

## SOLETEK

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## POROLUX™ 500

Gas-liquid displacement Porometer for the rapid measurement of through-pores in materials such as porous membrane, filters, paper, plastics, thin films, hollow fibers and many other applications.

The POROLUX™500 series uses a **pressure scan** method. In this method a single valve is opened during a measurement and the pressure and the resulting gas flow are measured continuously. This method is fast and typically generates very reproducible results. Therefore the POROLUX™500 series is very suited for QC type of work.



### Measurements

The POROLUX™500 measures bubble point, maximum pore size, mean flow pore size, minimum pore size, average pore size distribution of uniform materials and air permeability.

### Pore Size Range

Measurable pore size range from ca. 13 nm to 500 µm equivalent diameter (depending on the wetting liquid).

### Standard Pressure Range and Flow Rates

0-35 bar (500 psi) with flow rates of up to 200 liters per minute.

### Sample Holders

The POROLUX™500 comes with a 25 mm sample holder. Other sample holders are available.

### Hardware

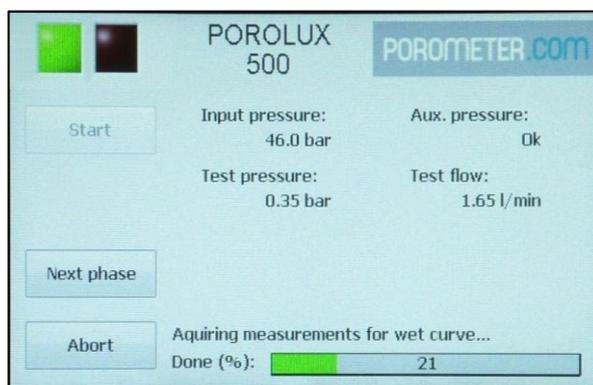
The POROLUX™500 comes standard with **2 flow meters** (automatic switch between the flow meters):

- 10 liters/min
- 200 liters/min

The pressure is regulated by means of 2 pressure regulators and the full pressure range is available from zero on. The POROLUX™500 comes standard with **3 pressure transducers** (automatic switch between the pressure transducers):

- 0.5 bar (7.25 psi),
- 5 bar (72.5 psi)
- 50 bar (725 psi)

The POROLUX™500 has an **integrated touch screen panel** on the front part of the equipment for easier operation of the device and display of the measurement status. The unit is mounted in the operation pane at the test place. During the measurement the touch screen shows the status of the device. The current sensor values and the proceeding of the measurement can be observed at the screen.



### First Bubble Point

Determination of **first bubble point** according to ASTM F 316-03. Calculated bubble point 30, 50, 100 ml/min, differential size or first flow.

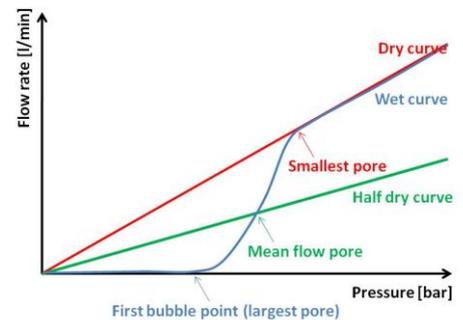
### Software

The POROLUX™500 uses LabVIEW software, a commonly used graphical programming system for data acquisition and instrument control, and offers a very intuitive selection of all analysis parameters:

- Type of wetting fluid
- Start and end pressure or max and min diameter (auto conversion)
- The software allows the user to select the **speed of pressure increase** and the **number of pressure steps**. This way the user can easily obtain more data point and thus improve the resolution for the pore size distribution for a wide range of samples

Data analysis includes:

- Comprehensive overview of all relevant results and input parameters
- Wet, dry and half-dry graph
- Cumulative flow and pore size distribution graph
- Curve overlay
- One button export to Excel, Word and pdf file



Universally available **PLC technology** (National Instruments) with **24 bit resolution** pressure and flow sensors.

Advanced service menu facilitates **diagnosis and service via Internet**

The POROLUX™500 comes with a free 6-month trial **PoreXpert** license. PoreXpert is a software for design, analysis and modelling of porous materials from experimental porometry data. It is a very powerful tool for prediction of properties to assist in the engineering and design of new materials. Some of the analysis functions included in this exclusive version for our POROLUX™ customers include:

- 3D Structure visualisation
- Gas and liquid permeability calculations
- Pore and throat size and connectivity distribution,
- Report of results and access to expanded functions of PoreXpert Cloud.

### Dimensions

- Length: 510mm
- Width: 510mm
- Height: 455mm
- Weight: 33kg

## Options

### **High pressure connection kit (CONK1000)**

35 bar pressure hose (1.5m) for gas medium with quick connector (CONN-N2) to the POROLUX™500 and screw connection to the reduction valve of the pressure cylinder.

► Price: 193 EUR

### **Low Pressure Connection kit (CONK6)**

Low pressure plastic hose (1.5m) for pneumatic control of valves. Also contains T-quick connector, low pressure plastic hose (0.5m) and quick connector (CONN-N1) that can be used if 7 bar medium pressure is sufficient for sample characterization

► Price: 39 EUR

### **Liquid Permeability kit (LIQ100)**

For liquid permeability and flow rate of fluids

► Price: 2,610 EUR

### **Hollow fiber sample holder (SHHF)**

Specially designed sample holder for hollow fibers, including 5 sealant rings

► Price: 830 EUR

### **Universal sample holder (USH)**

With the universal sample holder samples can be measured with diameters 40, 30, 20, 10 and 5 mm, by simply changing the inserts. Maximum thickness: 20mm. Maximum pressure: 10 bar (145 psi).

► Price: 3,800 EUR

### **Additional standard sample holders (AS1000xx)**

**The POROLUX™500 comes standard with a 25mm sample holder**

► **Exchange of the 25mm sample holder for a 13 mm or 47 mm sample holder: 356 EUR**

► Price: 1,481 EUR for other standard sizes (e.g. 30mm)

► Larger and special sample holders on demand

### **Porometer Reference Kit (REF1UMC)**

Hydrophilic polycarbonate membrane for regularly monitoring instrument performance including certificate of conformity (diameter +/- 25mm, MFP ca. 1 µm)

► Price: 847 EUR

### **Packaging (CH100)**

Solid plywood box for safe shipment of the POROLUX™ (OSB, engineered wood, low formaldehyde emission)

Weight: 25kg

► Price: 134 EUR

### **Compressor (CPR200)** only suitable for pore size range 500 µm - 80 nm

If the required medium pressure is below 8 bar (116 psi), a low noise lab compressor can be an economically/ergonomically alternative for a gas cylinder with compressed nitrogen/air:

- Weight 131 kg
- Sound Level 55 dB(A)
- Receiver Size 59 liter
- Output 160 L/minute (5.6 cfm)
- Motor Size 1.84 kw
- Max Working Pressure 8 bar
- Width 75 cm, Height 90 cm, Depth 74 cm

► Price: 4,759 EUR

### **Computer**

A computer is required, but we prefer this to be sourced locally. Microsoft Excel is not needed for operating the POROLUX™ 500, but is recommended for easy data export.