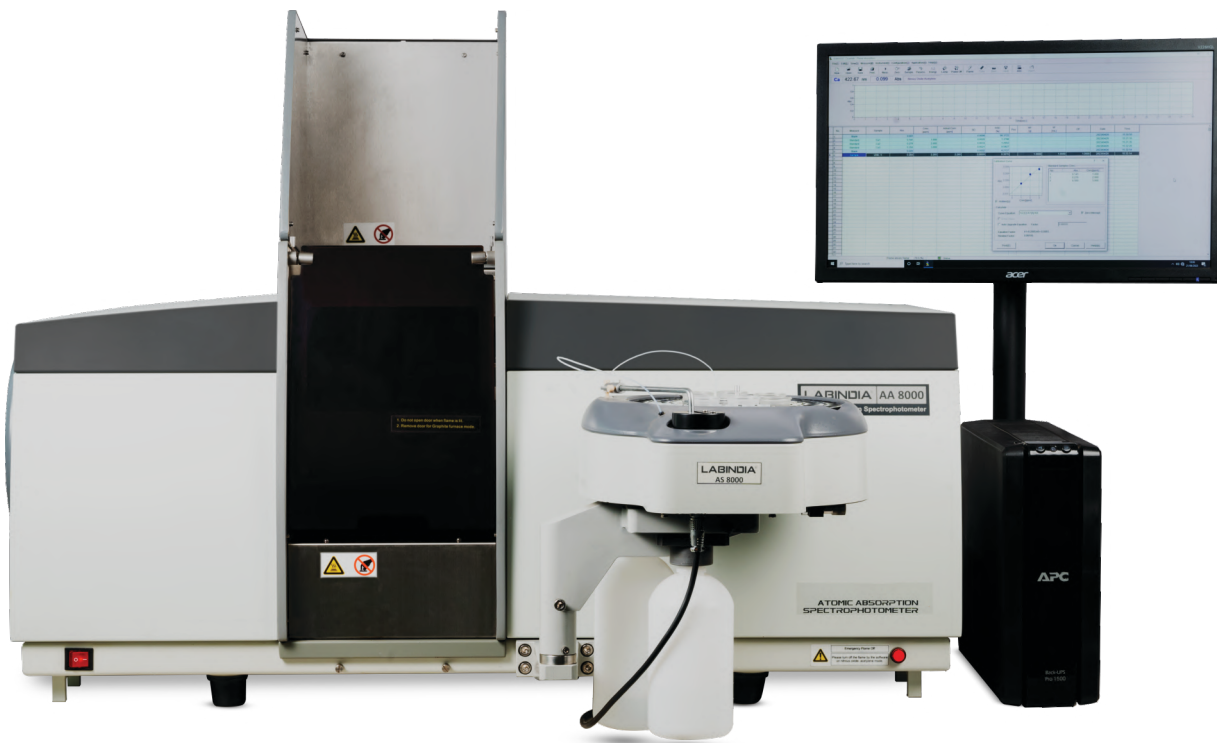


AA8000

Atomic Absorption Spectrophotometer



GLP COMPLIANT

FULL AUTOMATION
FOR MULTI-ELEMENT ANALYSIS

INTEGRATED GRAPHITE SYSTEM

HIGH SENSITIVE HYDRIDE



The AA8000 Atomic Absorption Spectrophotometer is a true double beam with sealed and vibration free optical system, having Czerny-turner Monochromator with Holographic grating (4500 lines/mm). It's a high performance automated instrument designed to meet the requirements of the modern laboratory. Due to its versatility and performance it can be used for a wide range of applications including: Agriculture, Soil, Environmental, Food, Metal, Mining, Petrochemical, Clinical, Pharmaceutical.

THE INSTRUMENT IS AVAILABLE IN THREE CONFIGURATIONS:

1. Equipped with Flame Atomiser with options for three flame configuration:
 - Air/Acetylene as standard configuration
 - N₂O/Acetylene or Air/LPG (Natural Gas) as option.
 - All three flame configurations are offered with coded burner for full safety and protection.
2. Equipped with Integrated Flame and Graphite Atomiser with easy change-over by simple selection in the AA-Win Software.
3. Equipped with Graphite Furnace Atomiser. The Graphite head is fixed into the optical path to maximise performance and eliminate drift. The transversely heated graphite tube is efficiently heated and cooled due to precision feedback system. Option upgradability to Graphite camera.

