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# 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.**

# CLS-700 T

## Corrosive Liquid Particle Counter

## specifications

	<b>CLS-700 T</b>		
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**



Particle Measuring Systems Headquarters  
 5475 Airport Blvd., Boulder, CO 80301  
 1-303-443-7100 1-800-238-1801 Fax: 1-303-546-7331  
 Instrument Service & Support: 1-800-557-6363  
 Customer Response Center: 1-877-475-3317

Particle Measuring Systems Europe  
 Tel: +44 1684 581000  
 PMSEurope@pmeasuring.com

Particle Measuring Systems Japan  
 PMSJapan@pmeasuring.com

Particle Measuring Systems Asia Pacific  
 PMSAsiaPacific@pmeasuring.com

Particle Measuring Systems Singapore  
 Tel: +65-6496 0330  
 PMSSingapore@pmeasuring.com

Particle Measuring Systems China  
 PMSChina@pmeasuring.com

Particle Measuring Systems Mexico  
 PMSMexico@pmeasuring.com

Particle Measuring Systems Puerto Rico  
 PMSPuertoRico@pmeasuring.com



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