USER MANUAL

ILX500C & IPX5002B

OPTICS FOCUS INSTRUMENTS CO., LTD. OPTICS-FOCUS.COM



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1. Overview

1.1. Main Features and Application Sectors of the Product

The ILX500C xenon lamp source has a wide spectral range, covering ultraviolet, visible and near infrared light, often used for excitation of fluorescence spectrum, lighting of biological and medical imaging research, etc.; because its color temperature is close to the sun, it can also be used to simulate the sun, serving as an ideal light source for infrared detection, ultraviolet spectrophotometer, chromatograph ultraviolet detector, fluorescence photometer and for other measuring instruments in areas such as physics, biochemistry, medicine and pharmacy, and environmental protection.

The IPX5002B xenon lamp source has a special power supply for the bulb of its model, which can provide a high stable DC power supply to ensure that the xenon lamp can emit stable radiation light.

Model	ILX500C
Bulb Life	1000h
Bulb Model	XHA500/H (domestic)
Spectral Range	0.2µm-2.5µm
Color Temperature	6000K
Bulb Luminous Flux	14500lm
Bulb Luminous Intensity	1450cd
Bulb Luminance	40000cd/cm ²
Color Render Index (Ra)	94
F/#	$F/2-F/\infty$
Optic Elements	Metal-Reflector & Fused UV Silica Lens
Cooling form (Cooling)	Air cooling (from bottom to top); Fan (From bottom to Top)
Model	IPX5002B Xenon Lamp Power Supply
Supply voltage (Supply)	AC220V±10%/50Hz
Lamp Power	500W
Current Out	22A~30A
Ignition Voltage	30kV±10%
Current Stability	0.5%
Current Drift	±0.3%/h

1.2. Product Model, Specification and Performance Parameters

500W xenon lamp model, performance, and specifications (Table 1)



1.3. The Spectrum Distribution of Xenon Lamp Source

The ILX500C Xenon lamp source radiates a continuous UV-Vis-NIR spectrum with the following spectral distribution:



Typical distribution diagram of xenon lamp emission spectrum (Figure 1)

1.4. The Basic Principle of Xenon Lamp Source Light Path

The ILX500C lamp source adopts JGS1 high quality ultraviolet quartz double lens, which has high transmittance for ultraviolet and near infrared, and makes full use of energy.

The ILX500C lamp source offers a wide range of adjustable focal lengths to suit different focal positions, covering from approximately parallel light to F/2. Loosen the knurled screw of the focusing lens barrel, and pull the lens group along the direction of the lens barrel to realize focusing. When the focus adjustment is completed, knurled screw can be tightened for fix.





ILX500C Light Source Light Path Diagram (Figure 2)

1.5. Basic Working Principle of Xenon Lamp Power Supply

IPX5002B xenon lamp power supply transforms the 220V AC into the appropriate DC voltage, provide the trigger with trigger voltage through the internal trigger circuit to light the xenon bulb, and provide a stable voltage and current to maintain the normal work of xenon lamp.

2. Product Appearance and Size

2.1. Product Appearance Drawing





Appearance drawing of ILX500C xenon lamp light source (Figure 3)

Appearance drawing of IPX5002B xenon lamp power supply (Figure 4)



32.5

360

2.2. Product Dimension Drawing



ILX500C xenon lamp source overall dimension drawing (Figure 5)



3. Precautions for Transportation and Storage

3.1 During transportation the xenon lamp bulb must be removed, and the bulb shall be placed with flexible packaging at safe position in the packing box to prevent damage in the process of transportation. And the bulb installation point in the xenon lamp chamber shall be prepared with special plastic fixed rod;

3.2. This instrument is photoelectric precision instruments, and its packing should be waterproof, moisture-proof, vibration-proof, and considering against falling;

3.3. This instrument shall be stored in a dry environment with normal room temperature.

4. Use and Operation Procedures, Methods and Attentions

4.1. Wiring Method

IPX5002B xenon lamp power supply input AC power supply is 220V, and is a single-phase three-wire system. The protective grounding terminal shall be connected to the grounding wire to protect the safety of the equipment and the users.

The power supply wiring of ILX500C xenon lamp source just need a docking with a 5-core cable. The external view of the 5-core power socket and the core number wiring diagram are as follows (Figure 7):





Xenon lamp 5-core power socket wiring diagram (Figure 7)

Attention: The power cord for triggering the xenon lamp must be plugged in and connected firmly without loosening!!!

4.2. Use of the Bulb

4.2.1. Removal of the Xenon Bulb

4.2.1.1. Precautions for Xenon Bulb Removal

▲ Please make sure the power supply is off, power supply cable has been disconnected, and lamp chamber has cooled to room temperature before operation!!!

▲ The xenon bulb has the possibility of explosion, please replace, remove, or take it with gloves and protective mask able to protect you, don't bare skin, or make direct contact with the glass part of the bulb with bare hand!!!

