

Specification for the MkIV High Frequency Omni-Directional Sound Source

The High-Frequency Sound Source consists of a horn driver unit that is connected to a radiating orifice via a long flexible hose. This allows the source to be positioned in relatively confined locations. The source produces a consistent, calibrated output level which is largely unaffected by the routing of the hose as long as care is taken to avoid crushing the hose.

The orifice contains a small microphone that is connected to a preamplifier in the base of the driver unit. The output from this is available on a BNC socket on the base of the sound source. The microphone system produces an approximation to the free-field sound pressure level at 1 metre and this fulfils two roles: it allows integrity checking of the system, as well as real time measurement of acoustic transfer functions.

The delivery hose is around 34 mm O/D and 3 m in length; the nozzle is around 14 mm O/D.

The Noise Source Power Unit is a combined signal generator and power amplifier designed to drive a number of different Sound Sources.

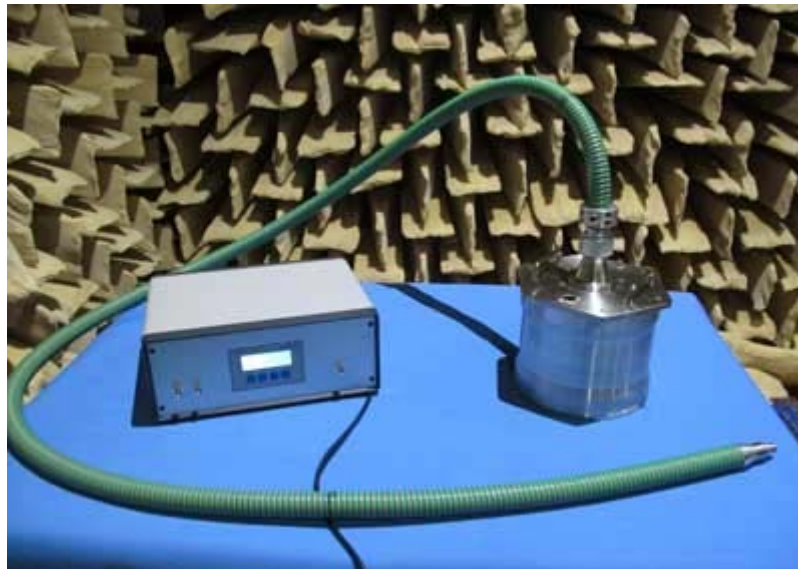
The Noise Source Power Unit can drive the Low-Frequency Omni-directional Sound Source that covers the range 20 Hz to 500 Hz and the High-Frequency Omni-directional Sound Source that covers the range 200 Hz to 10 kHz. The unit will also drive the Tailpipe and Intake Noise Simulator (TINS).

The Noise Source Power Unit is a stable and calibrated device that produces a consistent and repeatable acoustic output from the various Sound Sources.

The Noise Source Power Unit provides filters that are selected automatically when a Sound Source is connected. Each Source has its own connecting cable with a connector unique to the Source. The Power Unit contains a digital signal processor, a Class D audio amplifier and a power supply. The processor produces white noise, pink noise or a swept sine wave, and can accept and process an external input signal.

Outline Specifications

Noise level (SPL @ 1m):	55 dB @ 200 Hz; > 81 dB 2 000 – 10 000 Hz
Omni directionality:	± 1 dB < 2 000 Hz; ± 2 dB 2 000 – 10 000 Hz
Orifice microphone:	Miniature ceramic



The High-Frequency Sound Source and Noise Source Power Unit