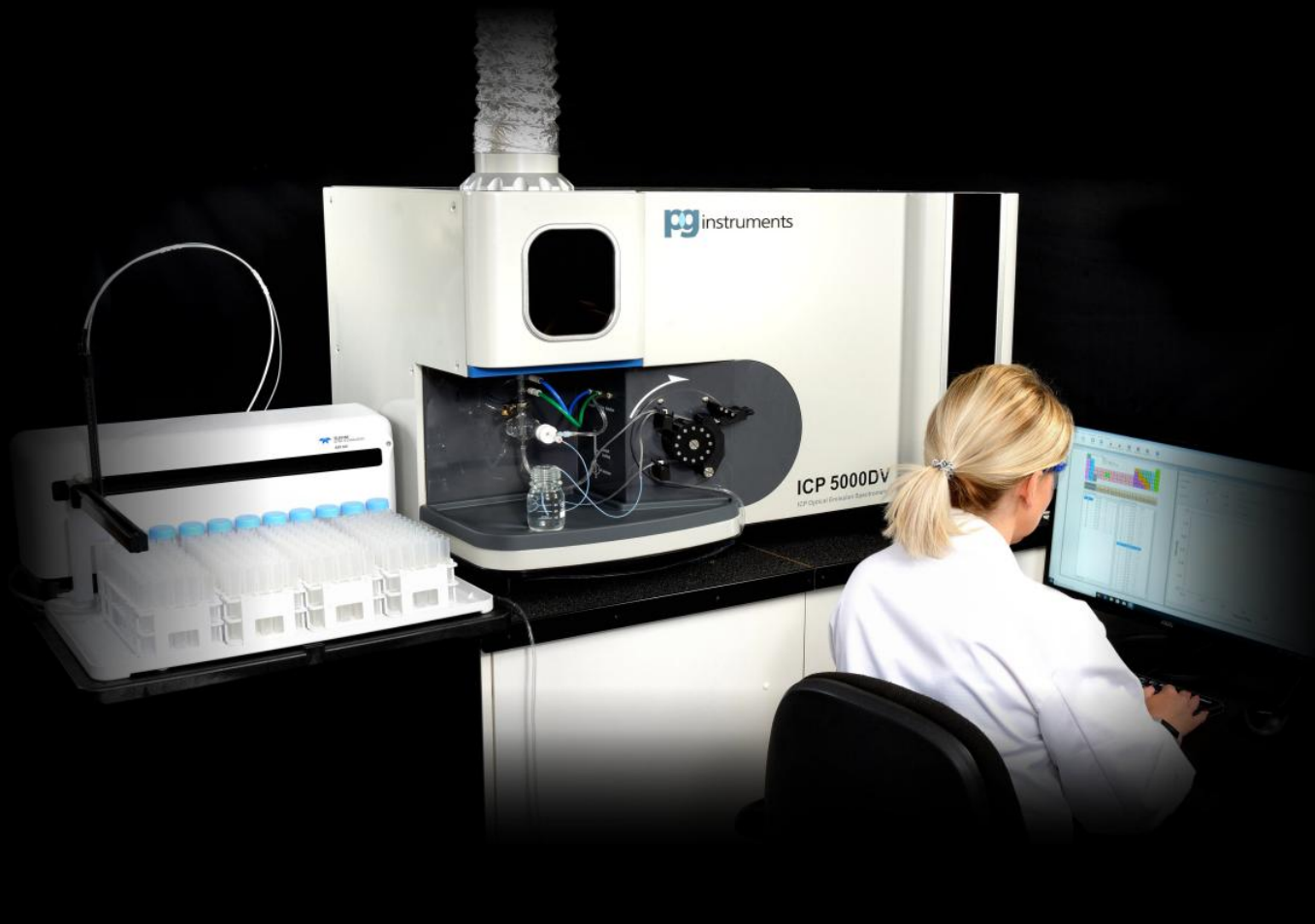


analytical instruments for science

ICP 5000DV

ICP Optical Emission Spectrometer



The ICP 5000DV is a Fully Automated, Fast Dual View Simultaneous system with CCD Detector (Charged Coupled Device). The Purged Spectrometer, with a 0.4m Focal Length, offers a wavelength range of 165-785nm.

An Echelle Grating provides the FULL Spectrum in a compact area. The system is fitted with a solid state 27.12Mhz RF Generator offering selectable power from 750 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:

- μ Agricultural
- μ Food
- μ Geological
- μ Clinical
- μ Metal
- μ Petrochemical
- μ Environmental
- μ Mining
- μ Pharmaceutical



ICP 5000 Spectrometer

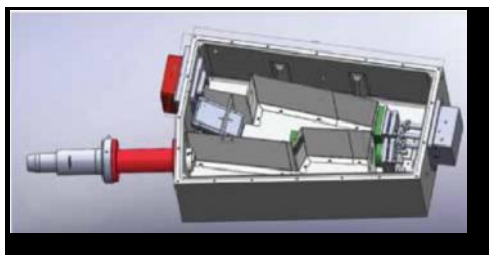
PG Instruments – a leader in the development of first class scientific instruments – is pleased to introduce its brand new ICP 5000.

