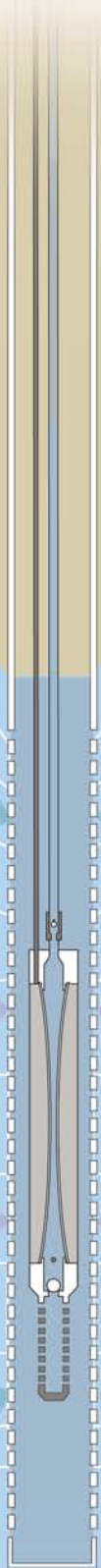


MicroPurge® Low-Flow Sampling Equipment Catalog

The most complete selection of pumps, controls, and accessories for groundwater sampling – from the Low-Flow Specialists



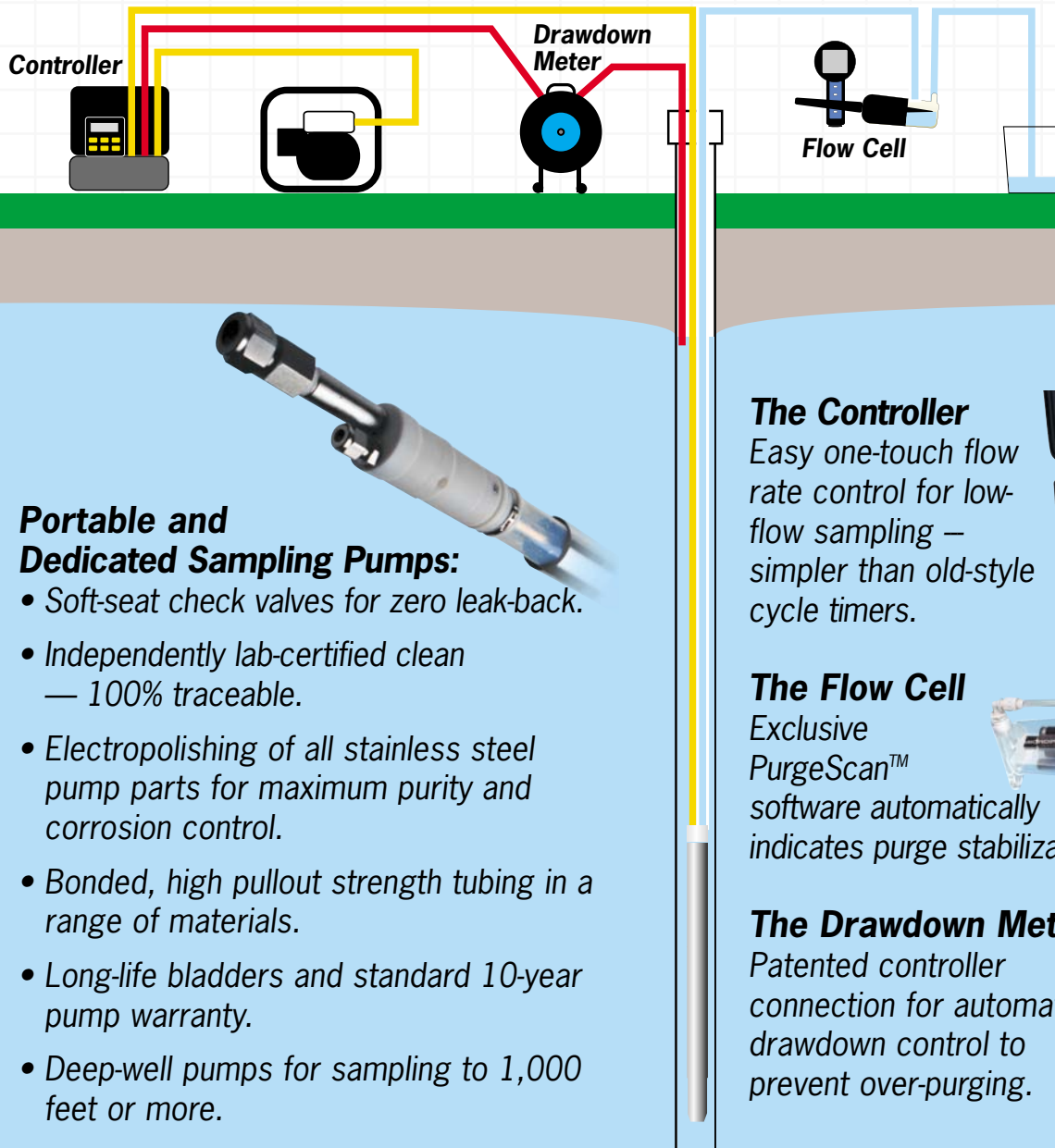
*Featuring Well Wizard® and
SamplePro® Pumps*

ThermoFisher
S C I E N T I F I C

The world leader in serving science

Introduction

Low-flow sampling reduces purge volumes, provides less turbid samples and improves precision.



Portable and Dedicated Sampling Pumps:

- Soft-seat check valves for zero leak-back.
- Independently lab-certified clean — 100% traceable.
- Electropolishing of all stainless steel pump parts for maximum purity and corrosion control.
- Bonded, high pullout strength tubing in a range of materials.
- Long-life bladders and standard 10-year pump warranty.
- Deep-well pumps for sampling to 1,000 feet or more.

The Controller

Easy one-touch flow rate control for low-flow sampling — simpler than old-style cycle timers.



The Flow Cell

Exclusive PurgeScan™ software automatically indicates purge stabilization.



The Drawdown Meter

Patented controller connection for automatic drawdown control to prevent over-purging.





Low-flow rate purging and sampling provides numerous benefits that make it the method of choice for existing and new groundwater monitoring projects. MicroPurge® low-flow sampling systems deliver all the advantages a project manager needs.

Bladder pumps are proven superior

Bladder pumps have been proven superior by the overwhelming majority of independent studies for the broadest range of groundwater quality parameters. They also have the longest warranties, so when you select a bladder pump you are selecting an enduring sampling device and method. Bladder pump advantages include:

- No suction or high speed impellers to outgas volatile compounds
- No churning action, like with bailers and inertial lift samplers, that disturbs the well and increases sample turbidity
- No contact of the drive air with the sample

Low-Flow Sampling

The science of groundwater sampling has advanced significantly in the past decade. Traditional approaches such as bailing, well-volume purging and high rate pumping have been replaced with a methodology that reduces disturbances to the well and aquifer. This proven approach, low-flow rate purging and sampling, provides numerous benefits that make it the method of choice for existing and new groundwater monitoring projects. MicroPurge® low-flow sampling systems deliver all the advantages a project manager needs:

- Low-flow samples are flow-weighted average of the entire well screen, providing a consistent picture of the subsurface conditions around the well
- More accurate and precise samples that yield consistent, reliable monitoring data
- Lower sample turbidity provides a better picture of the true contaminant level and can eliminate the need to filter samples
- Greatly reduced purge volume and the associated expense of containment, handling, and disposal
- Superior cost control over the life of the monitoring program

Dedicated and Portable Pumps Series

Dedicated pumps such as QED's leading Well Wizard bladder pumps provide the maximum benefits of faster, easier field operations and avoiding cross-contamination of wells or samples. The dedicated pump and tubing remain in the well, so equipment insertion & removal and decontamination between wells are eliminated. For short term projects or any situation in which dedicated pumps are not an option, special Sample Pro® portable bladder pumps are available with quick, no-tools disassembly and disposable bladders.

