



530 Main Street, Acton, MA 01720

**Phone:** (978)263-3584, **Fax:** (978)263-5086

**Web Site:** [www.acton-research.com](http://www.acton-research.com)

## **Instructions for Mounting and Operation of ARC Model IS-434 Infrared Light Source**

Ver. 2.1

**Description:**

The ARC Model IS-434 is an infrared light source system designed for use with ARC SpectraPro™ series monochromators. It consists of an infrared light source element, housing with light collection mirror, and power supply. The light source element is factory installed and aligned prior to shipment. Adjustments are provided on the light collecting mirror mount in the event that realignment becomes necessary.

# Installation Instructions

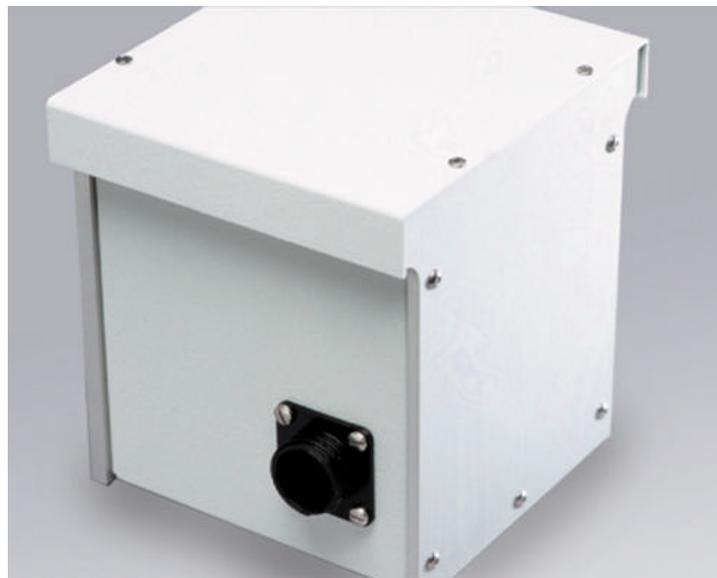
## IS-434

**Important:** These instructions are valid for IS-434 Sources bearing certain serial numbers. If the digits of the serial number that immediately follow 434 are 52 or greater please use these instructions. If the digits of the serial number that immediately follow 434 are less than 52 then disregard these instructions and use the following Mounting Instructions.

Your IS-434 Infrared Source is shipped with an installation kit which includes the following parts.

Part	Quantity	Description	ARC Part No.
Mounting Screws	3	8-32 X 1¼" Black Alloy	100-120-015
Mounting Screws	2	8-32 X ½" Black Alloy	100-120-010
Shoulder Screws	2	8-32 Attached to spacer	100-107-005
Spacer	1	¾"	8401-025-66
Spacer	1	¼"	8401-025-65
Hex Wrench	1	1/16"	700-025-002
Hex Wrench	1	9/64"	700-100-008

There are two variations for the installation of the **IS-434**. One set up assumes the use of either of the two optional Filter Wheel Assemblies **FA-448** and **FA-448-2**. The other set up is designed for using the **IS-434** without a filter wheel.