▲ Please do not stretch, press, or twist the bulb, lest it cause burst!!!

▲ Please prevent metal spherical mirror from pollution so as not to affect the actual output energy!!!

▲ Please do not hold the glass part of the bulb, but to hold the metal part of the bulb; do not hold one end of the bulb and rotate the screw at the fixed end, so as to avoid the bulb body stress!!!

4.2.1.2. Xenon Bulb Removal Procedures and Methods:

A. Unscrew the M3 cylinder socket head screw and screw sleeve (6 groups) on the side



plate of the lamp source, and remove the side plate, so that you can see the internal structure of the xenon lamp chamber. Xenon bulb stands in the lamp room, with cathode downward, and anode upward (before installing the bulb for the first time, in the lamp chamber there is a plastic rod in the position where a xenon bulb is placed, you can use it as a xenon lamp bulb to practice the operation), as shown in Figure 8:



Xenon Bulb Removal Procedure A (Figure 8)

B. Hold the metal part of the bulb anode (upper end of xenon lamp) with the hand, and then loosen the M4 hex socket head cap screws (2 pieces) fixing the bulb cathode (lower end of xenon lamp), and then carefully pull out the xenon bulb from the lamp holder, as shown in Figure 9:





Xenon Bulb Removal Procedure B (Figure 9)

C. Hold the metal part of the positive electrode (upper end of xenon lamp) of the bulb with your hand, and then loosen the M4 hex socket head cap screw that fixes the positive electrode (note: do not loosen the screw that connects the positive electrode to the electrode plate), and detach the positive electrode from the top of the bulb, as shown in Figure 10:





Xenon Lamp Removal Procedure C (Figure 10)

4.2.2 Installation of Xenon Bulb

Xenon bulb installation order is opposite to the removal order of the xenon bulb.

Attention:

▲ Please make sure the power is off, and the power cable has been disconnected before operation!!!

▲ Please distinguish the positive and negative electrodes of xenon bulb: the electrodes imported from Germany OSRAM with original packaging are clearly marked, i.e. the positive electrode mark "+" and the negative electrode mark "-"; some domestic xenon bulbs may not have obvious marks, at this time, it can be visually observed that the end connected with the thinner electrode is the negative electrode, and the thicker end is the positive electrode, as shown in Figure 11.





Differentiation diagram for positive and negative electrodes of xenon lamp bulb (Figure 11)

▲ The xenon lamp has the possibility of explosion, please replace, remove, or take it with gloves and protective mask able to protect you, don't bare skin, or make direct contact with the glass part of the bulb with bare hand!!!

▲ Don't stretch, press, twist the bulb so as not to cause burst!!!

▲ If the xenon lamp glass shell is stained with hand sweat, oil, or dust, absorbent cotton ball can be used to dips in anhydrous alcohol to do cleaning, lest the pollution affect the light transmittance and bulb life!!!

▲ Be careful, and don't pollute the metal spherical mirror so as not to affect the actual output energy!!!

▲ Please connect the bulb and power supply in the following order: first connect the connecting cable to the bulb, then connect the other end of the cable to the power supply, afterward connect the power cord of the xenon lamp power supply, and finally light up the xenon lamp!!!

4.2.3. Lighting of the Xenon Lamp

A. Connect the bulb and the power supply with a 5-core cable, and tighten the thread at the joint;

B. Connect the power supply to the 220 V mains supply with the power cord;

C. Open the power supply on the front panel of the power switch, the lamp lit up



immediately;

D. When it's needed to adjust the current, please turn the knob directly; turn clockwise, and the current will increase, counterclockwise, decreases; the current value is displayed on the ammeter.

Attention:

▲ The cable must be fastened, and the thread screw rear the joint must be tightened before trigger the power supply!!!

▲ Please confirm the bulb installed in good condition, and it is strictly prohibited in the lamp chamber to turn on the power switch under the no-load condition (not installed bulb) !!!

4.3 Introduction and Usage of the Operation Panel





IPX5002B xenon lamp switch and power supply operation panel (figure 12)

Power: power switch; red light indicates on, and dark indicates off;

Current Adjustment: current adjustment knob, range: 22 A \sim 30 A, where "min" is the minimum and "max" is the maximum;

Ammeter: current indication, unit: A.



4.3.2. Xenon Lamp Light Source Operation Panel Introduction and the Use Method

A. In order to increase the overall output light energy of the light source, a metal spherical mirror is placed behind the xenon lamp to collect light energy from behind the xenon lamp. The metal reflector can be adjusted through the two fine adjustment handwheels for pitch adjustment and tilt adjustment in Figure 13, and can be locked after adjustment.