Bladder Pump Info

How a Bladder Pump Works

Pneumatic bladder pumps operate with a unique, gentle action ideal for low-flow sampling. Timed ON/OFF cycles of compressed air alternately squeeze the flexible bladder to displace water out of the pump, and release it to allow the pump to refill by submergence, without creating any disturbance that could affect sample chemistry. Bladder pumps run easily at low rates for extended times, without the problems of other devices.

Why Bladder Pumps are Superior to Other Sampling Devices

Bladder pumps are simple in their fundamental design, which makes them desirable groundwater sampling pumps. Bladder pumps produce samples with minimal alteration, providing greater accuracy and precision than devices such as bailers and electric pumps. With only three moving parts, a flexible bladder and two check valves, bladder pumps are inherently more reliable than electric pumps, air-power piston pumps, and other devices with numerous moving parts, close tolerances and high-speed motors.

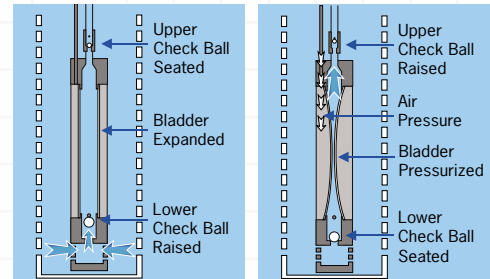
This combination of sampling accuracy and reliability is unmatched by other sampling devices.

What does it take to make a superior dedicated bladder pump? The answer: ongoing attention to engineering detail based on many years of wide-ranging field experience. This attention to detail focuses on 4 four critical areas:

- Long bladder life
- Reliable, leak tight check valves
- Consistent prevention of air and water leaks
- Purity and durability of materials of construction

Each pump is cleaned and laboratory-certified to be free of volatile organic compounds, acid extractable and base neutral contaminants. Your system is pre-assembled, with tubing cut to length, ready to install. If desired, installation by OSHA-certified field technicians is available. QED customer support backs you with unmatched expertise and service, including trained local representatives, 24-hour toll-free hotline and next-day loaners or service turn-around when needed. More MicroPurge dedicated sampling systems and pumps have been chosen since 1982 than all other manufacturers' equipment combined. To find out why, call QED today for a Low-Flow Data Sheet and site-specific cost analysis.

QED's attention to detail doesn't stop there. QED uses tubing/fitting sets engineered and quality controlled for high pullout strength so you don't lose a pump downwell; inlet screens to prevent solids from damaging the bladder or hanging up check valves and long enough to provide clear inlet flow even if it rests on the bottom; standard low-clearance wellhead caps that fit even when the well closure installation is tight; and special packaging to keep the equipment clean and help make the installation go smoothly. QED's bladder pumps build in all these details and more. Our engineers have never stopped learning how to make QED bladder pumps better!



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Dedicated Sampling Pumps

WELL WIZARD®



*Well Wizard® Bladder Pumps:
The Original, Low-Flow Sampling
Standard*

The leaders since 1982 in dedicated pump technology, performance and support.

The heart of every low-flow groundwater monitoring system is the sampling device. For the system to do its job properly, the sampling device must:

- run reliably even at low rates (100 ml/min or less) over a wide range of conditions;
- operate gently without increasing turbidity or altering samples;
- deliver reliable performance for many years without needing frequent repairs or maintenance.

The original, most complete low-flow pump selection

MicroPurge® system pumps come in an unsurpassed range of sizes, materials and capabilities, including models for deep wells, narrow or obstructed casings, and small-volume pumps for low-yield wells. Together with MicroPurge controllers, flow cells and accessories, they create the most reliable, cost-effective low-flow system available.

Field proven pump designs and exclusive, high performance PTFE bladder formulation offer the reliability critical to long-term monitoring. QED was first in the industry with a standard 10-year sampling pump warranty.

Unmatched regulatory and user acceptance

Bladder pumps, EPA-accepted for low-flow sampling, have been shown to deliver superior sample accuracy and precision in dozens of independent studies. Nearly 80,000 Well Wizard® bladder pumps are in use — more than all other brands and types of dedicated groundwater samplers combined.

Well Wizard® Bladder Pump Advantages

- 1. EPA-accepted low-flow sampling accuracy.**
- 2. Models for every well — low yield, short water column, depths over 1,000 feet, casing ID down to 1.25".**
- 3. Proven reliability since 1982, with the industry's first standard 10-year warranty.**
- 4. Exclusive PTFE bladder formulation rated for years more flex life than other bladder materials.**

Specifications

Model No.	Pump Materials	Length	Diameter	Fitting Material	Tubing* OD Size	Volume	Max Lift
T1100M	Teflon®	3.3 ft. (1.0 m)	1.66 in. (4.2 cm)	Teflon®	1/4 & 3/8 in. (6 & 9 mm)	395 mL	250 ft. (75 m)
P1101M	PVC	3.4 ft. (1.04 m)	1.66 in. (4.2 cm)	Polypropylene	1/4 & 3/8 in. (6 & 9 mm)	395 mL	300 ft. (90 m)
P1101HM	PVC	3.3 ft. (1.0 m)	1.66 in. (4.2 cm)	Stainless Steel	1/4 & 3/8 in. (6 & 9 mm)	395 mL	600 ft. (180 m)
ST1102PM	316 Stainless Steel	3.4 ft. (1.04 m)	1.66 in. (4.2 cm)	Stainless Steel	1/4 & 3/8 in. (6 & 9 mm)	395 mL	1,000 ft. (305 m)
T1200M	316 S.S. and Teflon®	3.4 ft. (1.04 m)	1.50 in. (3.8 cm)	Stainless Steel	1/4 & 3/8 in. (6 & 9 mm)	495 mL	300 ft. (90 m)
T1250	316 Stainless Steel	1.25 ft. (0.38 m)	1.50 in. (3.8 cm)	Stainless Steel	1/4 & 1/4 in. (6 & 6 mm)	100 mL	300 ft. (90 m)
P1150	PVC, Teflon®	1.63 ft. (0.5 m)	1.66 in. (4.2 cm)	Polypropylene	1/4 & 1/4 in. (6 & 6 mm)	130 mL	300 ft. (90 m)
T1300	316 S.S. and Teflon®	3.8 ft. (1.16 m)	1.00 in. (2.5 cm)	Stainless Steel	1/4 & 3/8 in. (6 & 9 mm)	220 mL	200 ft. (90 m)

* To choose 1/2 in. OD (13 mm) rather than 3/8 in. (9 mm) discharge tube option, delete suffix M from pump model number.

Intake Screen Specifications

Model No.	Material	Screen Size	Fits Pump Model(s)
35200	Stainless Steel	.010 in. (0.25 mm) mesh	T1200M, T1250
37789	PVC	.010 in. (0.25 mm) slot	P1101M, P1101HM
37727	PVC	.010 in. (0.25 mm) slot	P1250 (also P1101M, P1101HM)
37733	Teflon®	.010 in. (0.25 mm) slot	T1100

Note: Pump models ST1101P, T1300 include intake screens. Screens are optional on other pump models, but are required for full 10-year warranty coverage.

