



4 line Graphical Display



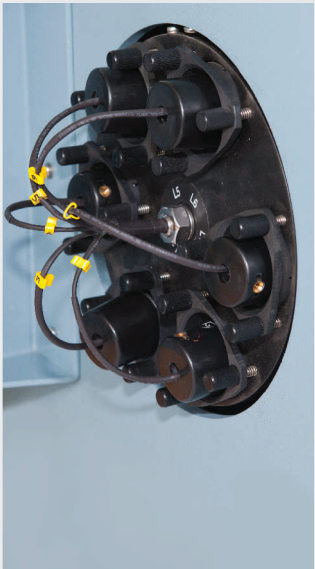
Auto Gas Box



Auto Burner Assembly with Air - Acetylene Flame



Auto Burner Assembly with Nitrous - Acetylene Flame



6 Lamp Turret

Attachments



Hydride Generator



Auto Sampler

APPLICATIONS

In the fields of



Soil Testing



MicroNutrients



Agriculture



Metals



Water



Mines & Geology



Fertilizer



Environmental & Pollution



Food & Beverages



Oil & Gas



Pharmaceutical



Coal



Glass



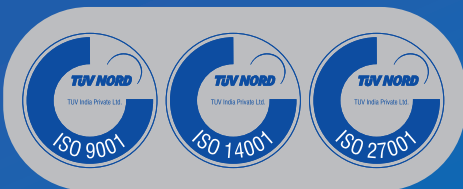
Cement



Research



Pesticide



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Specifications are subject to change as a process of continual development.

SINCE 1960

50

INNOVATIVE YEARS



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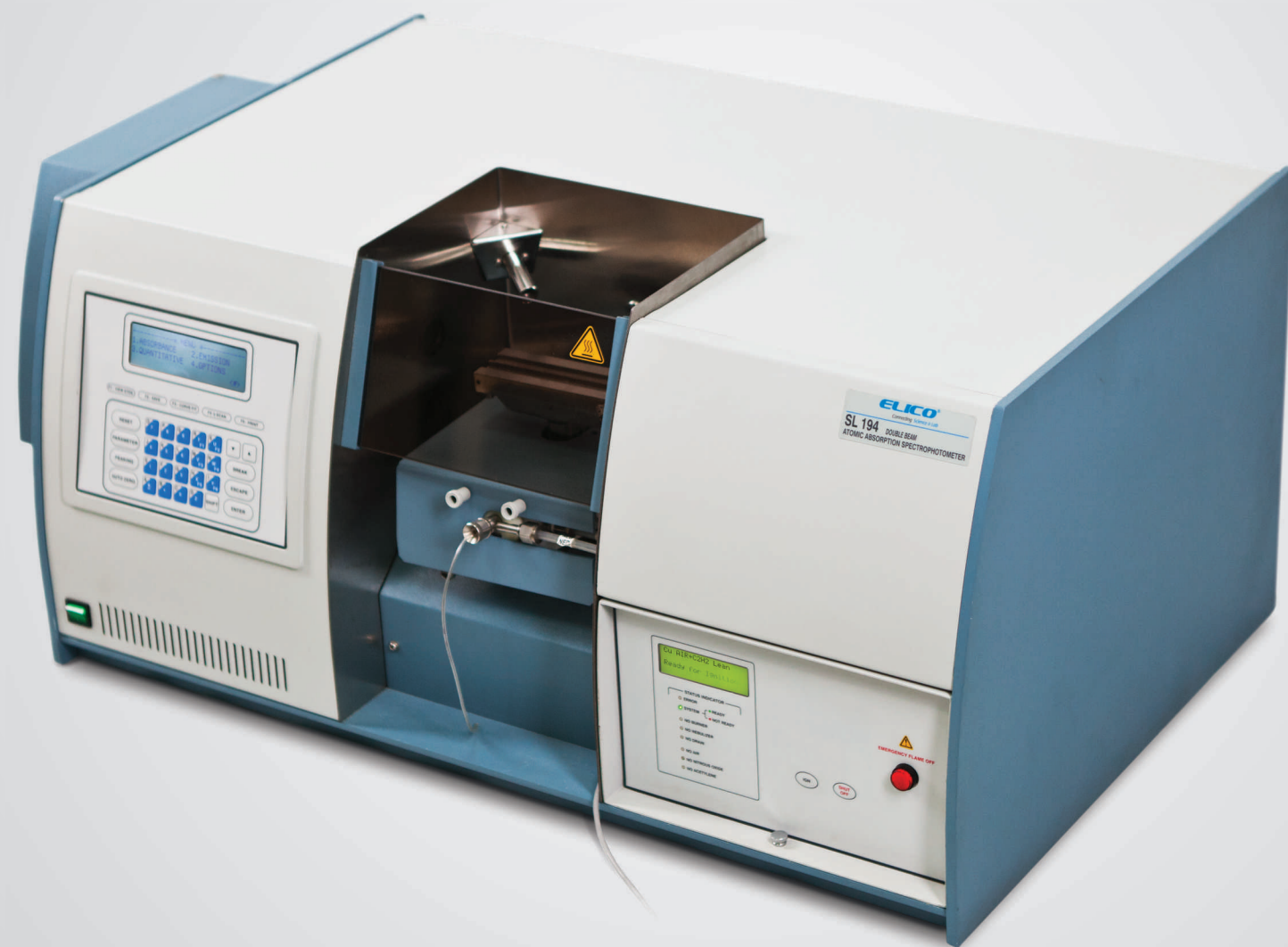
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TRUE DOUBLE BEAM
ATOMIC ABSORPTION
SPECTROPHOTOMETER

