

User Manual

LED Light Therapy Mask



Please read this manual carefully before using the product

Shenzhen Rainbow Technology Co.,Ltd

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Table of contents

1. Product overview	1
1.1. Basic information	1
1.2. Indications for use	1
1.3. Package content	1
1.4. Product main structure.....	1
2. Product Specifications.....	2
3. Contraindications	3
4. Warnings and Precautions	4
4.1. Warnings	4
4.2. Precautions	5
5. Getting started	5
5.1. Device Set-up	5
5.2. Light sensitivity test	6
5.3. Charging the battery	6
6. How to use it	7
6.1. Preparation.....	7
6.2. Tips for adjusting the headband:.....	7
6.3. Operation instruction	8
7. Care and maintenance	10
8. Disposal.....	10
9. Symbols meaning	11
10. Common malfunctions and solutions.....	11
11. EMC Statement	12
12. Warranty and special offers information	12
13. Contact information	14
Annex I. Guidance and Manufacture's Declaration	15

1. Product overview

1.1. Basic information

Product Name: LED Light Therapy Mask

Model: RB-081

Manufacturer: Shenzhen Rainbow Technology Co.,Ltd







1.2. Indications for use

- Red+Infrared light: Treatment of full-face wrinkles.
- Red light: Treatment of full-face wrinkles.
- Infrared light: Provide topical heating for the purpose of elevating tissue temperature; arthritis and muscle spasm;relieving stiffness; promoting the relaxation of muscle tissue; and to temporarily increase local blood circulation.
- Blue light: Treatment of mild to moderate inflammatory acne.
- Red+Blue light: Treatment of mild to moderate inflammatory acne.

The device is intended to use LED light for the treatment of wrinkles and mild to moderate acne for adults in home healthcare environment.

1.3. Package content

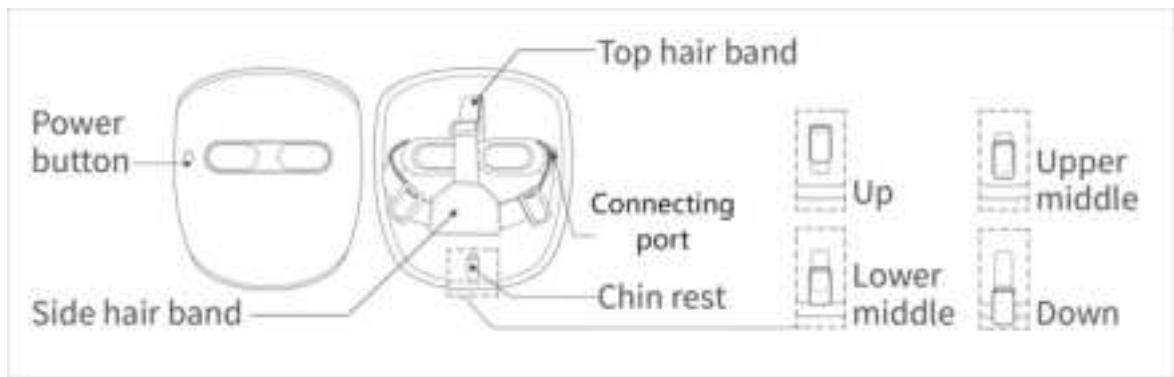
Upon opening the product package, you will find the following contents inside:

Items	Diagrammatic sketch	Items	Diagrammatic sketch
Main unit*1		User manual*1	
Remote control*1		Storage bag*1	
Type-C charging cable*1		Package box*1	

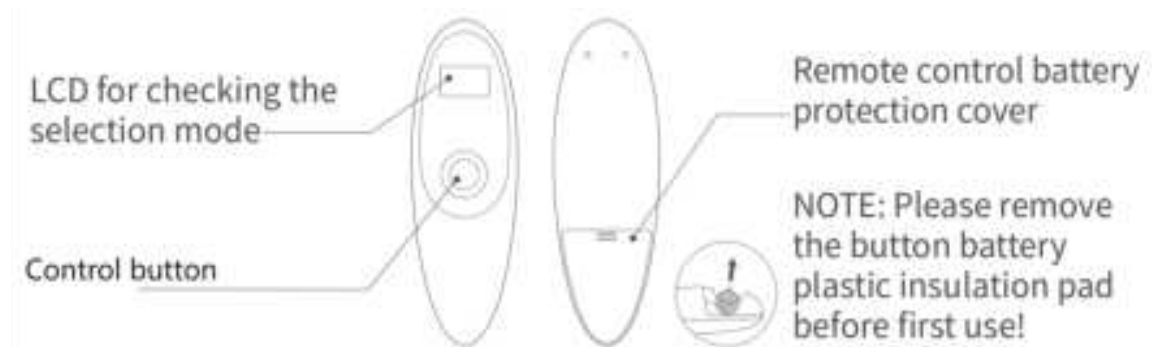
1.4. Product main structure

LED Light Therapy Mask is mainly composed of main unit, remote control, Type-C charging cable, etc.