After the lamp is lit, two light spots can be seen, one is the image directly formed by the light bulb, and the other is the image formed by the reflector reflecting light. If a light screen is placed at the light outlet, or simply a piece of paper is placed to receive the light spot, the former light spot is in the center of the light outlet, and the position of the latter light spot is adjustable. The height of the light spot can be adjusted through pitch adjustment, and the lateral position of the light spot can be adjusted through tilt adjustment. Adjust the position of the latter light spot to the center of the light outlet to coincide with the former light spot, which indicates that the position of the metal reflector is adjusted properly.

B. In order to meet the requirements of different focus position, the xenon lamp light source can be adjusted within a wide range of focal length, namely from approximate parallel light to F/2. In operation, loosen the knurled screw on the focusing lens barrel shown in Figure. 13, and pull the lens group along the direction of the lens barrel to realize focusing. When the focus adjustment is completed, knurled screw shall be tightened for fix.







ILX500C Xenon Lamp Light Source Operation Panel (Figure 13)

4.4. Xenon Lamp Power Fuse Replacement Method

If the xenon lamp indicator is not lit after the power on, and the bulb is not lit, then it needs to check whether the insurance fuse is damaged. Follow these steps (see Figure 14):

A. Pry the fuse tube box of power socket with a slotted screwdriver,

B. Remove the fuse at "a" in the figure, and observe whether the metal wire is disconnected.

If it is disconnected, it needs to be replaced. The replacement method is as follows:

C. Take out the spare insurance tube at "b" in the figure, and install it in "a",

D. Install the fuse tube box in the original position.



Xenon lamp power fuse tube replacement diagram (Figure 14)

If the fuse tube at position "a" is not damaged, please install it back in the original position and contact our company. We will solve the problem for you in time.

5. Safety

The use of xenon lamp light source has five major safety hazards, namely: radiation, xenon lamp rupture, ozone, electric shock and heat.

5.1. Radiation:

The high intensity ultraviolet radiation of Xenon lamp may damage the cornea, lens and retina of your body, therefore:

▲ Please don't observe the xenon lamp through the lens or vent directly after the xenon lamp is lit without wearing protective glasses!

▲ Please don't expose the skin to xenon lamp for a long time, and don't open the lid of the light source and side panel when using!

5.2. Xenon Lamp Rupture:

Xenon lamp is ultra-high pressure discharge lamp, and the lamp pressure is high before and during work, so:

▲ In the absence of safety tools and adequate protection, please don't touch the xenon lamp!

 \blacktriangle In the process of instrument installation or movement, please don't have pressure or torque on the xenon lamp!

▲ Don't touch the xenon lamp bulb! 5.3. Ozone:



Because the radiation of ultraviolet form the xenon lamp can ionize the oxygen in the air to produce ozone, the xenon lamp should be used in a well-ventilated environment to prevent the staff from lack of oxygen, and please use it away from ozone pollution-susceptible materials! 5.4 Electric Shock:

At the moment when the xenon lamp is lit, a high voltage of 30 KV is produced, and the instantaneous current of the lamp is more than twice the rated current, and easy to cause electric shock, therefore:

▲ The xenon lamp and wire interface should be leveled off and smooth, with good connection, to prevent contact resistance!

▲ At the moment of the lightening, please don't touch the cables connected to the bulb and power supply shell, lest produce danger!

▲ The equipment shall be reliably grounded. Power supply shall not be used until strict grounding is completed, in order to protect the safety of equipment and the operator!

▲ Under the condition of thunder and lightning weather, it is best to work the xenon lamp in room with strong lightning protection!

5.5. Heat:

Xenon lamp will become very hot in a few minutes after it's been lightened, and its high temperature can still remain for more than 10 minutes, so:

▲ Within 10 minutes after the xenon lamp is closed, don't pull out the power cord or cut off the power supply. The power supply and lamp chamber need to cool and will automatically shut off after 10 minutes!

▲ During using or before sufficient cooling, please don't open the lid of the bulb and the side panel or contact with the outer wall of the bulb!

 \blacktriangle Don't affix any cover on the bulb or power supply, to maintain a strong the heat dissipation!

▲ Don't make the bottom of the xenon lamp too close to the ground or plug the air inlet at the bottom of xenon lamp, lest affect the xenon lamp heat dissipation!

6. Product Maintenance

If the product fails, please contact us, we will provide you with a year of free repair service. **ATTENTION:**

When sending the instrument back to repair, you are gently suggested to use the original packing box, and remove the xenon lamp bulb—replace the bulb with a fixed rod, otherwise damage may be incurred in transit, and the resulting losses will be borne by you!

Notes:

The following conditions are not covered by the warranty, and you will have to pay for the repair:

A. Man-made damage or damage caused by improper use;

B. The customer repair it by self or entrust others to repair without recognition of our company, and it results in damage to the product;

C. From the day the user received the product, more than one year—warranty range of products has past.