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

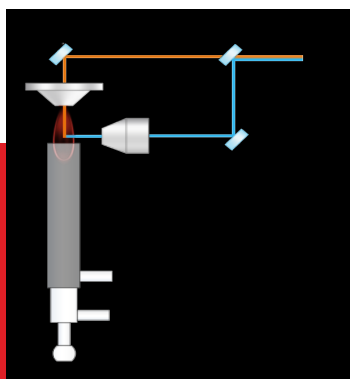
The Purged Spectrometer in the ICP 5000 has a focal length of 0.4m and a spectral wavelength range of 165 - 785nm. The Spectrometer has an Echelle grating and Prism Cross Dispersion System which allows the simultaneous display of all spectral lines in a single exposure and the analysis of the complete 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

Pre-Optical Path

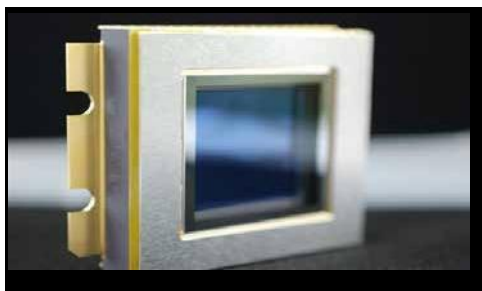
The pre-optics feature computer controlled high precision dual view simultaneous axial and radial plasma views which are purged to allow low wavelength analysis down to 165nm. The sealed pre-optical design offers reduced interference and maximised linear range.



Dual View pre-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 of 500KHz provides a simultaneous Full-Spectrum reading and real-time single pixel sub-array monitoring allowing very fast analysis. The triple stage Peltier device gives superior and fast cooling providing lower dark current and noise. All pixels of the CCD feature anti blooming protection for improved resolution and separation of simultaneous analytical peaks.



CCD Detector

Excitation Source (Plasma)

The 'on-board' Solid State RF Generator operates at a frequency of 27.12MHz and has a computer controlled forward power range of 750 - 1600 Watts with real time automatic tuning and stability better than 0.1%. The plasma ignition and generator output is fully monitored and controlled via the ICP-Win Software.



Sampling System

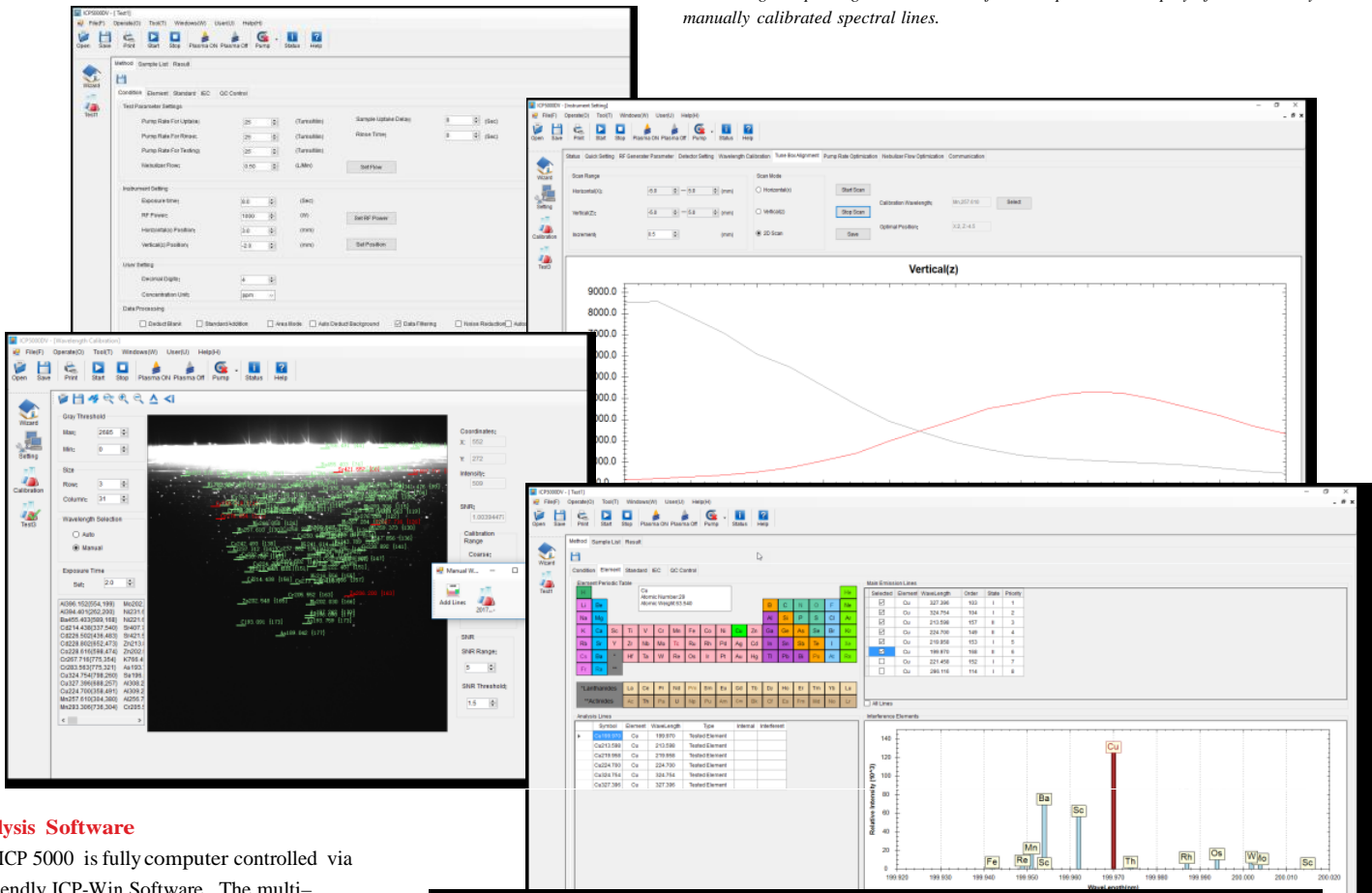
The sample introduction system is via a multi-channel (4 channel) 12 roller peristaltic pump (controlled via the software). A Quartz Torch, cyclonic spray chamber and a concentric glass nebuliser are supplied as standard (Further options available on request).



