

Sciencetech 75W Hg
Light Sources

User's Manual

Version 1.1

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1. Introduction

St-series mercury lamps are stabilized by the geometry of the gas discharge, resulting in an accurate position of the arc. As a result, the noise is very low - in the order of 0.1%. The most favorable values of drift and noise are achieved when only the middle part of the light arc is used as the light source.

The normal operating life for all St-lamp types is 1000 hrs with a reduction of the output of max. 50%. The normal useful operating life can be between 2000 to 4000 hrs. St-lamps should be mounted with the base down and an inclination from the vertical of less than $\pm 20^\circ$. In DC operation, the lamp must be connected so that the anode is at the bottom.

2. Technical Specifications – Power Supply

POWER SUPPLY Model 500-75ST

Input:	110-115 Vac or 220-230 Vac (selectable), 50 to 60 Hz
Power:	0-100W
Operating Voltage:	0-approx. 88 V
Operating Current:	0-1A (max. current range +/- 5%)
Pre-Ignition Voltage:	> 80 V
Ripple at Maximum Current:	< 1 mV
Stability after Warm-Up:	0.05%
Line Voltage Regulation:	0.02% current variation for 5 V line change
Display:	digital LCD
Dimensions:	5.8" x 9.5" x 14.4" (12.9 cm x 20.9 cm x 31.7 cm)
Weight:	9.86 kg

IGNITER Model 500-IG75ST

Input Voltage Supply Line:	80-120V
Nom. Ignition Voltage:	800V (Pulses 1KHz)
Dimensions:	3.5" x 2.1" x 5.3" (10.5 cm x 5.1 cm x 14.8 cm)
Weight:	0.6 kg

3. Shipping and Unpacking

3.1 Unpacking

The instrument is packaged in such a way as to minimize damage during transport. If the package is damaged or if after unpacking any signs of damage become apparent, a claim should be filed with the carrier immediately.

If the instrument must be returned, contact Sciencetech Inc. for approval prior to shipping. A full description of the reason for return should be included.

Inspect the exterior of all the units of the light source system for any noticeable defects. If any are present, contact Sciencetech Inc. immediately.

3.2 Included Components

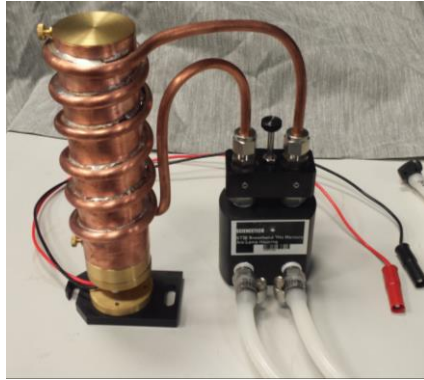
The packing box should contain the following components:

- Sciencetech ST75 lamp housing
- Sciencetech 500-75ST power supply and 500-IG75ST Igniter
- Power supply cable
- Lamp fan cable
- Requested bulbs

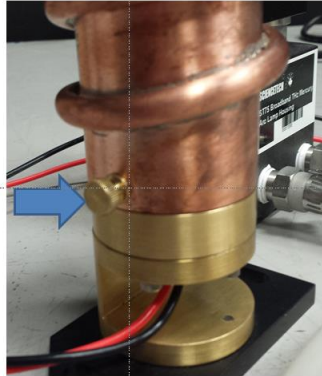
4. Installation and Alignment

4.1 *Bulb Installation Procedure*

The 75w Hg Light source is an ST75 low pressure mercury lamp. The base, socket and shroud that hold the lamp are pre-assembled. The only part to install is the bulb itself, which is shipped separately.



- a) Remove the lamp shroud carefully by removing the brass thumbscrew at the bottom front and sliding the shroud up over the socket.



- b) Note that one socket pin is labelled with a red dot (+ve) and one with a black dot (-ve). In the next step, the +ve and -ve pins on the bottom of the lamp must line up accordingly with the socket pins polarity.



