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For the most demanding elemental analysis  
in industry and research





# TY-9900

## ICP-AES Elemental Analyzer

ICP-AES Elemental Analyzer, as a large-scale inorganic analytical instruments, is widely used in analysis of rare earth and precious metals analysis, alloy materials, electronics, medicine, metallurgy, geology, petroleum, chemical, commodity inspection, environmental protection and other departments and NdFeB, silicon, ferrosilicon , Tungsten, molybdenum, etc., from trace to the common of the qualitative or quantitative analysis. It integrates light, mechanical, electrical, computer, analysis techniques in one high-tech products, have the advantages of high test speed, wide range, accurate and reliable analysis of the characteristics.

### Working Principle



ICP inductively coupled plasma single-channel scanning spectrometer, is a multi-element analysis of the sequence test measuring equipment. The instrument consists of scanning spectrometer, radio frequency generator, the sample introduction system, photoelectric conversion, control systems, data processing systems, and analysis software. Plasma is generated from the triple concentric

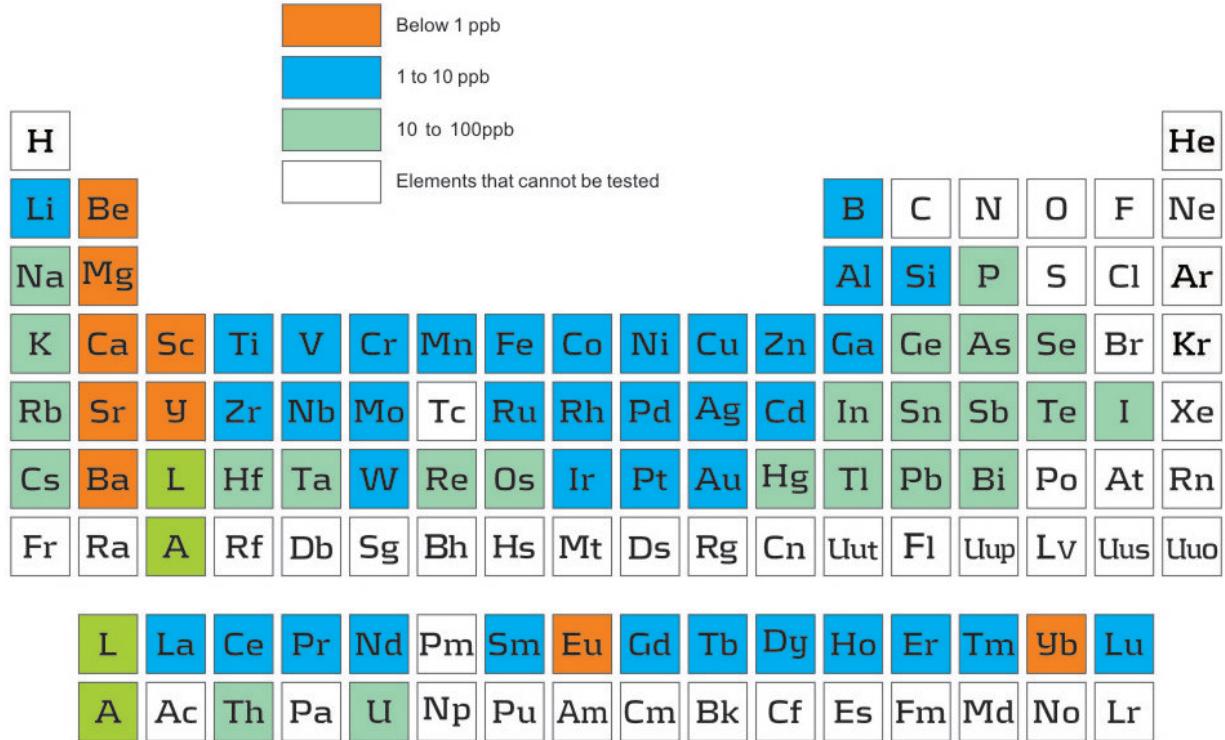
quartz tube in a torch. Argon is put into torch pipe in tangent direction, the upper part of torch is coiled with copper loop <intercom cooling water>. High-frequency generator generates the high frequency current(40 MHz frequency around 1 KW power) through the coil, producing around Alternating magnetic field, ionizing to produce a small amount of argon ion and electron, in the magnetic field under the accelerated collisions with other neutral atoms, producing more electronic and ions, in the form of eddy current, EDM reacts in the plasma formed under the plasma torch ( That is, plasma).

