



VisuScience



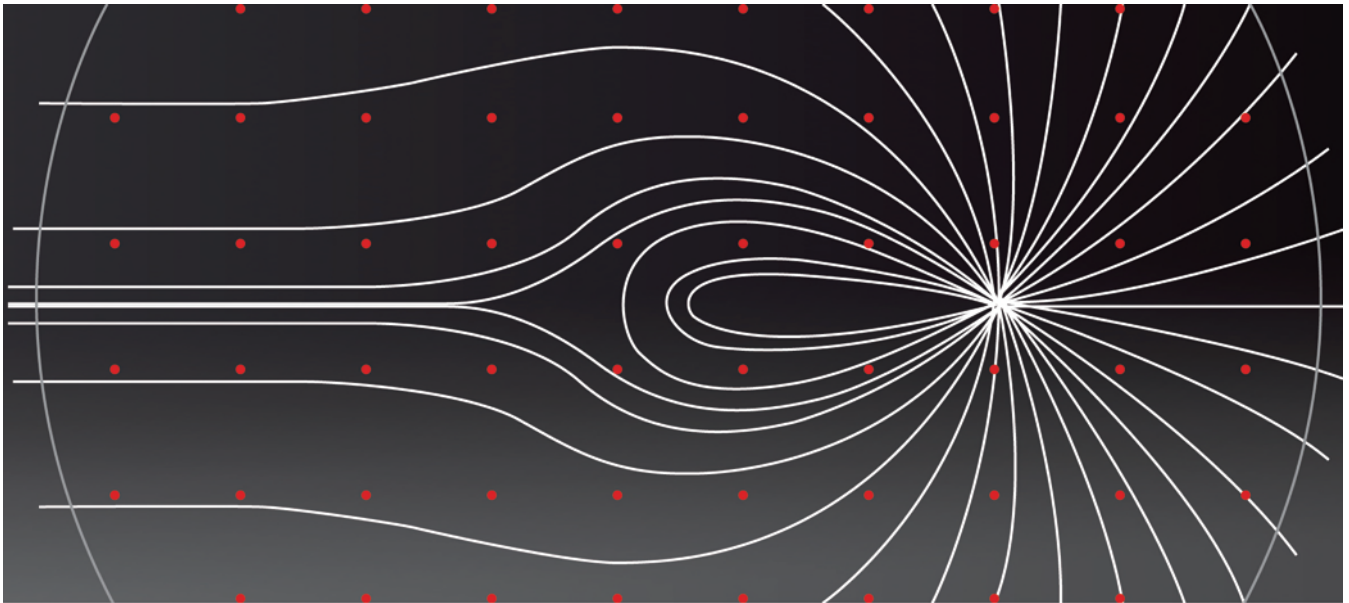
Front Projection Perimeter IFA-900/IFA-950/IFA-960

Reliable Accurate Flexible

Listen to the clinical

Standard Full Field White on White Perimetry

The IFA series offer a wide range of test patterns and strategies, including T30-2, T24-2, T10-2 for glaucoma diagnosis and T-Macula for macula function assessment. In addition, special test patterns like driver feasibility, monocular/binocular social security disability are also included. For better detection of visual field loss caused by early stage glaucoma, points of T30-2 and T24-2 are cautiously configured on the most sensitive position of retinal nerve fiber bundle.



Precise Diagnosis

Strictly conforming to the newest perimetry standard of IMAING and PERIMETRY SOCIETY, IFA series simultaneously fulfill the needs for ophthalmological and neurological uses.

Equipped with world-wide accepted 31.5 asb background illumination and incorporated with efficient HISA algorithm, comprehensive fixation control and age-related normal database, IFA's test result is highly consistent with Goldmann standard perimeter.

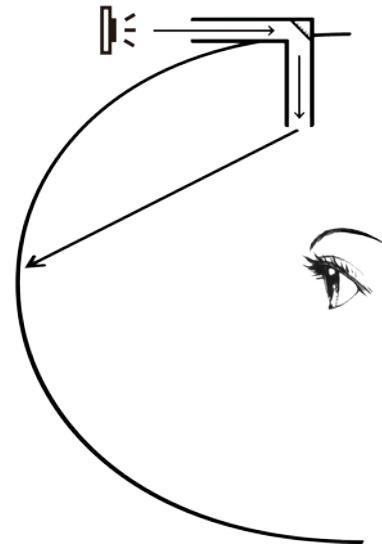
Its aspheric dome effectively shrinks its size, while ensuring the full field test range.