Materials Specifications

Stainless Steel	Type 316 electropolished
PVC	NSF-grade, extruded specifically for QED with no markings or lubricants.
Teflon® (pumps)	DuPont Teflon® and other premium PTFE resins
Teflon® (bladders)	Q-flex exclusive 200,000 cycle rated PTFE.

Teflon is a registered DuPont trademark.

Added System Benefits

Well Wizard® pumps will provide the most precise low-flow purging and sampling when operated by a MicroPurge® Model MP10 Controller, with purge water monitoring via the MicroPurge MP20 Flow Cell.

MicroPurge® Well Caps



MicroPurge® Well Caps

QED provides an extremely wide range of off-the-shelf and custom caps to complete the system to fit your project's needs and allow easy installation. Popular features include:

- high-purity flexible discharge tubes,
- low-clearance fit beneath wellhead closure lids
- below-grade water-tight closures,
- water level measurement ports,
- freeze protection, and
- protective dust caps.

Low Clearance Standard Cap

Low-clearance model includes a dust-tight cover and compact self-storing MicroPurge® discharge tubing. Anodized aluminum caps fit 2" and 4" wells. Models for 1/4" and 3/8" discharge tubing available.

Low Clearance

Model No.	Cap Size	Discharge
C24L	2 in. (5 cm)	1/4 in. (6 mm)
C26L	2 in. (5 cm)	3/8 in. (9 mm)
C44L	4 in. (10 cm)	1/4 in. (6 mm)
C46L	4 in. (10 cm)	3/8 in. (9 mm)

Sealing Cap

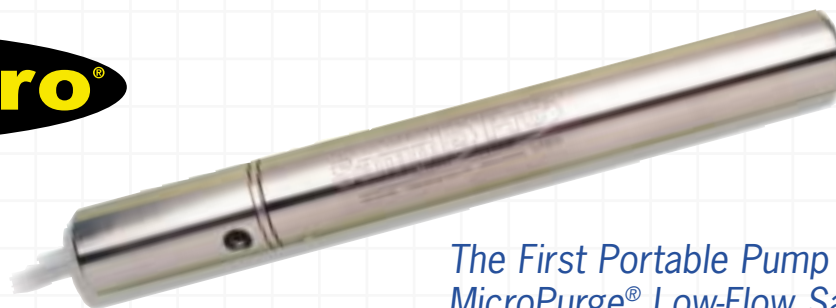
Sealing model includes a water-tight cover and compact self-storing MicroPurge® discharge tubing. Anodized aluminum caps fit 2" and 4" wells. Models for 1/4" and 3/8" discharge tubing available. QED offers dozens of custom well caps to work with any unique well casing or schedule. Contact QED with questions.

Sealing

Model No.	Cap Size	Discharge
C24S	2 in. (5 cm)	1/4 in. (6 mm)
C26S	2 in. (5 cm)	3/8 in. (9 mm)
C44S	4 in. (10 cm)	1/4 in. (6 mm)
C46S	4 in. (10 cm)	3/8 in. (9 mm)

Portable Sampling Pumps

Sample Pro®



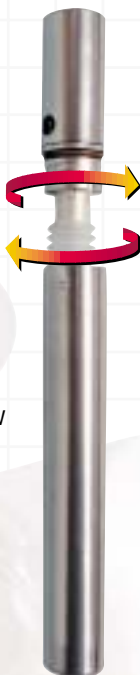
The First Portable Pump for MicroPurge® Low-Flow Sampling.

The Sample Pro® Portable Pump is the first pump developed specifically to bring the advantages of low-flow sampling to sites requiring portable pumps. The Sample Pro Pump is not only able to deliver consistent low-flow rates, it's easy to disassemble without tools, simple to clean and truly field rugged.

Unlike many other portable pumps, it is cool-running and can be operated by a lightweight backpack controller. There are no high speed rotating parts, no sample or motor heating, no costly motor replacement.

Sample Pro is the only pump available with these 3 innovations for portable low-flow sampling.

- Easy, rapid disassembly — 1/4 turn, no tools
- Pull-off bladder for fast replacement
- Integral push-in tubing connections only from QED, the originators of MicroPurge® low-flow equipment and Well Wizard®, the most widely used sampling pumps.



Sample Pro's reliability and low maintenance make it more economical. Its bayonet-type, twist-open design makes it easy to change the pull-off, disposable bladder in seconds. The compact 14.75" long size fits in a pail for pumping during cleaning. But, Sample Pro's innovations don't stop there. The pump is available with conventional compression fittings for tubing connections, or with a push-in head that's perfect for applications where the tubing is discarded frequently. Sample Pro's rugged, all-stainless construction will stand up to tough portable use. The simple yet effective design avoids the high maintenance expenses and destructive failure modes of other pumps.

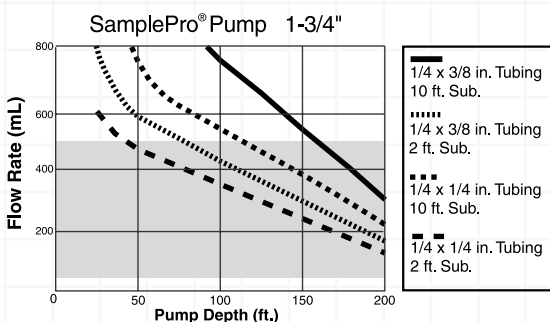
The Sample Pro Portable Pump uses a quick-change, one-piece bladder design. Compressed gas squeezes the outside of the bladder to gently force liquid out of the pump; there is no gas contact with the pumped water inside the bladder, making it the perfect choice for VOC sampling.

Squeeze type bladder pumps are supported by years of independent research that shows they provide accurate samples for even the most sensitive parameters. Water enters the pump through the inlet in the upper, head section, then flows down into the bladder. The high inlet helps keep the pump from clogging if it is accidentally lowered into a sediment-filled sump.

Check valves with stainless steel seats and Teflon® check balls are located at the inlet and outlet. A replaceable inlet screen is provided for wells with high solids levels to help ensure proper sealing of the check valves. The Sample Pro® Pump is shipped in a heavy-duty tube with rubber end caps to help keep the pump clean and protected between uses and is available in two diameters: 1.75" (4.45 cm) to fit in 2" (50 mm) monitoring wells or larger; and 3/4" (1.91 cm) to fit into small diameter monitoring wells and direct-push boreholes.



The pump is disassembled by a 1/4 turn of the cap and body; no tools are needed. The bladder pulls off for replacement. Both check valves are press-in, pull-out design and use the same size Teflon® check ball. Compression-type and push-in tube fitting kits are available and can be used interchangeably. Both options provide high pull-out strength and a cable eye is included for applications where a support cable is desired.



