

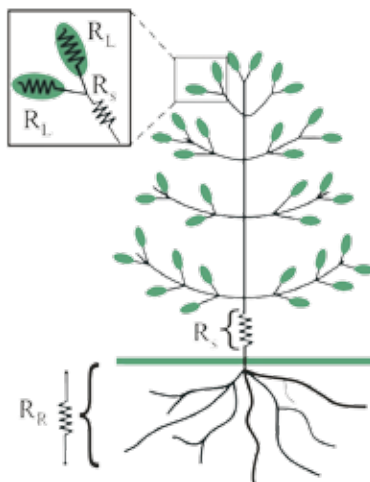
HPFM GEN3

High Pressure Flow Meter



The HPFM-Gen3 measures how water movement relates to the pressure differences required to draw water from the soil or through a plant.

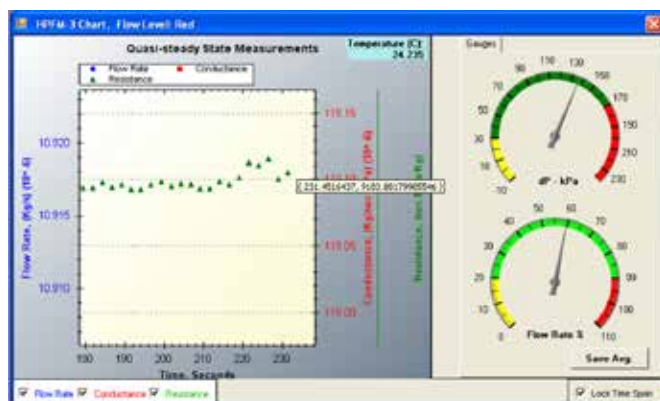
The hydraulic conductivity relationship is a quantitative analysis for roots and stems. The measurement is performed in the field, where in-situ root system can be measured in its natural environment.



In most cases, the analysis of a sample root or shoot is completed in as little as 10 minutes. HPFM-Gen3 measures the major components of the hydraulic conductance in the soil-plant-atmosphere continuum. The hydraulic architecture of a whole shoot or of a single leaf can be represented by a resistance diagram similar to the electronic circuit shown. One can measure the values of the individual hydraulic resistances, then

compute the pattern of water flow and water potentials in the resistance network. Each hydraulic resistance element (R) equals the pressure difference driving flow through the element divided by the resulting flow (F).

All data sets are saved within the Project Manager framework file structure. Transient results as well as QSS flow meter data are saved for easy viewing in with Excel, including the computed conductance, temperature and averaged results.



Features

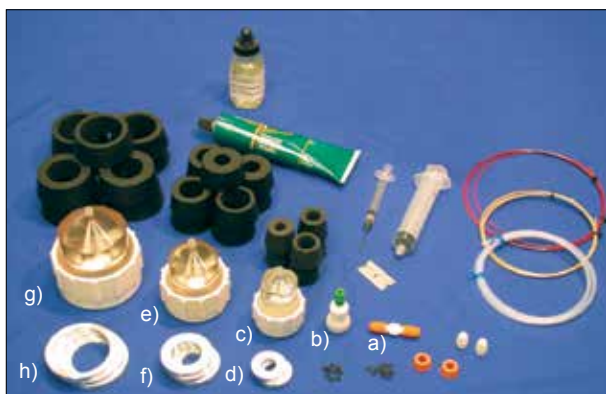
- **New High Res Generation 3 HPFM**
- **Reading Sensors direct in parts per million**
- **NIST calibration standard feature**
- **Instant data regression, and auto-saver aged results**
- **USB powered data acquisition**
- **New High speed sensor conversion module**
- **Flow ranges increased by 50%**
- **Improved overlap on conductance ranges by 50%**
- **Vista, XP, and Windows 7 supported**
- **Upgrade packages available to previous HPFM systems, with new factory calibration**



Specifications

Stem Ranges	1 mm to 55 mm diameters
Flow Rates	0.7 g/h to 2500 g/h in 6 overlapping ranges
Conductance	7.7E-08 to 2.2E-03 Kg s ⁻¹ MPa ⁻¹
Electronic A/D	24-bit resolution dual Analog / Digital converters
Analog/Digital	One reading every two seconds
Data Interface	USB
Dimensions	13.5" x 12.3" x 20.5" (33 x 31 x 52 cm)
Weight	26 lb (12 kg) with back pack and wheels
Capacity	2.1 gal. (8 liter) Degassed Water
Maximum Pressure	90 psi (630 kPa)

Ordering Information



Dynamax includes all the fittings and couplings you may require for analysis. These additional parts include high quality couplings machined out of Lexan for durability and easy viewing.

Compression Couplings to Plants

- a) 1-4 mm stem / HPLC Coupling, with O-Rings
- b) 4-10 mm stem / HPLC Coupling, with O-Rings
- c) 10-20 mm stem / HPLC Coupling, 6 Rubber seals with
- d) compression rings
- e) 19-36 mm stem / HPLC Coupling, 9 Rubber seals with
- f) compression rings
- g) 36-50 mm stem / HPLC Coupling, 9 Rubber seals with
- h) compression rings

Components Included with the System

- Pressure bottle with 1,800 psi (12.5 MPa) pressure regulator
- Pressure safety valve
- 2 ft (0.6 m) high pressure hose
- 6 ft of FEP hose, 5 ft of HPLC hose with spare couplings
- 8-way manifolds, two each
- Micron filter
- Portable degassed water refill kit with quick disconnects
- Algicide
- Cutting tools
- Coupling lubricant
- Bleeding kit
- Manual & Software CD