

MICRO PURGE basics[®] FLOW CELL

U.S. PATENT NO. 6,415,659



Sample with confidence thanks to visible & audible purge stabilization alert with PurgeScan™ technology.

Automated purge stabilization alert with powerful new capabilities

The MicroPurge basics™ MP20 Flow Cell — from the leaders in low-flow ground water sampling — sets new standards in performance, size and price for purge water quality monitors. QED-exclusive PurgeScan™ technology (U.S. Patent No. 6,415,659) signals when stabilization has been achieved for selected water quality parameters, with automatic storage of key data points.

Two upgrades enhance performance even further. One option offers fast PC download capability. The other option also adds a technology breakthrough turbidity sensor in addition to pH, ORP, DO, temperature, and conductivity.

The lightweight, waterproof MP20 meter is simple to field calibrate. It displays all readings automatically. The sonde is a compact, low-profile design with rugged, easy-to-service probes. The flow cell is designed to collect and vent gas bubbles effectively, and to distribute purge flow evenly for quick measurement response and more accurate readings.

The whole package is protected by a 3-year warranty, backed by service and support from QED, the leader in low-flow sampling.

MicroPurge® basics™ MP20 Flow Cell Advantages

- Exclusive PurgeScan™ technology (U.S. Patent No. 6,415,659) gives the OK to sample when selected purge water quality parameters remain steady over successive readings at user-defined intervals.
- Now, optional upgrades deliver twice the data storage with fast PC download capability and automatic date/time stamping, plus a new, revolutionary sensor array including turbidity.
- Transparent, molded flow cell effectively vents bubbles, even in the horizontal position: low internal volume (175 ml), designed flow distribution and stirrer give fast response, even at low rates.
- Rugged, waterproof case doubles as a measurement and calibration workbench.
- Waterproof MP20 meter displays all readings automatically: pH, ORP, temperature, conductivity, DO, and (optional) turbidity.
- The compact sonde attaches with a quick bayonet-type mount to the flow cell, calibration and storage cups.
- Three Year Warranty.

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QED
Environmental Systems

QED Environmental Systems, Inc.
P.O. Box 3726 • Ann Arbor, MI 48106-3726 USA
1-800-624-2026 • FAX (734) 995-1170
info@qedenv.com • www.micropurge.com

1133 Seventh Street • Oakland, CA 94607-2601
1-800-537-1767 • FAX (510) 444-6789

MICROPURGE® basics™ MP20 FLOW CELL

QED PurgeScan™ technology assures stabilization

Successful, consistent low-flow sampling is based on knowing when purge water indicator parameters stabilize. This allows sampling to begin only when the pump discharges samples representative of the formation water.

Until now, deciding when stabilization had been achieved was complex, requiring you to monitor multiple parameters and make repeated calculations. The MP20 Flow Cell simplifies this process. Microprocessor-based PurgeScan™ technology performs the monitoring and calculation, clearly signaling when stabilization has occurred.

This makes low-flow sampling easy. You can do it the right way, collecting the most accurate samples, and saving time and money.

Engineered for performance and field readiness

The MP20 flow cell is engineered to allow the probe to make rapid, accurate

responses to changes in purge water parameters. The flow cell is 100% transparent for observation. The low-volume, fast-response cell couples to the sonde with a quick, bayonet attachment, and can be used in either a horizontal or vertical position.

The incoming flow is directed in a tangential path around the flow cell to provide fast, thorough mixing with no "dead spots" that could affect the accuracy of purge parameter measurements. Bubbles in the flow stream are vented out of the cell and away from the probe so they don't interfere with purge water analysis.

The multiparameter probe has a special sensor with built-in stirring for highly stable dissolved oxygen readings. All sensors are easy to calibrate and the reference electrode is fully field-serviceable.

The large display screen makes it easy to see your purging status. Power by standard C cells keeps you on top of the job all day with no energy supply worries.



The complete MP20 kit, with sonde, flow cell, meter, and calibration and storage materials, in field-ready case.

OPTIONAL ENHANCEMENTS

- **PC Data Dump / Real Time Clock**

Fast, easy download to PC with automatic date/time stamp

- **Turbidity Sensor**

Patented 4-beam infrared sensor for accurate readings, easy calibration

Options available on new units or as retrofits on existing models

MICROPURGE FLOW CELL SPECIFICATIONS

System Specifications:

Model No.:	MP20 (Standard)
	MP20D (w/ Real Time Clock/Data Download)
	MP20DT (w/ RTC/Data Download/Turbidity)
Overall Dimensions:	18.5" x 15" x 6.5" (47 x 38 x 17 cm)
Overall Weight:	14 lbs (6.4 kg)
Storage:	100 Data Frames (200 opt.)
Stabilization:	Purge Scan™ Technology
Case Material:	Structural Resin
Keypad:	5 Keys

Meter Specifications:

Display Size:	3.5" (9 cm)
Weight:	2.1 lbs. (1 kg)
Memory:	100 Data Frames (200 opt.)
Rating:	Waterproof NEMA 6 [IP67]
Power:	3 "C" batteries
Battery Life:	12 Hours
Temperature:	23 - 122°F (-5 - 50°C)
Cable:	6 foot (1.83 m)

Flow Cell Specifications:

Volume:	175 ml
Material:	Rigid urethane
Fitting Type:	Soft-tube "clamp-free"
Fitting Size(s):	Inlet: 1/4" I.D. x 3/8" O.D. Outlet: 3/8" I.D. x 1/2" O.D.
Venting Modes:	Horizontal and Vertical
Sonde Connection:	Bayonet-style Twist Mount

Sonde Specifications:

Size:	3" x 9" (8 x 23 cm)
Weight:	1.3 lbs (0.6 kg)

Typical Sensor Performance Specifications:

	Range	Accuracy	Resolution
Temperature	-5 to 50°C (23 - 122°F)	± 0.2°C (0.36°F)	0.01°C (0.018°F)
DO	0 to 20 mg/l	± 0.2 mg/l	0.01 mg/l
Specific Cond.	0 to 100 mS/cm	± 1% of reading ± 1 count	4 Digits
pH	2 to 12 units	± 0.2 units	0.01 units
ORP	-999 to 999 mV	± 25 mV	1 mV
Turbidity	0 to 1,000 NTU	± 5% of reading ± 1 NTU	1 NTU
Salinity*	0 to 70 PSS	± 1% of reading ± 1 count	0.01 PSS

*Calculated

PurgeScan™ Specifications:

Parameter Stabilization range criteria*:	pH	± .2 units
	DO	± 0.2 mg/l
	Conductivity	± 0.020 mS/cm
	ORP	± 20 millivolts
	Turbidity	± 1 NTU

*NOTE: These are default ranges; settings are adjustable to meet site specifications.

Stabilization basis: 3 consecutive readings of selected parameters (one or more of above 5) within above limits, at time interval selected, from 1 to 9 minutes. For example, if 2 minutes is selected, then stabilization would be signaled when 3 consecutive 2-minute intervals showed in-range readings at the end of each interval, requiring 6 minutes.

Elapsed time since Purge Scan initiated shows at the bottom of the screen.

Full data sets are stored at time 0, every 5 minutes, and the 3 consecutive readings which satisfy the stabilization criteria.