Specifications

Pump Model	Sample Pro 3/4 in.	Sample Pro 1-3/4 in.
Body Materials	316 Stainless Steel	316 Stainless Steel
Inlet & Discharge Housing	303 Stainless Steel	303 Stainless Steel
Bladder	Polyethylene or Teflon®	Polyethylene or Teflon®
O-rings	Viton®	Viton®
Teflon is a registered trademark DuPont. Viton is a registered trademark of DuPont Dow Elastomers.		
Dimensions		
Diameter	0.75 in. (19 mm)	1.75 in. (47 mm)
Length	10.75 in. (273 mm) with Push-in Fittings 9.18 in. (233 mm) from Bottom of pump to centerline of inlet	14.75 in. (375 mm) with Compression Fittings 16.5 in. (419 mm) with Compression Fittings 12.1 in. (307 mm) from Bottom of pump to centerline of inlet
Weight	0.5 lbs. (0.23 Kg)	4.25 lbs. (1.93 Kg)
Fittings	Push-in Fitting w/ 316 Stainless Steel Grab Plate	Push-in Fitting w/ 316 Stainless Steel Grab Plate
Air Discharge	0.125 in. (3.2 mm) OD	0.25 in. (6.4 mm) OD
Maximum Lift	200 ft. (61 m)	250 ft. (61 m)
Pump Volume	0.33-0.50 oz (10-15 mL)	3.34 oz (100 mL)

Consultant Kits

3/4" Pump

SP-3/4-PK 3/4" SamplePro Consultant Kit with 1/8" + 1/4" Push-in Fitting Pump, includes Tool Box, Polyethylene Bladder Kit (10 bladders), O-Ring Kit, Grab Plate Kits (10), Tubing Cutter, Cleaning Brush Kit, Check Ball Kit, 1/8" Air Fitting, Needle Nose Pliers, Tubing Insertion Tool, O-Ring Extractor.

1-3/4" Pump

All 1-3/4" Sample Pro Pump Consultant Kits below include Pump, Connector Kit, Tool Box, Bladder Kit (10 bladders, material listed below), O-Ring Kits (10 sets), Check Ball Kit (5), Inlet Screens (10), Air Fitting, Portable Cap, Tubing Cutter, Cleaning Brush Kit.

MP-SPK-4P pump with push-in connection for 1/4" x 1/4" tubing, polyethylene bladders, 10 SS tubing grab plates.

MP-SPK-6P pump with push-in connection for 3/8" x 1/4" tubing, polyethylene bladders, 10 SS tubing grab plates.

MP-SPK-4P-T pump with push-in connection for 1/4" x 1/4" tubing, Teflon bladders, 10 SS tubing grab plates.

MP-SPK-6P-T pump with push-in connection for 3/8" x 1/4" tubing, Teflon bladders, 10 SS tubing grab plates.

MP-SPK-4C pump with compression nut connection for 1/4" x 1/4" tubing, polyethylene bladders, 5 sets of compression nuts and ferrules.

MP-SPK-6C pump with compression nut connection for 3/8" x 1/4" tubing, polyethylene bladders, 5 sets of compression nuts and ferrules.

MP-SPK-4C-T pump with compression nut connection for 1/4" x 1/4" tubing, Teflon bladders, 5 sets of compression nuts and ferrules.

MP-SPK-6C-T pump with compression nut connection for 3/8" x 1/4" tubing, Teflon bladders, 5 sets of compression nuts and ferrules.



Sample Pro® Supplies

Portable Pump Supplies

Disposable Bladder Kits



Pump	Material	Qty.	Order No.
1-3/4"	Polyethylene	10/Pkg.	38360
1-3/4"	Teflon®	10/Pkg.	38380
3/4"	Polyethylene	10/Pkg.	38500

Grab Plates for Push-In type Pumps



Discharge Tube Size	Material	Qty.	Order No
For 1-3/4" pump			
1/4"	Stainless Steel	10/Pkg.	38364
3/8"	Stainless Steel	10/Pkg.	38365
For 3/4" pump			
1/4"	Stainless Steel	10/Pkg.	38503

Pump O-Ring Replacement Kit



Pump	Material	Qty.	Order No.
1-3/4"	Viton®	10 sets/Pkg.	38362
3/4"	Viton®	10 sets/Pkg.	38502

Tubing



Special tubing sets have been developed to complement the Sample Pro pumps, to provide maximum ease

of use and performance in the field. Bonded twin-tube is a real time saver, but single tubes are also offered. Our tubing is carefully specified, processed, tested and packaged to provide leak tight connections, high pullout strength at connectors to prevent pump loss, and purity. The tubing is delivered in a re-sealable bucket to keep it clean during shipment and in the field after partial use. The 1/4" x 1/4" size uses contrasting colors to help identify which tube is air or water.

Twin tube, 1/4" x 1/4": Disposable tubing for 1-3/4" Sample Pro portable MicroPurge pump. Air tube is grey to allow easy contrast vs. water discharge tube. 250' prepackaged spool of 1/4" OD + 1/4" OD bonded, polyethylene tubing (includes bucket). **DT-TP4B**

Twin tube 1/4" x 1/8": Disposable tubing for 3/4" Sample Pro portable MicroPurge pump. 250' prepackaged spool of 1/4" OD + 1/8" OD skip-bonded, polyethylene tubing (includes bucket). **DT-TP2B**

Twin tube, 3/8" discharge x 1/4" air supply, polyethylene, sold by the foot, no pail. **P5000**

Twin tube, 3/8" discharge x 1/4" air supply, Teflon®-lined polyethylene, sold by the foot, no pail. **PT5000**

Single 1/8" tube: Disposable air supply tubing for 3/4" Sample Pro portable MicroPurge pump. 250' prepackaged spool of 1/8" OD single strand, polyethylene tubing (includes bucket). **DT-SP2B**

Single 1/4" tube: Disposable tubing for Sample Pro portable MicroPurge pump. 250' prepackaged spool of 1/4" OD single strand, polyethylene tubing (includes bucket). **DT-SP4B**

TRSM200 -
Tubing Reel.



Inlet Screens

Pump	Material	Qty.	Order No.
1-3/4"	Stainless Steel	10/Pkg	38361



Pump Check Balls

Pump	Material	Qty.	Order No
1-3/4"	Stainless Steel	5/Pkg.	38408
3/4"	Teflon®	10/Pkg.	38504



Compression Fitting Pumps

Discharge Tube Size	Material	Qty.	Order No
1/4"	Stainless Steel	5 sets	38366
3/8"	Stainless Steel	5 sets	38367

(Each set includes nuts and ferrules for water and air tube connections)



Sample Pump Tubing

QED tubing innovations such as Teflon®-lining and bonded twin-tube protect sample integrity while making system installation and operation easier and more economical. Careful development and quality control provide tight tubing diameter tolerances for connections that are leak-tight and have high pull-out strength, something not found in hardware store tubing. All tubing is controlled quality, virgin grade material. Economical Teflon-lined polyethylene tubing is the most frequently used, with Teflon on the inside of the sample tubing, where it's really needed. Other choices include all-Teflon, polyethylene, and polypropylene (for deep-well use). QED also stocks bulk tubing and many other sizes and materials; inquire for details.

QED Tubing Advantages

1. Hassle-free, twin-line bonded tubing, not cable tied or loose.
2. Systems are custom cut, pre-assembled, leak-tested and poly-bagged for easy installation all at no additional cost.
3. Highest quality materials and true continuous lengths.

