The **IQIPyc™** is fully automated **gas (helium) pycnometer** and **micropycnometer** in one instrument for very accurate measurements of true volume (density) of solids using the **gas expansion method**. The unique and modular design allows for sample volume determinations from about **10 cc to much less then 0.1 cc**. The new concept of **"Pycnometer to the sample"** allows for connecting external chambers for sample volume measurements. The open design enables utilization of the hardware and software resources that can be combined with auxiliary hardware for carrying out other measurements. The novel approach to operational software design allows the user for easy design of experiments and repeating them using previously saved templates. The user can change parameters at any time and any important quantities can be displayed on PC screen and printed on the report. All data are saved in text format for easy transfer to other programs. The Manual mode of operation is also implemented (via software) for learning, teaching, or troubleshooting purposes.

Main Features and Specifications:

- **Variable volumes of sample chamber by using different adapters**, for nominal sample holder volumes of 10 cc, 1 cc, and 0.1 cc, and ability to connect to external chambers.

- **Variable volume of reference chamber** - User adjustable to achieve large range of volume determinations and ability to add additional volumes

- **Special design of sample holders with installed filters**, suitable for finest powders, even for silica fume measurements

- **Super resolution and accuracy** - ±0.0001 cc with 0.1cc hardware

- **Dual Gas Selector** – one of two connected gas sources can be selected by front panel switch

- **Built-in precision low-pressure regulator** - allows for exact setting of required gas pressure.

- **Built in miniature vacuum pump with 7-10 kPa capability** – allows for the fastest and most effective outgassing of samples, especially when used in combination with pressure cycles.

- **24-bit data acquisition system**

- **Full control over experiment -** basic operations are preprogrammed as functions with parameters and their sequence is user defined. Parameters can be modified during experiment run and results viewed on screen. Once the experiment design is done, the procedure can be saved and reused with a few mouse clicks. Data are saved for future references and any further processing using spreadsheets.

IQIPyc™ – gas (helium) pycnometer - Ordering information

The scalable design allows providing the user with the needed capabilities, from the basic pycnometer version to fully equipped by addition of optional equipment. Some of the options need to be ordered at the production time while others can be added later. As we advance the technologies, additional equipment and software capabilities can be listed in updated brochures.

The complete part number for ordering consists of the core instrument name (IQIPyc) and capital letters indicating options. Any digit(s) following the letter indicate a special version of the option. At least one option, A or B, needs to be purchased to form a useful basic pycnometer or micropycnometer, respectively.

IQIPyc - Bare-bone system with single gas supply port. It can be purchased as such assuming that the user will design own hardware for volumetric measurements or use it as a module in a different instrument.   Power cable, USB adapter, extension communication cable, about 4 m of copper line 1/8"OD for gas connection, spare parts, manuals, and software are all included. The approximate instrument dimensions are: Length – 38 cm (15"), Width - 28 cm (11"), Height - 11 cm (4.5"). Universal Power Supply 100-240 VAC, 50/60 Hz , 100 VA for usage worldwide.

Option A - Hardware for 10 cc nominal sample volume (density) measurements, which consists of large adapter for closing of sample chamber, and large and medium sample holders.

Option B – Hardware for 1 cc nominal sample volume (density) measurements (micropycnometer), which includes small adapter with medium bore for closing of sample chamber, reducing adapter, and two sample holders.

Option C – Additional hardware to option B for 0.1 cc nominal sample volume (density) measurements, which includes small adapter with small bore for closing of sample chamber, and one sample holder. This option requires purchase of option B as some of the hardware is needed.

Option D – Dual gas supply ports option allow for connecting two (neutral) gases to the instrument and easy selection of one of them for a given experiment using the front panel switch. This option needs to be installed at production time.

Option E – Calibration kit. This comprehensive calibration kit includes additional ball for verification in addition to the ones used for calibration. In case of using more then one instrument in the lab, only one calibration kit is needed.

Option F – Laptop/Notebook with Microsoft Windows OS is offered almost at purchase price to make the easy installation even simpler as the software is already installed.

Option G – High-pressure regulator, dual-stage, analytical grade, with CGA580 adapter for neutral gases.
Other options may include specific applications hardware for other analytical capabilities.

Ordering example: **IQIPyc-ADEF** – this part number is for the **IQIPyc** gas pycnometer for volume range up to 10 cc (**A**), with dual gas supply (**D**), calibration kit (**E**), and laptop computer (**F**).

For any inquiries, please use our e-mail: **info@instruquest.com** , and replies to quote requests with complete business address of destination are provided in writing only.