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 rhythmic 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.

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.

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.

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.
### Technical Specifications

**Video Nystagmography (VNG Ulmer)**

**Synapsys related products:**
- Med4 Rotatory Chair
- Subjective Visual Vertical
- Vestibular Vibrator (VMB 3F)
- VHIT Ulmer

#### Examinations available

<table>
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<th>Examinations available</th>
<th>Nystagmus*</th>
<th>Caloric</th>
<th>Saccade</th>
<th>Smooth Pursuit</th>
<th>Gaze</th>
<th>Optokinetic</th>
<th>Kinetic</th>
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<tbody>
<tr>
<td>VNG SCREENING</td>
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**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

#### Included parts

<table>
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<th>VNG Screening and Standard: VNG Software</th>
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<td>VNG 3X goggles (one camera)</td>
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<tr>
<td>USB Acquisition Box</td>
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<td>Remote Control</td>
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| VNG Visio: |
| Standard VNG hardware + VISIO mask (bi-ocular camera) + PCI Acquisition Board |

#### VNG 3X 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

- 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


#### 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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