

Detect and monitor glaucoma

# Henson

7000  
9000

The Henson range from Elektron Eye Technology



"50% of glaucoma cases are currently undetected. There is an enormous need for screening so these people can be detected earlier when treatment is more effective and the long term prognosis is much better."

Fast screening in a portable, durable device



**Henson**  
7000



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Dedicated glaucoma screener

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Quick and reliable identification  
of visual field defects

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Well suited to primary care

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26 and 68 point suprathereshold  
screening tests

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For the consulting room or the  
mobile clinic

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Robust and portable for  
complete flexibility

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## Enhanced screening and monitoring with unique use of prior patient data



**Henson**  
9000



Enhanced screening and  
monitoring of glaucoma

Screening and thresholding for  
monitoring and management of  
established visual field loss

For use in primary, secondary  
and tertiary care environments

26, 68 and 136 suprathereshold  
screening tests

Video eye monitor

Esterman binocular field test

Unique ZATA threshold  
algorithm uses prior data for  
ongoing monitoring



# Over 30 years of innovation

The Henson range from Elektron Eye Technology delivers sensitive, specific results, fast. Developed in collaboration with David Henson, qualified optometrist and Professor of Ophthalmology & Vision Sciences at the University of Manchester, a dedication to high performance, compact, modern design and ease-of-use has influenced the technical evolution of our products for more than 30 years.



## THE 7000

is the ideal all-round screener – robust and ultra-portable, it offers single and multiple stimulus suprathreshold screening.



## THE 9000

offers all the capabilities of the 7000, plus the Henson ZATA threshold algorithm – for enhanced screening and monitoring.



### The Hensons are available for:

- Laptop
- Standard PC
- Touchscreen PC
- Tablet (With USB port)

*A variety of options are available for integrating with the practice environment.*

# Efficient, compassionate patient care

Efficiency of operation and patient comfort are Henson hallmarks. Operators can use multiple stimulus tests to speed up screening, with no impact on specificity, whilst unique ZATA threshold testing provides accurate measures of defect depth.

**Put patients first:** wide range of screening programs including the patient-preferred multiple stimulus presentation.

**Enhance efficiency:** fast tests through better use of prior data and an understanding of patient response characteristics.

**Streamline services:** ease-of-use enables operability by staff at all levels.

# Why choose a Henson for screening?

Henson screening tests are unique. Tests can be extended from 26 to 68 and 136 test points, missed locations can be re-tested and new locations can be manually added in-test. They allow operators to confidently identify those who do have visual field defects and efficiently rule out those who don't.

*See the 'Screening' section of this brochure to learn more about the capabilities of the Hensons*

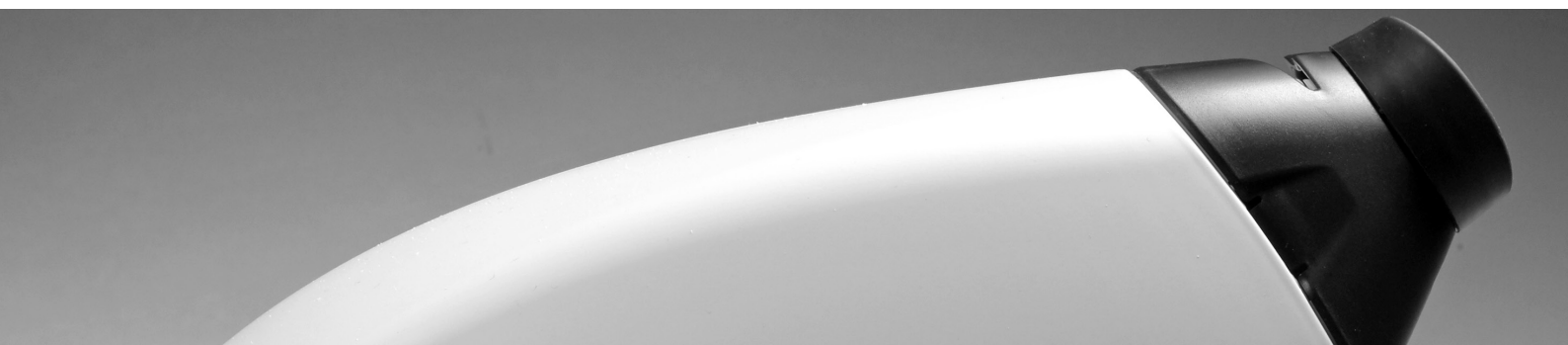
**Speed and accuracy:** multiple stimulus tests are faster than single stimulus tests, preferred by patients and subject to fewer response errors.

