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| AAS- Atomic Absorption Spectrophotometer (Low Cost Model), 190 - 900nm | **Atomic Absorption Spectrophotometer****Name of the equipment:** Atomic Absorption Spectrophotometer**Make & Model:**Perkin Elmer PinAAcle 900F**I-Stem Registration ID-** 3222318 **Category of Instrument*** Advanced Manufacturing facility
* Characterization & Testing
* Computational Facility
* Bioscience & Technology
* Sample preparation

**Types of Analysis / Testing*** Elemental analysis (metals and semi-metals)
* Quantitative determination in liquid/solid samples

**Application:** * Heavy metal detection in water, soil, and industrial waste
* Food safety (trace metal contaminants)
* Pharmaceutical and chemical industry quality control
* Metal Detection in Archaeology, Mining, Forensics, Manufacturing etc.

**Description of Instrument**A high-performance flame AA spectrometer with a true double-beam design for fast startup and long-term stability. Features fiber-optic light throughput for improved detection limits, an 8-lamp turret, and automated flame optimization. Controlled by Syngistix™ for AA software for streamlined workflows, with optional 21 CFR Part 11/EU Annex 11 compliance for regulated labs. |

**Booking Details**

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| **Book through I-STEM:** <https://www.istem.gov.in/>**Slot Booking Link**[I-STEM Slot Booking link for External User](https://www.istem.gov.in/equipment-info/22318/Atomic-Absorption-Spectrophotometer-Flame) | **Booking available for**Internal and External Both**Requisition form for** [Internals](https://randc.nitc.ac.in/pdf/instruments/civil/CED-REQUISITION_FORM_Internal.pdf)[Externals](https://randc.nitc.ac.in/pdf/instruments/civil/CED-REQUISITION_FORM_Internal.pdf) |

**Contact Details**

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**Features, Working Principle and Specifications**

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| **Features of the equipment*** Double-beam optics for stability & precision
* 8-lamp turret with automatic alignment
* Fiber-optic light path for enhanced sensitivity
* Automated flame/burner optimization
* Syngistix™ software with compliance options
 | **Unique features/Measurement capabilities, if any*** Fast startup (<10 min) with self-diagnostics
* Detection limits: Low ppm to sub-ppm range
* TurboCharge nebulizer for improved uptake
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| **Instrument Technical Description and Major Specifications***(This Specifications Limited to Major 5)** Wavelength Range: 190–900 nm
* Spectral Bandwidth: 0.2, 0.7, 1.4 nm
* Flame Types: Air-Acetylene / Nitrous Oxide-Acetylene
* Burner Head: 10 cm titanium
* Lamp Mount: 8-position auto-switching
 | **Measurement/Sample specifications:** * Sample State: Liquid (acid-digested)
* Volume Required: 2–5 mL (flame)
* Pre-Preparation: Acid digestion (HNO₃/HCl) for solids
* Detection Elements: Pb, Cd, Cu, Zn, Fe, etc.
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**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.)**

* **Quantity:**
	+ Minimum 20 mL of liquid sample per element (filtered through 0.2 μm filter)
	+ Volume may vary based on expected concentration
* **Pre-Preparation:**
	+ Samples must be acid-digested (e.g., HNO₃/HCl) if solid/sludge
	+ Filtered (0.2 μm) to remove particulates
	+ pH-adjusted if necessary (e.g., for preservation)
* **State:**
	+ Liquid only (aqueous matrix preferred)
	+ No organic solvents without prior consultation

**Guidelines for Sample Submission**

* Standards Required for Quantitative Analysis
	+ Provide certified standards for each target element.
	+ Each element & standard counts as a separate sample (charged accordingly).
	+ If standards are not provided, only absorbance values will be reported (no quantification).
* Sample Processing
	+ All samples (standards + unknowns) processed using client-provided method.
	+ Raw data only will be provided (no advanced data interpretation).
* Minimum Sample Requirement
	+ Batch processing: Minimum 20 total samples (standards + unknowns) per run.
	+ Smaller batches may incur additional charges.
* Submission Notes
	+ Label samples clearly with element(s) of interest and expected concentration range.
	+ Hazardous samples (e.g., HF-containing) require prior approval.

**User Charges Rs. (GST Extra)**

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| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| 200/- per sample per metal | 400/-per sample per metal | 400/-per sample per metal | 1000/-per sample per metal |