- c) Gripping the metal portion of the lamp base, insert it as shown by carefully pushing down and then rotating clockwise. Note the orientation of the numbers on the lamp base with respect to the black anodized aluminum socket baseplate. This shows the lamp with correct polarity mounting.



- d) Very carefully replace the copper lamp housing and secure it with the brass screw at the bottom as shown in step (a) above.

4.2 Lamp removal

- a) Remove the copper lamp shroud by unscrewing the one screw holding it (see 4.1 (a)).
- b) Release the lamp by gripping the metal at the base, pushing it **down** and rotating **counter clockwise**.
- c) Always store the lamp in its dedicated box, and avoid touching the quartz bulb.



5. Operating Instructions

Before operating the lamp the user has to make all cable connections (refer to figures below).

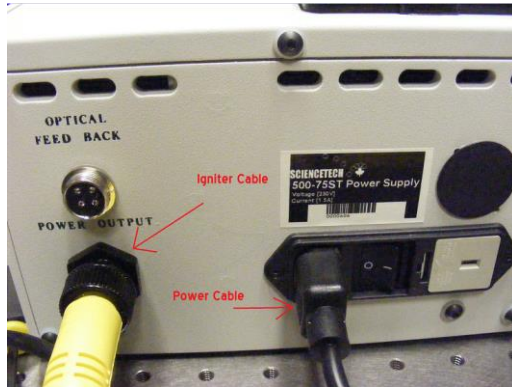


Figure 1



Figure 2



Figure 3

- 1) Connect the yellow power cable (Figure 1) to the igniter (Figure 3).
- 2) Connect the lamp housing leads into the igniter (Figure 2). Red to red and black to black.
- 3) Plug the power supply into your mains power line using the proper cable type (Figure 1).
- 4) Warning please verify that the Schurter module on the back of the power supply is set to the AC voltage you are using (120VAC or 220VAC)

To ignite the lamp, set the current dial to about 50% its base value and, ensuring all the connections are made properly, turn the power switch (Figure 1) to the ON position (-). When powering off the lamp, turn the current dial down to zero.

The igniter will generate 1 KHz HV pulses to ignite the lamp. Normally, the ST75 arc lamp ignites within 3-5 seconds. During the ignition process the display will show 110-130V. As soon as the lamp ignites the display will show 18-22 V. Then the voltage will gradually grow to its working value of 77-95 V (this takes typically 25-35minutes). Once the lamp has stabilized, the

user may adjust the lamp power to the desired value by using the CURRENT control knob.

IMPORTANT:

NOTE 1: After switching the lamp off, it remains hot. It is recommended that you leave the cooling circuit on for about 5 more minutes to cool down the housing.

6. Replacement of Fuses

6.1 External Fuses

To access the external fuses (there are two each 250 Volts and 3.2 Amps Slo Blo), carefully pry the grey plastic fuse drawer out of the black Schurter module on the back of the power supply with a small slot screwdriver. See image below:



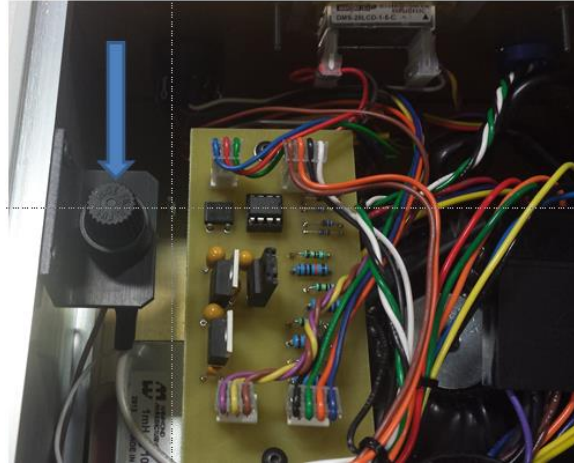
Replace any blown fuses with the same type only. Four spare fuses have been provided with the power supply.

