

Technical Specification for Atomic Absorption Spectrophotometer (Graphite, Flame and Hydride Techniques)		
Sl. No	Component	Specification
1	General	Fully External PC-controlled True Double Beam Atomic Absorption spectrometer system with Flame/Graphite and Hydride Generation
2	Number of Lamps	8 Single element coded fix position hollow cathode lamps with automatic lamp selection
3	Burners	<ol style="list-style-type: none"> 1. Should be Titanium/Incoloy material or equivalent for the better acid and temperature resistance air/acetylene (10 cm) and nitrous oxide/acetylene (5 cm) burner head 2. Should have facility for PC controlled burner adjuster with auto setting of burner height. 3. Burners, Nebulizer, Spray chamber should be resistant to corrosion.
4	Optics	Czerny-Turner/Littrow or equivalent monochromator with computer controlled wavelength selection <ol style="list-style-type: none"> 1. Wavelength Range: 185 - 900 nm 2. Focal Length: >250 mm. 3. Grating: 1800 Lines/mm. 4. Dispersion: 1.6 nm/mm or better. 5. Automatic slit selection between 0.2 to 1.0 nm
5	Detector	Photomultiplier tube or Solid State Detector
6	Background Correction	Deuterium Correction
7	Gas Control	Fully programmable gas control system. Automatic oxidant changeover facility should be there.
8	Safety System	<ol style="list-style-type: none"> 1. Safety interlocks should monitor burner type, burner fitting, liquid trap, pressure relief bung, flame shield, flame operation, mains power, and oxidant pressure within safety reservoir and deuterium lamp cover. 2. Should have separate ignite/flame-off buttons, internal gas connections made automatically, flame shields and protection against heat and UV radiation. 3. External adjustment of all burner and spray chamber controls. 4. Violation of any safety interlock should prevent flame ignition or should extinguish existing flame.
9	Performance	>0.7 absorbance with precision of <0.5% RSD from ten 5 sec. integrations for 5 mg/L Cu solution.
10	Graphite Furnace	<ol style="list-style-type: none"> 1. Temperature Range: programmable from ambient to 2700 degree C or better (for better graphite tube life). 2. Ramp Rate: 2000 degree C/sec or better. 3. Purging Gases: Argon or Nitrogen. 4. Background Correction: Deuterium Correction. 5. Integrated furnace-viewing camera. 6. Autosampler: Min 100 positions vial capacity.

		Should automatically prepare up to a 10-point concentration or standard additions calibration from one bulk standard.
11	Vapor Generation Accessory and lamp (for hydride elements)	<ol style="list-style-type: none"> 1. Should be an automatic and software-controlled continuous flow Vapor Generation Accessory system. 2. Lamps for hydride forming elements (As, Hg, and Se) should be quoted.
12	Software	<ol style="list-style-type: none"> 1. Should be an easy-to-use instrument software featuring wizards that guide users through method and sequence development, and method templates for rapid development of commonly used methods. 2. Included PC should meet the minimum requirements such as desktop with the i-5 processor, 8 GB RAM, 1 TB, Windows 7 home basic or better, and 28 inches or more LED monitor.
13	Accessories	<ol style="list-style-type: none"> 1. Types of Cylinder: Acetylene (min 99% pure), Nitrous Oxide (min 99.5% pure) and Argon/Nitrogen with desired purity. 2. Type of regulators: With heater wherever required. 3. Chiller: Should be provided directly through OEM with suitable capacity. 4. Compressor: Should be provided with suitable capacity 5. Graphite Tubes: 30. 6. Hollow cathode lamp: Ag, Al, Au, Bi, Ca, Cd, Cr, Cu, Co, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Si, Te and W should be quoted
14	Warranty	Minimum 3 years warranty with 2 years free services
15	Vendor eligibility criteria	<ol style="list-style-type: none"> 1. A list of at least 3 Institutions/R&D units/Industries where similar instruments have been supplied in India, including contact details (name of the person-in-charge, email, and phone number), is to be provided. 2. The quoted model's three performance certificates in reputed institutions in India should be enclosed duly signed and stamped by the concerned scientist.