



VNG Balance Testing

VN415 / VO425
- Complete
solutions for
balance testing



Balance testing with VNG VN415/VO425

Video Nystagmography is the "gold standard" for observation, measurement and analysis of eye movements in the evaluation, management and treatment of dizziness and balance disorders.

The sleek FireWire® design delivers high speed and accurate data which is analyzed in real time and graphically displayed instantly to allow quick interpretations of abnormalities.

Interacoustics offers two VNG solutions:

- VN415 is the basic VNG platform with standard protocols for Spontaneous Nystagmus, Bithermal Caloric, Positional and Dix-Hallpike testing and is delivered in a monocular camera configuration.
- VO425 is an advanced VNG platform with binocular cameras. VO425 offers the same test protocols as VN415 and additionally expands into oculomotor tests with standard protocols for Gaze, Saccade, Smooth Pursuit and Optokinetic testing.



The Combi Goggle

The VO425/VN415 FireWire® VNG system comes equipped with the industry's leading goggle design.

The Combi goggle is light weight with a direct FireWire® connection to a laptop or desktop computer. It has an easy fitting magnetic cover to allow for measurements both with vision and with vision denied, and a built-in fixation light to simplify testing. With adjustable mirrors and vertical, horizontal and focus adjustments for each camera, the fit is ideal for all patients, regardless of head size.

The disposable foam cushions allow for a sanitary solution for each patient and provide a comfortable, secure and light-tight fit.

Optimized lighting in the goggle results in significantly improved eye-tracking during testing. Add this to the industry standard goggle mirrors, and you have the strongest offering available today.

Combi goggle

- Light weight and comfortable
- Direct FireWire® connection
- Replaceable foam cushions
- Adjustable mirrors and Controls



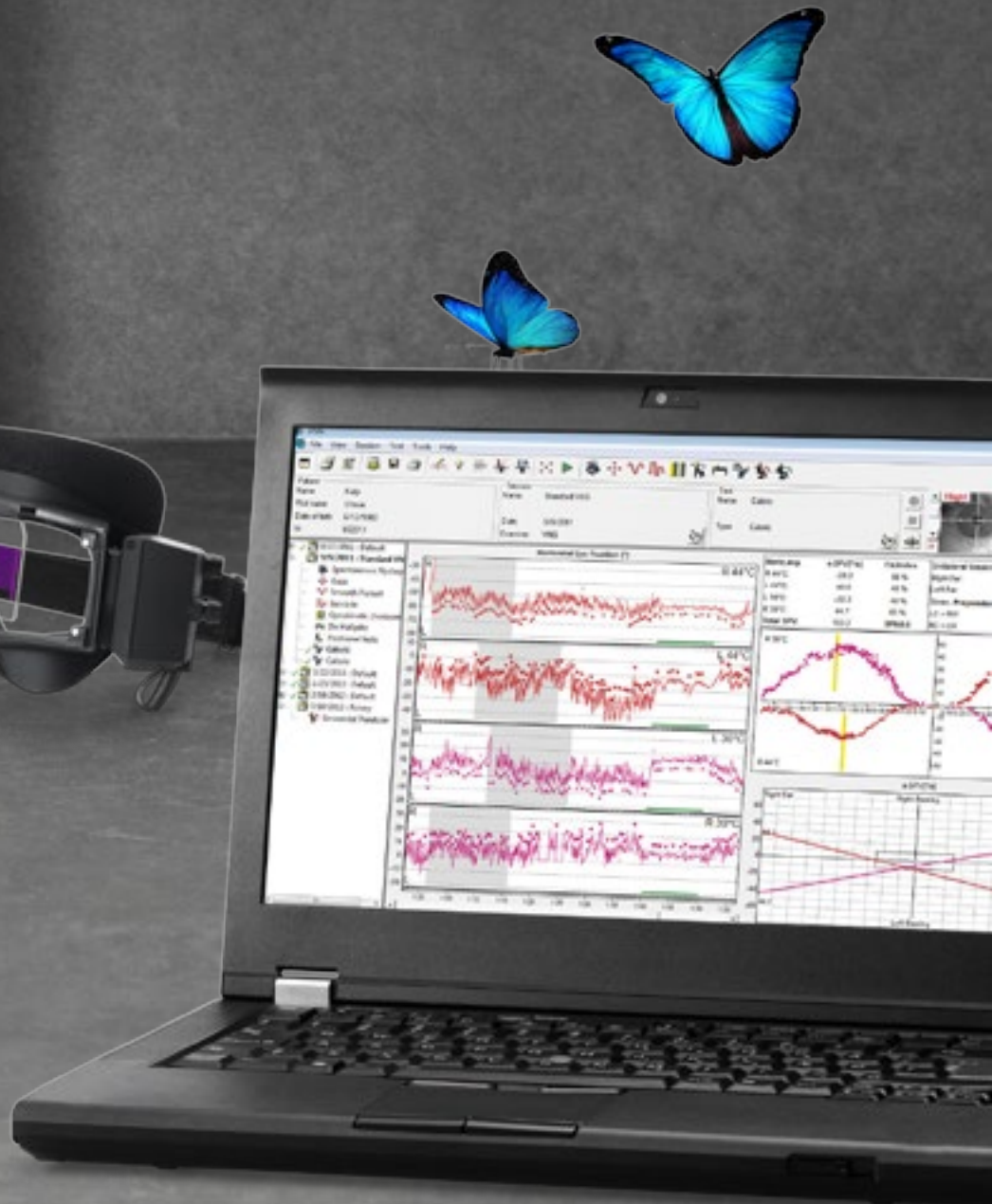
How common is dizziness and imbalance?

