size from Ø1 to Ø5mm. The energy of Lower Scale is higher; Higher Scale is lower. The table is listing as below:

Scale (mm)	Spot Size \varnothing (mm)
1	1
1.5	1.5
2	2
2.5	2.5
3	3
3.5	3.5
4	4
4.5	4.5
5	5



Figure 5.2

Warning: The laser systems have specific operating requirements. The operator must not establish contact between the handpiece and the surface of the treatment region. It is the practitioners responsibility to fulfill these requirements. Failure to do so can create the potential risk of cross contamination of biological incompatibility from one customer to another, it may increase the risk of injury to the customer. Do not allow the tip to establish physical contact with the skin during treatment.

7.6.3.4 Parameter setting table

Laser treatment parameter table							
Treatments	Wave length (nm)	Energy (mj)	Frequency (Hz)	Spot size (mm)	Total treatments (time)	Treatments intaval (Month)	Pulse number
Tattoo Removal (Black, Blue, Brown)	1064	120~270	4~6	3~5	3~6	0.7~1.5	1
Nevus of Ota, Ito	1064	300~500	4~6	3~4	4~6	2~3	2
Eye Line	1064	140~290	4~6	3~5	1~3	1~2	1
Eye Brow	1064	150~300	4~6	4~5	1~3	1~2	1
Blue Nevus	1064	400~600	4~6	3~4	2~4	2~3	2
Speckled nevus (big size)	1064	300~400	4~6	3~4	4~5	2~3	1
Tattoo Removal (Red, Purple, Orange)	532	50~150	3~5	3~5	4~10	0.7~1.5	1
Speckled nevus (small size)	532	50~150	3~5	3~5	1~3	1~2	1
Coffee Au Lait spot	532	70~170	3~5	3~5	3~6	1~2	1
Age spot	532	50~150	3~5	3~5	1~3	1~2	1
Sun spots	532	50~150	3~5	3~5	1~3	1~2	1
Lengitgo	532	70~170	3~5	3~5	3~6	1~2	1

7.6.4 2940nm Er:YAG fractional Laser treatment parameter	Hyper-Pigmentation	532	50~150	3~5	3~5	1~3	1~2	1
	Melasma	1064	200~350	4~6	3~5	6~10	0.5~1	1
	Skin resurfacing	1064	200~400	8~10	7	4~6	0.5~1	2
	Seborrheic Keratosis	532	50~150	3~5	3~5	1~3	1~2	1
	Nail fungus	1064	150~350	4~6	3~5	4~5	2~3	1
	Carbon peeling	1064	200~400	8~10	7	4~6	0.5~1	1
	Skin rejuvenation with Array lens 20X	1064	130~330	4~6	5	4~6	0.5~1	1

7.6.4.1 Suggestion parameter setting table

Treatment	TIP: TMZ	Energy: (mJ /TMZ)	Pulse Width	Repe at times	Number of treatments needed	Treatment Interval
Skin Resurfacing & Coagulation of Soft Tissue	49	12-28mJ/TMZ	1.5~2.5ms	1~2	3~5	3~4 weeks
	81	4-20mJ/TMZ	1.5~2.5ms	1~2	3~5	3~4 weeks

NOTICE:

1. Using EMLA Cream to lessen the discomfort from treatment procedures. It must be applied two hours before the procedure to the area that the doctor plans to treat.

2. In general the treatment for Skin Resurfacing and Coagulation of soft tissue may consist of 2 to 5 treatments at intervals of 3 weeks.

Fine Lines	49	12-17mJ/TMZ	1.5ms (soft)	2~3	3~5	4~6weeks
	81	4-9mJ/ TMZ	1.5ms (soft)	2~3	3~5	4~6weeks
Wrinkle	49	17-22mJ/TMZ	2ms (medium)	2~3	4~6	4~6weeks
	81	9-14mJ/ TMZ	2ms (medium)	2~3	4~6	4~6weeks
Striae	49	22-28mJ/TMZ	2.5ms (long)	2~3	4~6	4~6weeks
	81	14-20mJ/TMZ	2.5ms (long)	2~3	4~6	4~6weeks

NOTICE:

1. Using EMLA Cream to lessen the discomfort from treatment procedures. It must be applied two hours before the procedure to the area that the doctor plans to treat.