SL 194

PRODUCT SPECIFICATION SHEET

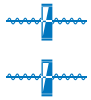


ELICO

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True Double Beam
Atomic Absorption
Spectrophotometer

SL 194



Double Beam



LCD Display



Auto Ignition



PC

High Energy True Double Beam Optics with Narrow Beam, fully sealed and Quartz over coated mirrors .

Automated Six or Eight lamp turret compatible to coded & non-coded Hollow Cathode Lamps with independent Power Supply and Alignment for each Lamp.

Integral Micro Controller based Auto Flame control with all safety features.

SALIENT FEATURES

- ▶ Microprocessor and Microcontroller based user friendly, Menu driven with printer interface and optional PC attachment through USB interface.
- ▶ Modes of operation include Absorbance, Emission and Concentration.
- ▶ Background correction with D₂ lamp source.
- ▶ Auto Saving of all parameters & Auto-Bandwidth Selection.
- ▶ Self Diagnosis, Automatic Wavelength Selection and Auto scan for Peak Searching.
- ▶ Burner Movement through Computer and Manual in all three directions - height, rotation and lateral.
- ▶ The Software has facilities to repeat the result of the sample and data treatment.
- ▶ Automatic calculation of percentage and ppm in base material.
- ▶ Optimization of flame conditions for each element with detachable burner.
- ▶ Automatic Setting of Parameters by selecting the Element (including Hollow Cathode Lamp).
- ▶ Absorbance Mode has the facility to measure sample absorbance for selected number of points and to calculate Mean, SD and RSD.
- ▶ Microsoft Windows® based software for Data processing, Storage, Retrieval, Interpretation etc.
- ▶ **OPTIONAL** : Autosampler Attachment, Hydride Generator.

SOFTWARE FEATURES

- ▶ **Microsoft Windows® based PC operating Software.**
- ▶ Easy User Interface.
- ▶ Linear / Quadratic curve equation to predict the sample concentrations.
- ▶ Modes of operation include Absorbance, Emission, Concentration and Standard Addition.
- ▶ Saving facility for the scanned Data.
- ▶ Print facility for all the scanned Data in Graph and Tabular formats.
- ▶ Automatic burner optimization through PC.
- ▶ Flame Control through Software.
- ▶ Energy Profile Mode to scan the energy of HC Lamp, D₂ Lamp and Flame.
- ▶ We provide Open Source Software complying International Quality norms, compatible to run on MS- Windows® Platform.
- ▶ Software is 21 CFR Part 11 compliant with password method protection, Instrument logbook etc.