According to the National Institute of Health "Over 90 million Americans, age 17 and older, have experienced a dizziness or balance problem."

Dizziness occurs in approximately 1.8 percent of young adults and more than 30 percent of the elderly. Every year, one-half of the population age 65 and over experiences falls.

As stated by the Vestibular Disorders Association, children can experience the same vestibular disorders as adults.

Benign paroxysmal positional vertigo (BPPV), although rare in children, is typically associated with physical trauma and can result from accidents, falls, or sports injuries. BPPV has also been observed following cochlear implantation. Vestibular neuritis or labyrinthitis occurs in children, as well as ototoxicity. Children that experience ototoxicity can have severe imbalance, falls, and visual-motor problems, including oscillopsia (bouncing vision).



Interacoustics products for balance assessment

VNG

VN415

The basic
VNG platform

VO425

The advanced
VNG platform

Learn more about VN415/
VO425 on the next pages

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VO425 is an advanced VNG platform with binocular cameras. VO425 offers the same test protocols as VN415 and additionally expands into oculomotor tests with standard protocols for Gaze, Saccade, Smooth Pursuit and Optokinetic testing.

Video Frenzel

VF405

Video Frenzel system

VF405 provides ideal conditions for fixation-free observation and recording of eye movements during

- Spontaneous testing
- Positional and Dix-Hallpike testing
- Head Impulse testing
- User defined testing

See more in separate brochure



Rotary Chair

The rotary chair stimulus is a very accurately controlled stimulus that more closely represents the stimuli experienced by the patient in everyday situations. Rotational chair testing is therefore the gold standard for assessing bilateral vestibular peripheral impairments.

The Nydiag Rotary Chair provides precisely controlled and reproducible stimuli and a full test battery. The rotary chair software is integrated with VNG and allows for user definable protocols.

Learn more on page 11.



Nydiag

Rotary Chair

Caloric Irrigators

Air Fx

The Air Fx caloric irrigator has an otoscopic handle with illumination and magnification. An integrated water reservoir helps cool air down to 20°C, and warm irrigations can be performed up to 50°C.

The Air Fx can be used as a stand-alone device, or can be controlled from the Interacoustics VNG software.



Aqua Stim

The Aqua Stim caloric irrigator offers 30°C cold and 44°C warm caloric irrigations. The Aqua Stim can be used as a stand-alone device, or can be controlled from the Interacoustics VNG software. An external water tank eliminates the need for a drain or water supply in the examination room.