2. Always see the skin reaction before adding energy.

Melasma, Pigment and Sunspots	81	14-20mJ/TMZ	2.5ms (long)	2~3	1~3	3~4 weeks
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NOTICE:

1. Using EMLA Cream to lessen the discomfort from treatment procedures. It must be applied two hours before the procedure to the area that the doctor plans to treat

2. The suggested treatment protocol are to treat with only the 100 mb tip.

7.6.5 1064nm Long pulse Nd:YAG Laser treatment	Acne Scars and Surgical Scars	Φ6mm (Optional)	500-2000mJ	2ms (medium)	2~3	3~5	3~6 weeks
	Acne Scars and Surgical Scars	Φ9mm (Optional)	500-2000mJ	2ms (medium)	2~3	3~5	3~6 weeks
	NOTICE: 1. Using EMLA Cream to lessen the discomfort from treatment procedures. It must be applied two hours before the procedure to the area that the doctor plans to treat						
	Nevus; Prominent mole; wart	Φ1~3.5mm (Optional)	500-1500mJ	2ms (medium)	2~3	1~2	3~6 weeks
NOTICE: 1. Using EMLA Cream to lessen the discomfort from treatment procedures. It must be applied two hours before the procedure to the area that the doctor plans to treat							

7.6.5.1 Suggestion parameter setting table

Application 1: hair removal, please make sure to use sapphire tip:Φ6 & Φ9 only.

Remark: below parameter setting, for skin type 1 and type2 can use Φ6 and Φ9 tip, but type 3-6 only use Φ9.

Skin Type	Spot Size (mm)	pulse Width (ms)	Frequency	Energy (J/cm ²)
1	6 or 9	20	1	70-110
2	6 or 9	20	1	60-100
3	9	20	1	50-90
4	9	30	1	40-80
5	9	30	1	30-70
6	9	40	1	20-60

Application 2: please make sure to use sapphire tip:2.2x5mm for vascular only.

(1)For superficial and medium vascular:

Treatment	pulse Width (ms)	Delay time (ms)	Energy (J/cm ²)
Normal	8+12	30	300
Face	4+6	30	300
Body	8+12	30	300

(2)For deep vascular:

Treatment	pulse Width (ms)	Delay time (ms)	Energy (J/cm ²)
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Normal	14+16	30	300
Face	8+12	30	300
Body	14+16	30	300

7.6.6 1540nm Er:Glass fractional Laser treatment parameter

7.6.6.1 Suggestion parameter setting table

Treatment	TIP:mb	Energy:(mJ per microbeam)	Pulse Width	Number of Passes	Number of treatments needed	Treatment Interval
Skin Resurfacing & Coagulation of Soft Tissue	100	50-70mJ/mb	10ms,15ms	2~3	3~5	3~4 weeks
	324	10~24mJ/mb	10ms,15ms	3~4	3~5	3~4 weeks

NOTICE:

1,Using EMLA Cream to lessen the discomfort from treatment procedures.It must be applied two hours before the procedure to the area that the doctor plans to treat

2,In general the treatment for Skin Resurfacing and Coagulation of soft tissue may consist of 2 to 5 treatments at intervals of 3 weeks.

Fine Lines	100	40-60mJ/mb	10ms,15ms	2~3	3~5	4~6weeks
	324	10~24mJ/mb	10ms,15ms	2~3	3~5	4~6weeks
Wrinkle	100	50-60mJ/mb	10ms,15ms	2~3	4~6	4~6weeks
	324	10~24mJ/mb	10ms,15ms	2~3	4~6	4~6weeks
Striae	100	40-60mJ/mb	10ms,15ms	2~3	4~6	4~6weeks
	324	10~24mJ/mb	10ms,15ms	2~3	4~6	4~6weeks

NOTICE:

1,Using EMLA Cream to lessen the discomfort from treatment procedures.It must be applied two hours before the procedure to the area that the doctor plans to treat

2,Above treatment in Skin Type IV-V and treatment of striae on the legs in Skin Type I-V,consider use 324mn tip at 15-25mJ/mb.

3,Always see the skin reaction before adding energy.

