

PQ100 Portable PM₁₀ / TSP / PM_{2.5}

Now furnished with EPA-designated Louvered Inlet



- Approved by EPA for PM₁₀ sampling (Designation No. RFPS-1298-124)
- Suitable for Lead, Asbestos, Oil Mists, Indoor Air Pollutants and Allergens
- Offers well Regulated Air Flow (Mass Flow Control) in the 1 to 25 LPM range

Features

- Accurate EPA Specified Flow Rate to $\pm 0.5\%$
- Precision Flow to $\pm 2\%$
- Download Software Included
- Complete System is Portable and easily usable Indoors or Out
- Weatherproof Enclosure Included
- 24 Hour Sample on Internal Battery

The PQ100 is the only truly portable PM₁₀ sampling unit on the market today. With microprocessor control plus mass flow control, programmability and download/storage capacity, this advanced system of pump and accessories are designed for any sampling application that requires portability plus regulatory compliance.

Because of the mass flow sensor, no flow corrections are needed. The units are supplied with full calibration to engineering standard conditions at the usual flow rates of 2, 10 and 16.7 lpm. Additional calibration data (up to 240 sets of conditions) can be stored for instant access. Calibration is easily confirmed or altered in the field using a bubble flow meter. The unit display gives elapsed time, total sample volume, battery state and instantaneous flow rate. The built-in real time clock and associated microprocessor allows future run times to be entered.

This microprocessor-controlled air sampling pump is designated specifically for PM₁₀ sampling. The unit will operate from its internal battery for 24 hours, but an auxiliary, easily interchangeable battery greatly extends run time. The built in software permits programming of start and run time as required. Air flow is rigidly controlled to $\pm 2\%$ precision with state-of-the art mass flow sensor. All relevant operations information such as date, time, flow rate and total flow are displayed. An RS232 port affords downloading of information plus remote access. During the data transfer, relevant data such as station number, job code and operator name may be entered. After filter analysis, the filter weight change may be entered and the system automatically calculates the air concentration corrected to EPA standard conditions. The real time clock permits sample start at any future time.

TSP Sampling Sampling for Total Suspended Particulates is no longer the National Standard, but, it is still widely used at the state level and for lead sampling. The former standard defined TSP particulates as those aerosols being drawn into an inlet whose velocity was equivalent to the sedimentation velocity of a 100mm AED particles (24.8 cm/sec). The PQ100 may be used as a TSP sampler by mounting the filter holder (F20) directly onto the pump, fitting the TSP cap onto the filter holder and operating the pump at 16.7 lpm.

Calibration When using a specific filter and flow rate (i.e. 47mm Teflo at 16.7 lpm) this calibration will be maintained in memory indefinitely. However, calibration should be checked on a yearly basis. Two hundred and forty calibration locations (from 1.0 to 25.0 in 0.1 lpm increments) can be programmed into this unit. When you calibrate the above flow rate/filter, and should you choose to correct for engineering standard conditions (760mm Hg at 20C), then every sample you run thereafter at 16.7 lpm using the 47mm Teflo will also remain constant.



Rack/Support Assembly This assembly is designed to be rigid and easier to use since the instrument panel is supported at waist height. The legs use the same "snap and lock" assembly developed for the PQ200 (and are, in fact, interchangeable). A large water trap has been included in the new specification for deployment of the instrument in extreme climates.

Downloading The data from the PQ100 may be downloaded to any IBM type computer system (5.25 and 3.5 floppy disks are provided). Any IBM compatible PC running MS-DOS 2.1 or higher with 1 floppy drive and at least 512K of memory is usable. One serial communication port is also required. The HP100LX palmtop computer is also usable with our accessory memory card and adaptor cable. The software also includes a corrections program which simplifies calculating the flow rate to EPA standards. After filter analysis, the downloaded information may be reaccessed and the program will automatically calculate the concentration to EPA standard conditions of 760mm of Hg and 25C.

Datatrans



The BGI Datatrans Data Communicator eliminates the need to carry a notebook computer to a field site, also eliminating the need for the field technician to be computer literate. With a mere press of a button, the Datatrans will collect up to 20 PQ100 and/or PQ200 runs from a sampler network.

The progress of the download is apparent from the light-emitting diodes. The field technician knows when the download begins, sees a flashing yellow light while the download occurs, and knows when the download is finished. Data capture is therefore completely assured. Upon return to base, data may be loaded into whatever computer is running the PQ100 or PQ200 software.

Additional features:

- No expensive notebook computer necessary
- Download information from either the PQ100 or PQ200
- Store up to 20 PQ100 and PQ200 runs
- Each downloaded run is automatically "stamped" with the instrument's serial number
- Low cost

Solar Panel

The BGI Solar Panel accessory for the PQ200 will extend its operational time range from 24 hours to an indefinite period depending upon the amount of ambient sunlight available in the region of use. As a practical matter the panel with the ballast battery will provide a minimum of 10-14 days of operation with only minimum ambient light. When interval sampling on three or six day cycles is contemplated continuous operations far from a source of power are achievable.

Specifications

PQ100 Sampling Pump

Dimensions 10 x 6 x 9.7 in (25.4 x 15.2 x 24.6 cm)
Weight 19 lbs (8.63 kg)

BGI 167 R

Height 79 in (2 m)
Weight 34 lb (15 kg)

BGI 16.7 PM10 Inlet Kit: Inlet, Tripod, and Filter Holder

Height 16 in (40.6 cm)
Diameter 11 in (28 cm)

Tripod

Height 68 in (1.73 m)
Diameter 6 in (15.2 cm) Closed
Height 39 in (1 m) Disassembled

Ordering Information

PQ167R	Portable PM10 monitoring system with rigid tripod, complete
3410	Portable TSP Sampling System with Rigid tripod (Specify 120 or 240 Volts)
PQ100	Portable pump with charger, cables, and software
F20 with F21	Cassette Optional Parts and Accessories
VPW2	WINS impactor complete with stage (for converting PM10 units to PM2.5)
VPW12	Spare stage, complete with carrying case
R2PJ047	Teflon, 2 micrometer, 47 mm, 50/pkg (for PM2.5 sampling)
61631	Type A/E glass fiber filters, 47 mm, 100/pkg. (for TSP sampling)
1851047	Quartz, 47 mm, 100/pkg (for PM10 sampling)
VPW30	Dow 704 Silicone oil, 30 mL (for WINS)
VPW100	Dow 704 Silicone oil, 100 mL (for WINS)
DC202	Datatrans (for downloading PQ100 in field)
F212	47 mm Filter cassette
F20	Filter holder (for BGI 167S or 167R)
TSP	TSP cap for F20
TP100	Dicoth Inlet Tripod
PQ103	Replacement Battery
CB1	Clock battery
CQ1	Charger Cable
CQ4	External Battery Cable for Marine Battery
SP21	Solar panel, rigid, 32 watt, with cable -- to connect to battery (external) and stand
PQ102	Hose Adaptor - Pump (Black)
A1446	Hose Adaptor - Filter Holder (Silver)
TC8	Tetralube
PQMOTOR	Motor for PQ Pump
PQ2 BattPCA	Battery PCB
PUMP	Pump Maintenance Manual (v.3 -- free download)
2245	Stabilizer Assembly
Rigid Mount Assembly Parts	
L200	Leg, complete with latch (3 required)
L20	12 in. Long Down Tube
L31	Cap, adaptor, down tube to filter holder