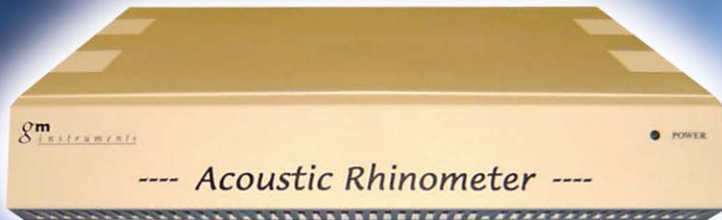


NASAL INVESTIGATION INSTRUMENTATION

featuring the gmi



gmi instruments
Ltd

RHINOMANOMETER & ACOUSTIC RHINOMETER

FEATURING:

- EASY TO USE WINDOWS BASED PROGRAMS
- QUICK AND ACCURATE NON INVASIVE MEASUREMENTS
- PRE AND POST OPERATIVE/CHALLENGE COMPARISONS
- GRAPHICAL AND NUMERICAL RESULT PRESENTATION
- SUPPLIED COMPLETE OR FOR USE WITH YOUR OWN PC
- CAN BE INTEGRATED INTO A NASAL EXAMINATION SYSTEM COMPRISING RHINOMETER, RHINOMANOMETER, RHINOSPIROMETER AND DATABASE
- STATE OF THE ART PRODUCT WITH BUILT IN EXPANSION OPTIONS
- COMPLIES WITH INTERNATIONAL SAFETY AND PERFORMANCE STANDARDS

A1 Clinical/Research Acoustic Rhinometer



Description

Acoustic Rhinometers allow a very rapid non-invasive examination of the nasal cavity using a sound pulse technique.

Reflections of the sound pulse, produced by changes in the cross sectional area within the nose, are processed by a PC to provide a plot of area, as a function of distance, into the nose. Numerical information such as the area at certain distances, and volumes between certain points in the nose, can also be presented.

The A1 Compact (Clinical) and the A1 Executive (Clinical/Research)

Two versions of the system are offered, to provide facilities tailored to particular applications which include:

- Surgical pre/post comparisons
- Nasal symmetry assessment
- Allergen challenge recording
- Sleep studies
- Quantifying the effect of decongestants, hay fever & viral infections such as the common cold.

Hardware Requirements

We are able to supply complete systems, including a medical grade PC and printer or alternatively we can supply the components required to install the A1 in your PC. The minimum PC requirement is a system running Microsoft Windows 98 or later and which has room for either a half size PCI bus expansion card or a PCMCIA card. Any printer with a Windows driver should be suitable. If your PC is not approved for use in a medical environment, we can supply the necessary converter.

Both A1 models provide:

Patient database, software calibration, colour selection facility for screen and printout, patient record screen editing, adjustable scale setting, calculation of the first two minimum areas, the distance at which minima's were found, the volume between any three distances, user definable printout headings and A4 size printouts.

The A1 Executive model additionally provides:

All the features above plus:

Software controlled **result validation** facility, which acquires data in batches, and then calculates the coefficient of variance between them. Most errors in rhinomanometry and acoustic rhinometry occur because of leakage or distortion at the nose/instrument interface. If you can make a measurement, remove the sound tube, re apply it and then make another measurement and find the coefficient of variance is low, then almost certainly you have good data.

Provision of the International Standardisation Committee approved artificial **nose** plus other tools to allow the performance of the system to be "tuned up" to optimal performance.

An **export facility**, which allows the transfer of data into other software packages.

A **plot style facility** to allow report printouts in a number of different styles.

Provision for **expansion** of the system to incorporate additional sound tubes set up to cover different measurement ranges. eg the child probe noted below.

It is anticipated that the A1 Compact will suit applications where assessment can be based on basic information taken from the screen or from a simple printout, while the A1 Executive will be used for detailed investigations usually involving pre/post comparison of data.

Accessories

The following are supplied with the system:

5 pairs of medium and large anatomically conformed nosepieces, a PCI interface card with setup software and manual, adjustment tools and user hardware and software manuals.

Options

A PCMCIA (PC) card can be supplied instead of the standard PCI card to enable A1 to be used with a laptop PC or with a desktop PC, which has PCMCIA card facilities.

Additional sound tubes, for use with small animals or children are also available as is a long sound tube to allow measurements to 25cm depth. We also have open tube designs. Please contact us with your specific requirements.