Acne Scars and Surgical Scars	100	50-70mJ/mb	10-15ms	3~4	3~7	3~4 weeks
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NOTICE:

1,Using EMLA Cream to lessen the discomfort from treatment procedures.It must be applied two hours before the procedure to the area that the doctor plans to treat

2,The suggested treatment protocol are to treat with only the 100 mb tip.

Melasma,Pigment and Sunspots	324	10-24mJ/mb	10-15ms	1~4	3~5	3~6 weeks
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NOTICE:

1. Using EMLA Cream to lessen the discomfort from treatment procedures. It must be applied two hours before the procedure to the area that the doctor plans to treat
2. For Skin Type I-III--3 to 4 passes with 2~3 overlapping passes.
3. For Skin type IV-VI--1 to 3 passes with lower energies starting at 5mj/mb and increasing energy based on test spots.

7.6.7 Q-switched Nd:YAG Laser treatment parameter 7.6.7.1 Brief introduction

The Q-Switched Nd:Yag module provides the flexibility to adjust the treatment parameters according to patient and lesion characteristics, in order to achieve optimal clinical results. The treatment parameters are appear in the user interface consist of: Energy density: derived from spot size. Frequency: to match user's expertise. Wavelength: Select according to the color of pigmentation.

7.6.7.2 Parameters

1. Wavelength: Refers to the spectrum of light emitted by the xenon flash lamp and focus tip. (532nm or 1064 nm). 2. Energy density:: The intensity or level of power emitted by the flash lamp and YAG BAR measured in joules/ cm². Generally, the greater the energy density the greater amount of light and heat is produced, when the spot size is at the focus point, the energy density reach to max. When the distance between treatment tip and treatment surface is bellow 6 cm, when the distance is near, the energy is lower. When the distance between treatment tip and treatment surface is above 7 cm, when the distance is farther, the energy is lower. 3. Frequency: The number of pulse emit by one trigger or one second. The frequency range is (1Hz to 10 Hz).

7.6.7.3 Parameter Principles

Indication	Wavelength
Tattoo:	
• Black, blue tattoo	1064nm
• Dark Ink tattoo	
• Red, pink, purple, brown	532nm
• Light Ink tattoo	532nm
Vascular lesions	
• Port wine birthmarks	532nm
• Telangiectasis	
Epidermal Pigmented lesions	
• café-au- lait birthmarks	532nm
• solar lentiginos	
• senile lentiginos	
• Becker's nevi	
• Freckles	
• nevus spilus	
• Melasma (integument)	

Treatment tip with focus adjustment function can be setting sport size from Ø1 to Ø5mm. The energy of Lower Scale is higher; Higher Scale is lower. The table is listing as below:

Scale (mm)	Spot Size Ø(mm)
1	1



1.5	1.5	Figure 5.2
2	2	
2.5	2.5	
3	3	
3.5	3.5	
4	4	
4.5	4.5	
5	5	

Warning: The laser systems have specific operating requirements. The operator must not establish contact between the handpiece and the surface of the treatment region. It is the physician's responsibility to fulfill these requirements. Failure to do so can create the potential risk of cross contamination of biological incompatibility from one customer to another, it may increase the risk of injury to the customer.

Do not allow the tip to establish physical contact with the skin during treatment.

7.6.7.4 Parameter setting table

Laser treatment parameter table							
Treatments	Wave length (nm)	Energy (mj)	Frequency (Hz)	Spot size (mm)	Total treatments (time)	Treatments interval (Month)	Pulse number
Tattoo Removal (Black, Blue, Brown)	1064	360~510	4~6	3~5	3~6	0.7~1.5	1
Nevus of Ota	1064	740~940	4~6	3~4	4~6	2~3	2
Eye Line	1064	380~530	4~6	3~5	1~3	1~2	1
Eye Brow	1064	390~540	4~6	4~5	1~3	1~2	1
Blue Nevus	1064	840~1040	4~6	3~4	2~4	2~3	2
Speckled nevus (big size)	1064	600~750	4~6	3~4	4~5	2~3	1
Tattoo Removal (Red, Purple, Orange)	532	180~330	3~5	3~5	4~10	0.7~1.5	1
Speckled nevus (small size)	532	210~350	3~5	3~5	1~3	1~2	1
Coffee Au Lait spot	532	210~350	3~5	3~5	3~6	1~2	1
Age spot	532	210~350	3~5	3~5	1~3	1~2	1
Sun spots	532	210~350	3~5	3~5	1~3	1~2	1
Lengitgo	532	210~350	3~5	3~5	3~6	1~2	1
Hyper-Pigmentation	532	210~350	3~5	3~5	1~3	1~2	1
Melasma	1064	390~540	4~6	3~5	6~10	0.5~1	1

