SPECIFICATIONS

General Specifications

Measured parameter	Viscosity measured at room temperature and values calculated at 25° C
Unit	mPas
CV	< 2% day to day variation (within series < 1%)
Capacity	up to 30 samples/hour
Temperature	Onboard measurement and calculated viscosity correction to 25° C
Working Temperature	Ideally laboratory temperature should be in the range 20 - 30° C
Barcode	Optional barcode reader for primary tubes
Measurement container	Sample stays in primary tube
Sample volume	400 το 600 µl
Software	Windows based
Operating system	Windows 98se / Windows 2000 / ME / XP
Patient database	Stores all sample data in a database on the hard disk or to network
Power requirements	External auto sense power supply feeding 12 V to the instrument
Viscosity range	To greater than 20 mPas (higher by special order)
Visco Lite Shear range	From 2000 to 10,000 1/secs
Visoc Tek Shear range	3 to 10,000 1/secs (specification may change)

Computer requirements

Model	Standard laptop computer (optional)
Com ports	One RS232 com port required
Printer model	Any printer suitable for the Windows operating system

Optional

Bar Code reader Code	READABLE BAR CODES 2/5 family, Code 39, Code 32, Code CIP 39, 128, EAN128, EAN/UPC, ISBN/ISSN, CODABAR, Code 93, ISBT128, MSI, Plessey, Telepen, Delta IBM, Code 11, Code 49, Code 16K, RSS

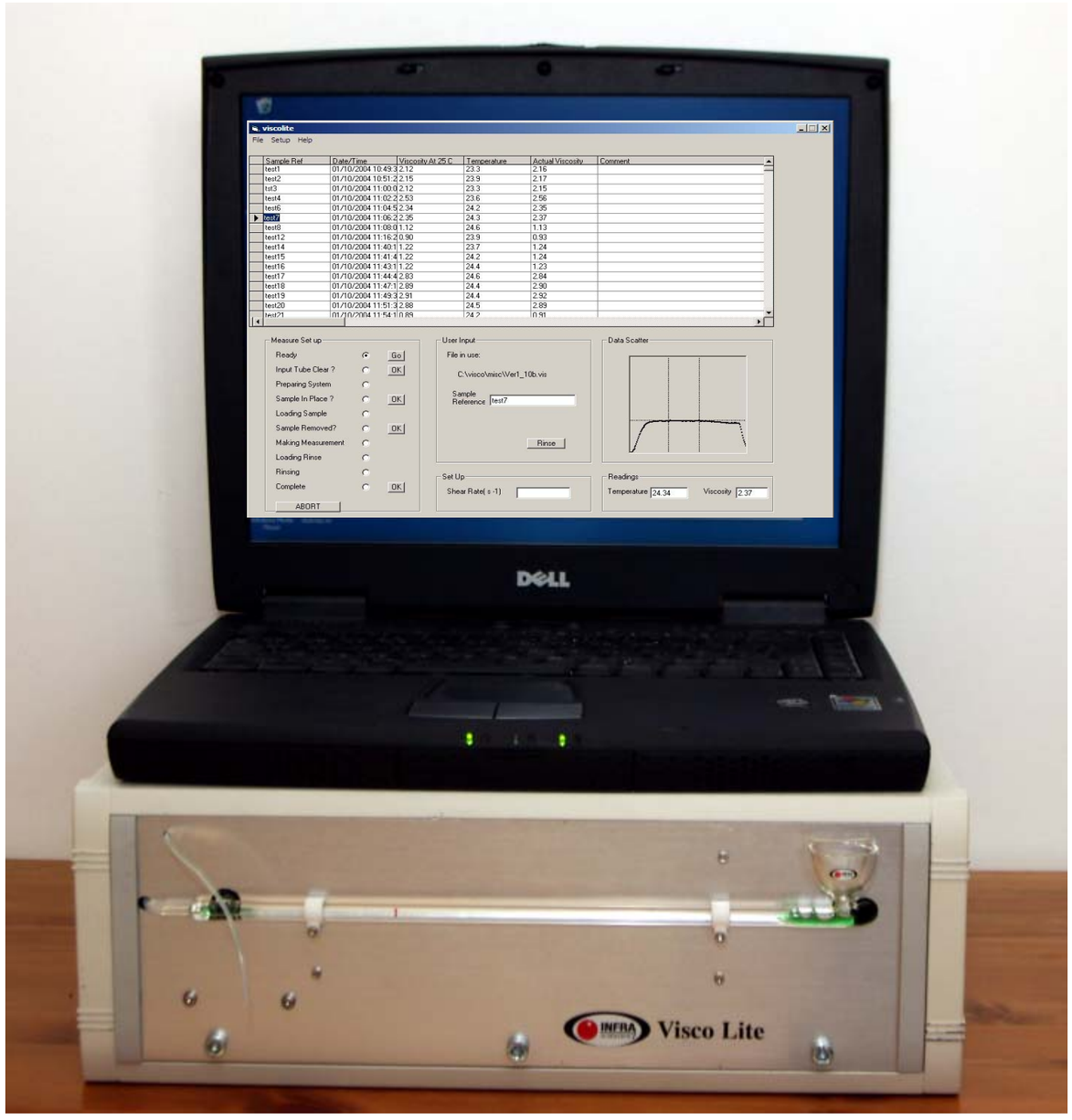
Infra Scientific Ltd

PO Box 2, Flockton,
Nr Wakefield, West Yorkshire, WF4 4YE
Tel: 01924 849 990
Fax: 01924 849 991
e-mail: info@infra.uk.com
Web: www.infra.uk.com