**Customisation:** flexible options available to ensure test specificity.

**Ergonomic design:** small footprints for space constrained environments.

**Durability:** robust, low maintenance solid-state electronics.

**EMR compatibility:** for streamlined practice management.



## For enhanced screening and monitoring

For the management of patients with suspected or diagnosed glaucoma, the Henson 9000 offers the ZATA threshold algorithm. ZATA uses the latest research findings to optimise performance and keep test times short. Uniquely, ZATA can use prior patient data to shorten test times and improve the accuracy of results in patients with established loss.

*See the 'Threshold testing' section of this brochure to read about ZATA and the Henson 9000 in more detail*

**Innovation:** prior data used to intelligently vary test criteria.

**Efficiency:** ZATA tests can be completed in just 4 minutes per eye.

**Ease of use:** easily operable by all levels of optical staff.

# Screening with the Henson 7000 and 9000

## Sensitivity, specificity, speed

**Sensitivity** and **specificity**. Historically, these two statistics have been the key performance indicators for a successful glaucoma screening test.

But what of the third? **Speed**. Tests need to be conducted as swiftly as possible, for the benefit of your practice and the comfort of your patients.

These three factors are interdependent – increasing the speed of a test can lead to a loss of sensitivity or specificity, whilst raising the sensitivity of a test involves sacrificing speed.

Uniquely, the Hensons utilise the latest research findings to deliver in all three areas.

## High sensitivity

Research conducted by David Henson has established the most likely locations for an early visual field defect and demonstrated that a large number of stimuli are not required to guarantee sensitivity.

As a result, the Hensons offer a fast 26 point suprathreshold test that can be run with single or multiple stimulus patterns.

Single stimulus presentations allow full automation (no operator input), while multiple presentations are faster but require the operator to input patient responses.

## High specificity

To guarantee high specificity the 26 point screening test can be extended to a 68 point test (or even a 136 point test on the 9000).

To further improve specificity missed locations can be re-tested as many times as the operator requires and at any stage of the examination. This drives down false positives and allows clinicians to differentiate between random misses and actual glaucomatous defects.

## High speed

The duration of any test is dependent upon many factors including the speed with which the patient responds. The use of multiple stimulus patterns, which are preferred by patients, shorten test times making the Henson screening test one of the fastest available.

For screening alone, consider the Henson 7000 – fast, accurate and easy-to-use. If you require enhanced screening and monitoring capabilities, take a look at the Henson 9000 and its unique, patient-centred ZATA test.

*For an in-depth explanation of our screening tests please visit the Henson product pages on [www.elektron-eye-technology.com](http://www.elektron-eye-technology.com)*

## Screening features

Multiple and single stimulus presentation options

Manual re-test of any stimulus (at any stage of examination)

Manual addition of test locations at any stage of examination

Extendable screening program

Optimised test pattern

## Benefits

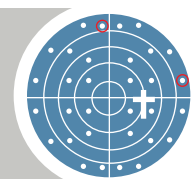
Multiple is faster and more patient friendly, with fewer false positives

Reduces false positives and increases identification of visual field defects

Allows further examination of areas around any missed stimuli to confirm defect and establish extent of loss

Gives the option of enhanced, in-test specificity and reduces false positives

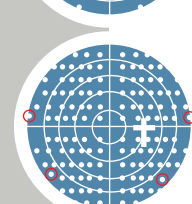
Enables faster test times without loss of sensitivity



x26

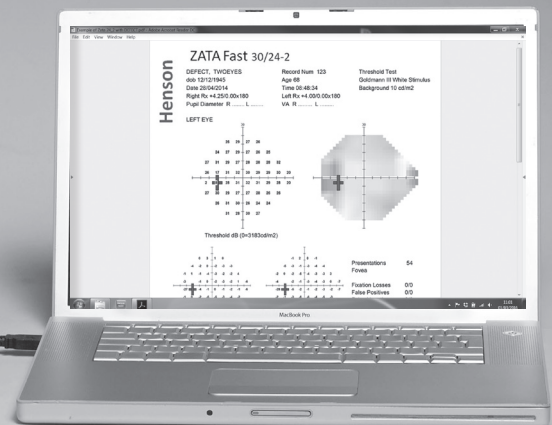


x68



x136

# Threshold testing with the Henson 9000



## Speed and accuracy allied

Further to the advantages of Henson screening technology, the Henson 9000 also offers a threshold test for the detection and monitoring of glaucoma.

