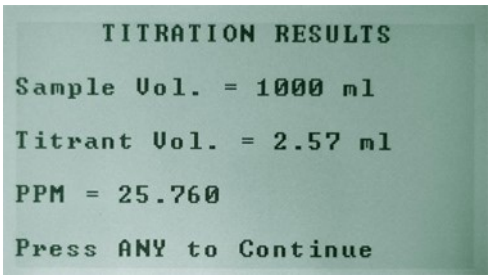
LabSense

Laboratory Charge Analyser

Pi's range of LabSense Laboratory Charge Analysers are an essential coagulation optimisation tool for water treatment. The LabSense Laboratory Charge Analyser allows the user to determine the ideal coagulant dosage needed to achieve optimum NTU and TOC reduction in typically less than 5 minutes, earning it the description "5 minute jar tester".

- **Optimise coagulation**
- **Optimum NTU reduction**
- **Optimum TOC reduction**
- **Manual or automatic titration available**
- **Multiple sample volumes**
- **User friendly**



LabSense titration results

Pi's LabSense Laboratory Charge Analyser comes backed with 30 years of charge analysis expertise and world class customer support. The LabSense is intuitive, flexible and gives great repeatable charge demand determinations time after time.

LabSense 1

- **Clear display**
- **Minimum sample of 225ml**
- **Maximum sample of 2000ml**
- **Simple to remove probe for cleaning**
- **Simple to remove piston for cleaning**
- **Includes magnetic sample stirrer**
- **Options:**
  - **pH measurement**
  - **Temperature measurement**
  - **Rollaway case for transporting unit**

LabSense 2

All LabSense 1 plus:

- **Built-in titrator for coagulant (dilute only)**
- **Options:**
  - **pH measurement**
  - **Temperature measurement**
  - **Rollaway case for transporting unit**

LabSense 3

All LabSense 1 plus:

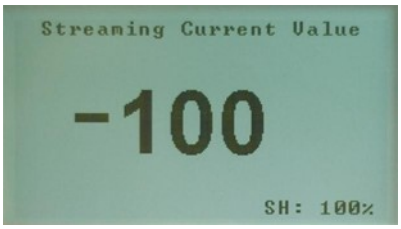
- **Built-in titrator for coagulant (dilute only)**
- **Built-in titrator for pH (base or acid)**
- **pH measurement**
- **Temperature measurement**
- **Options:**
  - **Rollaway case for transporting unit**

For more information, please visit our website: http://www.processinstruments.co.uk/products/laboratory-charge-analyser/

Principle of Operation

The measurement cell consists of a reciprocating piston in a probe assembly. Particles and dissolved materials are attracted to the surfaces of the probe by Van Der Waals forces. Counter ions surround these particles. The motion of the piston generates shear forces, which causes the counter ions to migrate. Electrodes in the probe measure the flow of counter ions, inherently defined as an electrical current. The current is electronically processed and displayed on the screen as the Streaming Current Value (SCV). For most samples in a paper mill, the SCV will be negative, indicating a net anionically charged sample.

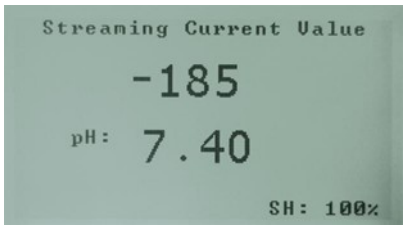
The process of finding the optimum dosage simply involves feeding in a measured volume of coagulant into the raw water sample until the reading indicates complete charge neutralisation has been obtained.



Streaming Current Value (SCV)

pH Adjustment

Some pH adjustment may be required to achieve accurate test results. An option for pH measurement allows the user to also quickly determine the dosage rate of additives like lime or caustic when needed to raise the coagulation pH of low alkalinity waters.



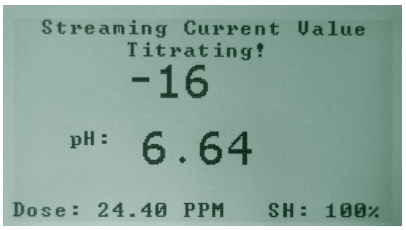
SCV with pH

Specification*

Sensor type:	Immersion, quick connect
Materials contacting sample:	Delrin, stainless steel (teflon optional)
Sample volume:	225ml-2000ml
Display:	LCD, monochrome with backlight
Dimensions:	17.8"H x 8.5"W x 9.2"D 26"H x 8.5"W x 9.2"D (fully extended)
Weight:	18lbs (8.2kg)
Electrical:	115VAC, 50/60Hz, 410mA 220VAC, 50/60Hz, 205mA (optional)
Operating Temp:	34° to 120°F (0° to 50°C)
Optional Accessories:	Rollaway case for transporting unit

Titration

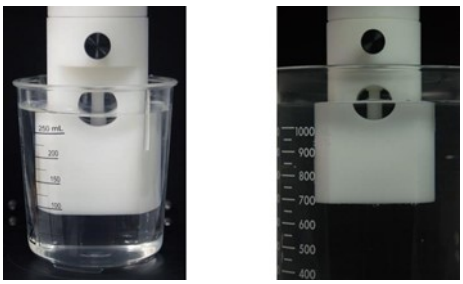
Titration of the coagulant and pH adjustment additives can be performed manually on the LabSense 1, or with the touch of a button using the auto-titration features that come as standard on LabSense 2 and LabSense 3. The automatic titration feature further simplifies the testing process and helps ensure the most accurate results possible.



Titrating

Sample Sizes

A very important feature is the large sample size capacity which allows the user to accurately titrate samples using undiluted coagulant (requires micro-pipette), which is the recommended method when feeding PACl or ACH.



Accommodates multiple sample volumes

Benefits

- **Quickly determine optimum dosage of coagulant needed to achieve charge neutralisation and optimise NTU and TOC removal.**
- **Great for assessing minimum dosage of base needed to raise pH in low alkalinity waters to optimise coagulation.**
- **Large sample size and magnetic stirrer ensures accurate results.**

Adjustable stand

** All subject to change without notice*