Air Fx

**Caloric irrigator
Air**

Aqua Stim

**Caloric irrigator
Water**

ENG

- 2 or 3 channel (monocular or binocular) electrode options.
- Easy electrode impedance interface, showing color coded boxes for quick checks
- Simple calibration procedure, as used in the standard VNG testing.
- Automatic centering
- Baseline drift compensation for saccade and pursuit testing
- Smoothing edit tool to manage noise
- Easy interface to toggle between VNG and ENG recordings

The EN415/EO425 ENG preamplifier is available as an optional choice for your VN415 or VO425 system. The tests are the same you perform with the VN415 or VO425 system, but using electrodes instead of video goggles. The ENG preamplifier is required to add the electrode recording capability. It connects to your desktop or laptop PC via a USB 2 cable.

EN415

**ENG preamplifier
for the VN415 VNG System**

EN425

**ENG preamplifier
for the VO425 VNG System**



VN415 Vestibular analysis

The VN415 is designed for convenient computer aided analysis of Spontaneous, Positional, Hallpike, and Bithermal Caloric tests. Rapid data transfer technology enables very high quality video and precise measurements with all results stored in the OtoAccess™ database. The system also includes functions for printing reports and sharing data.

Connect and go

VN415 is a completely portable VNG system. There is no bulky equipment to get in the way. Start the software, place the goggles on the patient and you are ready to test.

High quality video and analysis

The VN415 performs real time analysis. Rapid data transfer (105 Hz binocular, 174 Hz monocular) allows much more data to be analyzed, giving very precise measurements and outstanding video quality.

VN415

Fast eye-tracking & real time analysis. Automated 10 second calibration. Portable - Connect and Go.



Dix Hallpike test window



User-definable test battery

You can design your own test protocols which can be loaded with a single mouse click.

Remote controlled testings

It is possible to step through the tests using the USB connected footswitch.

Video recording

The video from each test can be recorded and stored in full on the associated storage device (typically a hard drive) where it is linked to the results in the database record. The only limit to the size of the recording is the capacity of the recording device.

When the session is reviewed, the recording will be available for replay in normal, fast or slow mode. There is also the option to review the recording one beat at a time.

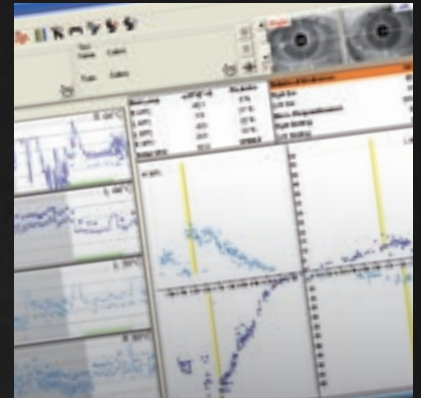
The recording can be exported in AVI format for consultation or teaching purposes. Various sound file formats are available to include sound recording together with the video.

Additional features

- Cutting edge eye trackers adjust for make-up and dilated pupils
- Reader station enables shared access to patient reports from multiple work stations
- MWST (Monothermal Warm Caloric screening test after two warm irrigations)
- Torsional eye movement observation with full screen eye images
- Multi-language interface
- Nystagmus edit function
- Real time analysis
- Compact & convenient hardware
- Integration with Nydiag 200 rotary chair
- Integration with Air Fx and Aqua Stim caloric irrigators
- Tester comments recorded with results
- Short automated calibration
- User-definable protocols
- Full color printed reports for each test

Related products

- Eclipse with Vestibular EP
- Nydiag 200 Rotary Chair
- Air Fx Caloric Irrigator
- Aqua Stim Caloric Irrigator
- EN415/EO425 ENG preamplifier



Bithermal caloric test window



Spontaneous test window

Test	Value 1	Value 2	Value 3	Value 4	Value 5
1.00%	0.000000	0.00	0.00	0.00	0.00
2.00%	0.000000	0.00	0.00	0.00	0.00
3.00%	0.000000	0.00	0.00	0.00	0.00
4.00%	0.000000	0.00	0.00	0.00	0.00