SPECIFICATIONS

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

DETECTOR
Wide Range Photo Multiplier Tube (PMT)

POWER SUPPLY	
HC Lamp	0 to 30 mA modulated
D ₂ Lamp	15 to 300 mA modulated
PMT	-200 to -1000 Volts

DATA PRESENTATION	
Display	240 X 64 dots Graphic LCD Module
Hard Copy	On printer (Centronics)

FLOW CONTROL	
Integral Auto Gas Control System with LCD Display, Keyboard and all Fault Indicators with all safety features	
Automatic Flame Changeover, Auto Ignition and Shut Off	
Optimization of Flame Conditions for each Element with programmable Flame Control	
SAFETY FEATURES	
Full Safety Interlocks including Pressure Sensors on both lines, Flame failure Detection, Burner Presence and Recognition, Nebulizer Presence and Drain Sensor, Power Failure Protection and Emergency Flame Shut Off Switch and Flash Back Arrester on the Cylinder	
BURNER	
Titanium construction, Premix Laminar Flow 100mm burner for Air - Acetylene (C ₂ H ₂)	
Optional - 50 mm burner for Nitrous Oxide (N ₂ O) - Acetylene (C ₂ H ₂)	
The Spray Chamber is made of Inert Material .i.e., PTFE (Teflon) fitted with adjustable impact bead Aerosol	
FUEL	Acetylene (C ₂ H ₂)
OXIDANT	Air / Nitrous Oxide (N ₂ O)

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

LIGHT SOURCE
6/8 Lamps Automatic Turret with Independent Power Supply compatible to coded and non coded HC Lamps.

BACK GROUND CORRECTION	Deuterium Lamp (D ₂)
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MONOCHROMATOR
Czerney Turner 1/3 m with 1800 lines/mm Holographic Grating and Hard Coded Optics

DATA PROCESSING	
Microprocessor Mode	1. Absorbance 2. Emission 3. Quantitative Curve fit (Linear and Quadratic).
PC Mode	Microsoft Windows® based PC Operating Software with following Operations. 1. Absorbance 2. Concentration (Standard Calibration and Addition), Curve fit Options - Linear and Quadratic 3. Emission 4. Energy Profile

NEUBULIZER	
Made of fully Inert Material with 90% Platinum and 10% Iridium Alloy Capillary	
SAMPLE FEED RATE	3 to 8 ml/min (Adjustable)
POWER REQUIREMENT	
230 V ± 10% AC, 50 Hz, 1ϕ, 200 VA Max.	
PHYSICAL DIMENSIONS	
Size (WxDxH) in mm	822 (+90) x 550 x 395
Weight (in Kg)	Approx. 70
SYSTEM UPGRADATION	
Instrument can be upgraded to Hydride and Cold vapour Generator	
ACCESSORIES SUPPLIED	
With Instrument	100 mm burner for Air - C ₂ H ₂ , Nebulizer with SS Capillary, Back Ground Correction with D ₂ Lamp, Oil free Air Compressor with 100% Dustfree Air Filter, Acetylene (C ₂ H ₂) regulator with Flashback Arrester
At extra Cost	50 mm burner for N ₂ O - C ₂ H ₂ , Nebulizer with Pt - Ir Capillary, N ₂ O Regulator, Nitrogen Regulator, HC Lamps for desired Elements coded or non coded, Hydride and Cold vapour Generator, Printer, PC Software, Computer, Exhaust Fumehood Chamber, Servo Controlled Voltage Stabilizer of suitable rating, Acetylene Gas Cylinder, Nitrous Oxide Gas Cylinder and Nitrogen Gas Cylinder

ACCESSORIES

