SPECIFICATIONS

Atomic Absorption

AAnalyst 400 AA Spectrometer

Control and Data System

User Interface Complete PC control of all functions of the AAnalyst™ 400 using WinLab32™ for AA software. WinLab32 for AA includes an innovative user interface that makes the software easy to learn and use, including a clear graphical design, task-oriented organization of the windows, an understandable vocabulary, extensive tool tips in multiple languages, simple data displays and Wizards for the simplification of many tasks.

WinLab32 is fully multitasking, allowing the analyst to report analytical results, view data or add priority samples without interrupting the analysis in progress.

Using WinLab32 software, setup is flexible and easy. Standard operating conditions for flame, graphite furnace and FIAS techniques are included. Auto Analysis Control links methods for each technique with a sample-information file. The sample list can be created by third-party software or LIMS and downloaded to the system.

WinLab32 software provides many tools to increase lab productivity. With WinLab32 Offline, method and sample-information files can be created and data reviewed or reprocessed without interrupting the current analysis.

WinLab32 software provides extensive QC protocols to meet internal and regulatory requirements. Data Reprocessing allows changes to many method and sample-information parameters after data collection and the recalculation of the results using the new parameters. With Data Reprocessing, the raw data are never altered, thereby ensuring data integrity is maintained.

WinLab32 Reporter provides the ability to generate post-run reports in a variety of formats. The Export feature of Data Manager can be used to export results as comma-delimited ASCII files for compatibility with commercial third-party programs such as Microsoft® Excel®, Access® and Word.

21 CFR Part 11 An optional WinLab32 Enhanced Security™ package is available for labs needing to be compliant with 21 CFR Part 11 regulations.

Hardware

System True double-beam echelle optical system. Front surfaced, reflecting optics with protective coating. Deuterium background corrector and two built-in EDL power supplies.

Optical System Echelle monochromator. Focal length: 300 mm. Grating: 36 x 185 mm area, 79 lines/mm, blaze angle 76˚. Fused-quartz prism: 95 x 40 mm, 60°. Wavelength: 189-900 nm. Spectral bandpass: 0.15 nm at 200 nm. Reciprocal linear dispersion: 2.4 nm/mm. The photometer optics are covered to protect against dust and corrosive vapors. For maximum protection, the optical system can be purged with an inert gas.

Detector High-efficiency, segmented solid-state detector.

Light Sources Hollow cathode or electrodeless discharge lamps (EDLs). EDLs provide much higher light output and longer lifetime when compared to conventional hollow cathode lamps. Lamp elements, recommended operating currents and slit selection are automatically recognized and set when using PerkinElmer® Lumina™ series AA lamps. Lamp alignment is completely automatic with the four-lamp turret.

E-box All electronics are located in a single user-replaceable module that the operator can easily replace without requiring a service visit.

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Gas Controls and Burner System

Flame Gas Fully automated gas box with computer-controlled oxidant selection, automatic gas sequencing, oxidant and fuel monitoring and control.

Control Software-actuated ignition with air/acetylene. Acetylene flow is automatically adjusted when switching to or from nitrous-oxide/acetylene operation.

Flame Safety Features Fully interlocked operation prevents ignition if the proper burner head, the nebulizer, end cap or burner drain system are not correctly installed, the level of the liquid in the drain vessel is incorrect, or gas pressures are too low. Interlocks will automatically shut down the gases if a flame is not detected. The flame is automatically and safely extinguished in the event of a power failure or when the emergency flame-off button is used.

Burner System An inert-polymer mixing chamber provides superior analysis of corrosive and high-solid matrices. The spray chamber is manufactured from a high-strength composite, eliminating the need for pressure-relief devices. The high-precision inert nebulizer maximizes stability and sensitivity. A 10-cm single-slot solid titanium burner head for air/acetylene operation is included. Optional burner heads include: 5-cm nitrous-oxide/acetylene, 10-cm three-slot air/acetylene and 5-cm single-slot air/acetylene.

Sample Area 25 cm wide x 25 cm deep sample compartment for easy access to burner components.

Accessories for the AAnalyst 400

Autosamplers Flame autosamplers automate standard and sample introductions for instrument calibration and sample analysis, extending the spectrometer's capabilities to those of a fully automated analytical workstation.

Sample Dilution The AutoPrep 50 sample-dilution system provides an optimized tool for truly automated flame AA. With automatic, intelligent on-line dilution capabilities, the AutoPrep 50 eliminates the time-consuming, manual, error-prone portion of your flame AA analyses.

Mercury/Hydride System For the analysis of mercury or hydride-forming elements, an optional automated flow injection system or a manual mercury/hydride system can be added. Flow Injection Atomic Spectroscopy (FIAS) combines the advantages of mercury/hydride AA with those of the flow injection, enabling mercury/hydride AA procedures to be truly automated.

System Specifications

Dimensions 70 x 65 (0.46 m^2) x 65 cm (W x D x H)

Weight 49 kg

Power 100-230 V (±10%), 50/60 Hz (±1%), 300 VA (maximum)

Technical Classified as a laboratory instrument. Complies with the applicable European Union directives and standards for safety and electro-magnetic compatibility for CE Marking, the safety requirements for Canada and the United States for CSA/NRTL certification and the FCC requirements for radio-frequency emissions. The instrument was developed and produced in compliance with ISO 9001.

Environmental Dust-free, free of vibrations, ambient temperatures: +15 ˚C to +35 ˚C with a change rate of a maximum 3 ˚C per hour. Relative humidity: 20% to 80% non-condensing.

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