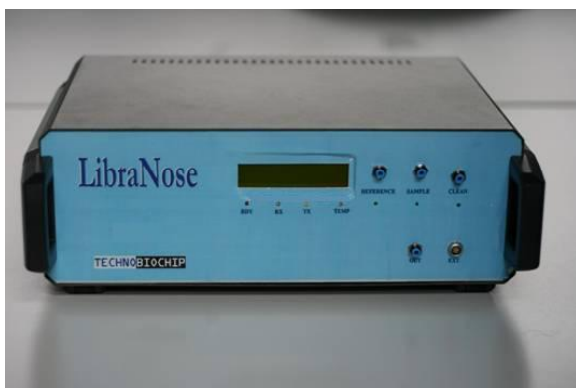


# Libra Nose

## Introduction

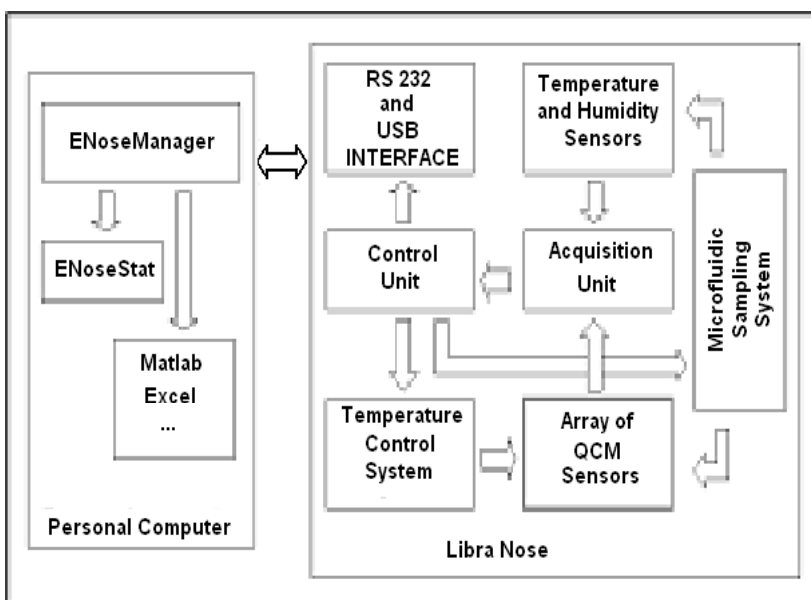
**Artificial Olfactive Sensors (S.O.A.)** are instruments used to classify and identify complex odours. They reproduce structure and principles of the natural olfactory sense. Basically the electronic nose is composed by an array of sensors and a data analysis system. Sensors act like biological receptors and data analysis system allows to transpose information that sensors extract from an odour in an “olfactory image” analogous with our “sensation” of a smell. The identification and comparison of odours is possible because different odours have different olfactory images. This distinguishes the (S.O.A.) from other analytical techniques, e.g. gas chromatography which identifies and measure single molecular classes inside a gaseous mixture. The (S.O.A.) classifies an odour as a whole, showing the synergic activity of different molecular species in a single olfactory image.



## The instrument

**LibraNose** is an extremely compact, easy-to-use instrument, which uses a matrix of eight chemical, non-selective sensors (quartz crystal microbalances). The receptors deposited on the sensor surfaces have been designed in order to allow interaction with a large number of substances and to minimize poisoning effects: in this way the instrument can be promptly reused after a short nitrogen or synthetic air cleaning cycle.

Measurement can be performed at room temperature: this makes measuring operations easier and avoids any denaturalisation of samples due to high-temperature treatment. Sensors are placed in a thermally stabilized measurement chamber in order to avoid temperature influence on quartz crystal microbalance. A microfluidic system allows sampling of odour mixture. Measurement can be done statically or flow through.



A simple RS232 and USB serial interface allows the communication between the device and a Personal Computer (PC).

The instrument is provided with a complete software package.

**ENoseManager** is an user friendly management software which allows full control of the instrument and **ENoseStat** is a statistical data analysis software which allows immediate data elaboration and visualization.

**Typical Applications are:**

- Food Industry
- Health
- Cultural heritage
- Environmental Monitoring

**Main Features**

- Array of eight 20MHz Quartz Crystal Microbalance Sensors
- Static and flow through measurements
- Embedded control temperature system
- Embedded gas sampling system
- Sample Temperature and Humidity monitoring
- RS232 and USB interface
- User friendly management software
- Proprietary statistical data analysis software

**Standard equipment:**

- One instrument “**LibraNose**” equipped with a standard sensor array
- One Power Supply Unit
- Driving software “**ENoseManager**”
- Statistic data analysis software “**ENoseStat**”

**Optional equipment:**

- Customized sensor array for specific application

**Technical specifications:****Sensor Array**

Gas Sensor Array                      Eight 20MHz pre-treated QCM Sensors  
 Chamber Volume                        12 ml

**Frequency acquisition System**

Frequency range                        16 ÷ 24 MHz  
 Frequency resolution                    1 Hz  
 Sampling rate                            1 sample/sec. (all the 8 QCM channels simultaneously)

**Sample microfluidic system**

**Inlets**                                      1/8” sample inlet, 1/8” reference-air inlet and 1/8” output inlet  
**Flow rate**                                 programmable from 0 to 400 ml/min

**Sample temperature and humidity monitoring system**

Temperature range                      0 ÷ 80 °C  
 Temperature resolution                 0.1 °C  
 Humidity range                          0 ÷ 100 %RH  
 Humidity resolution                     1 %RH  
 Sampling rate                            1 sample/sec.

**Connectivity**

Interface                                  RS232, USB

**Power supply**

V    220V AC 50Hz  
     110V AC \*  
     12V DC \*  
 P    80W

**Temperature control system**

Temperature range: Programmable from 20°C to 40°C  
 Temperature stability: 0.2 °C

**Physical specifications**

Weight:                                      2 Kg  
 Dimensions (mm):                        200mm x 200mm x 300mm

\* Upon request

**For further information contact:**

Technobiochip Laboratories:  
 Via Provinciale Pianura, 5 (Loc. S. Martino)  
 80078 Pozzuoli (NA)  
 Tel. 081 5264315 / 5263169  
 Fax: 081 5265116  
 e-mail: lab@technobiochip.com  
 www.technobiochip.com