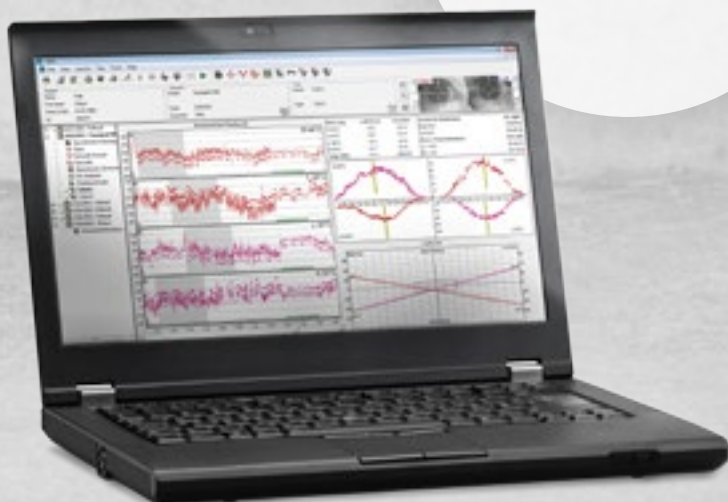
Example of printout of numerical statistical data (4 tests per page)

VO425 Vestibular & Oculomotor analysis

The VO425 is designed for clinics that carry out detailed balance evaluations. It provides full-field video stimulation for all tests in the standard dizziness test battery.

Rapid data transfer technology enables high quality video and precise measurements, with all results stored in the OtoAccess™ database. The system also includes functions for printing reports and sharing data.

VO425
Fast eye-tracking & Real time analysis.
Automatic Video Record.
USB Foot pedal.



Caloric test window



USB foot pedal



Software generated ocular stimuli

Full-field view visual stimuli are software generated on your laptop or PC and output directly through the included 42" flat panel TV or video projector onto a wall or portable screen. The digital stimuli are ideal for both pediatric and adult populations and include several default patterns, for e.g., stripes, chessboards and cartoons for the children. In addition you can import your own stimuli patterns.

Complete balance testing

Tests include a simple calibration, Spontaneous Nystagmus, Gaze, Tracking, Saccade, Optokinetics, Positional, Hallpike, and Bithermal/Monothermal Caloric. Easily design your own test protocols, which can be loaded with a single mouse click.

Automatic or manual analysis

The system produces very accurate measurements, but manual edit functions are also available, including ability to add or delete points and change the slope of the nystagmus SPV values.

Remote controlled testing

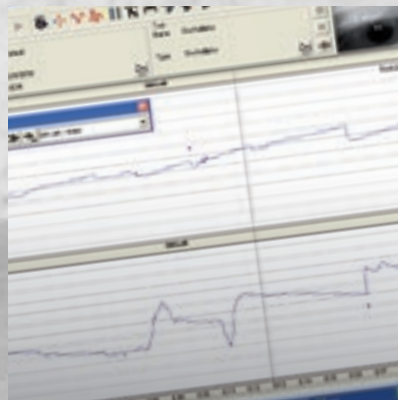
It is possible to step through the tests using a USB connected footswitch.

Sharing results

The VO425 is designed to facilitate collaboration. All results are stored in the OtoAccess™ database with abilities for printing detailed color reports. Results and recordings can also be exported for electronic charting purposes.

Video recording

The video from each test can be recorded and stored in full on the associated storage device (typically a hard drive) where it is linked to the results in the database record. The only limit to the size of the recording is the capacity of the recording device. When the session is reviewed, the recording will be available for replay in normal, fast or slow mode. There is also the option to review the recording one beat at a time.