SALIENT FEATURES

- Benchtop Model.
- PC system built into the instrument as standard. Windows professional platform with latest version operating system.
- Full software control of the instrument and autosampler.
- Pre-installed AA-Win Software GLP and 21- CFR Part 11 Compliant, export of data to other applications and integrated QC Protocol.
- Automatic 8 lamp turret controlled and optimized by the AA-Win software.
- Automatic alignment and optimization of energy using coded lamps & built-in power supply.
- GLP compliant software is now available for all AA8000 Configurations.
- D2 lamp or Self reversal background systems.
- High precision minimal optics ensures maximum for flame and furnace both light throughput to the computer controlled Czerny-Turner monochromator.
- High sensitivity absorbance better than 0.9abs for 5ppm Cu
- A universal autosampler is available which can be used for flame as well as graphite furnace system with Auto Dilution facility.
- Absorption and Emission modes are standard as well as peak height, peak area, sequential and manual integration modes.
- Auto flame Ignition. Nebulizer Interlock for gas leakage etc.
- New upgrade available with Full Automation for Multi-Element Analysis.
- Spray chambers chemically inert material capable of handling all corrosive materials.

SOFTWARE FEATURES

- Built in AA Cookbook for all elements
- Easy built in user Tools
- Automatic programming multiples of 8 elements approx 32
- Instrument controlled via built in PC
- Hollow Cathode Lamp Energy Graph
- Normal, Standard addition and standard curve calibration methods supported
- Flexible and comprehensive results database filters to select and display the required data.
- Validation Package
 - a. Validation should able to be performed by the operator
 - b. Automatic OQ test available
- Height of Burner Head - stored in method
- Gas Flow Control: Fully Automatic, Software operated mass flow control for Fuel Flow. Total gas flow control system to maintain gas flow (Ratio of fuel/Oxidant) at set levels even when subjected to outside variations like nebulizer adjustments. Automatic gas flow adjustment during change over between Air/C₂H₂ and N₂O.

FLAME ATOMISER FEATURES

3 flame systems are available. Air/acetylene is the standard configuration with the N₂O/acetylene and Air/LPG as options.

Air/Acetylene

- This flame uses a 100mm single slot burner for standard configuration.
- The high sensitivity (Cu 5ppm > 0.9A) is due to the efficiency of the fixed position High Efficiency Nebuliser fitted as standard. An acid resistant replacement is available as an option.

N₂O/Acetylene

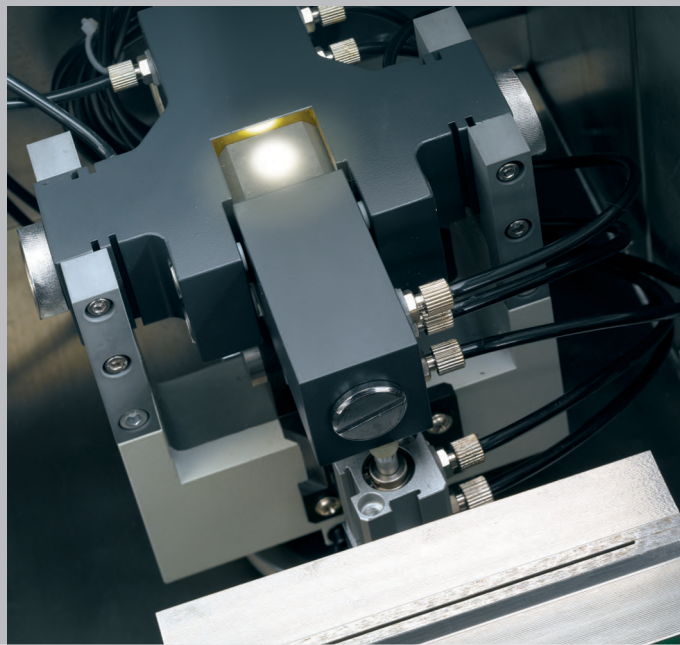
- The burner for this gas has a 50mm slot and is used to measure elements less prone to ionization such as: Aluminium, Tin, Titanium, Calcium and Vanadium.
 - The switchover from air/acetylene and flame off is fully computer controlled.

