

# Operation Manual

## *Erbium doped-Fiber Amplifier*



Keep this manual, read and follow the instructions before your safe operation.



## ■ Operating warning and precautions

- Equipment operators must strictly abide by relevant safety regulations and preventive measures;
- Operators should regularly inspect the equipment and ensure that all relevant personnel comply with safety regulations;
- Because laser can damage eyes and skin, please avoid laser entering eyes or irradiating skin;
- Note that laser can cause damage to retina and conjunctiva;
- Do not touch the end face of the optical fiber directly with your hands, to avoid enter the dust which will affect the product characteristics;
- Please keep the equipment away from the humid environment of high temperature and pressure;
- Dust-proof and static-proof clothes are recommended when operating equipment to avoid the impact of dust and static electricity on products.



## ■ Products Description

Box optronics' erbium-doped fiber amplifier (EDFA) is a series of products dedicated to laser signal amplification in optical fibers, Which with high gain and low noise, supports PC software control, and is compact and easy to integrate. We can customzied desktop or rack packaging according to customer needs. Can be used in optical communication, fiber laser, fiber sensing, teaching and scientific research and other fields.

EDFA is divided into Pre-amplifier and Power amplifier.

Pre-amplifier(PA): used to amplify optical signals in the range of -45~-25dBm, with a typical 35dB gain;

Power amplifier: Booster-Amplifier(BA), used to boost the power of optical signals in the range of -6~+3dBm, the maximum output power can reach 27~37dBm,

High power amplifier(HP-BA): used to boost the power of optical signals in the range of -6 ~ + 10dBm, the maximum output power can reach 30 ~ 37dBm,

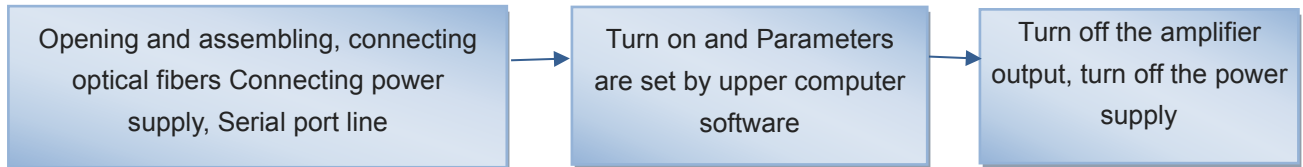
- High power;
- Low noise;
- High reliability;



## ■ Standard accessories

1. Power adapter 1pc;
2. Operation manual 1pc;
3. Test report 1pc.

## ■ Operational procedures and procedures



### Step 1: Opening and assembling:

Please check whether the fittings are complete before assembling.

### Step 2: Connect the optical fiber jumper and power adapter:

Insert the power line into the power line socket, and connect the power supply and the communication data line of the upper computer. The signal light is connected to the input end of the amplifier through the optical fiber jumper, and the amplified signal is output through the optical fiber jumper at the output end of the EDFA.

### Step 3: Turn on the EDFA:

Turn on the activation switch on the EDFA module. Note: at this time, the working current and gain value are the parameters set by the upper computer when the machine was shut down last time. If it needs to be adjusted, the appropriate power or pump current can be set through software modification;.

### Step 5: Shut down:

Turn off the power switch and disconnect the power adapter.

