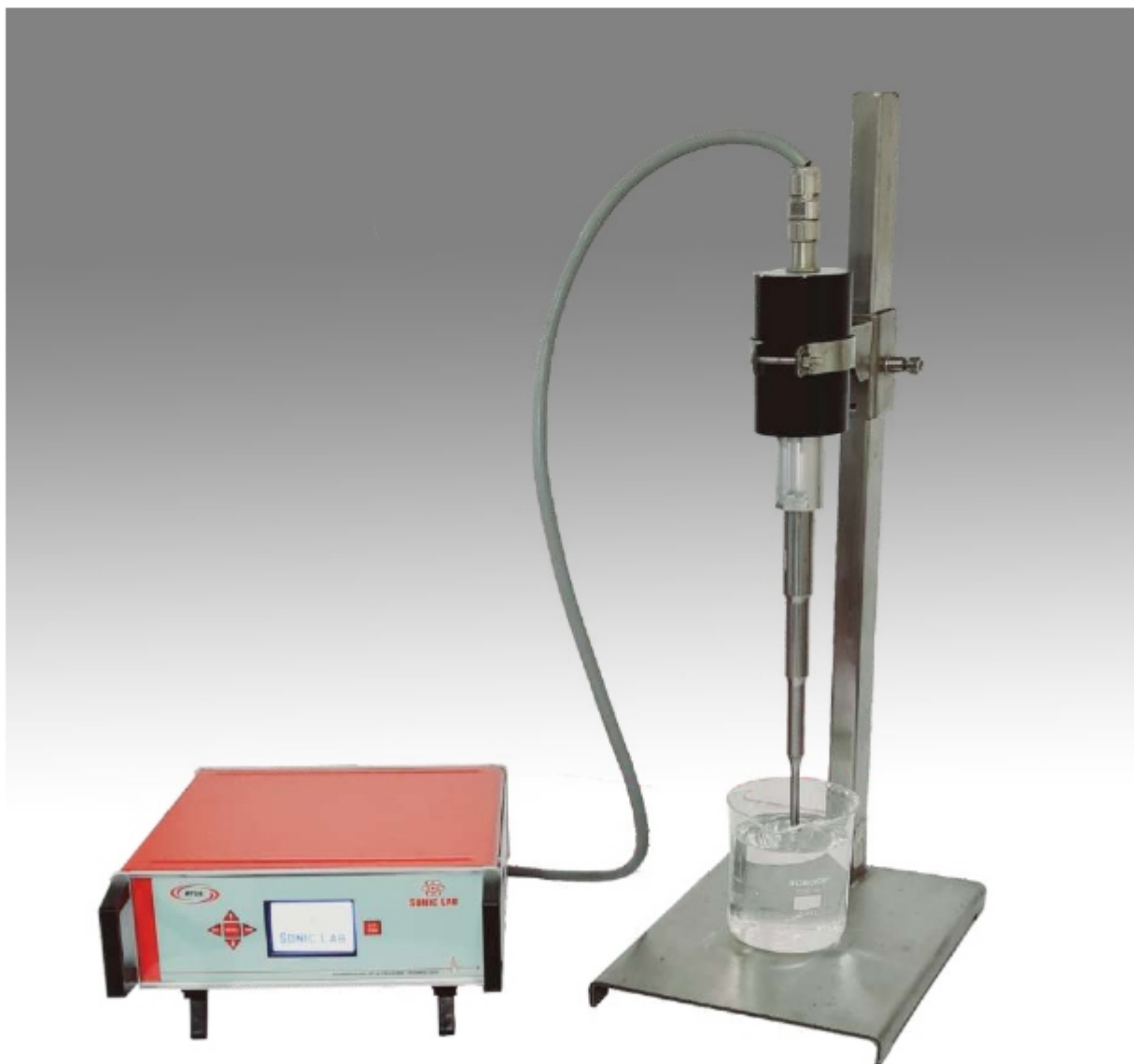


# *Ultrasonic Laboratory Processors*



RTUL's new Sonic Lab range of Laboratory processors are being designed to meet the challenges of Sonication process and feasibility trials of its suitability in various chemical processes like emulsification, particle size reduction, crystallization, agglomeration, dispersion, etc.

Sonic lab will be the first such equipment with a comprehensive integrated process measuring controlling unit. It will be an effective tool for establishing sonication process not only in laboratory but also on plant level.



**POWERHOUSE OF ULTRASONIC TECHNOLOGY<sup>®</sup>**



## Special Features

### Multi Frequency :

Sonic laboratory is able to operate with 2 or 3 different frequencies simultaneously and/or selectively. In the initial phase 4 sets of frequencies would be available namely 20 KHz, 35KHz, 50 KHz & 70 KHz

### Online Temperature Monitoring:

Temperature monitoring tools are housed in a single housing to compensate the process parameter. There is a optional temperature probe is available for those customer who want to monitor the temperature of their sample. Sonication will shut down if the temperature limit is reached, in order to prevent overheating.

### Full Amplitude Control:

There are many new features which are integrated in this range of processor. To effectively process the sample, amplitude can be controlled from 20-100% giving a greater degree of resolution and ability to pinpoint the amplitude needed.

### Constant power mode:

In constant power mode power can be pre set at watts or total energy in Watt/Sec/Joules.