7.7 The	Seborrheic Keratosis	532	210~350	3~5	3~5	1~3	1~2	1
	Nail fungus	1064	390~540	4~6	3~5	4~5	2~3	1
	Carbon peeling	1064	500~840	8~10	7	4~6	0.5~1	1

7mm Protocol for Q-switch

7.7.1 IPL treatment procedure

1. IPL treatment after selected the treatment mode and skin type please attach the proper treatment filter and set parameter as recommended on the screen.
2. Use the appropriate protective eyewear.
3. Apply a thin layer of coupling gel 2-3 mm.
4. Set the treatment head parallel and lightly touch to the skin's surface and begin treatment. Avoid excessive overlapping of treatment areas. Avoid doing double passes. For the first treatment, a test shot over an inconspicuous area can be performed.
5. After treating an area, carefully remove the gel and apply cool compresses (5-10 minutes).
6. Watch out for side effects such as burns, pain, and erythema.
7. Proceed to the next treatment area.
8. Treatment parameters before proceeding to the next treatment. Note down
9. If a different treatment is desired,
10. Place the unit on standby by pressing the Ready key.
11. Insert the desired filter (420,510,560,610,640,690nm,SHR)
12. Select Treatment Mode and resume treatment
13. Whenever the unit is not in use, set the device on standby by pressing the Standby key to extend the life of your flash lamp.
14. Turn Off the unit and clean the treatment heads.

7.7.2 Diode laser treatment procedure

Treatment can begin after the treatment parameters are selected.

1. Ensure that the patient is lying comfortably with eye protection in place. All personnel in the treatment room should wear eye protection as well.
2. Clean the skin to remove perfumes, cosmetics and sunscreens.
3. Press the single treatment reset button to reset the pulse counter.
4. Verify that the hand piece tip is cold.
5. The Ultrasound gel is best used chilled. It is spread thinly (2-3 mm) over the treatment area. The gel is used to cool down the treatment area before and during treatment. By pre-cooling the skin and by absorbing heat from the epidermis, discomfort is kept minimal. The use of cool ultrasound gel is also helpful in determining the areas that have just been treated by observing the footprint left behind by the treatment head.
6. Place the hand piece perpendicular to the skin and establish contact with the skin. Press the tip against the skin with moderate pressure to make good contact.
7. Always perform a skin test to establish the cutaneous reaction when beginning treatment.
8. Carefully diagnose the skin test.
9. If the pulse has the desired effect, continue treatment with the same parameters.
10. Start treatment by simultaneous activation of the handpiece trigger or the footswitch.
11. Occasionally examine the treatment site for a change in skin color and morphological changes around the follicles (erythema/edema). The smell of burnt hair may sometimes be detected, although absence of this phenomenon does not necessarily indicate that the present set of parameters is ineffective.
12. If adverse skin effects occur (such as excessive reddening) before good follicular response is achieved, adjust the treatment parameters to reduce the aggressiveness of the treatment. Aggressiveness may be reduced by either decreasing the fluence by one level or by changing the pulse type (pulse width) to a less aggressive one.

1. If the skin shows no adverse effects and no morphological changes are observed, you may raise the energy by one level until the desired effect is reached.
2. If practitioner pauses during the treatment for over 3 minutes, the Standby function must be turned off.
3. After treatment it is recommended to cool the area immediately (see 7.8 Post Operative Nursing Care).
4. Press "Ready" button and then press "Standby" button after treatment.
5. Turn off the device by turning the key counter clockwise. Clean the treatment sapphire with a soft cloth. Then sanitize the treatment head with alcohol cotton balls.

