

ICS Impulse System	
Interface:	USB 2.0 and 1m IEEE-1394a Firewire® 400 6-pin to 4-pin cable to PC
Power Supply:	Device is powered through USB: 5V DC/5mA
Performance Characteristics	
Inputs Head:	Gyroscopes with 6 degrees of freedom
Inputs Eye:	Monocular (Right eye only)
Sampling Rate:	250 Hz for Head Impulse Test; Option of 30, 60 or 120 Hz for Video Recording
Eye Tracking:	100 pixels x 100 pixels.
OTOSuite Vestibular software:	Windows Graphical User Interface; High Performance Analysis Software; Database Storage of Test Data; Sophisticated Patient and Test Data Management
Laser specifications:	
Wavelength Maximum:	660 nm
Output power Maximum:	0.9 mW
Dimensions	
Goggles Length:	7.25 in (18.4 cm)
Width:	0.5 in (1.3 cm) to 1.75 in (4.4 cm)
Height:	1.75 in (4.4 cm)
Interface box Length:	5 in (12.7 cm)
Width:	2.75 in (7 cm)
Height:	1 in (2.5 cm)
Weight	
Goggles:	2.1 oz (60 g)
Interface box:	4.6 oz (130 g)
Calibration	
Goggle have 2 built in calibration lasers for patient calibration	
Calibration of the system is not required	
Standards	
Safety Complies with IEC 60601-1, UL 60601, CAN/CSA-C22.2 No. 601.1-M90, Class II, Type B, IPX0, EMC IEC 60601-1-2, IEC 62471-1, IEC 60825-1	
PC Requirements	
Minimum computer requirements:	
Operating System:	Windows XP 32-bit Professional SP3 or Windows 7 32-bit Professional or Windows 7 64-bit Professional
CPU:	Intel i5 processor
Memory:	32-bit (Windows XP or Windows 7): 4 GB, 64-bit (Windows 7): 6 GB
Disk Space:	300 GB (3 GB of free disk space on C:\ drive for installed software)
Connectors:	USB 2.0 IEEE 1394a (Firewire)
<i>Note: It is preferable that the USB and Firewire ports are located on the same side of the computer.</i>	
DVD Drive:	DVD R/W
Monitor:	1600 x 900 Screen resolution
Components:	Mouse, keyboard
Internet access:	An Internet connection on the ICS Impulse computer is strongly recommended during installation. It will reduce installation time by approximately 20 minutes.
<i>Note. Our recommended computer brands are Dell™, Hewlett Packard™, and Sony™. Installation problems were experienced with Acer™.</i>	

Questions, comments, conversation

Join the conversation about ICS Impulse and head impulse testing. Ask questions, get answers from colleagues and balance experts or share your experiences and opinions.



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Greater precision...

...faster diagnosis



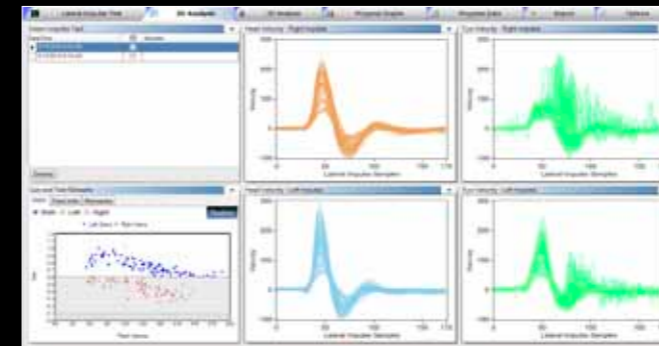
BALANCE



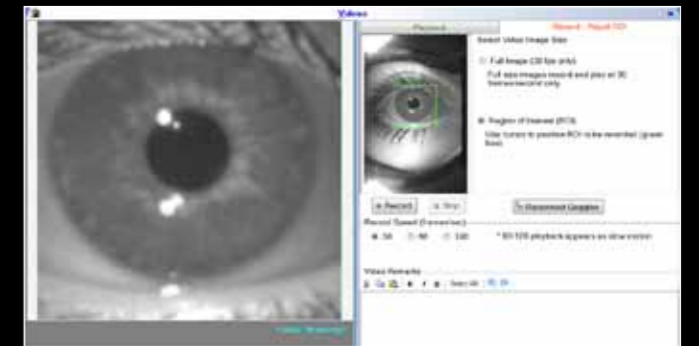
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ICS Impulse

