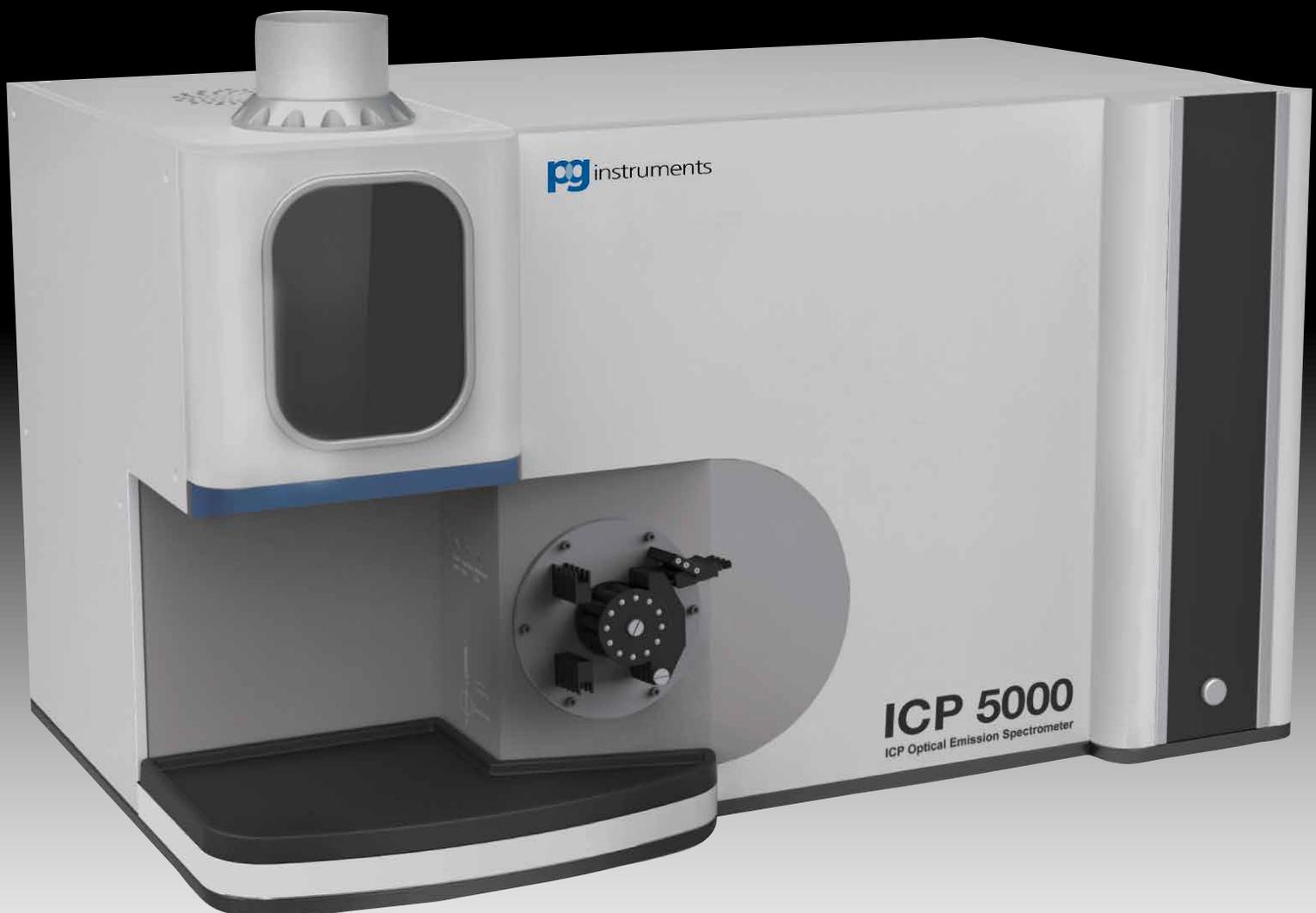


ICP 5000

ICP Optical Emission Spectrometer



The ICP 5000 is a Fully Automated, Fast Simultaneous system with CCD Detector (Charged Coupled Device). The Purged Spectrometer, with a 0.4m Focal Length, offers a wavelength range of 165-900nm. An Echelle Grating provides the FULL Spectrum in a compact area. The system is fitted with a solid state 40.68Mhz RF Generator offering selectable power from 800 to 1600 Watts.

Due to the versatility and high performance, the instrument can be used in almost any laboratory for a wide range of applications such as:

- ▶ *Agricultural*
- ▶ *Food*
- ▶ *Geological*
- ▶ *Clinical*
- ▶ *Metal*
- ▶ *Petrochemical*
- ▶ *Environmental*
- ▶ *Mining*
- ▶ *Pharmaceutical*

NEW

ICP 5000 Spectrometer

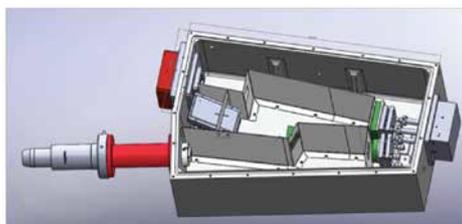
PG Instruments – a leader in the development of first class scientific instruments – is pleased to introduce its brand new ICP 5000.

