

# 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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### HEADQUARTERS

5475 Airport Blvd  
Boulder, Colorado 80301 USA  
T: +1 303 443 7100, +1 800 238 1801

Instrument Service & Support  
T: +1 800 557 6363

Customer Response Center  
T: +1 877 475 3317  
E: info@pmeasuring.com

www.pmeasuring.com  
info@pmeasuring.com



**PARTICLE  
MEASURING  
SYSTEMS<sup>®</sup>**  
a spectris company

### GLOBAL OFFICES

AUSTRIA  
T: +43 512 390 500  
E: pmsaustria@pmeasuring.com

BENELUX  
T: +32 10 23 71 56  
E: pmsbelgium@pmeasuring.com

BRAZIL  
T: +55 11 5188 8227  
E: pmsbrazil@pmeasuring.com

CHINA  
T: +86 21 6113 3600  
E: pmschina@pmeasuring.com

FRANCE  
T: 33(0)1 60 10 32 96  
E: pmsfrance@pmeasuring.com

GERMANY  
T: +49 6151 6671 632  
E: pmsgermany@pmeasuring.com

ITALY  
T: +39 06 9053 0130  
E: pmsrl@pmeasuring.com

JAPAN  
T: +81 3 5298 8175  
E: pmsjapan@pmeasuring.com

KOREA  
T: +82 31 286 5790  
E: pmskorea@pmeasuring.com

MEXICO  
T: +52 55 2271 5106  
E: pmsmexico@pmeasuring.com

NORDIC  
T: +45 707 028 55  
E: pmsnordic@pmeasuring.com

PUERTO RICO  
T: +1 787 718 9096  
E: pmspuertorico@pmeasuring.com

SINGAPORE  
T: +65 6496 0330  
E: pmssingapore@pmeasuring.com

SWITZERLAND  
T: +41 71 987 01 01  
E: pmsswitzerland@pmeasuring.com

TAIWAN  
T: 886-3-5525300 Ext: 301  
E: pmstaiwan@pmeasuring.com