- Main Unit



- Remote control (**RF remote control: the controller will emit RF signal, and the main unit will receive it.**)



1.5. Customer Conditions

- at least can read and understand the user manual and have self-control and self-consciousness.
- at least has a minimum of 8 years of education.

2. Product Specifications

Product Name	LED Light Therapy Mask
Model Name	RB-081
Power remote control	
<u>Input</u>	5 V 1 A
Battery specifications	LED Mask: 3.7V/2000mAh Lithium polymer Battery
	Remote control: CR2032, one 3V lithium battery
Max running time	90-120 minutes (depending on mode)
Charging time	4 hours
Protection against electric shock	Class II Type BF Applied Part (light emission part)
Dimensions	
LED Mask	About 19.5 X 22.3 X 9.3 (cm)
Remote control	About 4.5 X 13.3 X 3.2 (cm)
Weight	
LED Mask	About 391 g
remote control	About 50 g
Light	

Light source	Light Emitting Diodes
Risk group	Exempt group
Wavelength	Red: 630nm Blue: 460nm Infrared: 850nm
Energy level	Red+IR: 45.5mW/cm ² Red light: 53.2mW/cm ² Infrared light: 47.3mW/cm ² Blue light: 58.7mW/cm ² Red+Blue light: <u>33.6</u> mW/cm ²
Operation condition	
Temperature	+5°C to +30°C
Humidity	15% to 90%RH
Atmosphere pressure	700hPa to 1060hPa
Storage condition	
Temperature	-20°C to + 60°C
Humidity	10% to 95%RH
Atmosphere pressure	700hPa to 1060hPa
Service life	3 years

3. Contraindications

- DO NOT use if you have a history of light-triggered seizures. It is recommended that you test a small less sensitive patch of skin (see section light sensitivity test).
- DO NOT use LED Light Therapy Mask to treat any other conditions apart from those listed in the indications for use. The LED Light Therapy Mask has not been tested for any other conditions than those listed, and the risk is unknown.
- DO NOT use LED Light Therapy Mask if you are pregnant, planning on becoming pregnant, or breastfeeding. The LED Light Therapy Mask has NOT been tested on pregnant or breastfeeding women and therefore the risk to the fetus, neonate, or pregnant women is unknown.
- DO NOT use LED Light Therapy Mask if you suffer from Lupus erythematosus, photosensitive eczema, or Albinism. If you use the LED Light Therapy Mask to treat Lupus erythematosus, photosensitive eczema, or Albinism you may cause a severe skin reaction.
- DO NOT use LED Light Therapy Mask if you suffer from any photosensitive disorder (sensitization to light). If you use the LED Light Therapy Mask and you suffer from a photosensitive disorder you may cause a severe skin reaction.
- DO NOT use LED Light Therapy Mask if you are taking any medication that can cause photosensitivity. If you use the LED Light Therapy Mask and you are taking any medication that can cause photosensitivity you may cause a severe skin reaction. photosensitivity is a common side effect of various medications. These can include certain antibiotics, chemotherapy drugs, and diuretics. If you are unsure about any medication you may be taking consult your healthcare provider.

Other substances not listed above can also cause photosensitivity.

- Common examples of these substances are:
St John's Wort, Coal tar, Deodorants, antibacterial soaps, artificial sweeteners, naphthalene (mothballs), petroleum products, brightening agents found in laundry detergent, and cadmium sulfide (a chemical injected into the skin during tattooing).