P.S: Number of treatments needed: 4-5 sessions; Treatment Interval:4-6 weeks

7.7.3 1064/532nm Q-switched laser treatment procedure

1. Q-switched laser treatment depending on the color of pigmentation and treatment area, you may choose to use 532nm or 1064 nm treatment tip.
2. Select the tip for laser handpiece, screw the tip (according to figure 4.5) firmly and properly prior to turning the device on.
3. Touch the wavelength you use for treatment on the screen, setting the spot size by change the distance between treatment tip and treatment area (Ref. Fig.5.2b) according to the treatment. Please be noted that setting the actual spot size select on the screen, in this way the energy window will show the exactly energy combine by wave length and spot size.
4. Touch the "READY" to ready for treatment after user inserts IC card exactly and the IC CARD ONLINE icon will be shown on the system information window.
5. Movements should be gentle and rhythmical, but not irritating or uncomfortable.
6. Evaluate the treatment area for any untoward side effect such as pain. During treatment the spot size can be adjusted as to your requirements. If the customer feels too hot on the skin to press the red button of energy breaker handle immediately,
7. After treatment, copy the treatment parameters to the patient's record sheet and place the device on Standby Mode by depressing the "STANDBY" button.
8. Turn off the device by turning the key counter clockwise. Clean the lens of treatment tip if there is dust on it, then sanitize the treatment head with alcoholized cotton balls.
9. Replace the treatment handle on its carriage.

7.7.4 1540nm Er:Glass Fractional laser treatment procedure

1. Ensure that the patient is lying comfortably with eye protection in place. All personnel in the treatment room should wear eye protection as well.
2. Clean the skin to remove perfumes, cosmetics and sunscreens.
3. Place the hand piece perpendicular to the skin and establish contact with the skin. Press the tip against the skin with moderate pressure to make good contact.
4. Always perform a skin test to establish the cutaneous reaction when beginning treatment.
5. Carefully diagnose the skin test.
6. If the pulse has the desired effect, continue treatment with the same parameters.
7. Start treatment by simultaneous activation of the hand piece trigger or the foot switch.
8. Occasionally examine the treatment site for a change in skin color and morphological changes around the follicles (erythema/edema). The smell of burnt hair may sometimes be detected, although absence of this phenomenon does not necessarily indicate that the present set of parameters is ineffective.
9. If adverse skin effects occur (such as excessive reddening) before good follicular response is achieved, adjust the treatment parameters to reduce the aggressiveness of the treatment. Aggressiveness may be reduced by either decreasing the fluence by one level or by changing the pulse type (pulse width) to a less aggressive one.
10. If the skin shows no adverse effects and no morphological changes are observed, you may raise the energy by one level until the desired effect is reached.
11. If doctor pause the practice during the treatment over 3 minutes, the Standby function must be turn off.
12. After treatment it is recommended to cool the area immediately (see 7.8 Post Operative Nursing Care).

13. Press "Ready" button and then press "Standby" button after treatment.
14. Turn off the device by turning the key counter clockwise. Clean the treatment sapphire with a soft cloth. Then sanitize the treatment head with alcoholize cotton balls.

7.7.5 2940nm Er:YAG Fractional laser treatment procedure

1. Remove all jewelry or any metal items on the client, and then prepare the skin surface for treatment by first cleansing the area using the prescribed cleanser.
2. Observe proper optical safety by wearing the safety goggles provided with this device. (Opaque for the patient and filtered for the operator)
3. Turn the device on by turning the key switch in a clockwise direction. The screen will show the main menu and will undergo a systems check up diagnostic program.
4. Select the MTZs Density by touching "MTZs Density" and then FREQUENCY/ PULSE. After the desired parameters have been settled, the Multifunction Laser Platform Energy output can be adjusted by touching the "UP" and "DOWN" buttons.
5. No need to layer on gel/cream over the entire treatment area. Approximate the treatment head perpendicularly over the treatment area. And press the Trigger button on the treatment handle to begin treatment.
6. Depending on the treatment service and skin condition, you may choose proper treatment tip for different treatment. Screw the tip firmly and properly prior to turning the device on.
7. Evaluate the treatment area for any untoward side effect such as pain. During treatment the parameters can be adjusted as to your requirements.
8. Touch the "STANDBY" and then "WORK" to ready for treatment be shown on the system information window.
9. Movements should be gentle and rhythmical, but not irritating or uncomfortable.
10. When it works on the face, be sure to follow the "criss cross" type action using both horizontal/ vertical moving up and side to the center of facial, neck, chest, back, forearms, hands and body. There should be 50% over lap.
11. After the treatment, copy the treatment parameters to the patient's record sheet and place the device on Standby Mode by depressing the "WORK" button.
12. Turn off the device by turning the key counter clockwise. Clean the treatment tip with a soft cloth. Then sanitize the treatment head with alcoholized cotton balls.
13. Replace the treatment handle on its carriage and unplug the device.

