

# CLS-700 T

## Corrosive Liquid Particle Counter



The CLS-700 T corrosive liquid sampler is a compression sampler combined with a LiQuilaz® particle counter for effective measurement of particles in fluids contained in unpressurized vessels. It is ideally suited for testing effervescent chemicals. The system eliminates bubbles by pressurizing the sample and forcing the bubbles into solution.

The CLS-700 T corrosive liquid sampler can be integrated into a wet bench for continuous particle monitoring, or located on a cart for increased mobility. When integrated into the wet bench, the sampling system can be started or stopped by the tool, including automatic shut-off during a bath change, to prevent the injection of chemical foam or air into the particle counter.

The CLS-700 T corrosive liquid sampler is fully compliant with SEMI C1 for particle measurement of process chemicals.



### BENEFITS

#### Cost Reduction

- 50 or 80 mL/min. flow rate and 100% view volume means quicker process qualification
- Real-time characterization and analysis for immediate response to anomalies means less waste

#### Versatility

- Supports a wide range of applications and fluids
- Programmable particle-size thresholds
- Designed for easy mobility
- Compression sampling allows instrument to measure most chemicals, including effervescent ones
- External trigger coordinates sampling with process events
- Measurements can be made directly out of the bath

#### Easy to Use

- Facility Net process control software simplifies online sampling by providing alphanumeric paging, sensor status, tabular and SPC charts, and time plots
- SamplerSight batch sampling software facilitates all aspects of data management, including sophisticated data storage, retrieval, and report generation
- Designed for quick cleanup when switching from one liquid to another

### APPLICATIONS

- Particle level measurement in effervescent liquids
- Wet process monitoring
- Chemical process control
- Bath monitoring

**Without measurement, there is no control.**

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## Corrosive Liquid Particle Counter

## specifications

|                              | CLS-700 T   |                              |                              |
|------------------------------|---|------------------------------|------------------------------|
| Burette volume               | 65 mL nominal   |                              |                              |
| Assessed volume              | 48 mL nominal   |                              |                              |
| Maximum compression pressure | 60 psi at 120°C or less; max. 45 psi at 150°C   |                              |                              |
| Exterior surface             | Polypropylene (Meets flame retardant specification FM4910.)   |                              |                              |
| Wetted surface materials     | Teflon®, Kel-F® (See LiQuilaz particle counter information for other wetted surfaces.)  |                              |                              |
| Sample temperature           | 10-150°C at 45 psi or less (maximum 120°C at 60 psi); Sulfuric acid 100°C maximum   |                              |                              |
| Dimensions (l, w, h)         | 16 x 10 x 16 in. (41 x 26 x 39 cm)  |                              |                              |
| Weight                       | 34 lb. (15.5 kg)  |                              |                              |
| Communications               | RS-232 or RS-485  |                              |                              |
| Environment                  | Temperature: 10-35°C; Humidity: noncondensing   |                              |                              |
| Software                     | SamplerSight, Facility Net  |                              |                              |
| Sampling                     | Optionally controlled via external trigger  |                              |                              |
| Factory Requirements         | Power: See sensor requirements. Gas pressure: 70-150 psi. Liquid connections: Flaretek® 1/4 in.                                   |                              |                              |
|                              | <b>LiQuilaz SO2</b>   | <b>LiQuilaz SO3</b>          | <b>LiQuilaz SO5</b>          |
| Size range                   | 0.2 - 2.0 µm  | 0.3 - 3.0 µm                 | 0.5 - 20.0 µm                |
| Channels                     | 15  |                              |                              |
| Flow rate (ml/min)           | 50 mL/min. ± 10%  | 80 mL/min. ± 10%             | 80 mL/min. ± 10%             |
| Sample volume                | Volumetric 50 mL/min. (100%)  | Volumetric 80 mL/min. (100%) | Volumetric 80 mL/min. (100%) |
| Maximum concentration        | 10,000 particles/mL   |                              |                              |
| Sample temperature           | 10 - 150°C (max. 150°C at 45 psi, 120°C at 60 psi); Sulfuric acid 100°C max.  |                              |                              |
| Maximum pressure             | 100 psi   |                              |                              |
| Zero count                   | < 1 count/mL  |                              |                              |
| Wetted surface materials     | Sapphire, Teflon®, Kel-F®, Chemraz®   |                              |                              |
| Laser source                 | Laser diode   |                              |                              |
| Dimensions (l, w, h)         | 13 x 4 x 5 inches (32 x 11 x 11 cm); mounts inside the CLS-700 T  |                              |                              |
| Weight                       | 6 lbs. (2.7 kg)   |                              |                              |
| Power                        | 85 - 132 V or 220-240 V, 50-60 Hz   | 85 - 250 V, 50-60 Hz         | 85 - 250 V, 50-60 Hz         |
| Communications               | RS-485  |                              |                              |
| Calibration                  | Materials used are traceable to USA National Institute of Standards and Testing (NIST) and Japanese Institute of Standards (JIS). |                              |                              |

\*Greater than 90% accuracy (less than 10% coincidence loss) at maximum recommended concentration.  
Chemraz® is a registered trademark of Greene, Tweed of Delaware.  
Kel-F® is a registered trademark of the Minnesota Mining & Manufacturing Company.  
Teflon® is a registered trademark of DuPont.  
LiQuilaz® is a registered trademark of Particle Measuring Systems, Inc.  
U. S. Patent no. 4,728,190



Registration applies to the Boulder, Colorado facility.

**AUTHORIZED REPRESENTATIVE**



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