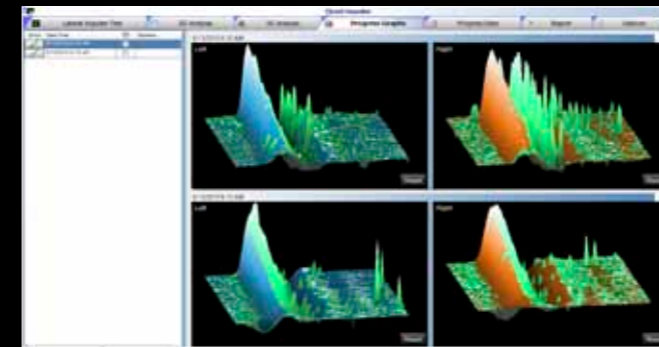
Bringing diagnostic accuracy and efficiency into balance testing



2-D and 3-D analyses with published normative data.



Eye movement can be recorded anytime and played back in slow motion.



Multiple test sessions can be compared using progress graphs and progress data.



Customise your report to meet your documentation requirements.

Years of research bring validity to ICS Impulse

More than two decades of testing

ICS Impulse is the first and only HIT system to be approved by Drs. Michael Halmagyi and Ian Curthoys, whose groundbreaking work first brought HIT to the attention of the world in 1988. Having developed both the prototype and the algorithms, Drs. Halmagyi and Curthoys were highly qualified to test and evaluate Otometrics' ICS Impulse. Their consensus was that it did indeed optimise their findings, providing thorough, precise results and excellent documentation.

Unsurpassed diagnostic precision in less than 10 minutes

In addition to providing an accurate, objective measure of the vestibulo-ocular reflex, the ICS Impulse allows clinicians to test patients with spontaneous nystagmus. Both overt and covert saccades can be detected allowing for proper diagnosis and rehabilitation recommendations. The vestibular function of both ears can be assessed and documented in less than 10 minutes from patient entry to reporting.

Improved Patient Care

Patient comfort is greatly enhanced by the lightest goggles in the industry. Due to the sophisticated cameras smaller velocity head impulses of only 15 to 20 degrees are used, making the test more pleasant for the patient.

What is Head Impulse Testing?

An ear-specific test that detects disorders of the vestibulo-ocular reflex and identifies which ear is affected in cases of peripheral vestibular loss. Patients with a vestibular loss will exhibit a corrective saccadic eye movement (a "catch-up" saccade) either during or after the head impulse and the gain of the head in comparison to the eye will not be equivalent.

An assessment tool that provides quick, precise information about the vestibulo-ocular reflex to stimuli in the high-frequency range.

- ▶ Watch videos of clinical applications of HIT and of Dr. Halmagyi's classroom lectures on www.headimpulse.com/knowledge-center

Features and Benefits

High speed camera (250 Hz)

- Ultra-sensitive, requiring head turns of just 15°
- Records fast eye movements that allow for identification of overt and covert saccades
- Test takes less than 10 minutes from patient entry to reporting

Built-in gyroscopes

- Ensure accurate head velocity measurement
- Provide instant feedback on proper head impulse manoeuvre
- Compare head and eye movement to assess VOR gain

Built-in calibration lasers

- Calibration is quick and easy, using two lasers incorporated into the goggle itself
- No need for additional hardware
- Test can be performed anywhere

Built-in head impulse algorithms

- Developed by HIT pioneers Drs. Michael Halmagyi and Ian Curthoys
- Inaccurate head impulse data is automatically discarded
- Only accurate data is analysed

Plug-and-go solution

- Small and compact for ultimate portability
- Easy and efficient for bedside testing
- Enables accurate testing of immobile patients

Video recording

- ▶ Read the flyer about enhanced documentation of abnormalities www.icsimpulse.com/downloads
- ▶ See all the benefits of ICS Impulse online at www.icsimpulse.com