7.7.6 1064nm Long Pulsed Nd:YAG laser treatment procedure

1. Ensure that the patient is lying comfortably with eye protection in place. All personnel in the treatment room should wear eye protection as well.
2. Clean the skin to remove perfumes, cosmetics and sunscreens.
3. Press the "" single treatment reset button to reset the pulse counter.
4. Verify that the handpiece tip is cold.
5. Place the handpiece perpendicular to the skin and establish contact with the skin. Press the tip against the skin with moderate pressure to make good contact.
6. Always perform a skin test to establish the cutaneous reaction when beginning treatment.
7. Carefully diagnose the skin test.
8. If the pulse has the desired effect, continue treatment with the same parameters.
9. Start treatment by simultaneous activation of the handpiece trigger or the footswitch.
10. Occasionally examine the treatment site for a change in skin color and morphological changes around the follicles (erythema/edema). The smell of burnt hair may sometimes be detected, although absence of this phenomenon does not necessarily indicate that the present set of parameters is ineffective.
11. If adverse skin effects occur (such as excessive reddening) before good follicular response is achieved, adjust the treatment parameters to reduce the aggressiveness of the treatment. Aggressiveness may be reduced by either decreasing the fluence by one level or by changing the pulse type (pulse width) to a less aggressive one.
12. If the skin shows no adverse effects and no morphological changes are observed, you may raise the energy by one level until the desired effect is reached.

Chapter 8 Specifications

This chapter specifies the most important technical data and system classification for the Laser platform systems

8.1 Specifications

8.1 Specifications

Parameter	Data
◆ Electrical connection data	
Line voltage:	110-240VAC (refer to system labeling)
Line frequency:	50/60Hz
Max.power consumption:	1600W
◆ System classifications	
Type of protection against electrical shock:	Class 1 equipment
Degree of protection against electrical shock:	Type B equipment
Classification according to the degree of protection against ingress of water:	IPX0 for main unit IPX1 for footswitch
Type of Classification against MDD 93/42/EEC	Class II equipment
◆ Climate (during operation)	
Ambient temperature	+5°C to +30°C
Relative humidity	70%
Atmospheric pressure	86.0 kpa to 106.0kpa
◆ Climate (during transport and/or storage)	

Ambient temperature	-40°C to +55°C
Relative humidity	Up to 93%
Atmospheric pressure	86.0 kpa to 106.0kpa
◆ Dimensions and weights	
Height	650mm
Width	480mm
Depth	1150mm
Weight	approx. 50Kg
◆ Therapy IPL	
IPL output power	1600Watt
Light source	Intense pulsed light (Xenon Flash Lamp)
Spectrum range	420-1200nm
Energy density	10~50J/cm ²

Pulse method	Intense pulsed technology (can adjust)
Pulse sequence	1~15 pulses
Pulse delay	5-50ms
Pulse width	2-20ms
Total Pulse width	Max. ≤50ms
Deliver system	Direct sapphire Coupling
Spot size	15mm×50mm
+ Therapy Diode laser	
Laser Type	CW, GaAlAs Diode Laser array
Wavelength	810±10nm,
Energy density	1~62 J/cm ²
Pulse Repetition Rate	1~10Hz
Pulse width	1-300ms
Sapphire spot size	12mm×23mm
+ Therapy Triple Diode laser	
Laser Type	CW, GaAlAs Diode Laser array
Wavelength	755±10nm, 810±10nm, 1064nm±10nm
Energy density	1~62 J/cm ²
Pulse Repetition Rate	1~10Hz
Pulse width	1-300ms
Sapphire spot size	12mm×23mm
+ Therapy Q-switch Nd:YAG Laser	
Q-switched Laser power	1000Watt
Wavelength	Double wavelength 1064nm&532nm
Pulse width	980ps
Pulse energy	360mJ to 2000mJ(1064nm); 180mJ to 1000mJ(532nm)
The light spot diameter	1~5mm
Repeat frequency	1/2/3/4/5/6/6/7/8/9/10Hz
Lead light method	Directly export laser
NOHD	1000mm
+ Therapy Picosecond Nd:YAG Laser	
Laser power	1000Watt
Wavelength	Double wavelength 1064nm&532nm
Pulse width	980ps
Pulse energy	50mJ to 800mJ(1064nm); 50mJ to 400mJ(532nm)
The light spot diameter	1~5mm
Repeat frequency	1/2/3/4/5/6/6/7/8/9/10Hz