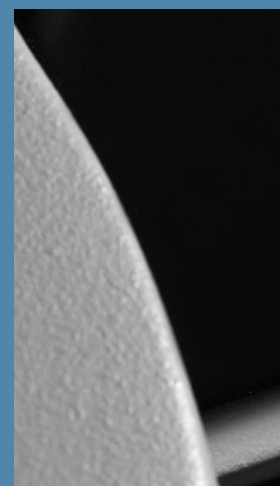
The Zippy Adaptive Threshold Algorithm (ZATA) developed by David Henson uses the more efficient Bayesian method to derive threshold values. Bayesian methods were first introduced into perimeters in the SITA algorithm of the Humphrey perimeter. Via the more efficient use of prior data and the recognition of research findings relating to the enhanced variability seen at test locations with depressed sensitivity, ZATA has further developed this method to provide a faster yet equally sensitive test.

## 5 reasons to choose ZATA

1. **It speeds up threshold testing through better use of prior data.** In instances where patients have been tested previously, ZATA will build on this prior data for subsequent tests, rather than starting a new test from age normative data by default, as other perimeters do.
2. **It doesn't just use single terminating criteria.** It varies the terminating criteria to give more accurate thresholds at damaged and neighbouring locations. This reduces test times, both for patients with extreme visual field loss and for those with no loss at all.
3. **It uses looser terminating criteria in severely damaged locations (<10dB).** ZATA does not attempt an accurate measurement of thresholds below 10dB where variability is high and attempts at accurate measures do not yield any useful additional data.
4. **It allows both 24-2 and 30-2 stimulus patterns in a single test.** Via a simple 'extend' facility operators can extend the 24-2 test pattern to a 30-2 test pattern during or at the end of each test.
5. **Standard printout:** The standard print format is used to aid interpretation and comparison with data from other perimeters. The Henson 9000 also allows users to switch between multiple views – threshold, grayscale, or defect values – at the end of each test.

*For an in-depth explanation of our ZATA test, please visit the Henson 9000 section of [www.elektron-eye-technology.com](http://www.elektron-eye-technology.com)*

	Henson 7000	Henson 9000
<b>Test specifications</b>		
Visual field test range	30°	60° (monocular) / 160° (binocular)
Visual field testing distance	17 cm	25 cm
Stimulus intensity (maximum)	317 ASB	10,000 ASB
Background illumination	10 ASB	31.5 ASB
Stimulus duration		200 ms
Stimulus size		Goldmann III
<b>Test methods</b>		
	Standard Automated Perimetry (SAP), white-on-white	
<b>Screening tests/patterns</b>		
Suprathreshold - single stimulus	2 levels (26, 68 points)	3 levels (26, 68, 136 points)
Suprathreshold - multiple stimulus	2 levels (26, 68 points)	3 levels (26, 68, 136 points)
Esterman (Driving)	No	Groups 1 and 2 (EU standard)
Customised tests	Test locations can be manually added to all suprathreshold tests	
<b>Threshold tests/patterns</b>		
Zata Standard - threshold central	No	10-2; 30/24-2 (extendable in-test)
Zata Fast - threshold central	No	10-2; 30/24-2 (extendable in-test)
<b>Average testing times</b>		
Suprathreshold - single stimulus		~90 seconds per eye
Suprathreshold - multiple stimulus		<60 seconds per eye
ZATA	N/A	~4 minutes per eye
<b>Fixation control</b>		
Fixation target	Single or 4-point LED diamond pattern	
Heijl-Krakau	N/A	Yes
Video eye monitor	No	Yes
<b>Software features</b>		
Patient management database	MS Windows compatible; networkable	
Practice management integration	EMR compatibility (parameter passing and text file)	
Languages	ENG, CHI, key European languages	
Hemifield Analysis	N/A	Yes
Progression Analysis	N/A	Yes
HFA data import	N/A	Yes
<b>Connectivity</b>		
DICOM	Yes (images)	
Ethernet	Yes, via connected computer	
Database backup	Removable, network or cloud storage	
<b>Dimensions</b>		
Weight (kg)	5	13.5
Measures (mm)	270-350 x 230 x 300-350	440 x 400 x 452
<b>Classification</b>		
Mains operated	Yes	
Medical device	Class 1	
Applied part	Type B	
<b>Regulatory approvals</b>		
CE	Yes	
FDA	Yes	
<b>Control device</b>		
	External PC / laptop / tablet running MS Windows® Professional, v. 7, and above	
<b>Patient unit inputs/outputs</b>		
	C13 mains input; Patient Response Button; 1 x USB Type B connector	C13 mains input; Patient Response Button; 2 x USB Type B connector
<b>Electrical requirements</b>		
	85 - 263V AC, 50/60Hz, 60VA	
<b>Optional printer</b>		
	Any compatible with controlling computer	



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For more information about  
Elektron Eye Technology go to:  
[www.elektron-eye-technology.com](http://www.elektron-eye-technology.com)

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