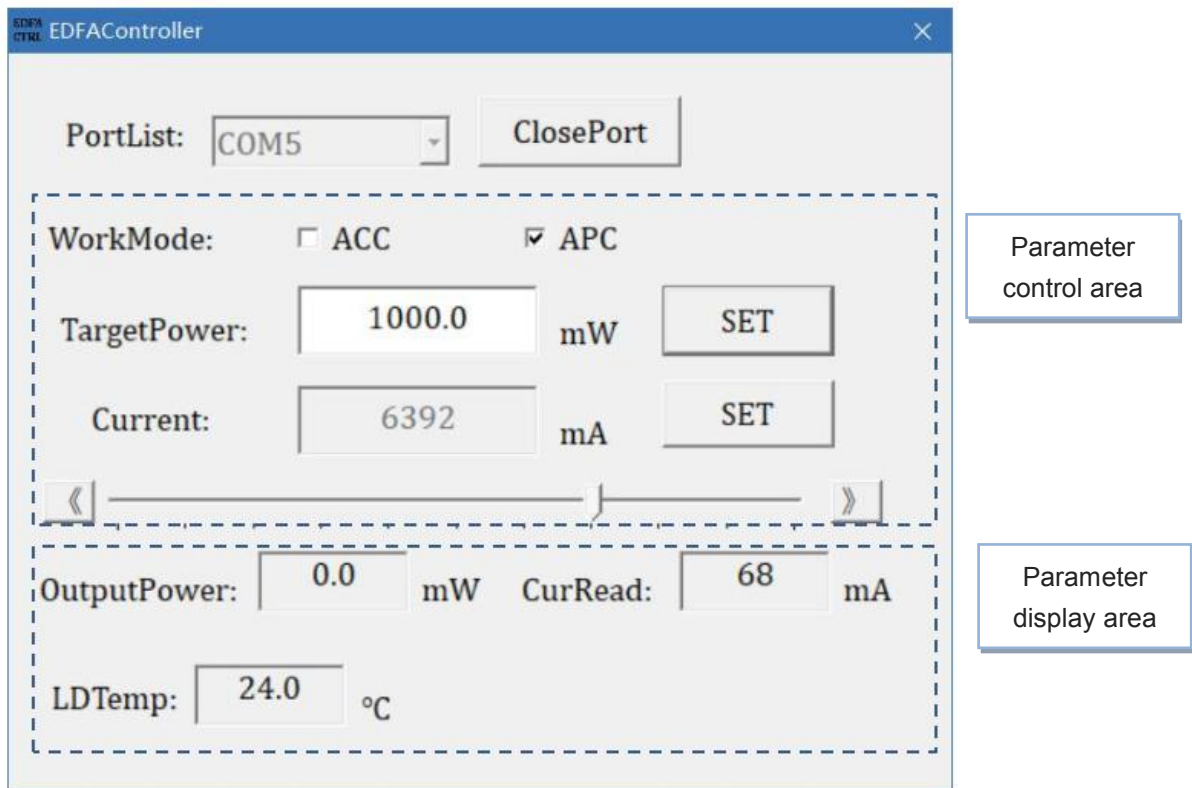
## ■ Description of working mode and control interface

1. The front panel is as shown in the figure below, which are input and output optical fiber, amplifier output activation switch, upper computer communication interface (DB 9) and power line (DC 5V).





2. The upper computer software displays the following information: working mode, output signal optical power, pump laser current, temperature monitoring status. After starting the upper computer software, select the correct serial port number in the serial port list, and click the openport button to open the serial port.



3. This fiber amplifier standard model supports two working modes: ACC mode and automatic power control APC mode: you can switch between the two working modes through the workmode option. When switching, please turn off the active mode first Switch. (\* small signal amplifier module only supports ACC mode).

4. In ACC mode, input the pump current value in the current window, click the set button, or directly drag the left and right sliding bars to set; Set the pump current value; in APC mode, input the target optical power value in the target power window and click the set button;

5. When the active key switch is on, the output power of the parameter monitoring area will display the current real state after the setting is effective curread displays the current pump current and ldtemp displays the internal temperature;

6. When shutting down, first click closeport to close the serial port, and then close the software.



## ■ Notes for operation

1. This desktop EDFA uses AC power supply, working voltage AC 220V.
2. When starting, first confirm that the switch is off, then connect to 220V power supply. When shutting down, first turn off the front panel Active switch, then turn off the rear panel power after the indicator lights go out.
3. Fiber optic connector should be wiped clean by dust-free mirror paper before connection, and observed by fiber optic end-face detector. After confirmation of cleaning, it can be connected through flange, otherwise the end-face of fiber optic connector may be burned when laser is connected. The flange must be connected without light.
4. The bending diameter of optical fibers should not be too small. The minimum bending diameter should be about 30 mm, otherwise it will lead to larger bending loss.

## ■ Quality Assurance and After Sale

### 1. Product Quality Guarantee Period

From the date of purchase, customers can ask the manufacturer to replace the parts or the whole machine free of charge within 2 years if the product has quality problems (non-artificial); after 2 years, the manufacturer will provide paid maintenance service.

### 2. Product Guarantee Scope

During the free warranty period, free maintenance or replacement service will be provided for the failure caused by product quality. During the warranty period, the company will reserve the right not to provide free maintenance under the following circumstances:

- (1) The product is damaged or damaged by natural or environmental factors (electric shock, dust);
- (2) Damage caused by incorrect operation of the product;
- (3) The product has obvious man-made damage;
- (4) The product is disassembled, refitted or repaired without the authorization of the company;
- (5) The quality assurance label sticker of the light source housing is altered or incomplete;
- (6) Damage or loss of the product during transportation.