Visco Lite

A new capillary viscometer suitable for low viscosity applications and plasma / whole blood)

Patent Pending 0422959.7



Infra Scientific Visco Lite – a new instrument for low viscosity measurements

The Visco Lite utilises a well established principle that makes low viscosity measurement easily accessible to any user. Ease of use, technical excellence, and superb reproducibility are some of the features that make the Visco Lite the instrument to choose for low viscosity measurements.

Suitability

The Visco Lite is suitable for the laboratory with a small number of viscosity measurements (~ 60 / day). It has been designed as an entry level instrument, for manual operation only. However the instrument is offered with a choice of 2 basic models.

Operating Principle

This is a single fixed shear instrument where the shear rate is chosen by the operator, and the resulting shear stress is measured by pressure transducer, suitable for Newtonian fluids only e.g. blood plasma, oils, very dilute polymer solutions, ink jet printer inks etc. Results appear in a tabulated format on screen. Sample dependent visco-elasticity can be avoided or studied depending on the shear rate chosen.

Reliable

The Visco Lite is based on a proven technology, which has been, and still is, used in the majority of medical and industrial viscometers. High viscosity samples (> 5mPas) are dealt with accurately by simply lowering the shear rate - without the need to recalibrate.

Optional

The Visco Lite can be equipped (optional) with a bar code reader, checking positive ID at the point of analysis.

Speed

The instrument is capable of measuring a sample in 20 seconds, however time has to be allowed to rinse after measurement, a realistic 30 samples an hour is possible.

Post Warranty Service contracts (UK only)

PMI or fully comprehensive contracts are available. For calibration, warranty or service the instrument is sent to Infra Scientific Ltd and then returned to the customer by 24 hour courier.

Calibrators, controls and rinse solutions

A full range of calibrators, controls and rinse fluids are available which may also be suitable for instruments from other manufacturers. Calibrators and controls are generally made to literature given values for glycerol solutions and then checked by specific gravity. Values of 2.35 and 1.60 mPas are always available but any value can be made to order.

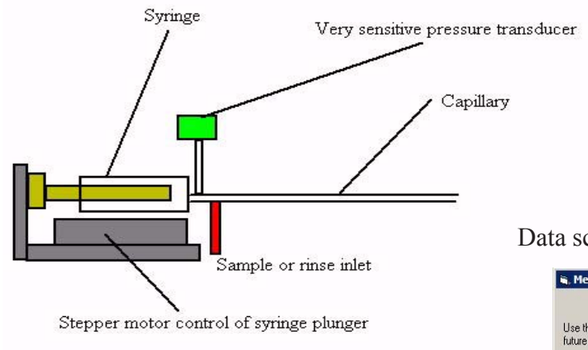
Principle of operation of the Visco Lite capillary viscometer

The Visco Lite viscometer is based on the industry standard capillary method of determination of viscosity. The steady flow of a liquid through a pipe was first investigated by POISEUILLE in 1844, who derived an expression for the volume of liquid issuing per second from the pipe :-

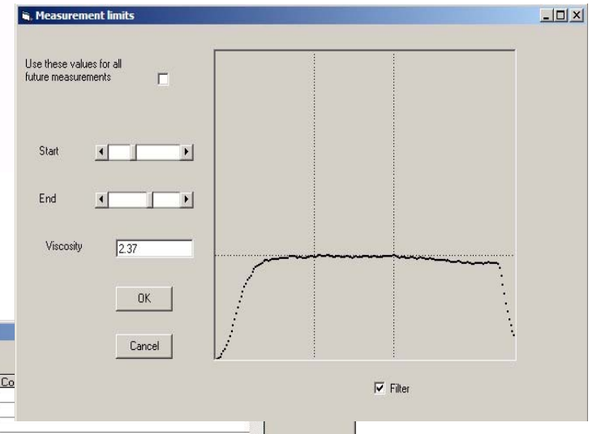
Volume per second = (pi * pressure difference * r^4) / (8 * viscosity * length capillary)

The volume / second is proportional to the shear rate and the pressure difference is proportional to the shear stress, so another common formula in rheological studies can be calculated :-

Viscosity = shear stress / shear rate



Data scatter diagram has user selectable steady state region



Visco Lite Typical results screen