6.2 Internal Fuse

To access the internal fuse (250Volts, 1.5 Amps, Fast Blo), first remove slide the cover off the power supply carefully by first removing the three screws that hold it on at the back. **The cover cannot be totally removed as it is tethered by a cable to the fan that is hardwired inside.** See the image below:



The Internal Fuse holder is a black plastic device on the side of the case just under the cover. See the image below:



Replace a blown fuse with the same type only. Two spare fuses have been provided with the power supply.

7. **Important Notice**

All electrical instruments may be dangerous if not handled in accordance with proper instructions and common precautions. Sciencetech Inc. will not be responsible for any damage caused by such units if instructions herein are not followed and repairs are not attended to or performed by company-trained or licensed personnel. All instruments should be operated with proper grounds on power line and should not be opened or handled as to electrical or electrically operated components without being switched off and disconnected from power receptacle.

Sciencetech Inc. reserves the right to make adjustments or improvements in its product without notice and without obligation to subsequent purchasers and without being required to make corresponding changes or improvements in products theretofore manufactured and sold.

We have done our very best in the manufacture and packing of this material. The transportation carrier is now responsible for delivering it to you in its original good condition, since all purchases are FOB London.

If the shipment is NOT delivered in good order and in accordance with quantity shown on Bill of Lading or Packing Slip, have the shortage or damage noted by the Carrier on both the delivery receipt and the freight bill, or by special form provided by United Parcel or the Post Office.

The Interstate Commerce Commission has ruled that Transportation Companies will not honor any losses or shortage claims unless exceptions are noted on the freight bill at the time of delivery. It is the buyer's responsibility to make a complete inspection immediately upon receipt of purchased goods.

If you accept shipment from the Transportation Carrier short of what is enumerated on the Bill of Lading – or in damaged condition – without having proper notation made by the Carrier, you do so at your own risk.

If bundles or crates are in apparent good order, but on opening contents are found to be damaged, call Carrier for adjuster to view same and have the Transportation Company/United Parcel/Post Office mark the freight bill or packing slip relative to such concealed damage. **Make your claim at once for the Transportation Company/United Parcel/Post Office has a limited time for presentation of claims.**

We are willing to assist you in every possible manner in collecting claims for loss or damage on this shipment, but this willingness on our part does not make us responsible for filing or collecting claims or replacing materials. Claims for Loss or Damage on shipment may not be deducted from our invoice, nor pay of the invoice withheld awaiting adjustment of such claims, as we cannot guarantee safe delivery.

Important: Do not return goods to Sciencetech Inc. without written authorization!

Contact factory for return material authorization.

Returned goods will not be accepted by us from the Transportation Company/United Parcel/Post Office unless written authorization has been issued by Sciencetech Inc.

Return of special or non-stock items cannot be authorized. Credit for goods returned - under authorization - will depend on the value to us based on our selling price, less a fair charge to cover the expense of shipping - re-handling - transportation - refinishing, etc, providing material is received in good condition - transportation charges prepaid - credit rendered to be used against future purchases.

All equipment manufactured by Sciencetech Inc. has been subjected to extensive performance and quality control testing. In order to constantly improve our product, we ask your assistance. Upon installation of our equipment, please fill out the attached card and return to us.

By completing the card and returning it to Sciencetech, you will register your instrument in warranty and enable us to provide you with the best possible service.

8. Warranty and Assistance

All Sciencetech products are warranted against defects in materials and workmanship. This warranty applies for one year from the date of delivery, or, in the case of certain major components listed in the operating manual, for the specified period. Products sold or resold, but not manufactured by Sciencetech, carry the warranty, if any of the original manufacturer. We will repair or replace products that prove to be defective during the warranty period or employ our best efforts to effect repair or replacement of equipment sold, but not manufactured, by Sciencetech. No other warranty is expressed or implied.

We are not liable for consequential damages.

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