Twin-line simplicity

Our standard twin-line air supply/discharge tubing has a continuous heat-welded bond to prevent tangles and hangups during pump installation and maintenance, and avoids entanglement with portable water level meters and other equipment.

Tubing assemblies are cut to exact length and pre-assembled to well cap and pump per customer specifications at no extra cost. QED stocks the largest variety of discharge adapters, elbows and couplers.

Model No.	Material	Maximum Pressure	Maximum Depth	Min Bend Radius
Air Supply: 1/4 in. OD (6 mm) Discharge: 3/8 in. OD (9 mm)				
P5000	Polyethylene	300 psi (2,070 kPa)	600 ft. (183 m)	1.25 in. (3 cm)
PT5000	Teflon®-lined PE	300 psi (2,070 kPa)	600 ft. (183 m)	1.25 in. (3 cm)
T5010	Teflon®	275 psi (1,896 kPa)	550 ft. (168 m)	2.5 in. (6 cm)
Air Supply: 1/4 in. OD (6 mm) Discharge: 1/2 in. (13 mm)				
P5100	Polyethylene	200 psi (1,380 kPa)	400 ft. (122 m)	2.5 in. (6 cm)
PT5100	Teflon®-lined PE	200 psi (1,380 kPa)	400 ft. (122 m)	2.5 in. (6 cm)
T5110	Teflon®	200 psi (1,380 kPa)	400 ft. (122 m)	3.0 in. (7.5 cm)
Air Supply: 1/4 in. OD (6 mm) Discharge: 1/4 in. (6 mm)				
P5200	Polyethylene	300 psi (2,070 kPa)	600 ft. (183 m)	1.0 in. (2.5 cm)
PT5200	Teflon®-lined PE	300 psi (2,070 kPa)	600 ft. (183 m)	1.0 in. (2.5 cm)
T5200	Teflon®	275 psi (1,896 kPa)	550 ft. (168 m)	1.0 in. (2.5 cm)
Air Supply: 5/16 in. OD (8 mm) Discharge: 3/8 in. (9 mm)				
DW5000	Teflon®	500 psi (3,447 kPa)	1,000 ft. (305 m)	2.5 in. (6 cm)

Well Development Pumps

When a monitoring well is installed, it is essential to clear soil particles and drilling fines out of the well that interfere with pumping and result in excessive turbidity. The Sample Pro® Well Development Pump is ideal for fast, easy development of 2" and 4" diameter wells. The operator pulls up on the hoses to surge the well with the pumps flexible wipers that sweep the inside of the casing. The surge-block action's reversing flow loosens fines in the well filter pack so they can be pumped out of the well. Two models are available – standard PVC/Stainless Steel, and Stainless/Teflon® for sensitive sampling situations. Wipers to fit both 2" and 4" wells are included. (This pump can also be used for purging).

Specifications

Model No.	Well Dia	Pump Material	Tube Fittings	Wiper Material	Max Lift	Length	Dia	Pump Wt.
Development Pumps								
HR4105D	2 or 4 in.	PVC/303 S.S.	Brass	PVC/Buna-N	200 ft.	65.00 in.	1.66 in.	6.0 lbs.
HR4105SS	2 or 4 in.	304 S.S.	304 S.S.	S.S./Teflon®	200 ft.	65.00 in.	1.66 in.	15.0 lbs.

HR4105SS uses barbed S.S. fittings and clamps with 0.50 in. OD air supply and 0.75 in. OD discharge tubing. All other pumps have brass quick connect air supply and thread-on discharge fittings for use with model P5700 Flexible Hose Bundle.



MicroPurge® Low-Flow Pump Control

MicroPurge® Controls

The MicroPurge® Controller (U.S. Patent Number 6,508,310) revolutionizes low-flow sampling with advanced logic control of flow rate and water level drawdown.

Simple up-down arrow keys increase and decrease flow rate, driving a microprocessor to re-create expert techniques for low-flow adjustment. Then, optimized settings are identified for recall in the next round of sampling.

The MP10 also offers an easy way to prevent excessive monitoring well drawdown during purging, by linking to the optional MP30 Drawdown/Water Level Meter that ceases flow when drawdown settings are exceeded. The lightweight, compact MP10 sets the pace for a new generation of genuine MicroPurge® equipment, first in control and power for low-flow sampling.

Simple, Stable, Repeatable Flow Rate Setting

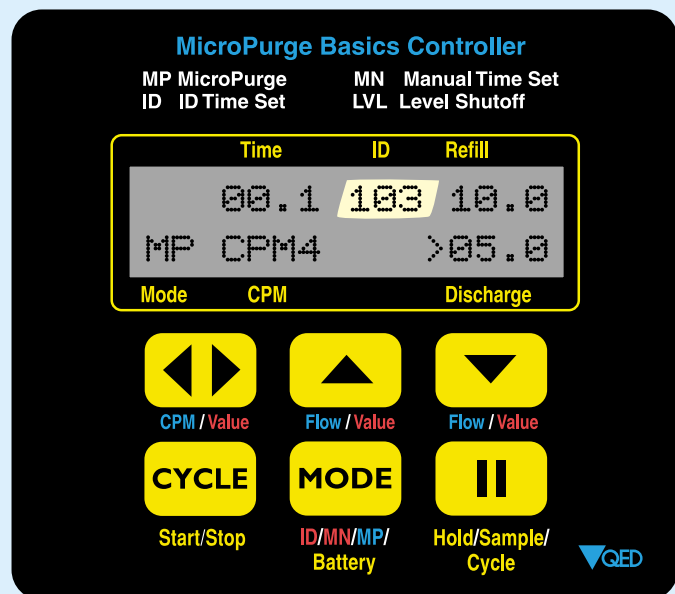
The MP10 controls the most advanced low-flow sampling system ever made. You will purge and sample quickly and easily, with precise, steady low-flow pumping rates from one sampling event to the next. Simplified, sealed electronics complete a design that delivers famous QED durability and value. MicroPurge controllers can be connected to the MP30 Drawdown Meter for optional Automatic Drawdown Control, an industry exclusive.

MicroPurge® Controller Advantages

1. Exclusive MicroPurge® control mode uses simple arrow keys to adjust low-flow rates easily and repeatably, using a micro-processor to re-create the flow adjustment strategies used by experienced samplers.
2. Patented connection port allows linking to optional MP30 Drawdown/Water Level Meter, which signals MP10 Controller to enter stand by mode if drawdown limit is exceeded.
3. Multi-mode digital control includes MicroPurge Mode, ID Mode for repeat events, and manual control mode.
4. Weatherproof controls are housed in a rugged, compact (10-3/4" x 9-3/4" x 5") case.
5. Full digital display of all setting and status information.
6. Optional deep well MicroPurge Controller versions allow for effective low-flow sampling from depths to 1000 feet.

