



ICP700T Pro

Inductively coupled plasma emission spectrometer

Introduction

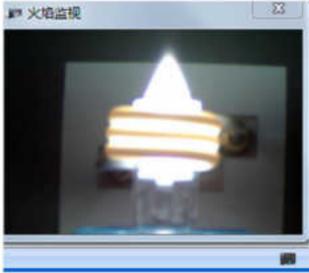
As a professional laboratory analytical instrument, the ICP700T Pro inductively coupled plasma Emission Spectrometer is a new upgraded product. It has many test elements, can measure more than 70 elements at most, has fast test speed, low detection limit and many other characteristics. It not only optimizes and upgrades the efficiency of solid-state Rf power supply and the monitoring function of instrument status from the perspective of instrument configuration, but also integrates audit tracking. The functions of flame video display and direct display of sample results during sample tracing make the instrument more stable and the software operation more convenient for customers to use, providing a better experience and meeting the testing needs of different customers. It can be applied to multiple industries with demand for element detection. The operation of complete machine automation and intelligence is simple and easy to learn.



Application area

- Rare earth industry
- Silicon industry
- Petroleum industry
- Ore analysis
- Metal
- Geological research
- Drug safety
- Experimental study
- Environmental testing

Performance characteristics



Intuitive flame video monitoring

The instrument is equipped with a highly sensitive flame sensing system and a visual video monitoring camera, which can observe the flame status of the combustion chamber in real-time and automatically turn off the RF power supply when the engine is turned off, protecting important components of the instrument.



Safe and reliable airflow protection function

The instrument is equipped with an argon monitoring and protection device, which automatically turns off the working power of the instrument when the argon gas is below the safety limit for use, to avoid damage to the equipment after using the argon gas.



Optional audit tracking function

The software is equipped with audit tracking function, which can set multi user and multi permission settings. Users can open and allocate account permissions according to their needs, and have complete operation log records, as well as permissions and notes for modifying and deleting data. It can also save measured data to the server for backup.

High degree of instrument automation

The automation level of the instrument is extremely high, and all operations except for the power switch are completed by software. Intelligent software that can provide real-time feedback and information prompts for various operations. The software can fully automatically ignite with one click,

Ultra high resolution optical system

The instrument can be equipped with imported gratings with ultra-high resolution 4320 lines, combined with unique optical path adjustment technology, which reduces the resolution of ordinary instruments from about 0.008nm to within 0.005nm. The ultra-high resolution ensures that there is no mutual interference between test elements.

Peristaltic pump injection device

The instrument is equipped with a high-precision peristaltic pump with five channels and 15 rollers, which can ensure the accuracy of sample injection and prevent liquid accumulation at the same time. The rotational speed of the peristaltic pump is continuously adjustable, meeting various testing requirements of customers.

Software optimization algorithm

By optimizing software algorithms, real-time matrix deduction methods can be achieved, allowing real-time zooming in and zooming out of two-dimensional coordinates for spectra with interference, facilitating spectral processing. One click automatic calculation of results eliminates the hassle of secondary data processing for customers.

Performance characteristics

High precision airflow control and protection system

The plasma gas, auxiliary gas, and carrier gas in the instrument work are all controlled by an integrated high-precision mass flow controller (MFC), with an accuracy of 0.01L/min.,It has continuously adjustable flow rate and high accuracy in outputting airflow, ensuring the accuracy of test data.At the same time, it has an airflow protection function to avoid damage to the instrument and accessories after using the working gas, and to reduce usage costs.

High precision constant temperature system

The overall optical path of the instrument is protected by a precision constant temperature system. The temperature control can be set in real time according to the actual environmental temperature of the customer's laboratory,without the need for continuous adjustment for a long time. The temperature control accuracy is $\leq \pm 0.1$ °C.The precision constant temperature system ensures the stability of the optical path, and the test data is more stable.

Split injection system

Reducing the impact of high temperature on atomization of the torch tube can also directly observe the progress of the sample, facilitating real-time troubleshooting of abnormal situations.

Automatic adjustment of observation position

The plasma flame can be adjusted in three dimensions (controlled by a computer), including front and back, up and down, and left and right. It integrates an integrated quartz torch tube (patented technology), which can achieve one second positioning of the torch tube and complete replacement in ten seconds, ensuring the performance of the instrument after replacing the torch tube.Find optimized observation positions through feedback signal values to obtain strong sensitivity and obtain accurate testing results.

Ultra low usage cost

When the instrument is not in operation, the power supply, cooling water tank, and gas of the instrument are all turned off without incurring any costs. The instrument is ready to use and does not require long-term optical path preheating.Using argon gas with a purity of 99.99% is sufficient, without the need for 99.999% high-purity argon, saving at least one-third of the cost.

Highly sensitive detector

The instrument is equipped with a highly sensitive imported photomultiplier tube as a detector, which can automatically set the best test parameters for different elements to be tested,so as to achieve an ideal detection state and give accurate test results. No refrigeration, no blowing, long service life, and lifetime warranty for the detector.



Technical parameter

Input power supply: voltage AC 220V, current 20A

Total argon consumption: less than 14 L/min

Grating: Ion etched holographic grating, with a scratch area of (80 × 110) mm

Resolution (Mn257.610nm): ≤ 0.005nm (4320 grating); ≤ 0.008nm (3600 line grating); ≤ 0.015nm (2400 line grating);

Wavelength range: 190-460nm (4320 grating); 190-500nm (3600 line grating); 190-800nm (2400 grating);

Atomizer: High precision and efficient concentric nebulizer 2ml/min, can be equipped with various injection systems such as high salt resistance, hydrofluoric acid resistance, and organic resistance.

Atomization chamber: The patented extended double tube atomization chamber has a better solvent removal effect.

Optical path type: Czerny Turner type optical path with a focal length of 1000mm

Replacement of tooling: Quickly replace the injection system, using patented technology for torch tube tooling and torch tube installation platform

Power characteristics: Equipped with reverse power protection for RF power supply (patented technology)

Precision: 2ppm mixed multi-element solution, RSD ≤ 1.0%

Stability: 2 hours RSD ≤ 2.0%

Detection limit: meets the A-level requirements of the national standard

Flexibility of spectral lines: Test spectral lines can be added arbitrarily according to usage requirements

Fully automatic one button ignition, automatic matching, stable and convenient ignition

Adopting a concentric atomizer with patented technology chamber, with a strength of 1ppmMn>1000000cps

Independently developed all solid-state RF power supply with output power of 500-1600W, continuously adjustable, adjustable accuracy of 1W, power stability:<0.01%

Power efficiency greater than 65%, operating frequency 27.12MHz

Frequency: 27.12MHz, coupling efficiency greater than 80%, frequency stability:<0.01%.