Front Projection, More Accurate Position & Intensity

As other mainstream high-end perimeters, IFA has adopted the advanced front projection structure: one independent light source, incorporated with rotating optical system, can project the uniform light spot on any position of the carefully prepared aspheric diffuse surface. The light spot has uniform intensity, despite of your observation angle.

Traditional hidden-led array perimeter uses hundreds of LEDs with fixed positions as stimulus points. It can't guarantee the exactly same stimulus intensity between different stimulus points, even been manually calibrated, for the parameter difference between LEDs and the thickness of their covering paint.



Low Light-declining LED, No Need for Replacement & Calibration

LED light source has characteristics of high efficiency, low heat, long life and low light decay. Its radiating energy reduction is less than 20% after 30,000 hours of illumination. That means, if there is about 300 stimulus for each test, and each stimuli lasts for 200 ms, then, after 1.8 million tests, the stimulus intensity of IFA has attenuated less than 1 dB.

Furthermore, to ensure even more stable performance, IFA has built a light measuring sensor internally to detect any abnormal change in light intensity.



Comfortable Perimetry

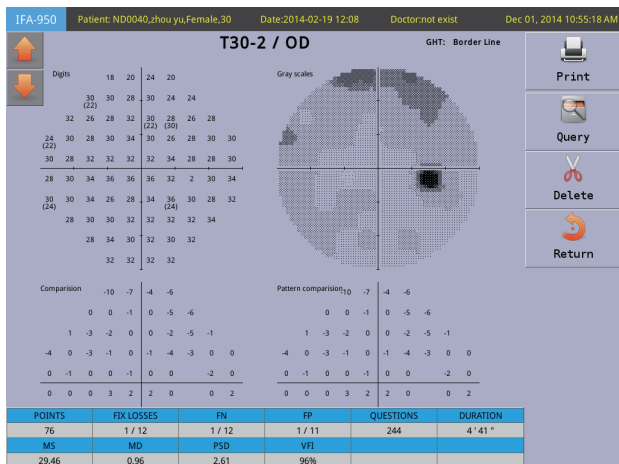
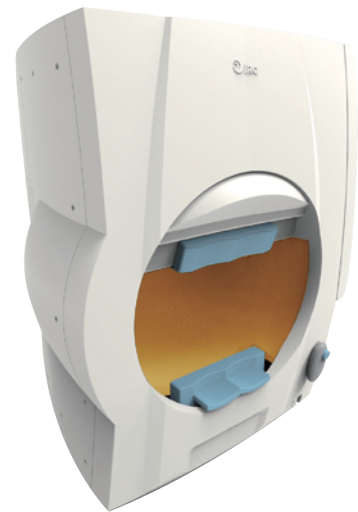
The super-silent design of chin rest and fan free power system makes the test quiet and comfortable. The inclined LCD monitor guarantees the optimized operator view and operation angle. The embedded monitor and its glare shield effectively avoid the impacts of monitor rays on patients.

The chin rest control buttons on the operator's side produce the comfortable experience. Apart from L/R, U/D, the middle button automatically calibrates pupils to the center with the cooperation of eye tracking camera.

15" LCD provides higher display quality and more diagnostic information. Better display quality, more sensitive touch screen and virtual multi-language keyboard enable clinicians an easy operation system with one finger.

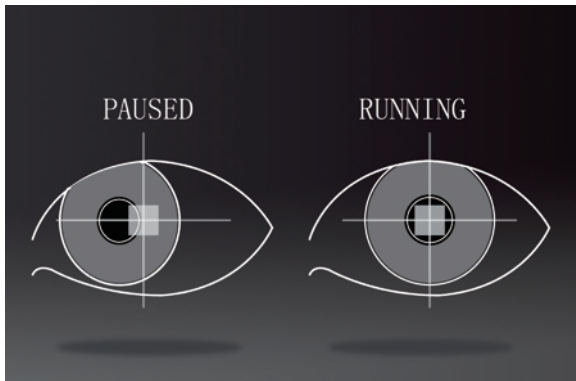
The ergonomic responder applies to all hands whatever the race, age and gender. Its elaborately selected tactile switch with 2.45 N action force has a life cycle of 1,000,000 times. The unique design brings patients happy and straightforward examination experience. Meanwhile, the switch action can be easily perceived, even for old sluggish patients.