Standard Sample Introduction System

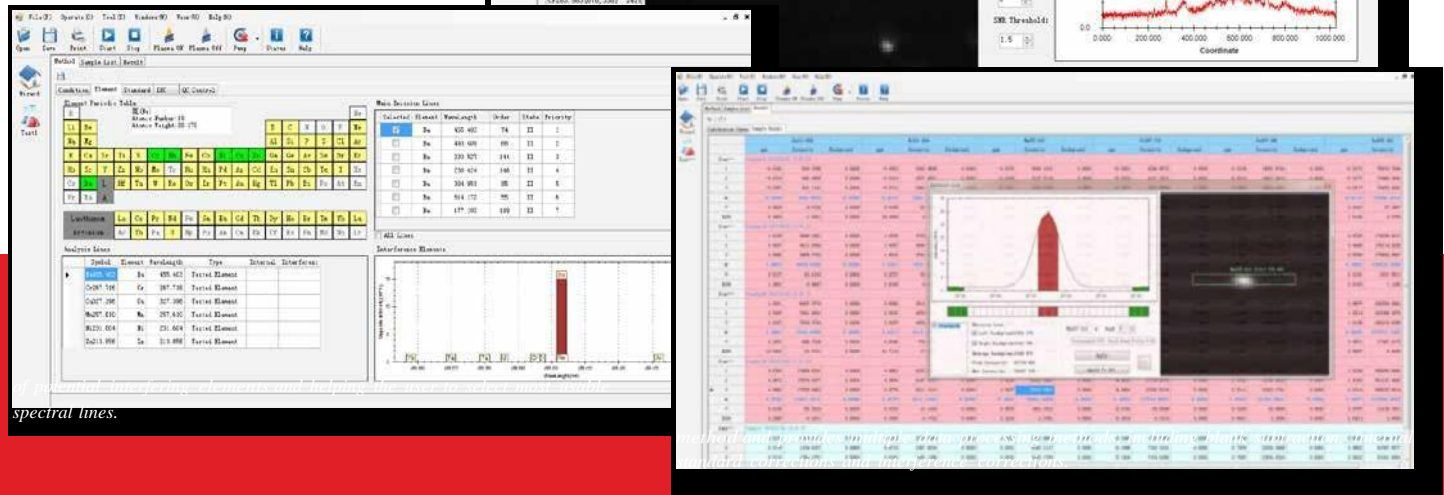


The Intelligent Spectrogram Calibration function provides a display of automatically and manually calibrated spectral lines.



Analysis Software

The ICP 5000 is fully computer controlled via user friendly ICP-Win Software. The multi-window and multi-method analysis program enables fast simultaneous measurements. The software has a built-in library of over 70,000 spectral lines showing inter-element corrections (IEC's) and interferences. Visual Background correction points are shown. The software allows the display of complete "Spectrograms" showing automatically and manually calibrated spectral lines.



spectral lines.



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
Detector Cooling	-35°C (Triple Peltier Device)
Wavelength Range	165nm - 785nm
Resolution	0.006nm @ 200nm
Purge	Spectrometer and optical path

RF Generator

RF Frequency	27.12MHz
Power Range	750 – 1600 Watts (automatic control)
Optical View	Dual View simultaneous Axial and Radial
RF Stability	<0.1%
Generator	Solid State (low voltage)
RF Coil Cooling	Water Cooled
Optical Height	Adjustable

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	106(W) x 67(L) x 75(H)cm
Weight	180Kg
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.

PG Instruments Ltd., Alma Park,
Wibtoft, Leicestershire LE17 5BH
England

t: 0044 (0) 1455220131

f: 0044 (0) 1455220025

e: info@pginstruments.com

www.pginstruments.com

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.

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.