Air/Propane (LPG)

- This flame uses a 3 slot burner and with the low pressure requirement it is also much safer to operate. Due to the lower temperature it is ideal for analysing alkali metals such as Potassium, Sodium and Lithium, especially when used in the Emission mode.
- There are some remote areas in the world that have difficulty obtaining acetylene or even a high enough purity to operate the flame, so LPG can give a real alternative and offer comparable results throughout the wavelength range.
- Safety Features
 - Gas Pressure Monitoring for all gasses
 - Burner Identification
 - Flame Sensor
 - Drain Trap level Sensor
 - Gas Leak Detector
 - Safety cut off switch

GRAPHITE FURNACE ATOMISER FEATURES

- The graphite furnace atomiser is available in 2 Models: - In the AA8000G instrument the graphite furnace head is fixed into the light path. In the AA8000FG instrument the graphite furnace head is positioned automatically into the light path by a simple operation in the AA-Win software.
- Furnace Head Design - The Transverse head is heated and cooled efficiently due to the feedback system and has been designed to reduce analytical problems normally associated with this type of technique. Pyrolytically coated graphite tubes are used as standard and are manufactured to improve performance as well as increase the analytical life.
- Heating Program - Up to 10 heat stages are available. These can be set up and stored in the AA-Win software.
- The graphite furnace tube is cooled efficiently by an optional water circulation system / chiller.
- Safety Features:
 - Argon Gas Pressure Sensor
 - Water Flow Sensor
 - Over Temperature Sensor
- Camera for Graphite furnace can be provided on request



FULLY ADJUSTABLE INERT NEBULISER

It is fully adjustable so that a wide variety of sample matrices - aqueous or organics (oils etc.), acid or alkali dilute or concentrated solutions can be analysed under optimum conditions.

- Fully inert nebuliser
- Adjustable from 2-6 ml/min
- Excellent RSD's typically < 1.0%
- Enhanced sensitivity
- Resistant to all acid including HF