4. Warnings and Precautions

4.1. Warnings

- Before using the LED Light Therapy Mask you must carry out a sensitization test (see section light sensitivity test). DO NOT use the LED Light Therapy Mask if you are sensitive to LED Light Therapy Mask. This unit is intended to be used in the home healthcare environment, the patient can be an intended operator
- DO NOT use the LED Light Therapy Mask in any way that is not exactly as specified in these instructions for use. Use of the LED Light Therapy Mask LED other than exactly as specified in these instructions for use has not been tested and the risk is unknown. This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the equipment to avoid the risk of fire or burns
- TURN OFF and REMOVE the LED Light Therapy Mask immediately if it feels hot or your skin feels uncomfortably warm. Due to the long cable of the charging cable, strangulation may occur, so keep the product out of the reach of children
- DO NOT use the LED Light Therapy Mask LED without first removing makeup BEFORE treatment. Some ingredients in these products may cause light sensitization or may reduce the effect of the treatment. If you use the LED Light Therapy Mask without removing these products, you may cause a skin reaction, or you may reduce the effect of the treatment. This equipment is not intended for use by children. Children should be supervised to ensure that they do not play with the equipment to avoid the risk of fire and burns
- NEVER use LED Light Therapy Mask LED near water or where water can be spilled onto the equipment. DO NOT use the LED Light Therapy Mask if you think it has come into contact with water. Do not subject the equipment to heavy shocks to avoid risk of damage to the lamp
- Keep the LED Light Therapy Mask away from HOT surfaces. If needed, contact the manufacturer for assistance in setting up, using, or maintaining the ME EQUIPMENT or reporting unexpected operation or events
- DO NOT attempt to modify the LED Light Therapy Mask LED in any way. Modifying the LED Light Therapy Mask will void your warranty. Modifying the LED Light Therapy Mask LED could cause an electric shock when the system is used again. The system contains no serviceable parts. Use of accessories other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity
- DO NOT use the LED Light Therapy Mask LED if the mask, remote control, or cord is damaged in any way. Do not leave the equipment unattended when it is switched on to avoid the risk of fire or burns
- When removing from minimum / maximum storage temperature, it is recommended to recover for 2 hours before use

- Do not look directly or shine light in the eyes while in operation

4.2. Precautions

4.2.1. General safety

The LED Light Therapy Mask is an electrical device, which under certain circumstances could present an electrical shock hazard to the user. please read the accompanying user manual thoroughly and follow directions stated in the manual to assure maximum safety during operation.

- The LED Light Therapy Mask strap contains a mixture of polyester, nylon and lycra. If you are allergic to any of these materials, you may not be able to use the head strap provided.
- The LED Light Therapy Mask cannot be used in charging mode.
- Before each use, with the device switched off, clean the face mask.
- DO NOT use any other cleansing products other than those stated in the cleaning instructions. The use of other cleansing products may damage the LED Light Therapy Mask.
- Store the LED Light Therapy Mask at room temperature in dry conditions, away from direct sunlight.

4.2.2. Electrical safety

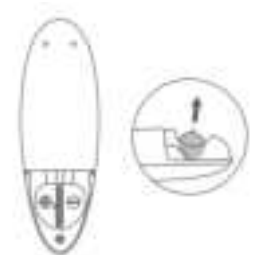
- DO NOT store the device in temperatures exceeding 140°F or 60 °F. Raising the internal temperature may cause a malfunction or fire.
- If there is smoke or a strange smell, stop using it, turn off the power, and remove the charging adapter.
- DO NOT damage, process, bend, twist or heat the USB cable. Damage to the cord may cause fire or electric shock.
- DO NOT place or operate the device near water or liquids. It may cause fire or electric shock.
- Since this product has a built-in battery in the system, fully charge the battery when using it for the first time after purchase.
- Since batteries are consumables, the usable time of batteries gradually decreases when used for an extended period.
- The built-in battery cannot be removed or replaced at the customer's discretion, and there is a risk of explosion if the battery is not properly placed.
- DO NOT dispose of the battery randomly, follow your local disposal procedure when disposing of it.
- Recommended using the DC 5V 1A charging adapter. Please avoid using chargers of unknown origin or poor quality to ensure device safety, with a maximum output power not exceeding 30W. [Please use an adapter compliant with IEC 60601-1:2005 + AMD2:2020 for charging, input: 100-240VAC, output: DC 5V, 1.0A.](#)

5. Getting started

5.1. Device Set-up

Getting started with LED Light Therapy Mask is easy.

- 1) Unpack the device and all the accessories.
- 2) Remove the remote control battery protection pad to replace a new battery (CR2032) if the battery is dead.
- 3) Your device has an internal rechargeable battery. You will need to fully charge your device approximately 4 hours before the first use.



