

AAAnalyst 200 AA Spectrometer

Atomic Absorption



Control and Data System

- User Interface** Complete control of the AAAnalyst™ 200 through an innovative touch-screen interface. Flexible software for lamp setup, flame control, parameter selection and sample analysis. The tools menu provides access to recommended conditions, sample information, method storage and recall, data transfer and service diagnostics screens. The AAAnalyst 200 supports multiple languages, including Spanish, English, French, Russian, Japanese, German, Italian, Portuguese (Brazilian), Polish, Greek and Chinese.
- Display** Full-color 10.4" LCD touch screen. VGA resolution (640 x 480 pixels). Coated for maximum durability and lifetime.
- Data Handling** The parameters page is used for setting up the analysis. Users can select up to eight calibration standards or a reslope standard and choose from seven different calibration algorithms. Integration times are operator-selectable from 0.1 to 60 sec. Print choices include method, replicates and calibration curve. Signal measurement modes include time-averaged integration, manual continuous graphics and peak-height measurement. An optional footswitch to trigger a read is also available.
- Sample Analysis** The sample-analysis page is used for manual or automated analysis. All results are displayed on the screen. Separate buttons for blank, standards and samples allow for easy analysis. Sample ID and dilution factor are available on this page as entered in the tools/sample information menus. The calibration curve can be displayed and printed with correlation coefficient, slope and intercept. Peaks can be displayed and printed when using the MHS-15 accessory.
- Accessories** Automated analysis can be performed with a PerkinElmer® autosampler and the sample information tool. The MHS-15 can be used for the determination of hydride-forming elements and mercury.

Hardware

- System** True double-beam echelle optical system. Front surfaced, reflecting optics with protective coating. Deuterium background corrector and built-in EDL power supply available on some models.
- 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 range: 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 lamps (HCLs) and electrodeless discharge lamps (EDLs). EDLs provide much higher light output and longer lifetime when compared to conventional HCLs. 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 in models with a four-lamp turret.

Electronics

Processor	Internal 300 MHz GX1 with 64 Mbytes of DRAM and 128 Mbytes of flash program memory on a PC104 interface-style printed circuit board. Includes real-time clock.
Graphics	32-bit controller on PC104 board.
Ports	RS232 C, 9-pin, parallel printer and 10BaseT Ethernet on some models.
E-box	All electronics are located in a single user-replaceable module. The operator can just slide the module out from the front of the instrument and replace it with a new one. Instrument operators can replace most parts quickly and easily without a service visit.

Gas Controls and Burner System

Flame Gas	Fully automated gas box with computer-controlled oxidant selection with automatic gas sequencing, oxidant and fuel monitoring and control.
Control	Touch-screen 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 is 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 gasses 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	<p>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.</p> <p>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 3-slot air/acetylene and 5-cm single-slot air/acetylene.</p>
Sample Area	25 cm wide x 25 cm deep sample compartment for easy access to burner components.

System Specifications

Dimensions	70 cm wide x 65 cm deep (0.46 m ²) x 65 cm high
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 electromagnetic 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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