HYDRIDE SYSTEM

CONTINUOUS FLOW HYDRIDE ANALYSIS SYSTEM

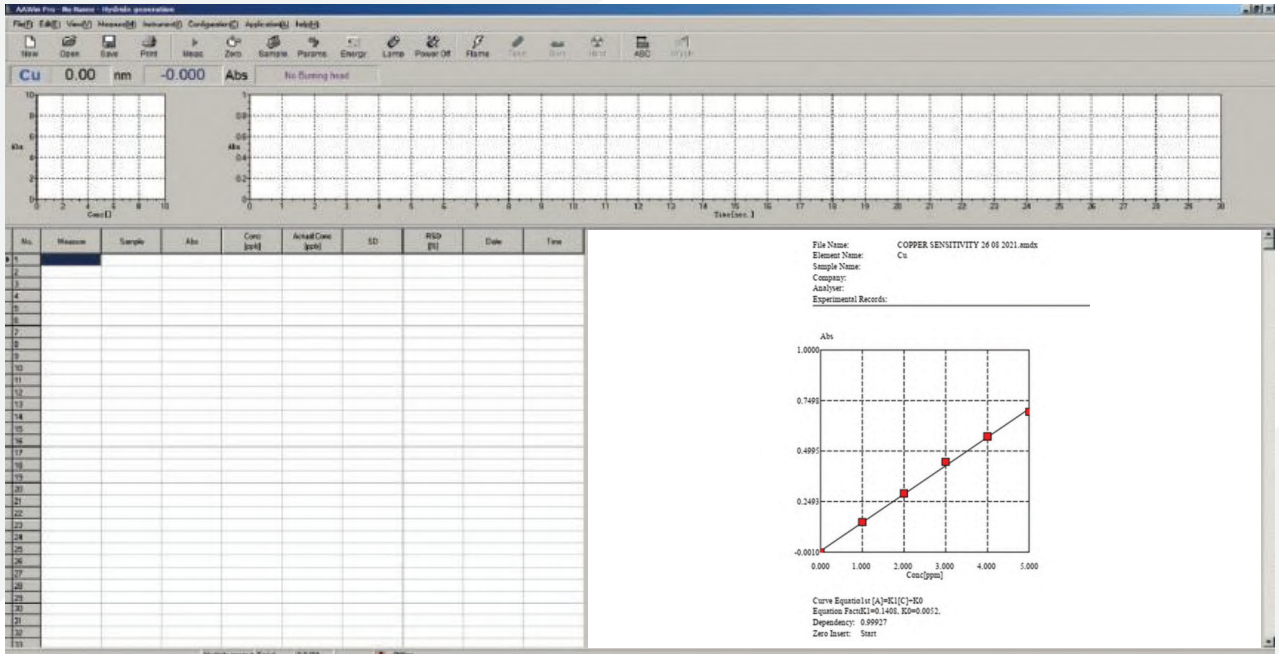
Main Features

- Improved detection limits for inorganic Hg
- RSD \leq 2%
- Easily adapted to standard hydride mode with improved detection limits for As, Se, Sb and other hydride forming elements via a heated cell
- Improved stability: The micro peristaltic pump is controlled via AAHyd-Win creating a stable flow of sample and reagent and producing a stable formation of H₂ gas and hydrides
- Compact system the smallest footprint of its kind on the market (95mm x 118mm x 140mm)
- Chemically resistant: ceramic pins, PFA mixing block, and quartz glass
- Detection limits upto 0.0005 mg/l OR PPb level

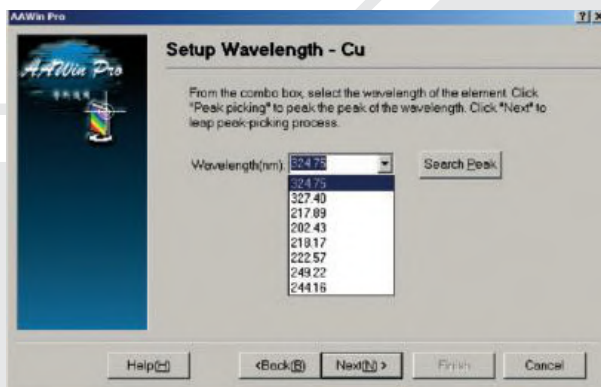
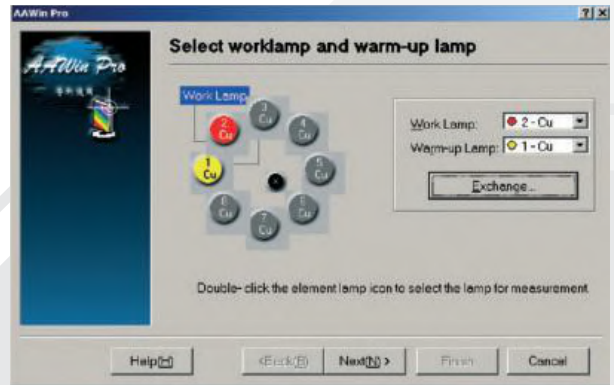


AAWin Software

AAWin Software is a powerful and intuitive software product designed to allow control and data acquisition.



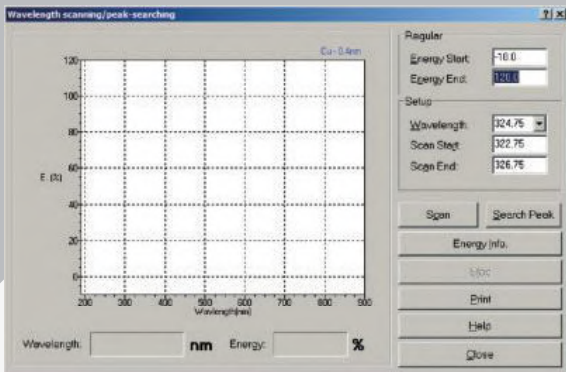
The AAWin software allows the Analyst to control all aspects of their analytical method whilst providing an extensive range of tools for data collection, storage and interpretation. The software interface consists of three key work areas, whilst having toolbars to access many others. These work areas allow the user to view real-time signal acquisition, up-to-date display of calibration curves and a flexible, sample table. The AAWin software offers full automation allowing the user to measure multiple elements sequentially by means of a sample wizard and optional random access autosampler.



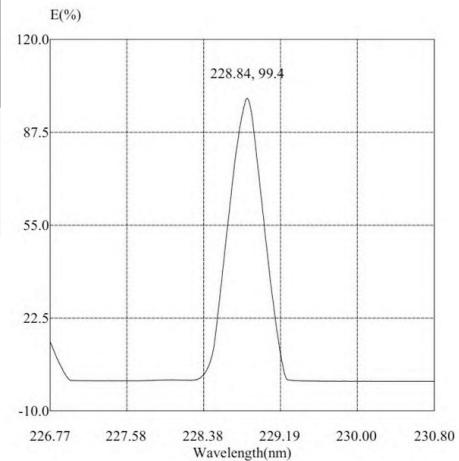
Lamp turret setup, operating and warm-up currents, along with the desired analytical wavelength are easily selected in the configuration.