See section 5.3 - Charging the Battery for details.

5.2. Light sensitivity test

Follow these instructions to see if you are sensitive to light:

- 1) Initiate the device by briefly pressing the LED mask “power button”, then switch color modes using the remote control "color modes selection button".
- 2) Place the device on a section of the forearm, maintaining contact for the entire three-minute treatment cycle.
- 3) Press the “color modes selection button” again to choose a different mode for another three-minute treatment on the same forearm area.
- 4) Wait 24 hours. You should NOT experience any adverse reaction during the next 24 hours.
- 5) An adverse reaction is a pain or discomfort in the treatment areas or any pro- longed skin redness.

5.3. Charging the battery

Before use, be sure to charge the LED mask battery as follows. (Charging time may vary depending on the battery charge status. It takes up to 4hours.)



- 1) Connect the Type-Cport of remote control by the supplied charging cable.
- 2) Connect the opposite USB port with the 5V 1A charging adapter to charge.
- 3) If the Indicator on the remote control lights up in green, it is fully charged. Please unplug the charging cable and use the device.

Note please:

The colors of the power button changes depending on the charging status of the LED mask.

- Redflashing: Indicates low battery / charging required. (please charge the device promptly.)
- Green flashing: Standby. (Battery power is sufficient to use LED mask.)
- Green light: Battery is fully charged.

Lithium Battery Maintenance Tips:

- Avoid fully draining the battery before recharging.
- Avoid overcharging the battery and try to limit the charging time to a maximum of 8 hours.
- If the device is not in use for an extended period, it is recommended to charge the battery at least once every three months.

6. How to use it

6.1. Preparation



- 1) Wash your face clean. (If you make up, please cleanse by cleansing foam.)
- 2) It can be used day or night. You can fit it into your current skincare routine after cleaning and/or exfoliating your skin.
- 3) Be sure to fully charge the battery before use. (when pressing button of remote control, if it flashes in green, it indicates the device is in usable and chargeable state.)



- 1) Remove the button battery plastic insulation pad of the remote control.
- 2) Long press the button of the LED mask for 5 seconds to turn on the power. (Available when blinking green.)
- 3) After adjusting the hair band moderately, wear it so that the inner side of the LED mask is on the face.

6.2. Tips for adjusting the headband:

- (1) When sitting or standing, the correct state should be minimal pressure on the eye socket, allowing the silicone eye pad to fit the eye socket, with the headband fixed the product.
- (2) If you feel the silicone eye pad is exerting too much pressure on the eye socket, loosen the headband on both sides.
- (3) If the silicone eye pad does not fit the eye area and light can enter through the gap between the eye pad and eye socket, tighten the headband on both sides.
- (4) If you feel the mask is sliding down and cannot maintain the correct position on your face, tighten the headband.
- (5) Place the chin rest on the chin (under the lip). There are 4 gears for the chin rest (Up, Upper middle, Lower middle, Down). Push the chin rest to move it one step upwards or downwards for a better wearing result.



- (6) Select the desired mode using the buttons on the remote control.
- (7) If you feel uncomfortable while wearing the device, you can try to adjust the strap or pick it off until you feel better.
- (8) The product will be turned off automatically when the set mode and the corresponding time finished.



- **Remove:** If user feels uncomfortable due to the chin rest, adjust it to "Down" gear and push it down to remove it. (Please store your chin rest after disassembly.)

- **Install:** To reinstall the chin rest, align it with the bottom of the slide and push it up to secure it in place. (As shown in the picture above)

Cautions for Use

- ※Move the remote control within 30 cm of the LED mask.
- ※Please do not act violently when wearing the product.
- ※When wearing the product, relax in a comfortable position on the couch or bed.

6.3. Operation instruction

6.3.1. Remote control matching

As it is a RF remote control (the controller will emit RF signal, and the main unit will receive it), so when

using the LED mask for the first time, user should match the LED mask and remote control. Long press the power button of LED mask for 5 seconds to enter the matching state:

- 1) In non-power saving state: short press the button of remote control within 10 seconds to match the remote control with LED Mask.
- 2) In power saving state: short press the button of remote control to activate it, then short press the button again to match the remote control with LED Mask.

Note:

- If the remote control and LED mask can not be matched within 10 seconds, the LED mask would quit the matching state.
- If there is no operation for 30 seconds, the remote control would enter power saving state, and the screen would go out. User should short press the button to activate the remote control.
- The LED mask and remote control would be matched before delivery. If they are not matched, users can match them according to the above instructions.

