

Spectrum Tube Power Supply

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Introduction

What are spectrum tubes, and why do we need a separate power supply for them? Spectrum tubes are small glass vessels which are filled with a specific gas, and are then sealed. Electrodes are added to the ends of the tubes. When electricity is passed through the tube, it excites the molecules of the gas, causing them to emit light.

However, all gases are not created equal, and different elements will produce a different light spectrum. Argon, for example, produces a purplish light, while hydrogen is redder.

Why is this the case?

The gases most commonly selected for spectrum tubes are used because of their sharp spectral lines. To the naked eye, each tube produces a single colour. However, if you look at the light through a spectrometer, it will reveal sharp lines in the spectrum. As noted above, Argon will produce strong spectral lines in the violet portion of the spectrum, but will be weak in the red. Hydrogen produces some violet lines but dominates the redder portions of the spectrum. Sharp lines indicate that the light is monochromatic, or made of one colour.

spectrum to determine which kinds of atoms are producing it. Argon will produce the same spectral lines, regardless if it is argon in your spectrum tube, or argon in a star millions of light years away. Because of this, astronomers can use spectrometers to determine the precise chemical makeup of a star. This is important for classifying stars, determining their age or even if they have planets!

Your Spectrum Tube Power Supply is exactly that: it provides the electricity needed to energize the gas in your spectrum tubes, causing it to glow.

Operation

The spectrum tube power supply is designed to be very easy to use. It can accommodate tubes of varying lengths, which is very helpful if you have a mixed collection. To adjust the length, simply loosen the brass nut on the back of the column, slide the top receiver into the desired position, and tighten the nut. It's that easy.

To put a tube in the power supply, place one end in the lower receiver, and press down the spring there. This should give you enough clearance to slide the top portion of the tube into the upper receiver.