

VNG

Balance Testing



*VN415 / VO425
- Complete solutions*



Interacoustics®

leading diagnostic solutions

VNG

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Balance Testing with FireWire® VNG

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:

VO425

- *FireWire® Speed and Accuracy*
- *Reduced Test Time, 30 minutes*
- *Full-Field Visual Stimulation*

- 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.



New, improved lighting in the goggle results in significantly improved eye-tracking during testing. Add to this the newly designed 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*



Rotational testing and VNG

The rotatory stimulus equals the stimuli experienced by the patient in everyday situations. Rotational testing is therefore a reliable test of the vestibuloocular reflex.

Rotational testing can be used to assess patients with bilateral vestibular lesions or partially compensated unilateral lesions (e.g. ototoxic damage) and compliments the VNG test battery.

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.

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 experience falls.

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

Benign paroxysmal positional vertigo (BPPV) 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).



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VN415 – Vestibular analysis

The VN415 is designed for convenient computer aided analysis of Spontaneous, Positional, Hallpike, Bithermal and 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 analysed, giving very precise measurements and outstanding video quality.

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
- Compact & convenient hardware
- Integration with Nydiag 200 rotary chair
- Tester comments recorded with results
- Short automated calibration
- User-definable protocols
- Real time analysis
- Full color printed reports for each test.

Related products

- Eclipse with Vestibular EP
- Nydiag 200 Rotary Chair



Bithermal Caloric test window

VNG

Balance Testing

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 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.

Software generated ocular stimuli

Full field view visual stimuli are software generated on your laptop or PC and output directly through the included 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. You can easily design your own test protocols and load these with a single mouse click.

Automatic or manual analysis

The system produces very accurate measurements, but you can select to manually edit any tests including adding or deleting points and changing the slope values.

Remote controlled testings

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.

Other features

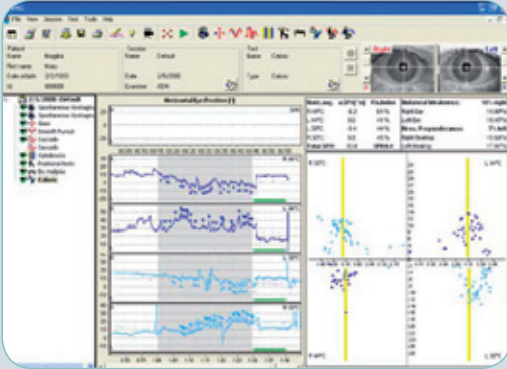
- Cutting edge eye trackers adjust for make-up and dilated pupils
- Reader station enables shared access to patient reports from multiple work stations
- MWST (Monothermal Warm Caloric screening test after two warm irrigations)
- Torsional eye movement observation with full screen eye images
- Sleek 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 Nydiag200 Rotary chair

Related products

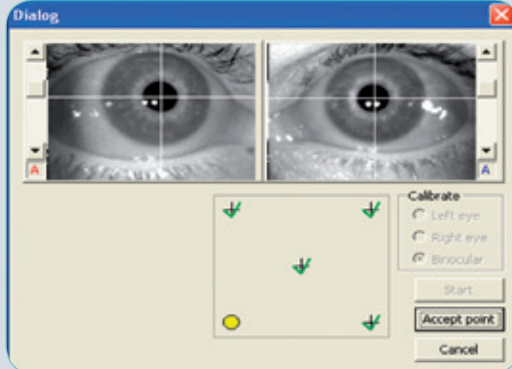
- Eclipse with Vestibular EP
- Nydiag 200 Rotary Chair



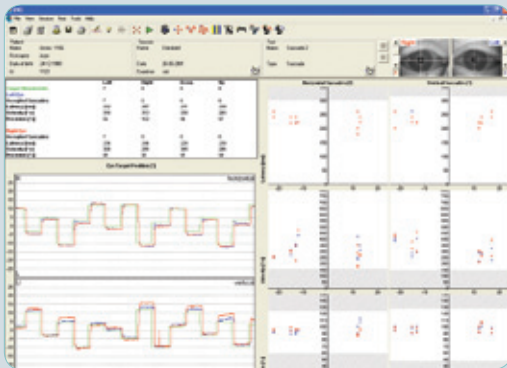
Video playback



Caloric test window



Simple calibration

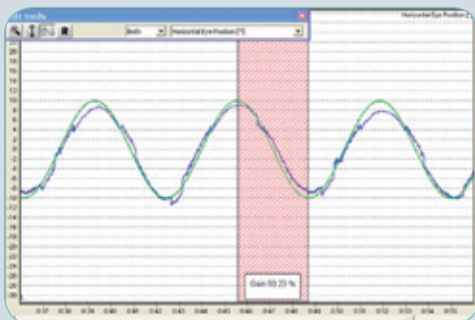


Saccade test window

Time-saving features

- Fastest Eye Tracking
- Automatic Video Record
- Real Time Analysis
- USB Foot pedal