System Specifications

Model No.	MP10	MP10H	MP10UH
Dimensions	10-3/4 in. x 9-3/4 in. x 5 in. (27 x 25 x 13 cm)	16 in. x 13 in. x 7 in. (40.6 x 33 x 17.8 cm)	16 in. x 13 in. x 7 in. (40.6 x 33 x 17.8 cm)
Weight	5.5 lbs. (2.5 kg)	19.25 lbs. (8.73 kg)	19.25 lbs. (8.73 kg)
Case Material	Structural resin	Structural resin	Structural resin
Keypad	6 Keys	6 Keys	6 Keys
Display	2 Line, 16 Character / LCD display	2 Line, 16 Character / LCD display	2 Line, 16 Character / LCD display
Power	3 "AA" batteries	3 "AA" batteries	3 "AA" batteries
Battery Life	50,000 Cycles @ 70 °F (21 °C)	50,000 Cycles @ 70 °F (21 °C)	50,000 Cycles @ 70 °F (21 °C)
Max Pressure	120 psi (8,275 kPa)	300 psi	500 psi
Max Pump Depth	250 ft. (76 m)	600 ft.	1000 ft.
Operating Temperature	-20-150 °F (-29-66 °C)	-20-150 °F (-29-66 °C)	-20-150 °F (-29-66 °C)
Connection to MP30 Drawdown Meter	Heavy-duty cable (supplied with MP30)		



Pressing the UP arrow increases pump flow in controlled steps.



The DOWN arrow decreases the flow rate in controlled steps.



The LEFT/ RIGHT arrows adjust Cycles Per Minute (CPM) of your pump.



The ID Number recalls settings and changes with the UP or DOWN arrows.



The CYCLE key Starts and Stops pump cycling.



The MODE key changes modes from default MP (MicroPurge) Mode to ID Mode to MN (User Set) Mode. This key also allows battery check.



Pressing the PAUSE key stops the flow. A second press allows push button controlled vial filling.

Multi-mode digital control

The MP10 gives you three easy-to-use operating modes, to cover every sampling protocol and situation.

- **MicroPurge® (MP) Mode** optimizes control settings to reach the desired pump flow rate; you don't calculate pump cycles, refill or discharge times.
- **ID Mode** recalls previously optimized settings for each well, providing consistent performance every time.
- **User Set (MN) Mode** - provides manual pump control for extreme depths and other special cases.

MicroPurge® Mode Quick Guide

1. Opening cover turns power ON. (Close to turn OFF)
2. Select desired Cycles Per Minute (CPM) with the ◀ ▶ key .
3. Turn throttle to set depth on gauge to 10-20 feet deeper than the pump location in the well.
4. Press CYCLE to START pumping.
5. When water discharge begins, adjust throttle until a slow, steady flowstream is achieved.
6. Press ▲ ▼ keys to set the desired purge flow rate.
7. To collect samples, continue purge flow, or use || key to directly control sample flow and pause.

MicroPurge® Portable Control & Power Pack



Compact Controller with On-Board Gas Supply

(U.S. Patent Number 6,508,310)

Remote wells and inaccessible sites are no problem with the unique, new MP15 Control & Power Pack. The convenient carrying case combines a compact compressed gas cylinder with the advanced control of MicroPurge Controllers. With this combination, a complete sampling setup can be carried by a single person, to reach wells where trucks or even compressor carts can't go.

MicroPurge Control & Power Pack Advantages

1. The MP15 weighs just 27 lbs. with a full cylinder in its padded nylon field case. Backpack carrying leaves hands free for other sampling equipment.
2. Also includes capability for optional drawdown control with link to the MP30 Drawdown Meter.
3. Lightweight, silent drive power: 3.5 hours of purging capacity at 75 foot pump depth!

System Specifications

Model No.	MP15
Dimensions	25-1/2 in. x 12-1/2 in. x 10 in. (65 x 32 x 25 cm)
Weight	27 lbs. (12 kg)
Case Material	Polyethylene
Carry Bag	Standard
Back Pack Straps	Optional
Keypad	6 Keys
Display	2 line, 16 character LCD display
Power	3 "AA" batteries
Battery Life	50,000 cycles @ 70 °F (21 °C)
Max Pressure	120 psi (827.5 kPa)
Max Pump Dept	250 ft. (76 m)
Operating Temp.	-20-150°F (-29-66 °C)
Cylinder	5 lbs. (2.3 kg) CO ₂
Cylinder Life	> 3 hrs (75 ft. pump depth)
MP30 Connection	Heavy-duty cable (supplied with MP30)

MicroPurge® Flow Cell



*Sample With Confidence
Thanks to Visible & Audible
Stabilization Alert with
PurgeScan™ Technology.*

Simple, Economical Purge Monitoring with Automatic Stabilization Alert

The MicroPurge® MP20 Flow Cell (U.S. Patent Number 6,415,659) sets new standards in performance, size and price for purge water quality monitoring. Patented QED-exclusive PurgeScan™ technology signals when stabilization has been achieved for selected water quality parameters, with automatic storage of key data points.

The MP20 meter is designed to simplify calibration and operation in the field. It displays all readings automatically and is lightweight and waterproof.

The compact sonde is a low-profile design with rugged, easy-to-service probes. The flow cell collects and vents gas bubbles effectively, and distributes purge flow evenly for quick response and more accurate readings. The whole package is protected by a 3-year warranty and is backed by service and support from QED, the leader in low-flow sampling.

System Specifications

Model No.	MP20 MP20D (w/ realtime clock/ data download) MP20DT (w/ realtime clock/ data download/turbidity)
Dimensions	18.5 in. x 15 in. x 6.5 in. (47 x 38 x 17 cm)
Weight	14 lbs (6.4 kg)
Storage	100 Data Points
Stabilization	PurgeScan™ Technology
Case Material	Structural resin
Keypad	5 Keys

Meter Specifications

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

Flow Cell Specifications

Volume	175 mL
Material	Rigid urethane
Fitting Type	Soft-tube "clamp-free"
Fitting Size(s)	Inlet: 1/4 in. ID x 3/8 in. OD Outlet: 3/8 in. ID x 1/2 in. OD
Venting Modes	Horizontal and vertical
Sonde Connection	Bayonet-style twist mount

Sonde Specifications

Size	3 in. x 9 in. (8 x 23 cm)
Weight	1.3 lbs. (0.6 kg)

MicroPurge® Flow Cell Advantages

1. Patented QED-exclusive PurgeScan™ signals when selected purge water quality parameters remain steady over successive readings, at user defined intervals, automatically storing the readings.
2. Transparent, molded flow cell effectively collects and vents bubbles, even in the horizontal position; low internal volume (175 mL), designed flow distribution and stirrer give fast response, even at low-flow purge rates.
3. Three year warranty.
4. Rugged, waterproof case doubles as a measurement and calibration workbench.
5. Waterproof MP20 meter displays all readings automatically: pH, ORP, temperature, conductivity, and DO.
- 6 The compact sonde attaches with a quick bayonet-type mount to the flow cell, calibration and storage cups.

