

Atomic Absorption

PinAAcle 500 Flame AA Spectrometer



The PinAAcle™ 500 is a standalone flame-only atomic absorption (AA) spectrometer featuring a fully-integrated operational benchtop AA system with a simplified touchscreen user interface.

System Design

Monochromator	<p>Littrow design with motorized drive for automatic wavelength selection and peaking.</p> <p>Wavelength range: 180-900 nm</p> <p>Diffraction grating: 1800 lines/mm blazed at 236 nm and 597 nm</p> <p>Grating area: 64 x 72 mm</p> <p>Reciprocal linear dispersion: 1.6 nm/mm (nominal)</p> <p>Focal length: 267 mm</p>
Spectral Bandwidths	User selectable automatic slit widths of 0.2, 0.7 and 2.0 nm at their optimized slit height.
Automatic Lamp Selection	4-lamp mount with built-in power supplies for PerkinElmer cableless Lumina™ hollow cathode and patented electrodeless discharge lamps. Computer-controlled lamp selection and alignment via Syngistix Touch™ or optional Syngistix™ for AA software. Lamp elements and recommended operating currents are automatically recognized and set when Lumina hollow cathode lamps (HCLs) and PerkinElmer electrodeless discharge lamps (EDLs) are used.
Detector	Wide-range segmented solid-state detector, including a built-in low-noise CMOS charge amplifier array.
Background Correction	Built-in continuum source double-beam background correction using a high-intensity deuterium arc lamp.
Corrosion Resistance	All the PCBAs are conformal coated for complete resistance to corrosion.

Flame Atomizer

Gas Controls	Fully computer-controlled with oxidant and fuel monitoring. Touchscreen or keyboard-activated remote ignition system with air/acetylene. Acetylene flow is automatically adjusted prior to the oxidant change when switching to or from nitrous oxide/acetylene operation.
Safety Functions	Interlocks prevent ignition if the proper burner head, the nebulizer/end cap, or the burner drain system is not correctly installed; the liquid level in the drain vessel is incorrect; or gas pressures are too low. Interlocks also will automatically shut down burner gases if a flame is not detected, or if any of the other interlock functions are activated. Provision is included for safe shutdown from all operating modes in the event of a power failure.
Sample Introduction System	<p>Modular sample introduction system consisting of a quick-change spray chamber, burner head and nebulizer.</p> <p>The introduction system is equipped with a high-strength inert mixing chamber, angled to ensure proper drainage.</p> <p>Choice of high-sensitivity, corrosion-resistant, plastic nebulizer or durable stainless steel nebulizer.</p> <p>The standard burner head is all-titanium, 10 cm, single-slot for air/acetylene operation. Optional burner heads include: 5 cm nitrous oxide/acetylene, 5 cm air/acetylene, and 10 cm 3-slot air/acetylene.</p> <p>The flame shield is polymer-coated for resistance to corrosion from acidic fumes from the environment or from the samples.</p>

Control and Data System

User Interface	The standalone PinAAcle 500 AA provides complete control through an innovative touchscreen interface. Its easy-to-use Syngistix Touch™ software enables you to start the analysis in three steps, and offers flexibility 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. Results are automatically stored in the Data Manager and can be printed using standard templates. In addition to English, the PinAAcle 500 AA supports multiple languages, including Chinese (simplified), French, German, Greek, Italian, Japanese, Polish, Portuguese (Brazilian), Russian, and Spanish.
Display	15" 26 Million display colors TFT LCD with embedded resistive touchscreen. Compatible with VGA (640 x 480), SVGA (800 x 600) and XGA (1024 x 768). Coated for maximum durability and lifetime.
Built-in Computer	The touchscreen interface operates via a on-board computer that comes with Intel Core i3 3.3GHz with 4GB RAM and 2.5" SATA 64GB SSD, Serial ports, USB 2.0 ports, VGA/HDMI/DVI, and Gigabit Ethernet ports.
Data Control System	In addition to Syngistix Touch software, the instrument can also be controlled and operated via the more comprehensive, optional Syngistix for AA software operating under Microsoft® Windows® 7. Syngistix for AA software provides complete control of the instrument and its major accessories, plus data handling and storage, post-analysis reprocessing, and simultaneous second-session of the data control system.
Data Handling	Instrument readings linear in absorbance (-0.500 A to +2.000 A), concentration, or emission intensity with continuously variable scale expansion from 0.01 to 100 times. Integration times operator-selectable from 0.1 to 120 sec in increments of 0.1 sec. Reading modes include time-averaged integration, non-averaged integration (peak area), and peak-height measurement. Includes built-in statistics. Up to thirty (30) standards and a choice of proven calibration equations. Reslope of the analytical curve using a single operator-selected calibration standard. Built-in Ethernet interface for computer connection and use of optional accessories. Data collection time of up to 20 mins.

Control and Data System *continued*

Minimum PC Configuration	Lenovo® ThinkCentre® M83 Windows® 7 (64-bit), tower, or equivalent <ul style="list-style-type: none">• Machine Type: 10AGS01A00• Processor: Intel Core i5-4670 (3.4 GHz, 6M Cache)• HDD: 1TB 7200 RPM• Graphics: Intel HD Integrated Graphics• Memory: 4 GB X 2 DIMM 1600 MHz UDIMM DDR3• 2nd Serial Port: Yes• Optical: DVD Recordable• Wireless: WiFi 6235• Operating System: Windows® 7 Ultimate 64-bit• Warranty: 3-year Onsite• Recovery DVD: Yes Includes Operating System and its power cord
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Physical Data

Dimensions and Weight	Width	Depth	Height	Weight
PinAAcle 500 (no LCD touchscreen)	67 cm (26 in.)	63 cm (25 in.)	64 cm (25 in.)	57 kg (126 lbs)
LCD Touchscreen	35 cm (14 in.)	5 cm (2 in.)	28 cm (11 in.)	3.5 kg (8 lbs)
System Power Requirements	100-230V (±10%), 50/60 Hz (±1%), single phase alternating current, 800 VA (maximum)			
Electrical Protection	As defined in EN 61010-1; Insulation Class I; Installation Category II; Pollution Degree 2.			
Certification	Designed and tested to be in compliance with the legal requirements for laboratory instruments. The instrument is developed and produced in compliance with ISO 9001 and ISO 13485. Syngistix for AA software provides required control parameters for GLP and instrument performance validation.			
Safety Standards	EN 61010-1, EN 61010-2-061, CSA C22.2 No. 1010.1, CSA C22.2 No. 1010.2.061. The instruments bear the CE Mark and the CSA/NRTL Certification Mark. EMC Standards EN 61326, EN 55011, EN 61000-3-2, EN 61000-3-3.			
Environmental Requirements	Dust-free, free of vibrations, ambient temperature: +10 °C to +35 °C, with a change of a maximum 3 °C per hour. Relative humidity: 20 to 80% non-condensing.			