

# Ultra DI<sup>®</sup> 20

Liquid Optical Particle Counter



Ultra DI particle counters are designed and optimized for the world's most advanced ultrapure water monitoring needs.

By counting and sizing particles as small as 20 nm, the Ultra DI 20 system provides unsurpassed particle detection:

- Low zero-count
- Large sample volume
- High counting efficiency

## BENEFITS

### High sensitivity

- Advanced laser optics and sensors enable detection of particles down to 20 nm (9 nm Au)
- Obtain meaningful statistical data to detect particle excursions quickly
- Fast sample cleanup shortens the time to move from one sample point to another

### Improved monitoring

- Larger sample volume and low zero counts detect smaller excursions with relevant statistical data
- Respond immediately to contamination with real-time particle measurement
- Facility Net software provides more sophisticated process control with:
  - sensor status
  - tabular and SPC charts
  - time plots
  - historical event log records
  - email notification
- Compatible with ozonated water
- Two counting modes
  - High resolution – *for pure environments*
  - High concentration – *for filter challenge tests and lower purity environments*

### Easy to use

- Utilize existing network with Ethernet communication
- Connect directly to PLC and SCADA systems with 4-20 mA
- Stainless steel housing and dual HEPA filtration for use in clean environments

## APPLICATIONS

- Quantifying particle concentration in state-of-the-art ultrapure water (UPW) systems
- Filter efficiency measurements
- Trending analysis at lower particle concentrations
- Detecting bacterial growth in UPW systems
- Episodic event tracking and alarming
- Continuous system monitoring

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## Liquid Optical Particle Counter

Specifications

<b>Size range</b>	> 20 nm PSL	
<b>Channels</b>	4	
<b>Channel sizes</b>	20, 50, 70, 100 nm	
<b>Flow rate (ml/min)</b>	75 ml/min ± 10%	
<b>Maximum concentration<sup>1</sup></b>	<b>High Resolution Mode:</b> 2500 P/ml > 20 nm; 1000 P/ml > 100 nm	<b>High Concentration Mode:</b> 500,000 P/ml > 20 nm; 10,000 P/ml > 100 nm
<b>Sample temperature</b>	59 – 122 °F (15 – 50 °C)	
<b>Maximum pressure</b>	100 psi	
<b>Zero count</b>	≤ 50 counts/L	
<b>Exterior surface</b>	Stainless steel	
<b>Wetted surface materials</b>	Teflon <sup>®</sup> , Kel-F <sup>®</sup> , fused silica, Viton <sup>®</sup> , 96% Alumina Ceramic, and Simriz <sup>®</sup> 485	
<b>Dimensions (d, w, h)</b>	17 x 17 x 10.5 in (43 x 43 x 27 cm)	
<b>Weight</b>	45 lb (20.4 kg)	
<b>Power</b>	100 – 240 VAC	
<b>Laser classification</b>	Class I complies with US21 CFR 1040.10 and EN60825-1. Internally an enclosed Class IV laser is used per EN60825-1.	
<b>Communications</b>	Ethernet, 4-20 mA (5 outputs: 4 particle channels, 1 instrument status) RS-232 (set up and diagnostics only, no data)	
<b>Status indicator</b>	Laser, power, and activity: one (1) tri-color LED	
<b>Calibration</b>	Materials used are traceable to National Institute of Standards and Technology (NIST) and/or Japanese Industrial Standards (JIS)	
<b>Environment</b>	Temperature: 72 – 82 °F (22 – 28 °C) ± 1 °C /hour Humidity, Non-condensing Indoor use only Pollution degree 2 Isolated from excessive machinery or vehicle vibration Over-voltages (transients) Category II Ordinary protection (Not protected against harmful ingress of moisture) Class I environment (Electrical Earth ground from the mains power source to the product input is required for safety)	

<sup>1</sup> Greater than 90% accuracy (less than 10% coincidence loss) at the maximum recommended concentration.

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