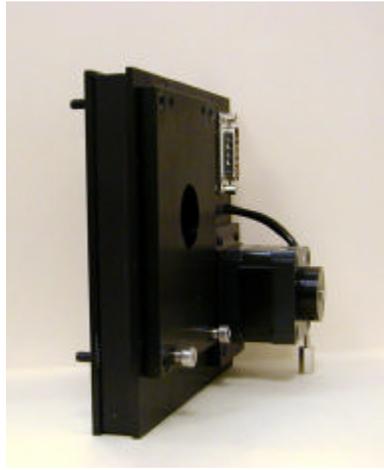
IS-434

## Light Source Installation (With Filter Wheel)

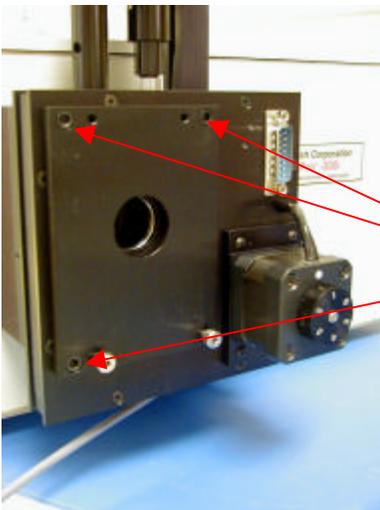
- 1) Be sure that there are no cable connections made to the IS-434 Light Source and that it has had sufficient time to cool.
- 2) Insert the three 8-32 x 1 ¼" black alloy screws into the recessed holes of the ¼" Spacer as shown in step one.
- 3) Lay the ¼" Spacer against the Filter Wheel and push the screws through the holes provided in the filter wheel as shown in step 2.
- 4) Using the 9/64" Hex Wrench, tighten the Filter Wheel / ¼" Spacer combination onto the entrance slit of the instrument as shown in step 3.
- 5) Using the 1/16" Hex Wrench, remove the cover to the IS-434. See step 5.
- 6) Align the IS-434's shoulder screw slots with the shoulder screws that are attached to the ¼" Spacer. Attach the IS-434. See step 6.
- 7) Insert and tighten the two 8-32 X ½" black alloy screws into the mounting holes on the inside of the IS-434. See step 7.
- 8) Replace the cover of the IS-434.



Step 1.



Step 2.



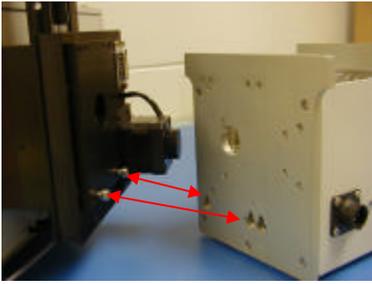
Step 3.

Tighten these

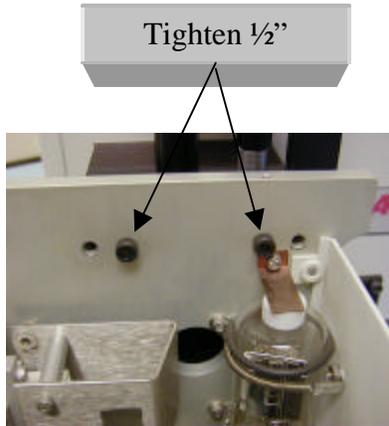


Remove  
Cover Screws

Step 4.



Step 5.



Step 6.

### **Light Source Installation (No Filter Wheel)**

Perform all the above steps except substitute the  $\frac{3}{4}$ " Spacer for the Filter Wheel.



$\frac{3}{4}$ " Spacer

## **Mounting** (for serial numbers after 434 that are less than 52 **ONLY**):

For proper operation, the lamp housing should be mounted to the entrance slit of the monochromator. The light collection mirror, located in the lamp housing, is designed to focus light from the light source element onto the entrance slit of the spectrometer. To mount the lamp housing to the entrance slit, use the following procedure:

1. Locate the two (2) shoulder screws and the two (2) 8-32 cap screws supplied with the IS-434. Insert the shoulder screws into the two bottom outside tapped holes of the entrance slit of the monochromator and tighten. These are used to mount the lamp housing.
2. Remove the four (4) slotted screws from the top of the lamp housing, then remove the cover.

-----  
**Do not touch the light source element or the surface of the focusing mirror**  
-----

3. Carefully slide the two (2) “key hole” type slots of the lamp housing mounting flange over the shoulder screws in the entrance slit of the monochromator. Insure that the top two holes of the lamp housing mounting flange align properly with the top two tapped holes of the monochromator entrance slit.
4. Insert the two (2) 8-32 cap screws in the top two holes of the lamp housing mounting flange and tighten.
5. Replace the lamp housing cover.

## **Operation: (All Serial Numbers)**

1. Connect the cable between the lamp housing and power supply, then plug in the power supply.
2. Press the power supply on/off button to the “ON” position.
3. This light source operates at a temperature of approximately 1000 degrees K when operated at 11 volts and approximately 12 amperes. Adjust the knob on the power supply so that the panel meter reads 11 volts in the VOLTS position. Switch to the AMPERES position and check to see that the panel meter reads approximately 12 amperes.
4. The adjustment knob may be locked at the above setting, if desired.

To shut off the light source, press the power on/off button to the “OFF” position.