

Sniff-0 Olfactometer



Sniff-0 is an olfactometer with a brand-new innovative design, feature rich, multi-channel, high-speed, accurate and easily transportable in the form of a normal suitcase. The number of channels can be customized according to your needs up to a maximum of 13 + 1 channels, while “tailor made” versions can also be created according to your needs.

Thanks to a standard controller, combined with highly optimized proprietary electronics, **Sniff-0** can provide complete control of your experiments, ensuring speed, accuracy, and reliability. Some additional features such as automated proportional valves, the measurement of propagation delays and channel-by-channel auto-calibration of the system drastically reduce configuration times and ensure maximum repeatability of experimental protocols. Compatibility with the most common programming platforms (e.g. MatLab®, Octave, EPrime®, LabView®, PsychoPy) and the integrated digital input / output trigger channels allow you to design experiments in complete freedom.

Sniff-0 can be used independently and requires only a standard PC with USB interface (it supports all operating systems), a standard power plug and a source of clean oil-free compressed air (at approx. 3 bar). Alternatively, it can be coupled to **Spir-0** in order to monitor and record the respiratory activity of the subject and synchronize the activation of odour channels to these, or to **Sniff-Air** thus offering the possibility of guaranteeing a more comfortable temperature and humidity of the constant flow air during long-lasting experiments.

Main features



Real-time system: high speed valves, calibrated flow rates, precise trigger management and dynamic user interface means you can manage your experiments in real time



USB interface to communicate to the host PC through an emulated serial port supported by all operating systems



Compatible with the most diffused application frameworks such as MatLab®, Octave, E-Prime®, LabView®, PsychoPy



Custom build electronics module minimises noise and delays to allow a precise valve and motor control as well as synchronization from/to external TTL compatible devices



Open programmable Arduino based architecture, allowing you to configure and personalize all aspects: standard firmware means you will be able to program the unit yourself, or choose to have us build a customized solution for your research needs



Multiple channels, digital I/Os, serial ports and level of automation configurations available as well as customizable interface for your specific research needs (available upon request)



Elegant and portable rugged protective case to safeguard your equipment wherever you may want to use it

SPECIFICATIONS	
OS support	<i>Windows®, MAC®, GNU/Linux using Arduino Due IDE drivers</i>
Communication	<i>USB 2.0 / USB 3.0 compatible (no additional software needed)</i>
Programming	<i>Possible via Python, MatLab®, Octave, C, C++, E-Prime®, LabView®, PsychoPy</i>
I/O	<i>Digital I/O for real-time triggering applications 1 BNC connector Input (0-5V, 10V tolerant) 1 BNC connector Output (0-5 V)</i>
Flow control	<i>Each channel is fitted with manual needle valves (knob adjustment), ultrafast solenoid valves (< 4ms) and, optionally, proportional servo valves (allowing variable odor concentration levels, odor gradients and mixing)</i>
Flow metering	<i>Built-in gas flow stabilizer and flow meter sensitive to +/- 0.01 L/min</i>
Multi-channel	<i>Ability to run multiple channels simultaneously, each with specific and even variable flow rate and independently of constant flow rate, if desired</i>
Pressure delay measure	<i>Delivery delay measurement function as a built-in firmware function to calculate delivery delay in propagation of odor pressure wave: the manifold can be at any distance from the suitcase unit, triggering signals will be automatically adjusted to compensate the timing skew.</i>
Time Saving	<i>Automatic flow calibration and determination of delivery delay per channel</i>
Triggering Speed	<i>Up to 200Hz; Pulses as short as 1ms</i>
Compliance	<i>CE EN 61000-6-3:2007; Meets Electromagnetic Compatibility – Radiated Emissions EN 61000-6-3:2007 standard</i>
Dimensions	<i>670 x 520 x 270mm and 25 kg (approximately for 12+1 ch. Model)</i>
Power	<i>12V operating voltage via provided 110-220V 50-60Hz universal power supply (CE/FCC compliant)</i>
Operating pressure	<i>Up to 6 atm (90 psi), standard operations at 3 l/min (max 6 l/min)</i>
Noise level	<i>Extremely quite operation (<40 dB @ 1m/3.3ft, excluding compressor)</i>

RELATED PRODUCTS	
Breathing cycle monitor	<i>Spir-0</i>
Portable air comfort unit	<i>Sniff-Air</i>
Video triggering device	<i>Response Box</i>
Audio triggering device	<i>Spir-0 with Audio Box plugin</i>
Virtual/Augmented Reality	<i>Unity-based compatible library</i>

OPTIONS / ADD-ONS
<ul style="list-style-type: none"> <i>Incoming air active carbon filtration module (only necessary if you are not sure of the purity of your incoming air)</i> <i>Real-time single channel airflow monitoring</i> <i>Alternative tube and nasal adapter lengths and materials</i> <i>Customized and split nostril stimulation manifolds</i> <i>Additional digital I/O channels (TTL trigger input/output compatible)</i> <i>Various air source options to meet your needs (e.g. silenced compressor <60 dB @ 5m/16ft)</i> <i>Additional modules for monitoring subject physiological functions under development - please ask for details</i>