Optional accessories: Foot Pedal. Keyboard, PC Mouse.



T-Macula	T10-2	T24-2	T30-2	SETUP ABOUT QUIT
T60-4	T24-SWAP	T30-SWAP	S-76	
S-40	S-64	Kinetic	...	

Accurate Perimetry



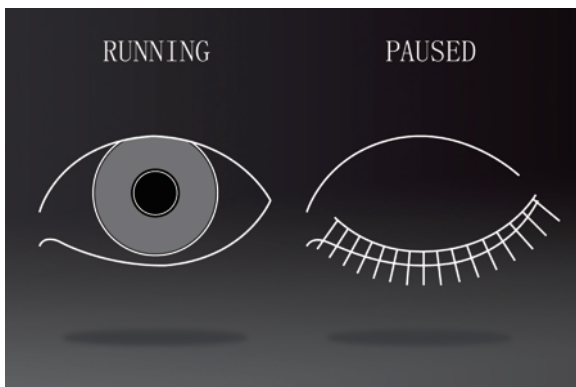
Gaze Tracking

Minimize effects of unreliable response

“Gaze Tracking” constantly monitors the pupil position and patient’s fixation. System beeps to draw patient’s attention when a fixation shift is detected. If fixation shift lasts for a while, system will stop test and inquire operator’s intervention.

When occasional pupil shift appears, system automatically ignores the question and its corresponding response under the condition that the stimuli presents during pupil shift.

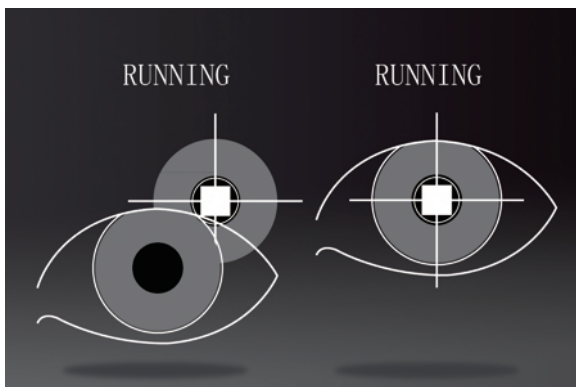
For continuous stable pupil shift, IFA moves the chin rest and corrects the wrong pupil position.



Blink Control

Never miss a stimuli

IFA’s BLINK CONTROL helps patients avoid from dry eyes and relax them to stay focused in subsequent test. When IFA’s BLINK CONTROL is on, stimuli during patient’s blink will not be counted and will automatically be repeated in later test.



Blind Spot Monitor

IFA will present stimuli on blind spot periodically. If patient responses one, system will record it as blind spot monitor failure.

From stimuli presents to patient’s response, there should be a reasonable time lag. If the patient response incredibly fast, system will record it as a FALSE POSITIVE as a reaction to patient’s “Happy Trigger”.

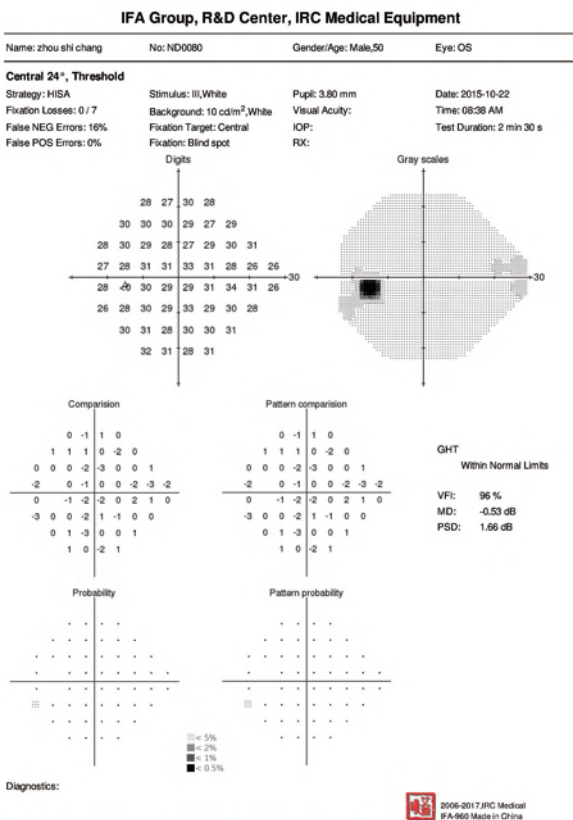
Blink spot monitor, FALSE NEGATIVE, FALSE POSITIVE and Gaze Tracking Curve could help clinicians scientifically evaluate the credibility of test result.

