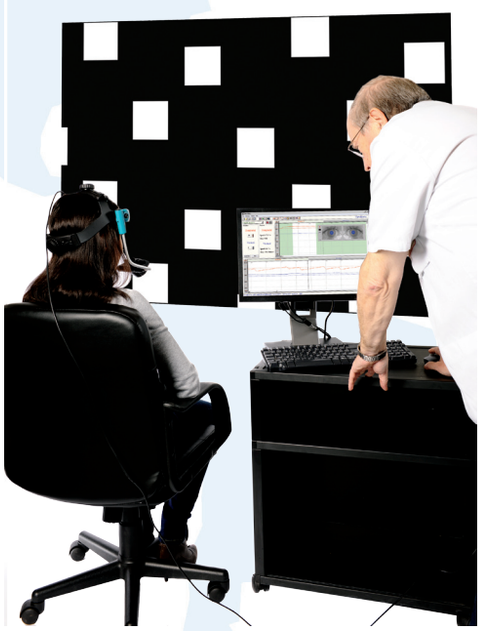
Video Nystagmography (VNG Ulmer)

For advanced balance disorder evaluation

Accurate analysis of the vestibular function

ENT doctors, audiologists and physiotherapists can investigate the vestibular function by finely analyzing eye movements, especially focusing on involuntary rythmical movements called “nystagmus”. Using state-of-the-art infrared cameras mounted on goggles, patient’s eye is recorded and analyzed by the software.

Synapsys was one of the earliest manufacturers to develop VNG technology over aging electrodes based approach (ENG). With easy pre-defined protocols and precise measurement, the VNG Ulmer reduces examination time. Once related to clinical standpoint, it allows conclusion to the most probable balance disorder diagnostic.



VNG Ulmer in application
Ocular motor test with free field of vision mask: Visio mask

Complete set of tests and various valuable tools

The Synapsys VNG Ulmer offers a wide battery of tests for a full VNG testing including vestibular and ocular-motor tests. Designed as a modular system: you can create your perfect configuration with a selection of different cameras, tests and options available.

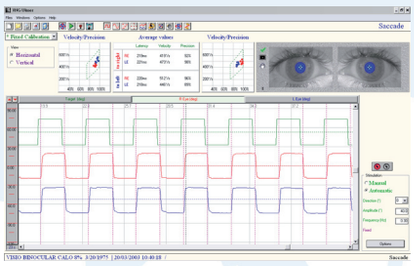
For vestibular testing, such as spontaneous, positional Nystagmus and Caloric test, the ultra lightweight VNS 3X goggles provides great comfort for the patient and the user.

The VNG Ulmer:
Caloric examination with VNS 3X goggles

For ocular-motor assessment (saccade, smooth pursuit and optokinetic), the visual stimulation is controlled by the software and can be displayed either on a video projector or on a large flat screen. The VNS 3X goggles set in open-field mode gives a large visual field for the patient and performs a classical monocular analysis. Advanced analysis with bi-ocular high frequency camera is available with the Visio mask (optional). Specifically designed for ocular-motor tests, it analyzes both eyes simultaneously while providing a true open field of vision.

Quick and easy set-up, smooth operation and clear results

With our unique eye tracking system, the software instantly locks on the pupil without any adjustment required. The system can overcome difficulties such as dark eyelids and allows optimal operations without complex settings. Normative data, extensive selection of results plotting modes (charts,graphs), several languages available and customizable protocol, make the system extremely user-friendly. Video recording, mono or bi ocular cameras, real-time insertion of markers, customizable reporting and many more features will help you get the most of your patient. The Synapsys VNG Ulmer will guide you through balance disorders examination to make it as easy as possible.



VNG Ulmer software interface:
Saccade test recorded with VISIO mask

A system designed by a doctor for doctors

Designed with Dr Eric Ulmer; the VNG Ulmer provides comprehensive information to support patient’s evaluation in a simple and efficient system. Over years, continuous improvements from research and listening to our users have refined our products.

With presence in over 35 countries, we take pride in providing our users with the latest clinical advancement and finest technology.

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SYNAPSYS

Technical Specifications

Video Nystagmography (VNG Ulmer)

VNG Screening and
VNG Standard hardware

Patient with VISIO mask

Synapsys related products:

- Med4 Rotatory Chair
- Subjective Visual Vertical
- Vestibular vibrator (VVIB 3F)
- VHIT Ulmer

Your local partner:

SOFTWARE	**Examinations available**	Nystagmus*	Caloric	Saccade	Smooth Pursuit	Gaze	Optokinetic	Kinetic
	VNG SCREENING	✓	✓					option
	VNG STANDARD	✓	✓	✓	✓	✓		option
	VNG VISIO	✓	✓	✓	✓	✓	✓	option
	Patient Manager	Patient and tests results saved on a specific database compatible with other Synapsys equipments Network storage available for multi location test centers and Reader stations for collaborative work						
	Results available	Graphs: Horizontal and Vertical ocular position, Slow Phase Velocity and Cumulative curves Nystagmus measurement: direction and frequency, Slow Phase Velocity value Caloric results: Unilateral weakness (%), Reactivity (°/s), Fixation index (%), Preponderance (°/s and %) Ocular motor tests: Latency, Velocity, Precision, Gain with normative diagrams						
	Stimulation	Video projector or video monitor						
HARDWARE	**Included parts**	VNG Screening and Standard: VNG Software VNS 3X goggles (one camera) USB Acquisition Box Remote Control			VNG Visio: Standard VNG hardawre + VISIO Mask (bi-ocular camera) + PCI Acquisition Board			
	VNS 3X goggles (included in all VNG configurations)	Camera Resolution 512000 pixels Sensor Type CCD 1/3" Sensibility 0.1 lux Adjustable Zooming Yes Power Consumption 130 mA Power supply 12 V DC			Goggles Horizontal field of vision: 100° Vertical field of vision: 55° Weight (without cable): 150 g / 5.3 oz Material: POM and PVC (cushions foams) certified biocompatible, hypoallergenic and phthalate free Adapted for children			
	VISIO mask (only in VNG Visio configuration)	Camera CCD B/W 1/3 inch, 320 000 pixels Lens: 3.8 mm / 0.15 " Sampling rate available: 50,100 or 180 Hz Sensitivity : 0.1 lux at 50 image/s, f1.4 Infrared light: 880 nm Power supply :12V, 250 mA			Mask Horizontal visual field: Unlimited Vertical visual field: 40° Weight 270g / 9.52 oz (without cable) Cable 7m / 22.96 ft			
	Optional part	Kinetic Examination: Electronic Med4 Rotatory Chair or Speed sensor for mechanical chair Subjective Visual Vertical Vestibular Vibrator Caloric irrigator (air or water) Wireless VNS 3X camera Disposable VNS 3X goggles						
	Classification	The VNG is a Class IIa medical device (European Medical Device Directive 93/42/EEC)						
	Standard	CE approved / EN 60601-1 / EN 60601-1-2 / EN ISO 9001v2008 / EN ISO 13485v2003						
	Minimum computer requirements	Pentium IV 3GHz, 512 Mb RAM, Hard disk 80 Gb Operating system: Windows XP or Windows 7 32 bits One free USB port and/or PCI slot (depending on configuration) Graphic Board: Minimum 2 video outputs to enable Extended mode (Dual view)						

* Spontaneous, positional and positioning nystagmus (Dix-Hallpike, Head Shaking, VIN…)

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