6.3.2. Mode switching

User can select different modes according to the following instructions:

LED Mode	Selection method	Indicator and “beep” sound
Standby	<p>Short press the button of LED mask, it would enter the standby state.</p> <ul style="list-style-type: none"> - LED mask would turn off automatically without operation for 5 minutes. - Short press the button of LED mask again to turn off the mask. 	<p>LED mask indicator:</p> <ul style="list-style-type: none"> - Redflashing: Indicates low battery / charging required. - Green flashing: Standby. (Battery power is sufficient to use LED mask.) - Green light: Battery is fully charged. <p>When entering standby mode, the LED mask indicator would light up with a “beep” sound.</p> <p>When powering off, the LED mask indicator would light out with two “beep” sound.</p>
Red+Infrared	Short press the button of remote control to enter the red+infrared light mode, and the LED mask would turn off automatically after 10 minutes.	<p>LED mask: “beep sound”</p> <p>Remote control: the screen would display “R+N”.</p>
RED	Short press the button of remote control to enter the red light mode, and the LED mask would turn off automatically after 10 minutes.	<p>LED mask: “beep sound”</p> <p>Remote control: the screen would display “RED”.</p>
Infrared	Short press the button of remote control to enter the infrared light mode, and the LED mask would turn off automatically after 10 minutes.	<p>LED mask: “beep sound”</p> <p>Remote control: the screen would display “NIR”.</p>
Blue	Short press the button of remote control to enter the blue light mode, and the LED mask would turn off automatically after 10 minutes.	<p>LED mask: “beep sound”</p> <p>Remote control: the screen would display “BLU”.</p>
RED+Blue	Short press the button of remote control to enter the red+blue light mode, and the LED mask would turn off automatically after 10 minutes.	<p>LED mask: “beep sound”</p> <p>Remote control: the screen would display “PURP”.</p>
Standby	Short press the button of remote control, the LED mask would enter standby mode and the remote control would enter “power saving” state after 30	<p>LED mask: two “beep sound”</p> <p>Remote control: the screen would light out.</p>

	seconds.	
<p>Note:</p> <ol style="list-style-type: none"> 1) In any treatment mode, the LED mask would enter standby mode by pressing the button of LED mask. 2) In standby state, user can select treatment mode by short pressing the button of remote control, these modes would be switched in order [Standby - Red+Infrared - Red - Infrared - Blue - Red+Blue - Standby]. 3) In standby state, the LED mask will be turned off automatically without operation for 5 minutes. 4) In standby state, the LED mask will be turned off by pressing the button of LED mask. 5) The LED mask will be turned off automatically at the end of the treatment duration. 		

The parameters of different modes are as follows:

LED Mode	Quantity of LED's	Duration (minutes)	Wavelength (nm)	Power of light (mW/cm ²)
RED+Infrared	60 bulbs of Red 60 bulbs of NIR	10	630, 850	45.5
RED	60 bulbs of Red	10	630	53.2
Infrared	60 bulbs of NIR	10	850	47.3
Blue Light	60 bulbs of Blue	10	460	58.7
RED+Blue	60 bulbs of Red 60 bulbs of Blue	10	630, 460	<u>33.6</u>

7. Care and maintenance

- 1) Store the LED Light Therapy Mask at room temperature in dry conditions. Use the carry bag provided.
- 2) Avoid storing the LED Light Therapy Mask in dusty conditions, in direct sunlight or in damp and humid conditions.
- 3) The LED Light Therapy Mask contains no serviceable parts.
- 4) Before each use, with the device switched off, clean the face mask following the cleaning instructions below.

Cleaning the LED Light Therapy Mask














- 1) DO NOT use any other cleansing products as these may damage the device.
- 2) Clean the device surface with a water-based wipe or damp clean cloth. Stubborn stains can be removed by wiping gently with 70% alcohol, then use a dry and clean cloth to wipe the device.

8. Disposal

DO NOT dispose any part of the LED Light Therapy Mask at a domestic waste facility.

The LED Light Therapy Mask and remote control contains a Lithium-ion polymer battery. For the protection of the environment, please package and return this unit to the manufacturer or their representative at the end of its working life or safely dispose of the device following your local guidelines.