SWAP for Earlier Glaucoma Detection

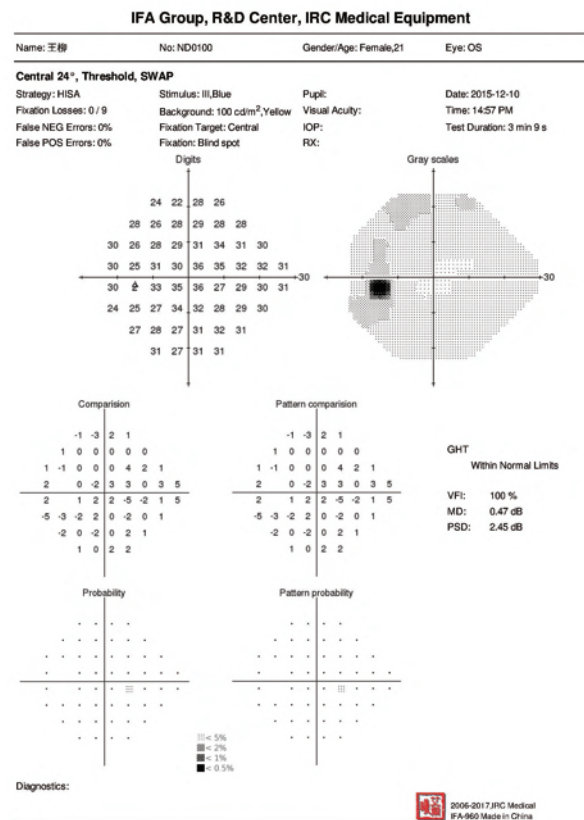
Researches show that Blue-Yellow ganglion cells are selectively damaged first in the early glaucoma. Short-Wavelength Automated Perimetry, or SWAP, is also known as Blue-Yellow perimetry. SWAP preferentially tests the blue cones and their ganglion cell connections by the means of using bright 100 cd/m² yellow background to desensitize the green and red cones, and evokes response of blue cones through carefully chosen 440nm blue stimuli.

Researches also show that SWAP can identify early glaucomatous visual field defects and progression in glaucomatous field loss much earlier than by using standard white-on-white perimetry. It has been proven clinically that SWAP test result is highly consistent with RNFL loss caused by glaucoma.

IFA-950,960 provides clinician with economic Blue-Yellow perimetry solution through T30-SWAP, T24-SWAP programs. Facilitated by its unique HISA-SWAP algorithm, IFA completes a Blue-Yellow perimetry as quick as the usual White-White perimetry does.



White on White



Blue on Yellow

The SWAP report reveals deeper field damage than traditional white on white perimetry, as well as the unrecognized GHT abnormality.

Standard Goldmann III for SWAP Enable More Accurate Damage Positioning

Compared with perimeters using halogen lamps, IFA gets sufficient blue stimuli intensity through an independent blue LED. So it operates Blue-Yellow with standard Goldmann III stimuli and thus guarantees more accurate damage positioning.