Editing and data management



Edit tracking test

- Export
- Backup
- Email
- Exchange



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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. This makes rotational testing particularly suitable for VOR testing.

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. You have full control over acceleration, velocity and amplitude and can easily 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.



Nydiag Rotary Chair

- FireWire® cameras
- USB connection
- Small footprint

VNG

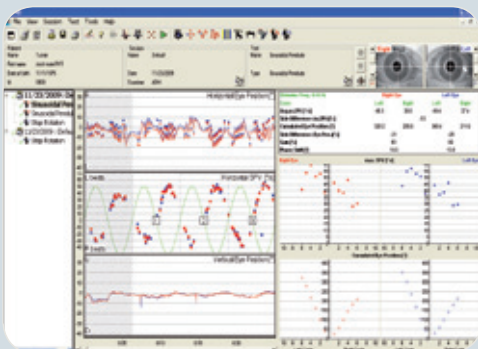
Nydiag Specifications

The Nydiag 200 rotary chair is controlled via USB-connection through the RCControl-program. The following functions are available:

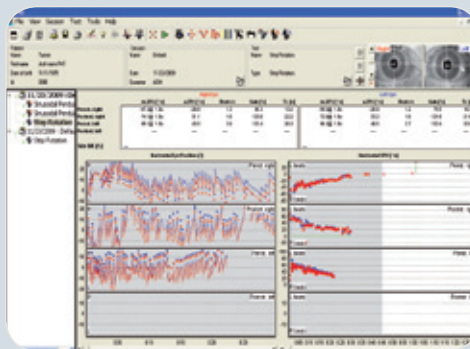
- Set position
- Set speed
- Set acceleration
- Pendular movement for Sinusoidal Harmonic Acceleration (SHA) test
- Velocity Step test
- VOR Suppression test

Maximum speed	200 deg/s
Maximum acceleration	100 deg/s ²
Max. patient weight	300 lbs. for full specification, 330 lbs. with reduced specs.
Reclining backrest	Manually operated from 0 deg (horizontal) to 90 deg (sitting)
Slip rings	18 FireWire® compatible slip-rings
Emergency stop	Emergency stop button disconnects the motor power
Patient alarm button	Sends an alarm signal to the computer and stops the rotation
Weight	386 lbs.
Weight incl. package	419 lbs.
Dimensions	35.4 x 27.6 x 63 inch.
Dimensions incl. package	39 x 29.5 x 75 inch.
Power supply	110-230 V~ (50/60 Hz)/ 4A max
Options:	Off-axis movement, ± 10 cm max

The rotary chair complies with the CE-regulations



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



StepRotation test window
(only with rotary chair)

Read more here:
www.interacoustics-us.com/us/VNG



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VO425 Specifications

Technical Standards:

Camera: IEEE1394 FireWire®

Resolution: 640 x 480 Pixels

Images: 105 images per second binocular, 174 images per second monocular

Safety Standards: EN60601-1 (General Safety), EN60601-1-1 (System Safety), EN60601-1-2 (EMC)

Physical Specifications: Goggle weight with two cameras
305g / 0.7 lbs. (without magnetic cover)
385g / 0.8 lbs. (with magnetic cover)

Dispensing box with 24 pcs. of disposable goggle foam pads
302 x 216 x 131mm / 11.9 x 8.5 x 5.2 inch. (L x W x H)

Tests: Bithermal Caloric Test / monothermal caloric test
Spontaneous Nystagmus Test
Positional Test
Dix-Hallpike Test
Gaze Test
Smooth Pursuit Test (Tracking)
Saccade Test
Optokinetic Test