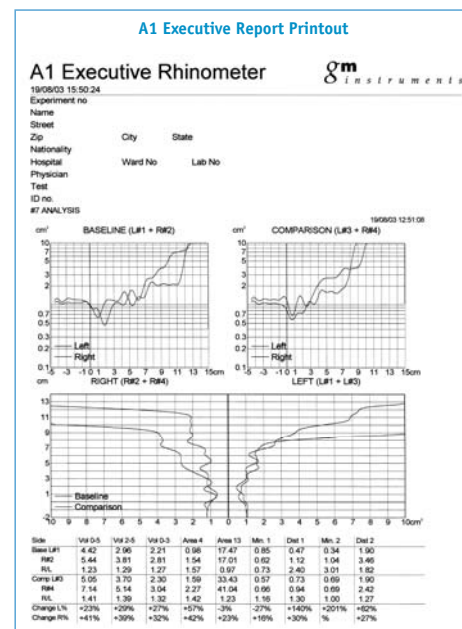
A compatible rhinomanometer, model NR6, can be linked to the same interface card as A1 and can therefore share the same PC and printer, as can our NV1 rhinospirometer.

Naris Software

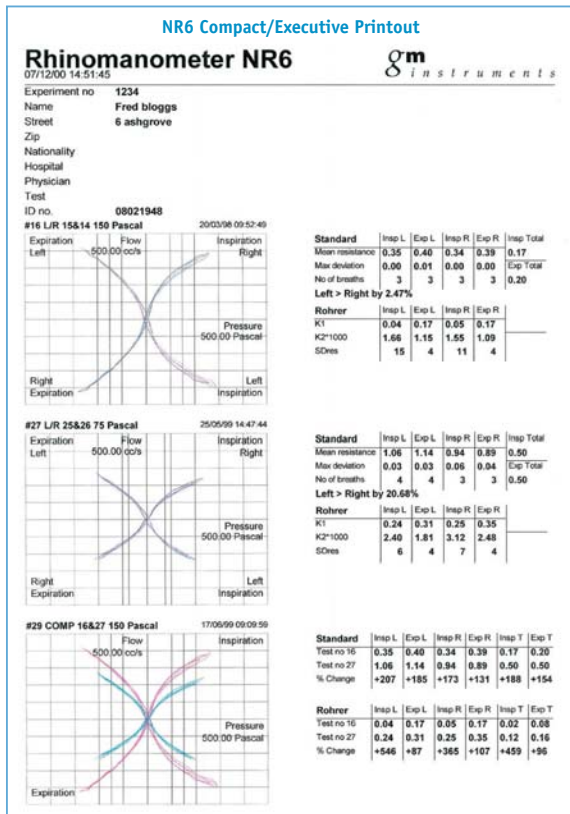
Software which can make either A1 acoustic or NR6 rhinomanometric or NV1 rhinospirometric measurements, and which creates patient records containing all results, is also available.

Naris Sound Tube

A combined rhinomanometer and acoustic rhinometer measurement sound tube is available and can be used with Naris software to provide almost simultaneous measurements, from a single patient connection.



NR6 Clinical/Research Rhinomanometer



Description

The NR6 calculates nasal airway resistance by measuring nasal flow and the pressure producing that flow.

Active anterior or posterior rhinomanometry, using either the Broms or standard techniques can be performed. Results are calculated using the four phase system approved by the International Standardisation Committee.

In addition NR6 can calculate and display either the Rohrer coefficients or the Broms angle relating to the resultant curves, and for anterior measurements there is a diagnostic mode, which looks for nasal valve collapse.

Two versions of the instrument are available, the NR6 Compact and the NR6 Executive - the difference between them being software facilities as described below.

Hardware Requirements

We are able to supply complete systems, including a medical grade PC and printer. Alternatively we can supply the components required to install the NR6 in your PC.

The minimum PC requirement is for a system running Microsoft Windows 98 or later and which has room internally for a half size PCI bus expansion card, or facilities externally for a PCMCIA (PC) card, or USB port card.

Any printer with a Windows driver should be suitable.

If your PC is not approved for use in a medical environment, we can supply the necessary converter.

Both NR6 models provide:

- a An individual patient database, which holds patient details and stores test result files, in chronological order, for ease of display printout and comparison.
- b Files which can be saved to disk and recalled for comparison, re-examination or printout.
- c Tests can be performed using one of a number of techniques and reassessed by changing the reference or threshold points.
- d Test results can be compared with ones previously stored. This comparison is presented in the form of a graphical display with percentage change figures produced, and is available for printout.