Injection Molding Diffuse Surface for Easy Maintenance

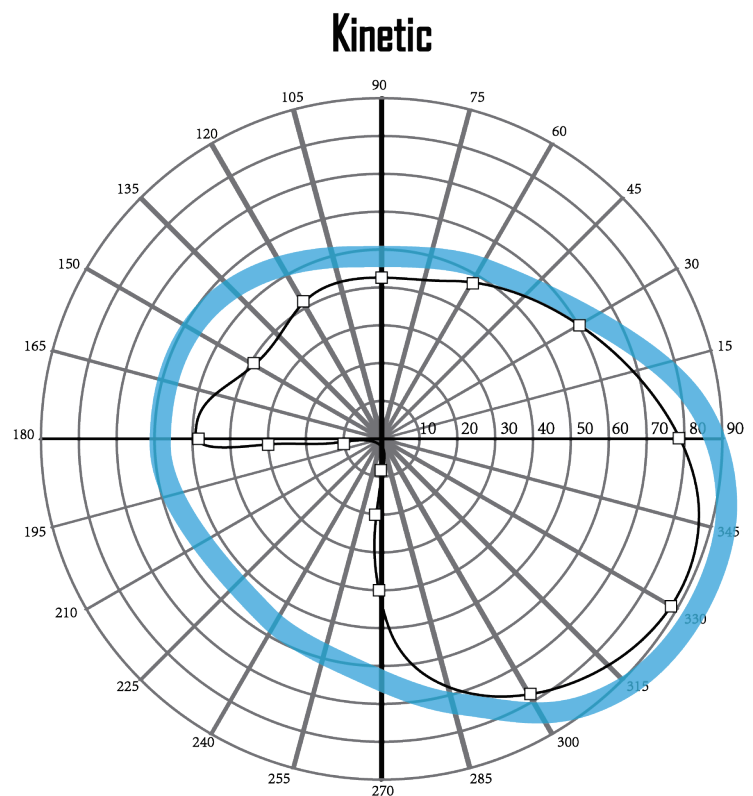
IFA's diffuse surface is directly made by dedicated chemical etching on its injection mold. It can be cleaned with damp cloth if coated with dust. While the diffuse surface of competing products is made by painting, which is difficult to clean since the slightest mistake may lead to permanent damage of the painting diffuse surface.

Kinetic Perimetry

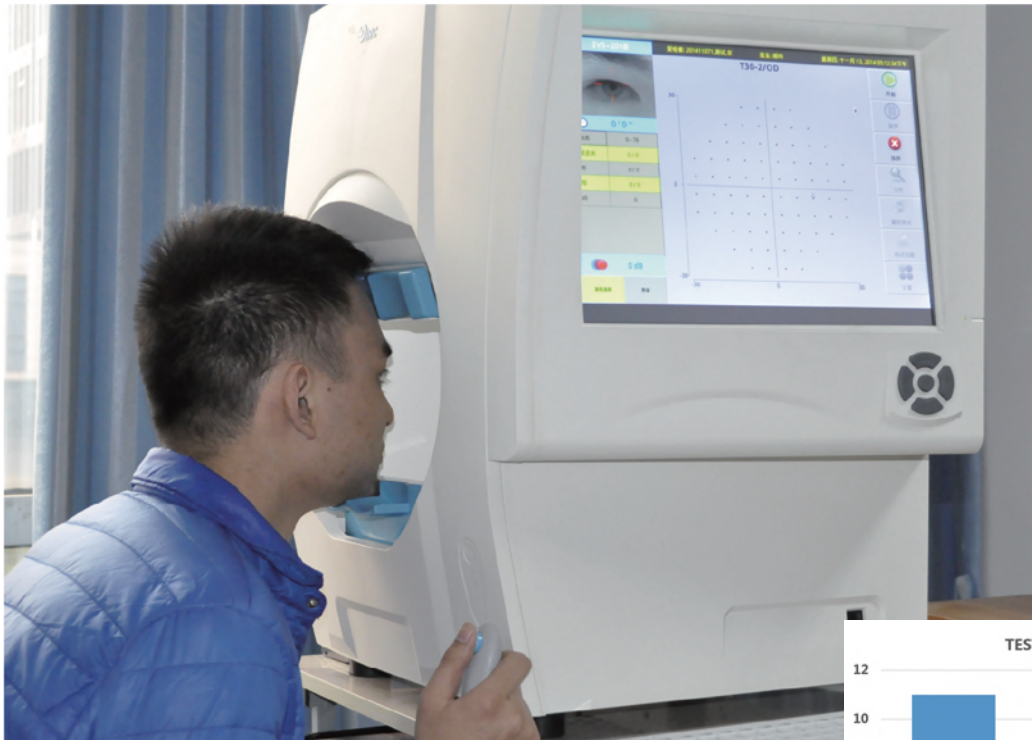
Kinetic Perimetry is supported by IFA-960 as well.