### Proprietary Sonogamy™ tool:

Real time monitoring of process parameter and temperature, with a proprietary device to measure and monitoring completion of chemical reaction (Optional)

### Auto Tuning:

The generator automatically detects the correct load frequency and changes the generator parameters accordingly. The welding temperature changes and maintains electrical efficiency at all times. Manual tuning is unnecessary.

### Program in Sequence:

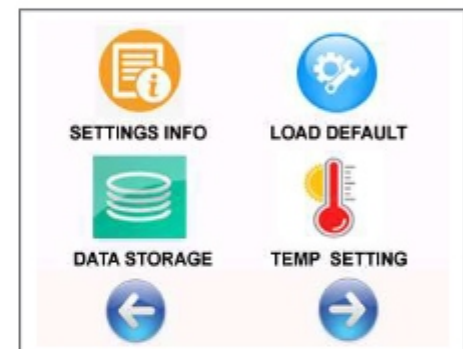
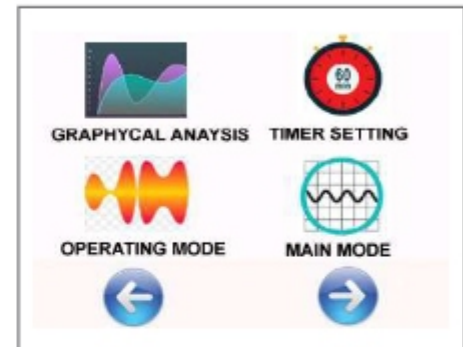
Multiple programs can be run in sequence in eight steps. Example, the unit can be programmed to sonicate at 60% amplitude for 8 minutes, shut off at 4 minutes and re-start at 30% amplitude for 15 minutes etc. The unit can be run with sequentially different frequencies at set amplitude.

### Continous/Pulse Mode:

Adjustable pulse On and Off times to reduce the heat gain in temperature sensitive application. Able to operate in pulse or continuous mode.

### Touch Screen Control:

A LCD screen clearly displays all operating parameters and options. Intuitively and quickly access any of the sonicator's functions with a simple touch.



### Ease of Operation:

Parameters like processing time, amplitude, on/off can be saved to memory via TFT display.



## Application Fields

- Dispersion
- Suspension
- Emulsification
- Homogenization
- Degassing of liquids
- Acceleration of chemical processes
- Sonochemistry
- Crystallization
- Extraction
- Cell disruption
- Automization
- Agglomeration



## Technical Specifications

Power supply 85V AC to 265V AC, 50/60 Hz, 1 $\phi$

Ultrasonic power output  
 150 W Average (Model SL-150)  
 500 W Average (Model SL-500)  
 1000 W Average (Model SL-1000)  
 (Other Outputs Optional)

Frequency 20/35/50/70 KHz single, dual or triple output.

Timer Microprocessor controlled upto 999 min.  
 (with lapse time display)

Processing Volume  
 0.25 ml to 10 ml (Standard probe dia. 3mm) -SL-150  
 Upto 500 ml (Standard probe dia. 12.5mm) -SL-500  
 More than 500 ml (Standard probe dia. 28mm) - SL-1000

Data Storage/  
 Transmission RS 485/Bluetooth/USB



## Components & Accessories

- Sonotrode dia. 3mm, 6mm, 13mm, 18mm, 20mm, 25mm, also available with replaceable tips
- Integrated temperature controller ( Heating & Cooling )
- Accoustic enclosure
- Booster in various conversion ratio / Micro-tip sonotrodes
- Laboratory Jack
- Extender
- Ultrasonic Generator
- Converter
- Stand / Converter Holder
- Standard Sonotrode - Ti / SS316 1 No.
- Foot Switch
- Tool Kit

## Labsoft Software for Sonic Lab System.



The RTUL software is used to control the ultrasonic processes with the changing process parameters. The results of measurements are easily documented for quality assurance purposes and can be introduced within the software into statistics and reports. The innovative visualization both reduces the complexity of operation and allows efficiency enhancing functions to be adjusted intuitively due to the complex data processing.

### Unique Features & benefits:

- User Friendly GUI
- PC to Device USB Connectivity
- Continuously Synchronized with Online Device
- One Click Connect & Disconnect Facility
- Real Time Graph for Power, Maximum Power, Frequency, Temperature & Phase
- Independent Parameters Trend Selection Option
- 10 – 100 Minutes Selectable Visualization Time Span
- Real Time Gauge Meters for Power, Maximum Power & Amplitude
- Simple and precise reports
- Intuitive user operation
- Smooth graphical display with and detailed documentation
- All Device Parameters Real Time Monitoring & Control
- Configuration Parameters Setup with Load & Save Options
- 100 Recipe Programs Storage on Local PC Database
- Real Time Parameters Storage on Local PC Database with Settable Storage Time
- 3 Time Channels for Ultrasonic On Trigger in Day, Ultrasonic On/Off & PLC Connectivity Monitoring
- Options for Different Devices Connectivity on Same GUI Platform
- Well Structured & Detailed Reports Generation to PDF, Word & Excel Files



- Standardized system security & ensure confidentiality & integrity
- Fully automatic system with user interfaces
- Data can easily be store, analyze & interpret
- Result driven & faster support through remote access
- Easy to evaluate the particle sizes

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