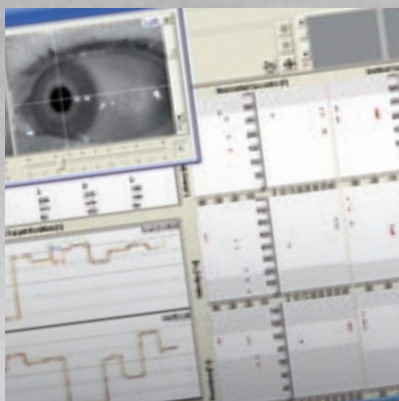
Video playback

Other features

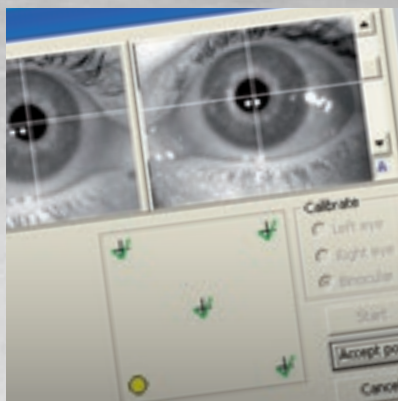
- Cutting edge eye trackers adjust for make-up and dilated pupils
- Reader station enables shared access to patient reports from multiple work stations
- MWST (Monothermal Warm Caloric screening test after two warm irrigations)
- Torsional eye movement observation with full screen eye images
- Sleek portable design
- Fully randomized combined vertical and horizontal saccade protocol
- Detailed oculomotor testing
- Customizable protocols
- ANSI standard compliant (ANSI S3.45-1999)
- Real-time analysis
- Synchronized video playback
- High speed resolution up to 174 HZ
- Integration with Nydiaq200 Rotary chair

Related products

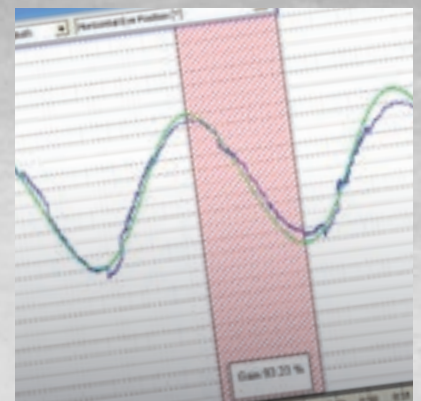
- Eclipse with Vestibular EP
- Nydiaq 200 Rotary Chair
- Air FX Caloric Irrigator
- Aqua Stim Caloric Irrigator
- EN415/EO425 ENG Amplifier



Saccade test window



Simple calibration



Edit tracking test



Highlights:

- FireWire® cameras
- USB connection
- Small footprint



Nydiag Rotary Chair

Rotational testing is typically used during a full balance assessment and is a perfect compliment to caloric testing. Rotational testing is often better accepted by some patient groups, such as children.

Authentic rotational stimulus

The physiological rotatory stimulus is similar to that which the patient will experience in daily life. Rotational testing is particularly suitable for testing over a range of different frequencies.

Vestibular Rehabilitation

The Nydiag Rotary Chair can play an important role in monitoring the compensatory processes of vestibular rehabilitation therapy. It can chart the vestibular healing process by utilizing a wide range of frequencies and acceleration rates.

Accuracy, convenience and flexibility

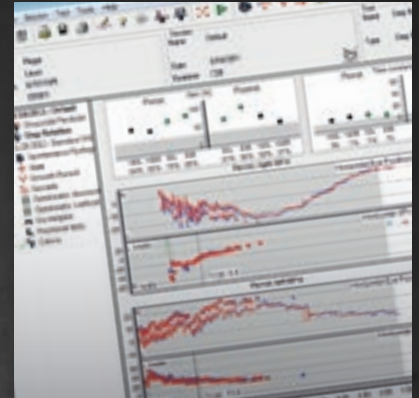
The Nydiag Rotary Chair provides precisely controlled and reproducible stimuli. With full control over acceleration, velocity and amplitude, it is easy to design and configure your own protocols.

A full test battery

A full test battery is included with the chair, including the step rotation test, sinusoidal harmonic acceleration, and VOR suppression.

Space-saving design

Nydiag Rotary Chair has minimal space requirements and can recline to various positions to act as a VNG exam table. Easily access both ears for caloric testing.



*Step Rotation test window
(only with rotary chair)*

*Sinusoidal Harmonic Acceleration
(SHA) test window
(only with rotary chair)*





Interacoustics

Interacoustics is a world leading diagnostic solutions provider in the field of hearing and balance assessment. We help the professional audiologic world reach new milestones through continuous developments and a constant focus on integration and direct customer value.

With you at all times

Whenever you purchase audiological equipment with the Interacoustics brand on it, you are not just guaranteed a quality product but also highly trained support personnel with specialized knowledge. We operate in over 100 countries worldwide through a carefully selected network of distributors and service centers to ensure that you receive total support and service.

Product specifications

All technical and hardware specifications concerning our VNG products can be downloaded from our website.

Read more at
interacoustics-us.com

Go online to
explore our
full product
range

Interacoustics USA

10393 West 70th Street,
Eden Prairie, MN 55344

T +1 800 947 6334

F +1 952 903 4200

info@interacoustics-us.com
interacoustics-us.com



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