

**Dual View Inductively Coupled Plasma
Optical Emission Spectrometer**

Plasma ICP-OES SYS 7000

ICP Optical Emission Spectrometer

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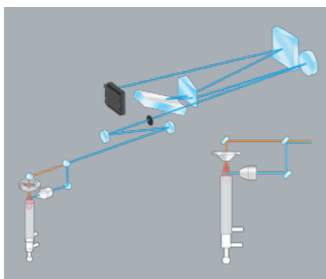


Systronics India Ltd.

Plasma ICP-OES SYS 7000 has capacity of quick quantitative analysis for all metal elements and some nonmetal elements. It is widely used for element analysis in such fields as metallurgy, geology, material, environment, food, medicine, petroleum, chemical industry, biology and water quality.

- ▶ It has a wider dynamic linear range and lower background with a vertical torch dual view and a cooled cone developed to remove the cooler plasma tail.
- ▶ The solid state RF generator is efficient, stable, small in volume and fast in turning, capable of ensuring high-precision and long-term stability.
- ▶ The echelle polychromator delivers all the emission lines within the whole spectral range on the large-area CCD detector simultaneously in a single exposure.
- ▶ A powerful software system simplifies the development process for the analysis method. The tailored operation software is developed according to application needs in various analysis.

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Optical system

- The design of radial view and axial view is suitable for element measurement in samples with content from less than ppm to high concentration.
- The using of a CaF_2 prism can increase the optical throughput.
- The optimized optical design and aspherical elements prevents astigmatism, guaranteeing the best image quality, promoting spectrum acquisition efficiency.
- The purging and maintaining technology in the polychromator can not only shorten the time for gas purging of the polychromator but also can increase the sensitivity and stability especially in the ultraviolet spectrum, making it capable for measurement once the machine is started.
- The multi-point monitoring temperature control can ensure stability with no drift of the optical system for a long time.

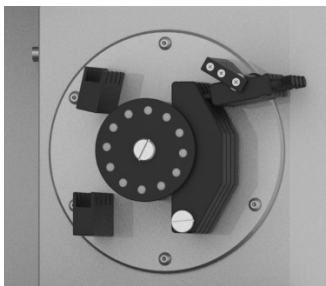
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RF Generator

- The solid state RF generator is efficient, stable, small in volume and fast in turning, capable of adapting to measurement of various complex matrix samples and volatile organic solvent, obtaining excellent long-term stability.
- The design of a vertical torch makes it have a better sample tolerance, less demand for cleaning and lower consumption for spare torches.
- The technology of removing plasma tail by the cooled cone can weaken the self-absorption effect and ionization interference to the largest extent obtaining a wider dynamic linear range and lower background to ensure the measurement accuracy.
- It has a green energy saving standby mode. The function can help save the cost by lowering the output power and decreasing the gas flow rate with only maintaining the plasma operation.
- The design for simple torch installation makes it capable for rapid positioning with great position.
- The real-time monitoring for the instrument parameter and high-performance CAN industrial field bus can ensure high efficiency and reliability of communication.

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Sampling system

- The instrument is equipped with a series of optimized sampling systems, which can be used for testing organic solvent, high salinity/complex matrix sample, or samples containing hydrofluoric acid etc.
- The demountable or fixed torch makes it easy for maintenance, rapid for replacement with a low cost.
- Mass flow controllers (MFCs) are used to control the flow rate of the cooling gas, auxiliary gas and carrier gas in order to ensure the stability of the testing performance for a long time.
- The multi-channel 12-roller peristaltic pump can increase the stability of sample uptaking.

Plasma ICP-OES SYS 7000

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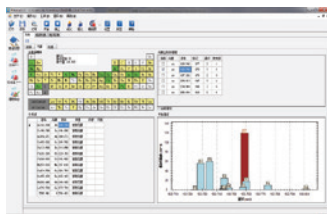
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Detector

- The large-area back-illuminated CCD detector has good sensitivity over the whole spectral range, especially better quantum efficiency in UV than counterparts, anti-blooming function, an extremely wide dynamic range and an extremely fast speed for signal processing.
- It can finish collecting and reading signals for the whole spectral range in a single exposure in order to obtain a faster and accurate analysis result.
- It has the largest image area among similar products, with millions of pixels, single pixel area of 24umx24um, Triple-stage Peltier cooling, refrigeration temperature <- 40 °C, low noise and excellent stability

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Analysis Software

- The humanized interface design is easy for understanding and simple for use. The software system is optimized for analysis and application, capable of conducting analysis and operation rapidly, needless for complex methods development.
- The rich spectral line library can give a prompt to potential interference elements and help users select & analyze the spectral line in a reasonable way.
- It has a simple setting for observation modes and an intuitional display for testing results.

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Safety protection system

- Integrated EMC protection system to reduce electromagnetic radiation;
- Interlocking door protection to prevent loss caused by misoperation;
- UV-proof observation window.

Technical Parameters

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■ Analysis Capability

Detection Limit: sub ppb- ppb
Short-term Stability: $RSD \leq 0.5\%$ ($500 \times LOD$)
Long-term Stability: $RSD \leq 1.0\%$ ($500 \times LOD$)

■ RF Generator

Solid state RF generator, output power continuous adjustment by 1W.
Oscillation frequency: 27.12MHz
Output power: 500W-1600W
Power Stability: $\leq 0.1\%$

■ Specifications

Dimensions: W x D x H (106cm x 67cm x 75cm)
Weight: 180kg

■ Optical system

Spectral range: 165-950nm
Resolution: 0.007nm@200nm
Constant temperature: 38°C $\pm 0.1^\circ\text{C}$
CCD Pixel: 1024x 1024
Single pixel area: 24 μm x 24 μm

■ Operating environment

Room humidity: relative humidity: 20-80%
Argon purity: Higher than 99.995%
Air exhaust: not less than 400m³/hr
Power supply: 220V $\pm 10\%$, AC single phase, 50Hz-60Hz; 25A

High-quality Creates Better Life