9. Symbols meaning

Symbol	Meaning	Symbol	Meaning
	Batch Code		Serial number
	Refer to instruction manual/ booklet		Type BF Applied Part
	Class II equipment		Caution
	Manufacturer		Manufacture Date
	General warning sign		“WEEE (Waste Electrical and Electronic Equipment)”. The waste products should be handled legally.
IP22	IP Classification		Keep dry
	Keep away from sunlight		Fragile, handle with care

10. Common malfunctions and solutions

- 1) The remote control screen does not light up after pressing a button, and the mask cannot be controlled.

Solution: Check whether the battery isolation tab in the battery compartment of the remote control has been removed. If it has been removed and the remote control still does not work, please check whether the button battery is exhausted. If it is indeed a battery issue, you can contact us for a replacement of the button battery.

- 2) Turn on the mask, the screen lights up after pressing the remote control button, but the mask cannot be controlled.

Solution: Please repair the remote control and the mask.

Pairing method:

- a. Long-press the power button on your device for five seconds, the alternately flashing red and green lights indicate that it is in pairing mode.
- b. Simply press the button on the remote control to complete the pairing process.

- 3) The remote control cannot be charged.

Solution:

- a. Replace the charging cable. If it is indeed a charging cable issue, you can contact us for a replacement of the charging cable. If the problem still cannot be solved, please contact us to replace the device.
- b. Check whether the charging adapter to which you connect the unit is live or whether the voltage indicated on the unit corresponds to the local mains voltage.

11. EMC Statement

- 1) LED Light Therapy Mask needs special precautions regarding EMC and need to be installed and put into service according to the EMC information provided in the accompanying document;
- 2) Portable and mobile RF communications equipment can affect LED Light Therapy Mask.

Warning:

- 1) Don't 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.
- 2) Use of accessories, transducers and cables other than those specified or provided by the manufacturer of LED Light Therapy Mask could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.
- 3) Use of LED Light Therapy Mask 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.
- 4) Do not expose the device to the EM emitters, including but not limited to: radio-frequency identification (RFID) readers, security systems (e.g., metal detectors or electronic article surveillance (EAS)), wireless power transfer (WPT), and 5G cellular signals.
- 5) Portable RF communication 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 [ME EQUIPMENT Or ME SYSTEM], including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
- 6) When functions or performance are lost due to EM disturbances, user should shut down the device and then use it again after being away from the interference source.


12. Warranty and special offers information


We will make available on request circuit diagrams, component part lists, descriptions, calibration instructions, or other information that will assist SERVICE PERSONNEL to repair those parts of ME EQUIPMENT that are repairable by SERVICE PERSONNEL.

- 1) Standard warranty and return policy

Every original LED Light Therapy Mask comes with a 1-year limited warranty and a 56-day no-questions-asked return service.

If you have any product inquiries or need assistance, please contact us at:

 customerservice@beauty.com

 +86 13253413226

 www.beauty.com

- 2) Value-added extended warranty service

To provide you with a more comprehensive after-sales experience, we offer a value-added service that can be purchased on our official website: an additional 1-year of warranty and a 90-day no-questions-asked return service. The price for this value-added service is \$30 or the equivalent in local currency.

3) Free activation of additional benefits

Now, you can immediately get the above-mentioned value-added services for free! Simply scan the QR code via Whats App or contact us through email and our official website to activate. once successfully activated, you will receive a total of 2-year of warranty service, 146 days of no-questions- asked return service, and the opportunity to enjoy one-on-one skincare guidance from our expert professionals, as well as a chance to try out LED Light Therapy Mask's new products for free.

13. Troubleshooting

We will make available on request circuit diagrams, component part lists, descriptions, calibration instructions, or other information that will assist SERVICE PERSONNEL to repair those parts of ME EQUIPMENT that are repairable by SERVICE PERSONNEL.



Warranty Card
Warranty period from the date of purchase
Name:
Address:

Email:
Purchase date:
Order number:

(*means required,and the other information means optional provided)

Note please!

Respects every customers' privacy. We will never share this information to the 3rd part persons or companies and we will never send any advertisements without your permission.