Included Parts - with desktop: Installation CD
Combi mask with 2 cameras
Disposable combi mask foam cushions - pk. of 24
USB Footpedal
Otoaccess™ database software
Desktop computer, Windows 7, 3 year manufacturer warranty applies
15" flat screen monitor, keyboard, mouse
LCD projector and extension cable, manufacturer warranty applies
Color inkjet printer with USB cable, manufacturer warranty applies
Operation manual
VNG Quick Guide
Warranty card

Included Parts - with laptop: Installation CD
Combi mask with 2 cameras
Disposable combi mask foam cushions - pk. of 24
USB Foot pedal
IEEE 1394a express card with power supply
Otoaccess™ database software
Laptop, 1 year manufacturer warranty applies
LCD projector and extension cable, manufacturer warranty applies
Color inkjet printer with USB cable, manufacturer warranty applies
Operation manual
VNG Quick Guide
Warranty card

Optional Parts: Ceiling mount bracket
Tripod projector screen
Disposable foam cushions (pk. of 24)
Caloric irrigator, air
Rotary Chair
Flat panel LCD TV

VNG

VN415 Specifications

Technical Standards:

Camera: IEEE1394 FireWire®

Resolution: 640 x 480 Pixels

Images: 105 or 174 images per second

Safety Standards: IEC 60601-1 (General Safety), IEC 60601-1-1 (System Safety), IEC 60601-1-2 (EMC)

Physical Specifications: Goggle Weight with one camera

- 240g / 0.5 lbs. (non-occluded view)
- 320g / 0.7 lbs. (occluded view)

Dispensing box with 24 pcs. of disposable goggle foam pads
302 x 216 x 131mm / 11.9 x 8.5 x 5.2 inch. (L x W x H)

Tests: Bithermal Caloric Test / Monothermal Caloric Test
Spontaneous Nystagmus Test
Positional Test
Dix-Hallpike Test
Sinusoidal Pendular test (only with rotary chair)
Step Rotation test (only with rotary chair)

Included Parts - with desktop: Installation CD
Combi mask with 1 camera
Disposable combi mask foam pads - pk. of 24
USB Foot pedal
IEEE 1394a express card with power supply
Otoaccess™ database software
Desktop computer, Windows 7, 3 year manufacturer warranty applies
15" flat screen monitor, keyboard, mouse
Color printer
Operation manual
VNG Quick Guide
Warranty card

Included Parts - with laptop: Installation CD
Combi mask with 1 camera
Disposable combi mask foam pads - pk. of 24
USB Foot pedal
IEEE 1394a express card with power supply
Otoaccess™ database software
Laptop, 1 year manufacturer warranty applies
Color printer
Operation manual
VNG Quick Guide
Warranty card

Optional Parts: Disposable foam cushions (pk. of 24)
Caloric irrigator, air
Rotary Chair

Read more here:
www.interacoustics.com/com/VNG



Interacoustics®

Leading diagnostic solutions

Interacoustics – the best choice

With over 40 years of experience, Interacoustics is dedicated to supplying its customers with the best possible solutions for their professional needs. This is accomplished by maintaining a continuous dialogue with healthcare professionals working in all sectors of audiology, neurology and physical therapy. Our equipment meets the highest possible engineering standards and we provide design know how that can only come from close contact with clinical practice.

Solutions on every scale

Designing equipment for every size of clinic in so many countries puts us in the unique position of being able to offer solutions that fit your requirements exactly. Audiometry, tympanometry, electrophysiology, hearing aid testing, balance investigation and rehabilitation are all within our scope and can be integrated to suit your needs.

Design for diagnosis

We design equipment to make testing and interpretation easier. This means better interfaces, well designed screen layouts, printed reports and interaction over networks with databases and electronic records systems. In most cases, you can configure the settings and layout yourself.

Support worldwide

The Interacoustics name is not only your guarantee of quality and functionality, but also for support. We operate in over 100 countries worldwide through a well coordinated network of distributors and service centers to ensure that you receive total support and service.



Products in this group:

- VO425
- VN415
- VF405 Video Frenzel
- Nydiag 200 Rotary Chair

Related products:

- Eclipse EP
- BRU™ Balance Rehabilitation



Available with desktop PC or laptop

FireWire and the FireWire symbol are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. The FireWire logo is a trademark of Apple Computer, Inc.

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Read more here:
www.interacoustics-us.com/us/VNG



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