Typical Sensor Performance Specifications:

	Range	Accuracy	Resolution
Temperature	23-122°F (-5-50 °C)	± 0.36 °F (0.20 °C)	0.018 °F (0.01 °C)
DO	0 to 20 mg/L	± 0.2 mg/L	0.01 mg/L
Specific Cond.	0-100 mS/cm	± 1% of reading ± 1 count	4 Digits
pH	0 to 14 units	± 0.2 units	0.01 units
ORP	-999 to 999 mV	± 20 mV	1 mV
Salinity*	0 to 70 PSS	± 1% of reading ± 1 count	0.01 PSS

*Calculated

PurgeScan™ Specifications:

Parameter Stabilization range criteria:
(Values are user adjustable;
default values shown.)

pH	+/- .2 units
DO	+/- 0.2 mg/L
Conductivity	+/- 0.020 mS/cm
ORP	+/- 20 millivolts
Turbidity	+/- 1 NTU

Stabilization basis: 3 consecutive readings of selected parameters (one or more of above 4) 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.

MicroPurge® Drawdown Meter



Links to Controller to Prevent Excessive Drawdown During Purging and Sampling.

MicroPurge® Drawdown/Water Level Meter

Drawdown control is now automatic with QED's low-flow water level meter. The MP30 Drawdown/Water Level Meter (U.S. Patent Number 6,456,201) provides a patented, simpler way to assure drawdown control when connected to the MicroPurge® controllers, and acts as a high quality water level meter. The MP30 can easily switch between both modes. For drawdown control the meter is turned to MicroPurge® mode and the probe is lowered to the point of maximum drawdown. If purging lowers the water level to the selected point, a light and buzzer on the MP30 meter are activated and the controller is signaled to enter a stand by mode until the water level rises again. A separate light indicates probe submergence in both modes.

System Specifications

Model No.	MP30
Dimensions	14 in. X 10.5 in. X 8 in. (37 x 27 x 20 cm)
Weight	7 lbs. (3.2 kg) w/150 ft. tape 9 lbs. (4 kg) w/300 ft. tape
Probe Diameter	5/8 in. OD (1.6 cm)
Probe Length	7.5 in. (19 cm)
Carry Bag	Optional
Connecting Cable	Included
Well Hanger	Included
Reel Brake	Included
Power	9V battery
Battery Life	30-40 hours
Tape Length	150 or 300 ft. (46 or 91 m)
Operating Temperature	-40-185 °F (-40-85 °C)

Well Level Meters

6000 Series Flat Tape Meters

The compact, Stainless Steel and Teflon electronic probe is specially designed to eliminate false readings caused by cascading water. Kink resistant flat tape is permanently marked in 1/50' increments, allowing repeatable depth measurements accurate to 1/100' (Metric models are available) and fits easily in wells, boreholes and stand-pipes.

The probe and cable are lowered from the easy-to-carry free standing reel. Visual and audio alarms indicate contact with static water; depth measurement is taken directly from the tape. A built-in sensitivity control allows adjustment to fit varying water conductivity conditions. The unit operates for up to a year on a single, easily replaceable 9-volt battery

Decontamination is easy – the meter electronics can be removed by disconnecting a single plug; the whole reel / tape / probe assembly can then be simply washed down or totally immersed for thorough, between-well cleaning.

Accessories

Model No.	Description
36059	Tape guide
36060	Carrying bag

Specifications

Probes	Stainless steel and Teflon (w/strain relief), 5/8 in. diameter x 5 in. long		
Tape	Flat tape, Polyethylene with Kevlar® and Stainless Steel conductors, markings at 1/50 ft. intervals or 1 cm intervals for metric.		
Power	One standard 9V battery		
Reel	Small, free standing with carrying handle and winding knob, brake, probe holder, battery test, ON/OFF switch, sensitivity adjustment (model 6000DSS uses larger reel)		

Depths	Model No.	Tape Length	Metric Model No.	Tape Length
Options	6000YSS	100 ft.	M6000-45	45 m
	6000MSS	300 ft.	M6000-100	100 m
	6000SS	150 ft.	M6000-150	150 m
	6000DSS	500 ft.		

Kevlar is a trademark of DuPont.

MicroPurge® Engine/Compressor



Compact, Portable Pneumatic Power for Purging and Sampling

The rugged MicroPurge® MP40 Compressor eliminates the weight and part count of other oil-less field compressors. The high quality compressor is directly coupled to a smooth-running Honda engine, without the weight and complexity of pulleys, belts, and belt guards.

The MP40 compressor is mounted in a light weight aluminum cage for easy carrying — only 48 pounds total weight!

A new hose reel option attaches to the compressor cage so that wells up to 200 feet away can be reached without having to move the compressor unit. An optional cart with high flotation wheelbarrow tires is also available for mounting the MP40 to reach more distant wells.

Expand Your Sampling Range With This Versatile, Full-Powered Compressed Air Source.

System Specifications

Model No.	MP40	
Overall Dimensions	14 in. x 18-1/4 in. x 18-1/2 in. (36 x 46 x 47 cm)	
Weight	45 lbs. (20.5 kg) dry; 48 lbs. (22 kg) filled w/gasoline & oil	
Engine	4.0 HP Honda	
Max Pressure	125 psi (8,620 kPa)	
Max Lift	250 ft. (76 m)	
Output	Through (20 ft. [6 m] air hose)	(100 ft. [61 m] air hose)
0 psi (0 kPa)	7.0 cfm (11.9 m³/h)	
25 psi (1,725 kPa)	6.1 cfm (10.4 m³/h)	4.8 cfm (8.2 m³/h)
50 psi (3,450 kPa)	5.0 cfm (8.5 m³/h)	4.4 cfm (7.8 m³/h)
75 psi (5,170 kPa)	4.2 cfm (7.1 m³/h)	3.8 cfm (6.5 m³/h)
100 psi (6,895 kPa)	3.5 cfm (6.0 m³/h)	2.4 cfm (4.1 m³/h)
125 psi (8,620 kPa)	2.2 cfm (3.7 m³/h)	1.7 cfm (2.9 m³/h)
Compatible Controllers	MP10/MP15 or Model 400	

Options

Cart Kit	MP40-1
Hose Attachment (200 ft.)	MP40-2
Propane Conversion Kit	MP40-3

12 Volt DC Light Weight Electric Compressor

The 3020 Compressor is a useful option for low-flow sampling of wells at depths to 200 feet. It runs on a 12 volt DC electrical supply, and can be connected to your vehicle's battery with the supplied cables, or driven by a separate power source. At Just 15x11x6-1/2" and 15 pounds, it offers an extremely convenient, portable pneumatic power choice for many sampling systems.



Model 3020 Electric Compressor

Electric Compressor Specifications

Model No.	3020
Dimensions	15 in. x 11 in. x 6.5 in. (38 x 28 x 17 cm)
Weight	15 lbs. (7 kg)
Power Supply	12 VDC (battery cable)
Max Pressure	100 psi (6,895 kPa)
Max Lift*	200 ft. (60 m)
Output	0.21 scfm @ 100 psi (0.357 m³/h @ 6,895 kPa)

* Pump flow rates in deeper wells, over 100 ft., will be reduced, especially for pumps with less than 10 ft. liquid submergence.

QuickFilter®



QuickFilter® In-Line Filters:
The Original, In-Line
Groundwater Filter.

Are You Analyzing Your Samples or Your Sample Filters?

QuickFilter® In-line Sample Filters from QED are the original disposable filter for groundwater sampling. They provide fast field filtration without exposing samples to air or on-site contamination.

