



# LabSense5

## 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".

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.

### Product Highlights

- **Optimise coagulation**
- **Optimum NTU reduction and TOC reduction**
- **Manual or automatic titration available**
- **Multiple sample volumes**
- **User friendly**
- **Application:** Coagulant determination for water treatment professionals

### Standard Features

- Minimum sample of 1000ml
- Maximum sample of 2000ml
- Clear 7" touchscreen display
- Simple to remove probe
- Simple to remove piston
- Measures charge
- Sensitivity adjustment for high conductivity samples
- Zero offset to customise data sets
- Adjustable Stand

In addition to the features listed above, the LabSense Laboratory Charge Analysers have the following optional features.

### Optional Features

LabSense	Charge	pH & Temp	Auto-charge titration	Auto-pH titration	Carry case	Syringe pump for neat coagulant
5.0	✓	✗	✗	✗	Optional	✗
5.1	✓	✓	✗	✗	Optional	✗
5.2	✓	✓	✓	✗	Optional	Optional
5.3	✓	✓	✓	✓	Optional	Optional



### Key Benefits

- **Sturdy housing for easily mobility, quick set-up, and bench-top stability**
- **Low maintenance, improved reliability**
- **Gain control to amplify low level signals**
- **Detachable probe and piston to facilitate cleaning and prevent corrosion**
- **Large sample size and magnetic stirrer ensures accurate results**
- **Great for assessing minimum dosage of base needed to raise pH in low alkalinity wates to optimise coagulation**

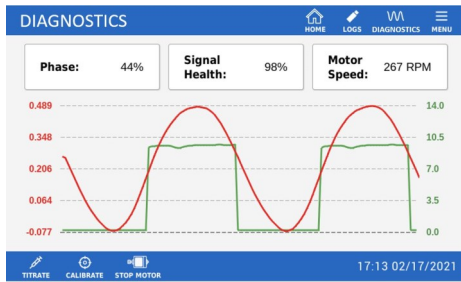
For more information, please visit our website: <http://www.processinstruments.co.uk/products/laboratory-charge-analyser/>



## 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).

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.



*Diagnostics*

Specification*	
Sensor type:	Streaming Current, Immersion, Quick connect
Materials contacting sample:	Delrin, 316 stainless steel
Sample volume:	1000ML-2000ML
Display:	7" capacity touchscreen, WVGA 800 x 480
Dimensions:	21.59cm W x 24.13cm D x 38.1cm H (58.42cm H fully extended) 216mm W x 241mm D x 381mm H (584mm H fully extended)
Weight:	7.3kg (16lbs) 8.6kg (19lbs) with syringe pump
Electrical:	100-240V, 50-60Hz, 1 amp max.
Operating Temp:	0° - 49° C (32° - 120° F)
Sample Stirrer:	550 RPM direct-drive stirrer with safety clutch
Auto Titration Pumps:	Solenoid micro-pump with 50µL dispense volume (used with neat chemicals) Syringe pump with 0.5µL dispense volume (used with neat chemicals)
pH Probe:	Glass body, 0–14 pH range, internal reference, ceramic junction
Temperature Probe:	RTD, 316 SS Body
Optional Accessories:	Rollaway case for transporting unit

\* All subject to change without notice

## Titration

Titration of the coagulant and pH adjustment additives can be performed manually on the LabSense 5.0, or with the touch of a button using the auto-titration features that come as standard on LabSense 5.1, LabSense 5.2 and LabSense 5.3. The automatic titration feature further simplifies the testing process and helps ensure the most accurate results possible.



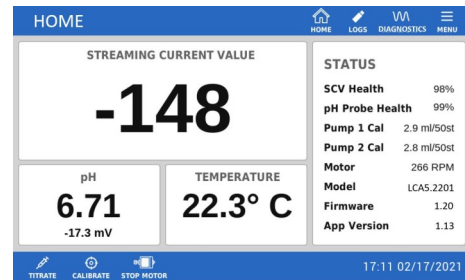
*LabSense titration results*

## Sample Sizes

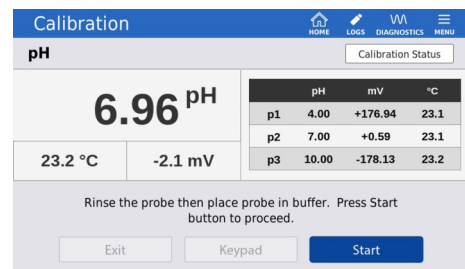
A very important feature is the large sample size capacity which allows the user to accurately titrate samples using undiluted coagulant (requires micro-pipette), which is the recommended method when feeding PACl or ACH.

## 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 and Temperature*



*Calibration Menu*