Lead light method	Directly export laser
NOHD	1000mm
◆ Therapy Er:YAG fractional Laser	
Wavelength	2940nm
Energy	9x9 Pixel: 4-20mJ/Microbeam; 7x7 Pixel: 12-28mJ/Microbeam; Beam expander (Φ6mm, Φ9mm):500-5,000mJ Zoom lens (Φ1-3.5mm):500-5,000mJ
Pulse width	1.5ms, 2.0ms, 2.5ms
Deliver system	Direct sapphire Coupling
Type of delivery way	1Hz
Laser Output Power	600W
◆ Therapy 1064nm Long pulse Nd:YAG Laser	
Wavelength	1064nm
Sapphire spot size	2.2x5mm, Φ6mm, Φ9mm
Pulse Repetition Rate	0.5~1Hz
Pulse width	10~40ms
Energy density	2.2x5mm:150~500J/cm ² ; Φ6mm: 60~260J/cm ² ; Φ9mm : 10~110J/cm ² .
Laser Output Power	1500W
◆ Therapy Er:Glass fractional Laser	
Wavelength	1540±5nm
Energy	10*10Pixel:25~70mJ/Microbeam 18*18 Pixel:6~24mJ/Microbeam
Pulse Repetition Rate	Single or 1Hz
Pulse width	10ms/15ms
Laser Output Power	500W
◆ Operation interface	12.1" touch True Color LCD
◆ Cooling system	
Cooling system	Water cooling, forced-air cooling and TEC water tank cooling system and semiconductor chip
Cooling temperature	-4°C~+10°C

8.2 ELECTROMAGNETIC COMPATIBILITY(EMC)

8.2.1 Essential performance

The accurate output of the wavelength and pulse energy for each handpiece is defined as the essential performance of the device

8.2.2 Classification and grouping

The nuCORE 8:1 Multi-function Platform System is ranged to the Group 1 Class A apparatus

according to the standard of CISPR 11:2015+A1:2016+A2:2019 Clause 5.1 and Clause 5.2. It is suitable for use in professional healthcare facility environment. Except for near active HF SURGICAL EQUIPMENT and the RF shielded room of an ME SYSTEM for magnetic resonance imaging, where the intensity of EM DISTURBANCES is high. In addition, it is not suitable for use in the environment where contains diathermy, electrocautery, RFID, near-field communications(NFC) systems, wireless power transfer(WPT), electronic article surveillance(EAS), unique medical emitters such as electrocautery, MRI, electrosurgical units, diathermy equipment.

The test requirement are below:

Phenomenon	Basic EMC standard or test method	IMMUNITY TEST LEVELS
		Professional healthcare facility environment
RADIATED EMISSION	CISPR 11	3 m distance 30 – 230 MHz, 50 dB μ V/m 230 – 1000 MHz, 57 dB μ V/m
CONDUCTED DISTURBANCES	CISPR 11	Quasi-peak: 0.15 - 0.5 MHz, 79 dB μ V 0.5 – 30 MHz, 73 dB μ V Average: 0.15 - 0.5 MHz, 66 dB μ V; 0.5 – 30MHz, 60 dB μ V
ELECTROSTATIC DISCHARGE	IEC 61000-4-2	\pm 8 kV contact \pm 2 kV, \pm 4 kV, \pm 8 kV, \pm 15 kV air
Radiated RF EM fields	IEC 61000-4-3	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz
Proximity fields from RF wireless communications equipment	IEC 61000-4-3	380 to 390 MHz, 27 V/m 430 to 470 MHz, 28 V/m 704 to 787 MHz, 9 V/m 800 to 960 MHz, 28 V/m 1 700 to 1 990 MHz, 28 V/m 2 400 to 2 570 MHz, 28 V/m 5 100 to 5 800 MHz, 9 V/m
RATED power frequency magnetic fields	IEC 61000-4-8	30 A/m 50 Hz or 60 Hz
Proximity magnetic fields	IEC 61000-4-39	30 kHz, 8A/m 134,2 kHz, 65 A/m 13,56 MHz, 7,5 A/m
Electrical fast transients / Bursts	IEC 61000-4-4	\pm 2 kV 100 kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	\pm 0,5 kV, \pm 1 kV
Surges Line-to-ground	IEC 61000-4-5	\pm 0,5 kV, \pm 1 kV, \pm 2 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3 V 0,15 MHz – 80 MHz 6 V in ISM bands between 0,15 MHz and