During kinetic test, light spot with different intensity slowly moves from periphery to the center. Patient makes response after seeing the light spot. The response position represents the border of visual field on this direction. By connecting all response points, the range of patient's visual field is depicted. The range of visual field varies by the intensity and size of light spot.

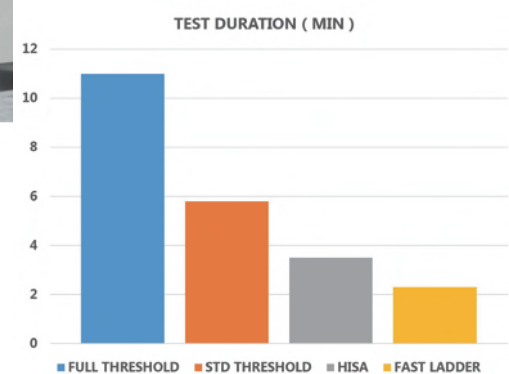
The kinetic perimetry can be applied to assessing the change of visual field and the field difference between eyes.



Quicker Perimetry



We extremely values the time of patients and operators. On the premise of consistent accuracy, we continues to innovate its testing algorithm and has developed HISA, a more reliable, more time-saving Heuristic Interactive Threshold Searching Algorithm.



HISA-Heuristic Interactive Threshold Searching Algorithm

HISA forecasts initial threshold for new point through a complex mathematical model, which takes neighboring tested results and same age normal values into consideration. Then unnecessary search will consequently be avoided. During test process, HISA intelligently skips those “undoubted” questions regarding the change of neighboring point’s value.

HISA is not likely to initiate all points but do a sample survey from some specific location. Subsequently, time will be saved for patients with serious reduction of sensitivity by skipping those high-sensitivity questions.

HISA will adjust the stimuli interval adaptively according to the patient’s response lag. With HISA, young, quick patients will experience a happier, faster and more reliable test. And older, sluggish patients will not miss the response in long stimuli intervals.

HISA will evaluate the reliability of the tested points through a complex reliability function. Besides, HISA will automatically retest the suspected result.

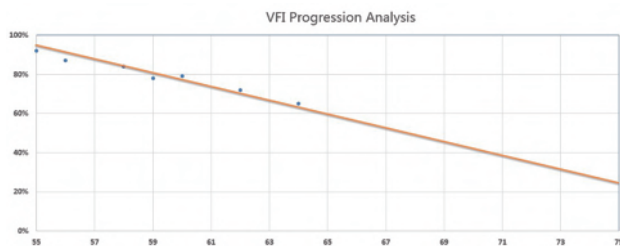
HISA will ... with other know-how techniques and mathematical models, HISA is bound to be the most reliable and accurate threshold testing strategy.

Dedicated System, Safer Data, Easier Operation

Instead of common x86 PC and its related operating system, IFA series adopt low power, high reliability, space compact industrial embedded ARM computer and dedicated operating system. IFA is immune to common computer viruses, and its simple structure (no video card, no hard disk, no DVD drive) brings us incredible reliability.

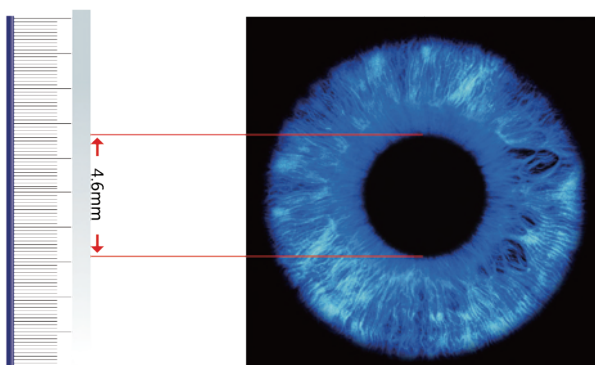
More than 1,000,000 tests can be stored in more than 32 GB solid state disk. High drop and unusual power off will not result any data loss.

We have elaborately designed IFA's UI and operation process, which is easily accessible for a fresh operator without any instructions.



Glaucoma Progression Analysis

IFA can accurately differentiate clinically significant progression of visual field loss from random variability within a series of follow up tests, providing an advanced, reliable method to enhance the management of glaucoma. It really helps identify rapidly progressing, high-risk patients.



