

U5000AT+

Ultrasonic Nebulizer



Greater Efficiency, Lower Detection Limits

The U5000AT+ Ultrasonic Nebulizer offers detection limits up to 10x lower for ICP-AES and ICP-MS. Samples are introduced onto a piezoelectric transducer, providing greater analyte transport efficiency to the ICP. An integrated desolvation system with electrothermal cooling removes excess sample aerosol solvent and ensures stable ICP operation.



Benefits

The U5000AT⁺ converts more liquid sample into usable aerosol, with an efficiency of 10-15%, versus 2-3% for conventional nebulizers. The result is up to 10 times improvement in analyte signal and detection limits.

For ICP-AES detection, limits fall below 1 ppb for many elements. For ICP-MS, sub-ppt limits can be achieved; even lower limits may be obtained under clean-room conditions.

Short-term (60 min.) and long-term (8 hour) stability is excellent, with %RSD typically <1%.

The U5000AT⁺ has an autotuned oscillator for stable operation. No adjustment is necessary between different sample types.

Features

The U5000AT⁺ has a compact footprint for convenient placement on a benchtop or laboratory cart.

A modular design allows easy replacement of the entire glassware assembly. This unique feature can be useful when switching between very different sample types.

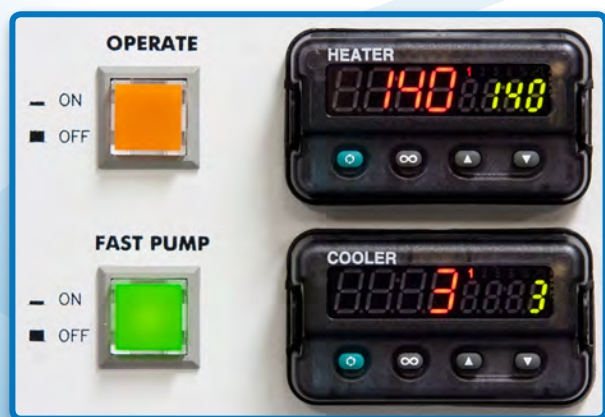
An optional membrane desolvator (CETAC MDX-200) can be added for further removal of sample solvent (aqueous or volatile organic).

Easy Setup and Operation

Each U5000AT⁺ is provided with an interface kit for easy connection to the host ICP-AES or ICP-MS.

The press of one button ("operate") on the USN generates sample aerosol.

The dedicated temperature controllers can be quickly reset for organic or aqueous applications.



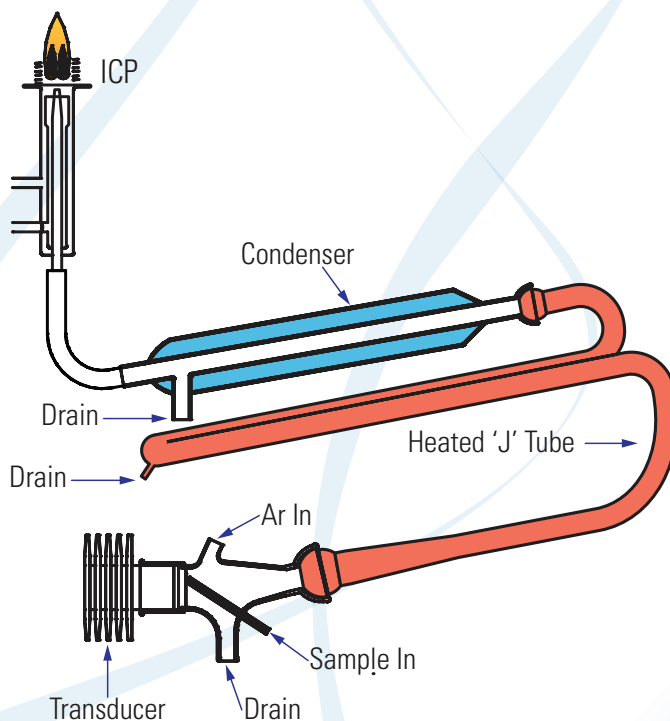
Operate Button and Temperature Controllers

Principle Of Operation

A peristaltic pump introduces liquid sample across an oscillating piezoelectric transducer. The oscillations disperse the sample into a fine aerosol, which is swept out of a spray chamber by a flow of argon gas from the host ICP-AES or ICP-MS instrument.

The aerosol passes through a heated tube and an electrothermally cooled condenser. An integrated drain pump removes the condensed sample solvent and any excess sample liquid from the spray chamber.

After passing through the condenser, the dried aerosol particles are swept by the nebulizer gas to the ICP instrument for analysis.



Specifications

Sample Uptake Rate: 0.5 to 2.5 mL/min

Nebulizer Gas Flow: 0.5 to 1.5 L/min

Heater Temperature: 120°C to 160°C

Cooler Temperature: -20°C to +10°C

Voltage: 100-120 VAC, 50/60 Hz, 4.5A
220-240 VAC, 50/60 Hz, 2.5A

Dimensions:

Height: 25.4 cm (10")

Width: 35.6 cm (14")

Depth: 34.9 cm (13¾")

Weight: 12.3 kg (27 lbs)

Warranty: 12 month limited