QuickFilter capsules attach directly to sample tubing for faster, more efficient sampling, with no setup or decontamination required. QED's Sample Transfer Vessel allows use with any type of sampling device. If you use other filters for metals analysis, you could be risking the accuracy and consistency of your program data. A number of monitoring projects have traced false positives and other analytical errors to the use of "off-brand" filters.

QuickFilter® Advantages

1. High-performance, premium membrane polyethersulfone increases filtration capacity.
2. Capsules heat-sealed, not glued — for purity and performance under pressure.
3. Purity tested to assure metals sample integrity.
4. Full rated surface area guarantees maximum capacity and performance.
5. Always in stock — no back orders; guaranteed best value with the industry's lowest prices.

Specifications

Model No.	Capacity	Area	Filter Material	Pore Size	Max Press.
FF8100	Standard	30 cm ²	Polyethersulfone	0.45 microns	60 psi
FF8101	Standard	30 cm ²	Polypro	1.00 microns	60 psi
FF8200	High	609 cm ²	2 Polyethersulfone	0.45 microns	60 psi
FF8201	High	770 cm ²	2 Polypro	1.00 microns	60 psi
FF8205	High	770 cm ²	2 Polypro	5.00 microns	60 psi

Accessories (ordered separately)

Model No.	Description
FF8500	Sample transfer vessel with hand pump
35780	Transfer vessel stand
8810	Connector for 1/2 in. OD tubing
8815	Connector for 3/8 in. OD connector
8820	Connector for 1/4 in. OD tubing
8825	Connector for 3/4 in. OD connector

Transfer Vessel Specifications

Model No.	FF8500
Volume	1100 mL
Height	12.63 in.
OD	5.25 in.
Weight	3 lbs.
Cap Material	Polypro
Reservoir Material	Styrene-Acrylonitrile
Max Pressure	125 psi

Application Data Sheet



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Site Information Form

QED USE ONLY

Today's Date _____
 Quote Number _____
 Sales Order Number _____

CUSTOMER INFORMATION	
Name: _____	Title: _____
Company: _____	
Address: _____	

Email: _____	
Phone: _____	FAX: _____

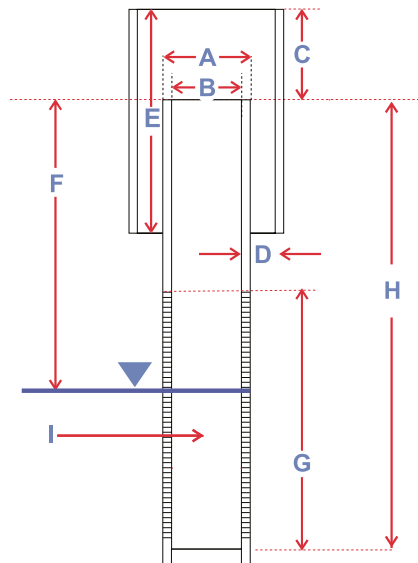
SITE INFORMATION	
Site Name: _____	
Project Ref: _____	
Company: _____	
Address: _____	

Phone: _____	FAX: _____

SAMPLING DATA DESIGN
Site _____
Location _____
Date _____ Well Purge Volumes Required _____ <input type="checkbox"/> MicroPurge
Sampling Parameters _____
Metals, Low Level Organics, etc. _____
Well Bottom to Pump Intake Distance _____
Casing Material _____
Pump Material Preference _____
Pump Tubing Material Preference _____

OPTIONAL COST ANALYSIS INFORMATION
Current Sampling Method _____
Frequency of Events (Quarterly, Yearly, etc.) _____
No. of Persons in Sampling Crew _____
Man Hours to Purge, Sample and Clean _____
Hourly Labor Rate Assumed _____
No. of Cleaning Blanks Per Event _____ Blank Cost _____

WELL DATA



STANDARD CASING DIMENSIONS

Sizes	Schedule 40		Schedule 80	
	OD	ID	OD	ID
2	2.375	2.049	2.375	1.913
2-1/2	2.875	2.445	2.875	2.289
3	3.500	3.042	3.500	2.864
3-1/2	4.000	3.520	4.000	3.326
4	4.500	3.998	4.500	3.786
5	5.563	5.017	5.563	4.767
6	6.625	6.031	6.625	5.709

Note: Please note any special characteristic on illustration above

WELL IDENTIFICATION NUMBER									
A. Well Casing Diameter – OD									
B. Well Casing Diameter – ID									
C. Clearance from the Top of Well Casing to the Top of Outer Casing / Vault									
D. Clearance of Outer Casing / Vault Depth									
E. Outer Casing / Vault Depth									
F. Depth to Top of Static Water									
G. Screen Length									
H. Depth of Well									
I. Water Yield (gpm)									

The information provided on this form will be kept confidential by QED.

The World Leader in Air-Powered Pumps

Free Product Recovery

The largest family of in-well skimmers and separators available in the industry. Flexible systems to match the recovery needs of your site.

- AutoGenie™ and Programmable Genie®
- Ferret® In-Well Separator
- AutoSkimmer™



Remediation and Landfill Pumping

QED pumps and systems for landfill leachate and condensate and groundwater remediation have been recognized worldwide for their superior quality and reliability for over two decades. From small municipal facilities to large industrial and military sites, QED can supply the equipment and expertise.

- Air-Powered Automatic Pumps
- Piston Pumps



Air Strippers/VOC Removal

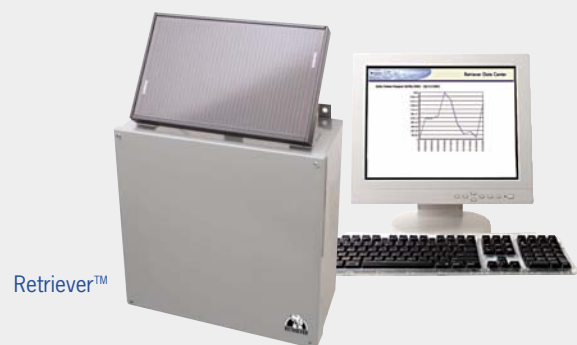
Unique air stripper designs for removing volatile compounds (VOC) from groundwater and industrial process streams.

- Sliding Tray SS Air Strippers
- Stacking Poly Air Strippers



Wireless Data System

Complete data delivery and reporting system that delivers dependable reporting of well level and pump flow data, clearly charted and displayed, and securely archived.





Beyond the Basics...

Since 1981, QED's Well Wizard® and Sample Pro® bladder pumps have been the best choice for producing accurate, precise samples while controlling sampling program costs. The addition of QED's MicroPurge® line of low-flow sampling controls simplifies the low-flow sampling process, further improving sample quality and reducing costs. QED's industry-leading team of technical experts will configure a dedicated or portable sampling system to meet your project needs based on site-specific data and well configurations.

Accessories

- MicroPurge® Flow Cell
- MicroPurge® Drawdown Meter
- Bonded twin-tubing, well caps and discharge adapters
- Electric or Engine-Powered Compressors
- Custom components for special applications

The World Leader in Air-Powered Pumps

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In New Zealand:

For customer service, call 0800-933-966

To email an order, ordersnz@thermofisher.com

To order online: thermofisher.com

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