NOW GLP COMPLIANT

FULL AUTOMATION FOR MULTI-ELEMENT ANALYSIS

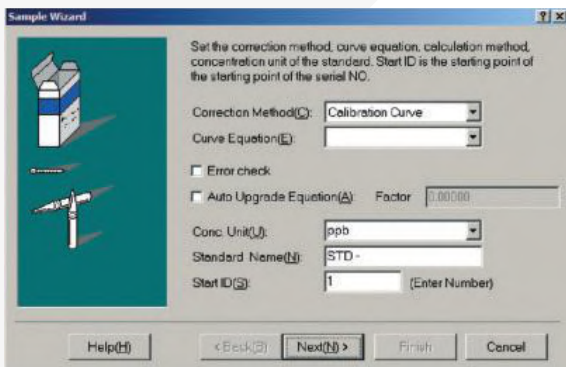


Ensure optimal peak position at the chosen analytical line by scanning the emissions spectra.

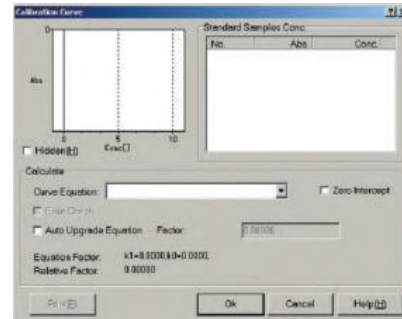


Cd

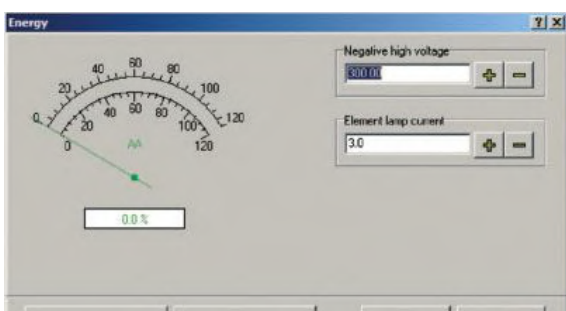
Slit (nm): 0.4nm
 Peak (nm): 228.84
 Energy (%): 99.4
 Lamp Current (mA): 2.0
 High Voltage (V): 356.00



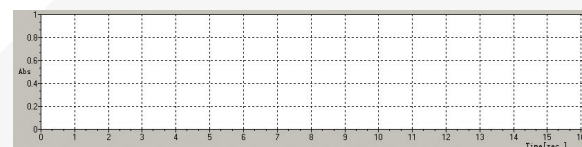
Each stage of analysis setup is made quick and simple by means of sample wizard.



View up-to-date calibration curves in 1st, 2nd, or 3rd order using a standard calibration or standard addition. Perform retrospective curve fits to ensure optimum correlation.



Obtain reliable and accurate results by using the energy control feature to manually optimise atomiser position and setup. Use the auto-balance feature to ensure energy level, and optical alignments are optimised when using background correction



View real-time signal acquisition for flame, graphite furnace and hydride generation analysis.

AA8000 SPECIFICATIONS

FLAME SYSTEM

Instrument can be configured with Flame, Graphite or Integrated Flame & Graphite (interchanged using Software)

Wavelength Range	185nm – 915nm
Optics	True Double Beam, Sealed & Vibration free optical System with a reflective optical compartment
Detector	PMT (Wide Range)
Monochromator	Czerny-turner type with Holographic Grating of 4500 lines/mm and Reciprocal Linear Dispersion better than 0.45 nm/mm @ 200 nm, focal length 330mm.
Spectral Bandwidth	Adjustable slit from 0.1 nm. to 2 nm. (software selectable)
Wavelength Accuracy	± 0.1nm
Wavelength Reproducibility	< 0.03nm
Resolution	0.1nm
Baseline Stability	0.005A/30min
Sensitivity (Cu)	>0.9 Absorbance or better for 5 ppm Cu solution precision of <0.5% RSD from 5 second integrations for 5 ppm Cu standard
Detection Limit	Cu < 0.004 µg/ml (flame) Cd < 0.4 x 10 ⁻¹² g (graphite furnace)
Repeatability	Cu < 0.7% (Air/Acetylene flame) Ba < 1.0% (Nitrous oxide/Acetylene flame) Cu < 2.0% Cd < 2.0% (Graphite Furnace)
Background Correction	Deuterium / Self reversal upto 2.5 Absorbance
Characteristic Concentration	Cu < 0.02 µg/ml, Ba < 0.15 mg/ml (N ₂ O/Acetylene) Burner Heads
Nebuliser	High Efficiency fully adjustable Inert nebuliser
Burner Head	Titanium Alloy
Atomization Chamber	Corrosion-resistant material
Position Adjustment	Automatic Changeover for Integrated Flame and Graphite system. Automatic setting of optimum height of Flame Burner, Software controlled Burner movement both vertical and horizontal.
Safety Functions (Interlocks)	Burner Identification, Flame Sensor, Gas leak Sensor, Low Gas Pressure Sensor, Drain Trap Sensor, Power Loss Protection, Circulation Water (graphite), Over Temperature Sensor (graphite)

