



# SPECTROLAB

## TRUE DOUBLE BEAM ATOMIC ABSORPTION SPECTROPHOTOMETER Model

Specification Sheet

Model S44



ISO 9001:2008 Certified



ISO 14001:2004 Certified



**TOUCH S**

**WITH 7" HIGH RESOLUTION  
COLOR GRAPHICAL DISPLAY WITH**

**GREEN LCD  
BUILT-IN PC CONTROL**



**MASS DATA STORAGE THROUGH  
USB PEN DRIVE**

- **7" High Resolution Touch Screen LCD Color Graphical Display**
- **SUPPORTS USB PEN DRIVE TO STORE / RETRIEVE MASS SPECTRAL DATA**
- **BUILT-IN WINDOWS BASED PC CONTROL**
- **AUTOMATED SIX LAMP TURRET COMPATIBLE TO CODED HALLOW CATHODE LAMPS WITH INDEPENDENT POWER SUPPLY AND ALIGNMENT FOR EACH LAMP**
- High Energy Double Beam Optics
- Microsoft Windows® based software for Data Processing, Storage, Retrieval, Interpretation etc.
- Modes of operation include Absorbance, Emission, Concentration & Standard Addition Background correction with D<sub>2</sub> lamp source
- Saving of optimum parameters
- Auto Flame control
- Auto scan for wavelength conformation
- Self Diagnostics
- Integral Microcontroller based auto gas box with all safety features
- Optimization of flame conditions for each element
- Precise vertical, lateral and rotational alignment of burner for Absorbance, Optimization automatically with keyboard / Manual control
- **OPTIONAL**
- Autosampler attachment

● **For analysis of various metallic constituents in**

Soil, Fertilizer, Micro Nutrients, Plants, Pesticides, Foods, Water, Biological Matter, Metallurgy, Plating, Coal, Petrochemicals, Glass, Cement, Steel and Other Industry.



**AUTO SAMPLER**



**BUILT-IN PC CONTROL**



**AUTO FLAME CONTROL**



**AUTO GAS BOX**

## SPECIFICATIONS

### PARAMETER

#### SPECTRAL

Range	185 to 900 nm
Accuracy	± 0.5 nm
Readability	0.1 nm
Repeatability	0.2 nm
Bandwidth	0 to 2.5 nm continuously variable with increment of 0.1 nm

#### PHOTOMETRIC

Range	0 to 2 Abs
Accuracy	± 0.010 Abs at 1.0 Abs
Integration Time	0.04 to 99 sec

#### LIGHT SOURCE

6 lamps Automatic turret with independent power supply compatible to coded lamps

#### BACK GROUND CORRECTION

Deuterium Lamp (D<sub>2</sub>)

#### MONOCHROMATOR

Czerny Turner 1/3 m with 1800 lines/mm holographic diffraction grating and hard coated optics  
Reciprocal linear dispersion is 1.5 to 2.0 nm/mm

#### DETECTOR

Wide range Photo Multiplier Tube (PMT)

#### POWER SUPPLY

HC Lamp	0 to 30 mA modulated
D <sub>2</sub> Lamp	15 to 300 mA modulated
PMT	-200 to - 1000 V

#### FLOW CONTROL

Integral auto gas control system with LCD display, Keyboard and all fault indicators.  
Automatic flame change over, Auto Ignition / Shut off.  
Optimization of flame conditions for each element  
Programmable flame control

#### Safety Features

Full safety interlocks including Pressure sensors, Flame failure detection, Burner presence and recognition, Nebulizer presence and Drain sensor.

Power failure protection and Emergency flame shut off switch, Flash back arrestor on the cylinder

#### BURNER

Titanium construction, Premix, Laminar flow,  
100 mm burner for Air - Acetylene (C<sub>2</sub>H<sub>2</sub>)

Optional - 50 mm burner for Nitrous Oxide - Acetylene (N<sub>2</sub>O-C<sub>2</sub>H<sub>2</sub>)

Automatic control of burner in all 3 directions through Stepper motor.

#### FUEL

Acetylene (C<sub>2</sub>H<sub>2</sub>)

#### OXIDANT

Air/Nitrous oxide (N<sub>2</sub>O)

<b>NEBULIZER</b>	Pneumatic, with 90% platinum and 10% iridium alloy capillary
Sample feed rate	3 to 8 ml/min (adjustable)
<b>CONTROL</b>	Built-in Windows Based PC Control
<b>PORTS</b>	3 USB Ports - Can be used for Printer, Keyboard, Pen Drive & Mouse TCP/IP Port - Network connectivity PC Port - PC Connectivity
<b>DATA PROCESSING</b>	1. Absorbance, 2. Concentration (Standard calibration and addition, Curve fit options - Quadratic and Least Squares), 3. Emission, 4. Energy Profile
<b>DATA PRESENTATION</b>	
Display	7" (800 x 480) High Resolution Graphical Display
Hard Copy	On Printer (USB interface)
Soft Copy	Mass Data Storage through USB Pen Drive
<b>POWER REQUIREMENT</b>	230 V $\pm$ 10%, 50 Hz, 1 $\phi$ , Max. 200 VA
<b>PHYSICAL DIMENSIONS</b>	
Size (WxDxH) in mm	822 + 90 x 550 x 395
Weight in kg	Approx. 70
<b>SYSTEM UPGRADATION</b>	Instrument can be upgraded to hydride generator and cold vapor generator
<b>ACCESSORIES SUPPLIED</b>	
With instrument	100 mm burner (Air-C <sub>2</sub> H <sub>2</sub> ), Nebulizer with SS capillary, Background correction with D <sub>2</sub> Lamp, Compressor, Acetylene regulator with flash back arrestor
At extra cost	HC Lamps for desired elements, 50 mm burner for N <sub>2</sub> O - C <sub>2</sub> H <sub>2</sub> , N <sub>2</sub> O regulator, Nebulizer with Pt-Ir Capillary, Hydride/vapor generator, USB Pen Drive and Exhaust fume hood

Specifications subject to change due to continual development



# SPECTROLAB

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