The ICP 5000 offers Low Detection limits with a wide analytical working range, enhanced stability and fast collection of quantitative and qualitative analytical data.

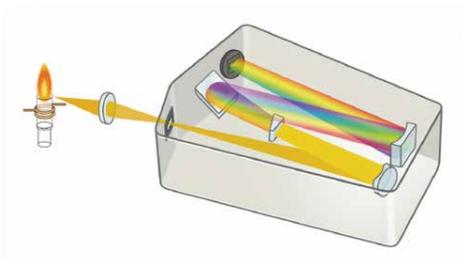
Features & Functions

Optical System

The Purged Spectrometer in the ICP 5000 has a focal length of 0.4m and a spectral wavelength range of 165 - 900nm. The Spectrometer has an Echelle grating and Prism Cross Dispersion System which allows the simultaneous display of all spectral lines in a single exposure and the analysis of the complete spectrum in a compact area. The thermally stabilised optical system is argon purged to allow the analysis of elements in the far UV.



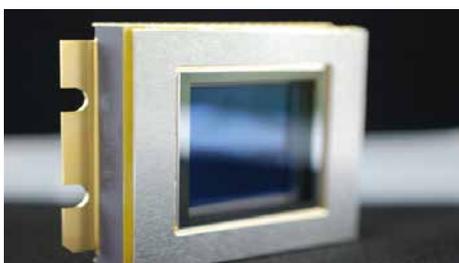
Basic Optical design of Spectrometer



Optical path of Spectrometer

Detection System

The detection system is a CCD (Charged Coupled Device) 1024 x 1024 Pixels (CCD Pixel Size 24µm x 24µm). The high speed acquisition system provides for simultaneous Full-Spectrum reading and real-time single pixel sub-array monitoring allowing very fast analysis.



CCD Detector

Excitation Source (Plasma)

The 'on-board' Solid State RF Generator operates at a frequency of 40.68MHz and has a computer controlled forward power range of 800 - 1600 Watts with real time automatic tuning and stability better than 0.1%. The plasma ignition and generator output is fully monitored via ICP-Win Software.



Inductively Coupled Argon Plasma

Sampling System

The sample introduction system is via a multi-channel (4 channel) 12 roller peristaltic pump (controlled via the software). A Quartz Torch, cyclonic spray chamber and a concentric glass nebuliser are supplied as standard (Further options available on request).



Standard Sample Introduction System



Specifications

Optical System

Grating	Echelle Grating 50grooves/mm
Prism	Cross Dispersion Device
Focal Length	400mm
Temperature Control	38°C +/-0.1°C
Detector	CCD (Charged Coupled Device)
Pixel Size	24µm x 24µm
Detector Pixels	1024 x 1024 pixels
Wavelength Range	165nm - 900nm
Resolution	0.007nm @ 200nm
Purge	Spectrometer and optical path

RF Generator

RF Frequency	40.68MHz
Power Range	800 – 1600 Watts (automatic control)
Optical View	Radial and Axial
RF Stability	<0.1%
Generator	Solid State (low voltage)
RF Coil Cooling	Water Cooled
Optical Height	Adjustable

We reserve the right to modify, revise/upgrade, suspend or discontinue any Product in whole or in part, either temporarily or permanently, with or without notice.

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Sample Introduction

Torch	One Piece Glass (low flow) (Demountable Torch Available)
Spray Chamber	Cyclonic Glass (Other Options Available)
Nebuliser	Concentric Glass (Other Options Available)
Sample Introduction	4 Channel 12 Roller Peristaltic Pump

Software

Operating Software	ICP-Win Software
Element Library	>70000 Spectral Lines
Element Corrections	IEC (inter-element corrections) and Background
Computer	PC, Windows 10 operating system, monitor and printer
Dimensions	121(W) x 74(L) x 80(H)cm
Weight	200Kg
Voltage (Stabilised)	120 - 240V 50/60Hz

Accessories

Random Access Auto-sampler

Continuous Flow Hydride system

Voltage Stabiliser

Nebulisers - Quartz Concentric, V-Groove, HF resistant etc. available on request.

Programmable Temperature Controlled Spray Chamber

Sample Introduction – HF Acid resistant available on request.

Qualification Kit.

The highly qualified and long experienced team at PG Instruments Ltd are recognised experts in Spectroscopy, Electrochemistry and Relevant Technologies. They have been developing and manufacturing analytical instruments for science for over a decade and have a worldwide recognised reputation for excellence in their field.