		80 MHz 80 % AM at 1 kHz
Voltage dips	IEC 61000-4-11	0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°
		0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0°
Voltage interruptions	IEC 61000-4-11	0 % UT; 250/300 cycle
Results: Pass		

WARNING:

1. Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally. 2. Use of accessories, transducers and cables other than those specified or provided by shanghai bele could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation 3. Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

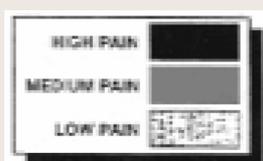
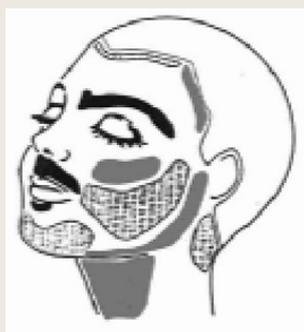
NOTE:

The EMISSIONS characteristics of this equipment make it suitable for use in industrial areas and hospitals(CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

APPENDIX

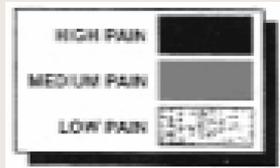
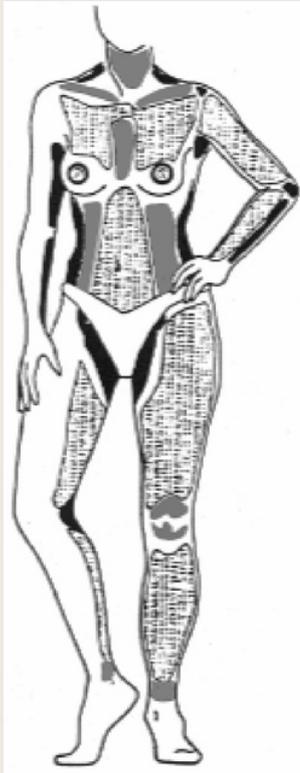
Overview of Areas Sensitive to Pain

Face:



(Figure. 7.1 Pain zones of face)

Body:



(Figure 7.2: Pain-sensitive zones of body)

Hair Growth Table

	Appr. depths of terminal anagen follicle	Duration of TELOGEN	Duration of ANAGEN	Number of follicles/cm ²	Daily rate of growth
HEAD					
Upper Lip	1-2.5mm	6 weeks	4 months	500	
Beard-Chin	2-4mm	10 weeks	1 year	500	0.38mm
Cheeks	2-4mm			880	0.32mm
Eyebrows	2-2.5mm	3 months	4-8 weeks		0.16mm
Ear		3 months	4-8 weeks		
Scalp	3-5mm	3-4months	2-6 years	350	0.35mm
BODY					
Axillae	3.5-4.5mm	3 months	4 months	65	0.3mm
Legs, Thighs	2.5-4mm	5 months	4 months	60	0.21mm
Pubic Area	3.5-5mm	3 months	4 months	70	
Arms		4 months	3 months	80	0.3mm
Breast	3-4.5mm			65	0.35mm
Trunk	2-4.5mm			70	0.3mm

SKIN TYPE	COLOR	CHARACTERISTICS	
I	Light skin	Always Burns	Never Tans
II	Light skin	Always Burns	Sometimes Tans
III	Light skin/ Oriental	Sometimes Burns	Always Tans
IV	Brown skin	Never Burns	Always Tans
V	Negro Skin	Never Burns	Always Tans

Annotations:

If you have any questions, please feel free to contact our company as following:



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