# TY-9900 ICP Specification

## Technical Specification

<b>RF Generator(RF)</b>	
	Automatic ignition, automatic control, etc.
Circuit type	Self-inductance feedback oscillation circuit, the output of coaxial cable, matching tuning, feedback signals from power, closed-loop control.
Frequency	40.68 MHz ± 0.05%
Frequency stability	≤ 0.1%
Output power	800-1500 W
Output power stability	≤ 0.1%
Leakage of electromagnetic field strength of radio	20 cm from the device
Electric field strength E	<2 V / m
<b>Sampling Devices</b>	
Output of the coil diameter of 25mm, 3-turn.	
Torch tube	three concentric type, diameter 20 mm quartz tube torch.
Coaxial-type sprayer 6 mm diameter.	
Double-room fog diameter 34 mm.	
Argon carrier gas flow meter specifications and pressure gauges Specifications:	
1. Plasma gas flow meter (100-1000) L / h (1.6-16L/min).	
2. Auxiliary gas flow meter (10-100) L / h (0.16-1.66L/min).	
3. Carrier gas flow meter (10-100) L / h (0.16-1.66L/min).	
4. Carrier gas regulator valve (0-0.4Mpa) L / h.	
5. Cooling water temperature :21-26 °C flow> 5 L / min pressure> 0.1 Mpa cooling water: resistivity > 1 Ω.	
<b>Spectrometer</b>	
Optical pathway	Czerny-Turner
Focal length	1000mm.
Dispersion of the penultimate line	0.26nm
1/(Line Dispersion rate)	0.26nm
Resolving power	≤ 0.006 nm
Scan wavelength range	125-800 nm
Stepper motor drive the smallest step	0.0005nm.
Radio and the incident slit	20 μ m
Mirror specifications	(80 × 110 × 16) mm
Temperature keeping	38 °C ± 1 °C

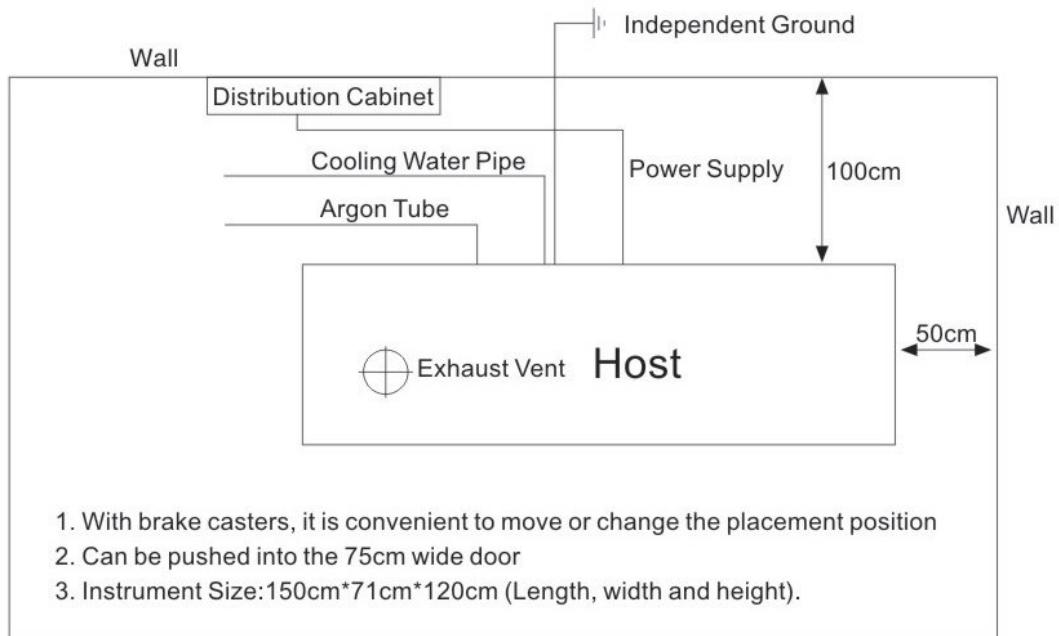
## Common Application Areas



## Equipment Installation Conditions

Laboratory environment	
Temperature	18-28°C(Temperature change rate within 2°C/h)
Humidity	Below 70%(Dehumidifier should be equipped in areas with high humidity). Please avoid places with large vibration and dust.
Power Supply (With 10KW regulated power supply is better).	The host:two phase, 220V±10%, 50/60Hz, 30A(Introduce the indoor power supply into the 40A circuit breaker, then connect one 30A circuit breaker and two 10A circuit breakers respectively).
Data Processing Device	Two phase 220V±10%, 10A
Ground	The instrument is independently grounded, resistance < 4Ω, (Generally digging below 1.5 meters deep outdoors, using copper wire to introduce indoor)
Gas Supply System	Two bottles of argon gas, the purity of which is more than 99.99% (standard for trachea) is output with an oxygen meter (two pieces), and the pressure is adjusted to 0.2Mpa
Cooling Water	Self-made water tank, water supply with 100W pump (water pipe standard) If you choose an intelligent cooling circulating water tank, you don't need a self-made water tank (water pipe standard)
Exhaust Duct	Plasma chamber: The exhaust gas is mainly argon, but there will also be some metal vapors and solvents. Therefore, you need to configure an exhaust pipe. It is recommended to buy a 110mm PVC pipe 4m, one elbow, two three-way valves, and then use a 15W fan Lead exhaust gas out of the room (standard for fan). High frequency power supply: No exhaust pipe is required due to the use of cooling circulating water tank

## Equipment Installation Example





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