14. Contact information

Shenzhen Rainbow Technology Co.,Ltd

Address: 5th floor, Building C, Fenda Technology Innovation Park, Xixiang, Baoan District
Shenzhen Guangdong, CN 518000

Tel: +86-135-9032-9742

Fax: +86-755-23114522

E-mail: layla@rainbowdo.com

Annex I. Guidance and Manufacture's Declaration

- The LED Light Therapy Mask is applicable for use in all establishments (included home healthcare 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.
- No Essential Performance as defined by manufacturer.
- The Basic Safety of the LED Light Therapy Mask is as following: Deviation from normal operation that poses unacceptable risks to the patient or operator.
- ⚠ Warnings: The use of LED Light Therapy Mask 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.
- The use of accessories, transducers and cables other than those specified, with the exception of the accessories, transducers and cables provided by the manufacturer of the LED Light Therapy Mask as replacement parts for internal components, may affect compliance of the ME equipment or ME system with the requirements of Clause 7 (EMISSIONS) and Clause 8 (IMMUNITY).
- ⚠ Warnings: 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 LED Light Therapy Mask, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
- Guidance and manufacturer's declaration
The following cables must be used to meet electromagnetic emissions and immunity requirements:

Table 1-1 Sample cable

No.	Name	Cable length (m)	Shield (Yes or No)	Remarks
1.	Power supply cable	1.5±0.3	No	/

Table 1-2 Electromagnetic emission

TABLE 1-2-1 Guidance and manufacturer's declaration -electromagnetic emissions

Guidance and manufacturer's declaration - electromagnetic emissions			
Emissions test		Compliance	
RF emissions CISPR 11		Group 1	
RF emissions CISPR 11		Class [B]	
Harmonic emissions IEC 61000-3-2		Class A	
Voltage	fluctuations/ flicker	Comply	

emissions	
IEC 61000-3-3	

TABLE 1-2-2Guidance and manufacturer's declaration - electromagnetic immunity

Guidance and manufacturer's declaration - electromagnetic Immunity		
Immunity Test	IEC 60601-1-2 Test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	±2kV, ±4kV, ±8kV and ±15kV air ±8kV contact	±2kV, ±4kV, ±8kV and ±15kV air ±8kV contact
Electrical fast transient/burst IEC 61000-4-4	±2kV for a.c. power lines	±2kV for a.c. power lines
Surge IEC 61000-4-5	±0.5kV and ±1kV for a.c. power line(s) to lines	±0.5kV and ±1kV for a.c. power line(s) to lines
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% UT; 0, 5 cycleg) At 0°, 45°, 90°, 135°, 180°, 225°,270°and 315° 0% UT; 1 cycle and70% UT; 25/30 cycles Single phase: at 0° 0% UT; 250/300cycle	0% UT; 0, 5 cycleg) At 0°, 45°, 90°, 135°, 180°, 225°,270°and 315° 0% UT; 1 cycle and70% UT; 25/30 cycles Single phase: at 0° 0% UT; 250/300cycle
Power frequency magnetic field IEC 61000-4-8	30A/m	30A/m
Conducted RF IEC61000-4-6	3Vrms 0,15 MHz – 80 MHz 6Vrms in the ISM frequency band	3Vrms 0,15 MHz – 80 MHz 6Vrms in the ISM frequency band

Radiated RF	10 V/m	10 V/m
IEC61000-4-3	80 MHz – 2,7 GHz	80 MHz – 2,7 GHz
NOTE U _T is the a.c. mains voltage prior to application of the test level.		

TABLE 1-2-3 Guidance and manufacturer's declaration - electromagnetic immunity

Guidance and manufacturer's declaration - electromagnetic Immunity							
Radiated RF IEC61000-4-3 (Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment)	Test Frequency (MHz)	Band (MHz)	Service	Modulation	Modulation (W)	Distance (m)	IMMUNITY TEST LEVEL (V/m)
	385	380 – 390	TETRA 400	Pulse modulation 18 Hz	1,8	0.3	27
	450	430 – 470	GMRS 460, FRS 460	FM ± 5 kHz deviation 1 kHz sine	2	0.3	28
	710	704 – 787	LTE Band 13, 17	Pulse modulation 217 Hz	0,2	0.3	9
	745						
	780						
	810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	2	0.3	28
	870						
	930						
	1720	1 700 – 1 990	GSM 1800; CDMA 1900;	Pulse modulation 217 Hz	2	0.3	28
	1845						
	1970						

			GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS				
	2450	2 400 – 2 570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	2	0.3	28
	5240	5 100	WLAN 802.11 a/n	Pulse modulation 217 Hz	0,2	0.3	9
	5500	–					
	5785	5 800					

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.