

## User Manual

Thank you for using **Ultralasers** lasers, please read the User Manual carefully before operating the lasers.

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### **1. Safety Precautions**

- 1-1 Please ensure the shell of the laser head is similar to room temperature before turning on, to prevent differences between temperatures that may be harmful to the device.
- 1-2 Laser beams are extremely dangerous, to ensure the safety of you and others, do not point the beam at one's body or flammable objects. Do **NOT** point the beam directly at one's eyes.
- 1-3 This product should be used in a dry, clean and static-free area. Avoid heat, damp and shock.

### **2. Installation Notices.**

- 2-1 Please place the laser head and the power supply on a heat-sink. (e.g. metal board.)
- 2-2 This product has an air-cooled system, please ensure that there is 5cm ~ 10cm space between the laser head and an object, to avoid overheating.
- 2-3 When this product and other parts are installed inside an instrument, please ensure that there is enough ventilation room for the air flowing freely in and out of the instrument.
- 2-4 If putting ventilation fan within an instrument, please keep the air flow of the instrument and that of the laser head are in the same direction.

### **NOTE:**

It may lead to damages to the product if user does not follow above instructions.

### **3. Product Knowledge**

- 3-1 Power switch placed in "OFF" is turned off. "ON" is on.
- 3-2 Key position placed in "OFF" is turned off. "ON" is on.
- 3-3 AC input, voltage of this product is 50-60Hz, AC 90-260V
- 3-4 Modulated signal access port can be used for TTL or analog modulation; as for the access to TTL signal, red for positive, white for negative; as for the access to analog modulation, red for positive, white for negative.
- 3-5 Work Status Indicators
- 3-6 Laser head power connector.
- 3-7 Power supply connector.
- 3-8 Laser aperture.

### **4. Operation**

- 4-1 Connect the wires from the laser head to the power supply, and secure the screw.

4-2 Remove the sticker from the front cap of the laser head. (To avoid the beam from harming others, before starting, a rather dark metal object should be placed in front of the laser head to absorb the beam.)

4-3 Plug in the power supply to the outlet.

4-3-1 For laser with FDA power supply, please plug in the key and insert the interlock plug (if necessary) first before turning on the power (see pictures below)



4-3-2 For laser with OEM-40B power supply, please simply connect the switch power to the driver board, after inputting analog signal (DC 0~5V), the laser will be working properly.

4-4 Turn on the power switch; the "Power" indicator should turn red.

4-5 Turn on the key switch, the "Laser" indicator should light up in approximate 3~5 seconds (for some models, there is no delay!), laser will start operating; After 10 minutes warm-up under room temperature, the product will be operating stably.

4-6 If the "Alarm" indicator lights up, then the user should turn off the power of the laser immediately, when the laser cool down, restart the laser and the product will operate normally.

4-7 When need to access to TTL and analog modulation, please refer to "**Modulation Instruction**"

4-8 To turn off device: turn off the key switch, turn off the power supply, and then pull out the plug.

4-9 Re-attach the sticker back on the laser aperture.

## 5. Warranty

5-1 This product has a warranty of ONE year after the date of purchase.

5-2 Signs of destruction, self-repair, disobeying the instructions, broken in appearance or mismatch of records are **NOT** included in the warranty

5-3 Service is only available within the warranty limit and by normal operation of the device.