The NR6 Executive model additionally provides:

All the above features plus:

A batch test facility to allow data runs to be repeated and mean, standard deviation and coefficient of variance calculation for results within the batch to be displayed and printed. This "best clinical practice" facility helps ensure top grade measurement accuracy.

Data exportation facilities are built in to the executive model which allows "raw" data in a number of formats to be provided for statistical analysis and other purposes.

The executive system also includes a fixed pneumatic resistor which allows a rapid check (but not adjustment) of calibration to be made. (Parts code NR Cal.)

Accessories and Consumables Supplied with both models

1 x adult anterior mask NRAAM	1 x metre posterior tubing NR Postub
1 x adult posterior mask NRPAM	1 x metre anterior tubing NR Antub
1 x child anterior mask NRACM	1 x hole punch NR HP
1 x child posterior mask NRPCM	1 x roll of anterior tape NR Tape
1 x 3 part tubing NR 3T	1 x flowhead NR FL
5 x tip connectors NR TipCon	1 x anterior tube connector

Accessories and Consumables Supplied with the Executive model

1 x calibration checking unit NR Cal

Options

Naris Software

Software which can make either A1 acoustic or NR6 rhinomanometric or NV1 rhinospirometric measurements, and which creates patient records containing all results, is also available.

Naris Sound Tube

A combined rhinomanometer and acoustic rhinometer measurement sound tube is available and can be used with Naris software to provide almost simultaneous measurements, from a single patient connection.

Calibration Units

Calibration units FP2 (5% accuracy) and FCP(3% accuracy) are also available for use with the NR6 or Naris systems. FP2 is physically much smaller than FCP and as such is more easily stored and moved around. Full details are available on a separate data sheet.

S P E C I F I C A T I O N S

NR6 Clinical/Research Rhinomanometer		NR6 COMPACT	NR6 EXECUTIVE
PRESSURE RANGE		800pa	800pa
FLOW RANGE		800cc/sec	800cc/sec
ACCURACY		2%	2%
SIZE		27 x 6 x 28cm	27 x 6 x 28cm
WEIGHT		2Kgm	2Kgm
ELECTRICAL SAFETY		BS EN 60601	BS EN 60601
CE MARK CLASS/APPROVAL		CLASS1/YES	CLASS1/YES
MEASUREMENTS:	ACTIVE ANTERIOR	YES	YES
	ACTIVE POSTERIOR	YES	YES
	STANDARD/BROMS/ROHRER	YES	YES
COMPLIES WITH STANDARDISATION COMMITTEE RECOMMENDATIONS		YES	YES
"BEST PRACTISE" BATCH FACILITY		NO	YES
DATA EXPORTING SOFTWARE		NO	YES

A1 Clinical/Research Rhinometer		A1 COMPACT	A1 EXECUTIVE
DISTANCE RANGE:	STANDARD PROBE	15cm	15cm
	OPTIONAL CHILD PROBE	10cm	10cm
	OPTIONAL LONG PROBE	25cm	25cm
AREA RANGE:	STANDARD PROBE	0.1 - 20cm ²	0.1 - 20cm ²
	OPTIONAL CHILD PROBE	0.01 - 5cm ²	0.01 - 5cm ²
	OPTIONAL LONG PROBE	0.1 - 20cm ²	0.1 - 20cm ²
VOLUME ACCURACY			
DISTANCE 0-5cm		2%	2%
5cm - end		5%	5%
INFORMATION REPORTED:	STANDARD SOFTWARE	2 x minimum areas 3 x volumes	2 x minimum areas 3 x volumes
	MULTIPLE REPORT	NO	YES Volumes + Areas
	DATA EXPORT FACILITY	NO	YES
SIZE		27 x 6 x 28cm	27 x 6 x 28cm
WEIGHT		2 Kgm	2 Kgm
CE MARK CLASS/APPROVAL		2A/YES	2A/YES
COMPLIES WITH STANDARDISATION COMMITTEE RECOMMENDATIONS		YES	YES
"BEST PRACTICE" BATCH FACILITY		NO	YES
ELECTRICAL SAFETY		BS EN 60601	BS EN 60601

LOCAL DISTRIBUTOR	GM Instruments Ltd, Unit 6, Ashgrove, Ashgrove Road, Kilwinning, UK, KA13 6PU	Tel: 01294 554664 Fax: 01294 551154
	email: gminstruments@aol.com enquiries@gm-instruments.com www.gm-instruments.com	