GRAPHITE SYSTEM

Graphite Tubes are pyrolytically coated & transversely heated upto 3000°C

Platform tubes supplied as standard, capable of accepting volumes 1-50 µL (recommended value less than 20 µL)

Programmable graphite furnace upto 10 stages which can be set & stored using Software. Heating rate 2000°C/s

Replacement of Graphite tube performed by a simple command using Software

Graphite tube cooling by additional water circulatory system

Cd Sensitivity: 4x10⁻¹² gm

Safety Features	1. Argon Gas pressure sensor 2. Water Flow sensor 3. Over Temperature sensor 4. Broken Graphite Tube protection
-----------------	--

AA8000 SPECIFICATIONS

AUTOSAMPLER

The AA8000 Autosampler 114 position with Autodilution facility can be used with both Flame & Graphite Instrument Configurations with Dilution facility

Flame System

Vial Capacity	38 positions
Sample Vial Size	6 ml
Standard Sample Vial Size	12 ml
Reproducibility	Cu < 0.6% (air/acetylene) Cu < 1.0% (air/LPG) Ba < 1.0% (nitrous oxide/acetylene)
Pressure Protection for Wash	
Position Adjustment using Software	

Graphite System

Vial Capacity	76 positions
Sample Vial Size	1.5 ml
Modifier Vial Size	12 ml
Upto 3 Modifier	Additions
Reproducibility	Cu < 2.0 %, Cd < 2.0 %
Pressure Protection for Wash	
Position Adjustment using Software	

LABINDIA
ANALYTICAL
WHERE COMMITMENT IS CULTURE

www.labindia-analytical.com / For Enquiries: sales.mfd@labindia.com

Labindia Analytical Instruments Pvt. Ltd.

HEAD OFFICE:

Thane: 201, Nand Chambers, LBS Marg, Near Vandana Cinema, Thane (W) - 400 602. Tel.: +91-22-2598 6000 / 2598 6110 E-mail: sales.mfd@labindia.com

REGIONAL OFFICES:

Delhi: Tel.: +91-11-4330 6001 / 10

Chennai: Tel.: +91-44-2434 7008 / 2432 0352

Kolkatta: Tel.: +91-33-2466 3362

BRANCH OFFICES:

Bangalore: Tel.: +91 80 4565 6200

Lucknow: Tel.: +91-522-2346 535 / 2346 496

Hyderabad: Tel.: 040 4444 3530

Vadodara: Tel.: +91-265-2986 005 / 2986 006

Pune: Tel.: +91-20-2545 3386

Chandigarh: Tel.: +91-172-4090 001-07 / 4090 009

FACTORY 1: Plot No. EL-72, Electronic Zone, TTC Industrial Area, Thane Belapur Road, Navi Mumbai - 400 705. Tel.: +91-22-6107 6666

FACTORY 2: Plot No. W-401, TTC, MIDC Industrial Area, Rabale, Thane-Belapur Road, Navi Mumbai 400 701. Tel.: +91-22-6107 6555

APPLICATION & TRAINING CENTRE: R-909, TTC Industrial Area, Thane Belapur Road, Rabale, Navi Mumbai - 400 701. Tel.: +91-22-6107 6555



Striving to become the best individuals, we endeavour to foster the best team. Performing sensibly, we try to achieve the best efficiency. Working innovatively, we seek to make the best products. Listening patiently, we excel to offer the best service. So, no matter what you needs are, come to us. **GET THE BEST**

LABINDIA reserve the right to change specification without notice as part of its continuous programme of product development.