

Spectrum Tube Carousel System

P2-9900

INSTRUCTIONAL GUIDE

Contents

Power Supply & Storage Unit

- 1. Wall mount power supply
- 2. Power supply base and electronics
- 3. Carousel with 8 tube stations
- 4. Fixed cap
- 5. Tube insertion aperture

Required for activities:

Spectrum tubes



Background

The Next Generation Science Spectrum Tube Carousel System offers a considerable improvement in safety, convenience, and tube life over conventional systems. It consists of a power supply and tube storage unit and a series of spectrum tubes filled with various gases for spectral inspection and measurement.

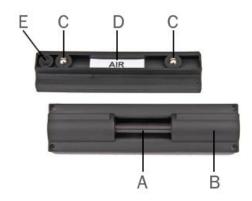
Up to eight spectrum tubes can be loaded into the tube carousel at once. The desired tube is energized by rotating the carousel until the selected tube reaches the energizing station.

The spectrum tubes in the Spectrum Tube Carousel System offer extended life by having no internal electrodes and are protected against accidental breakage by a hard polymer shell. Unlike conventional spectrum tubes, the tubes in this set do not have a time limit for how long they can be energized.

Operation

Tube Components

- a. Tube
- b. Hard polymer shell
- c. Spring-loaded contacts
- d. Gas species label
- e. Safety interlock magnet



Caution! This unit is suitable for operation in dry locations only! The tube becomes hot in operation! Do not touch the hot tube!

Inserting a tube

Tubes can only be inserted into the carousel at one location. To ensure correct orientation of the tube in the tube well, the tube shell has a ridge along the front right side.

Rotate the carousel unit an empty location aligns with the tube insertion aperture.



End of tube - back view

Match the ridge on the tube shell to the insertion aperture on the top of the power supply. The round magnet cover on the rear of the shell should be facing down.

Insert the lower end of the tube into the insertion aperture and slide the tube all the way down into the well so that it seats in the recess at the bottom of the well.



Inserting a tube

Load up to eight tubes in this way. The unit may be operated safely with one or more tube locations empty.



Tube in place

Turning on

The back of the power supply carries the power input socket, the fuse, and the on/off switch. Insert the output connector of the wall mount power supply into the main power supply input socket.



Insert the wall mount power supply into a 110 V AC electrical outlet.

Rotate the carousel until the desired tube is at the energizing station located in the front of the unit.

Turn on the power switch. The discharge tube will now strike and run.



Tube at energizing station

Changing the selected tube



Changing the selected tube

The selected tube may be changed without turning the power supply off. Simply rotate the carousel (holding the partition between stations) until the new selection is in the energizing station.

Do not touch the hot tube that has just been running!

The previously selected tube will be automatically turned off and the new tube will be energized. The supply contacts are not energized if an empty location is at the energizing station.

Removing the tube

To remove a tube, rotate the carousel until the tube to be removed aligns with the tube insertion aperture. The tube can then be removed by placing a finger under the top ledge of the illuminated area and lifting the unit until its top can be grasped from above and lifted out.

Always allow a hot tube to cool before removing



Supply voltage contacts



Removing a tube

Maintenance

The system needs no special maintenance. It should be stored in a dry, dust-free environment. For repairs or replacement parts, contact us at helpdesk@arborsci.com. Please do not return any item without receiving a return authorization number from us. Replacement spectrum tubes are available.

Resources

Tubes for the system are available with the following gases and vapors.

Gas species	Item number
Air	P2-9900-01
Argon	P2-9900-02
Carbon Dioxide	P2-9900-03
Helium	P2-9900-04
Hydrogen	P2-9900-05
Neon	P2-9900-06
Nitrogen	P2-9900-07
Water	P2-9900-08

Related Products

RSpec Explorer (P2-9505) Digitally capture an individual spectrum, and then compare it to a series of known spectra! The included camera and software make this an easy and inexpensive solution to studying quantitative spectral data in the classroom.

Spectrum Analysis Chart (P2-7067) This chart shows the visible continuous spectrum of the sun and the emission or bright line spectra of ten relatively common elements. It provides an excellent beginning point to show the student the total individuality of the spectrum of each element.

Quantitative Spectroscope (P2-7061) Use this durably constructed, economical tool to see and measure different spectra. Brighter and clearer than other spectroscopes. A built-in scale measures light wavelengths from 400nm to 700nm with a precision of +/- 5 nm.