Automated Pupil Measurement

IFA can automatically measure patient's pupil diameter and print it in report. This benefits comprehension of the correlation between pupil size and perimetry result to avoid wrong report interpretation with too small pupil size.

Universal Printout

Digits, grayscales, comparison, probability, pattern comparison and probability extensively reflect the information gathered during a perimetry test from different perspectives. The universal HFA-style printout makes it easier to compare IFA's results with other mainstream perimeters. Meanwhile, for paper writing, the universal or familiar graphs will be more accepted by reviewers.

In comparison with other graphs, pattern comparison/probability is more liable to correct the effects of cataract, refractive error, and other generalized sensitivity reduction by small pupils. It attempts to reflect only the change of fundus and resulting localized field loss. This makes it more valuable for glaucoma diagnosis.

GHT-Glaucoma Hemifield Test

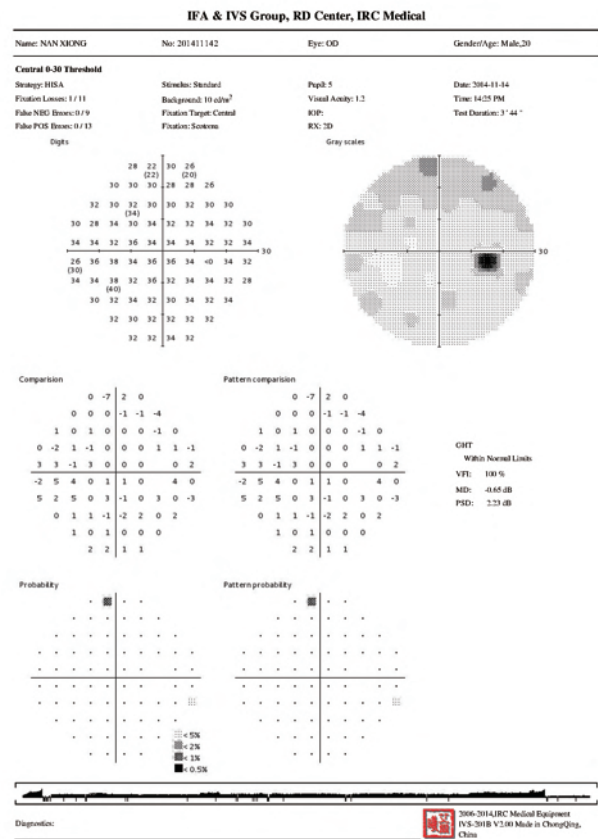
Comparing points within five zones in the superior and inferior hemifields, T30-2, T24-2, T30-SWAP and T24-SWAP provides a plain language analysis of the test results: Outside the Normal Limits, Within Normal Limits, Borderline, Abnormal High Sensitivity and General Reduction of Sensitivity.

The GHT result is valuable for glaucoma diagnosis. Because asymmetric change in visual field is a typical symptom of glaucoma.

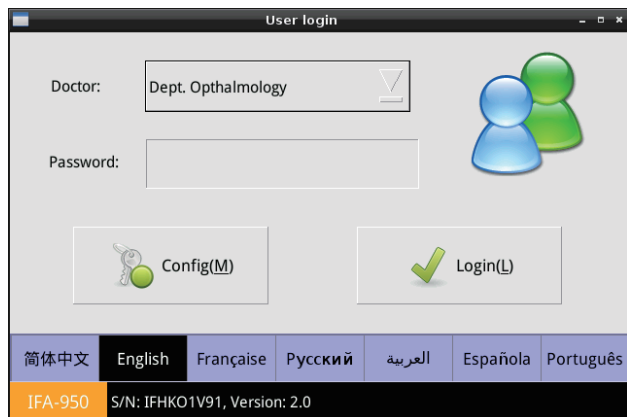
Visual Field Index, Pattern Standard Deviation

VFI is a measure of the patient's overall visual function compared to an age-adjusted normal population. It has been proven that it is highly consistent with ganglion cells density and resulted visual function.

PSD is a measurement of the degree to which the shape of the patient's measured field departs from the normal, age-corrected reference field. A high PSD indicates an irregular hill and may be due either to variability in patient response or to actual field irregularities.



Dedicated System, Safer Data, Easier Operation



Multi-Language Support

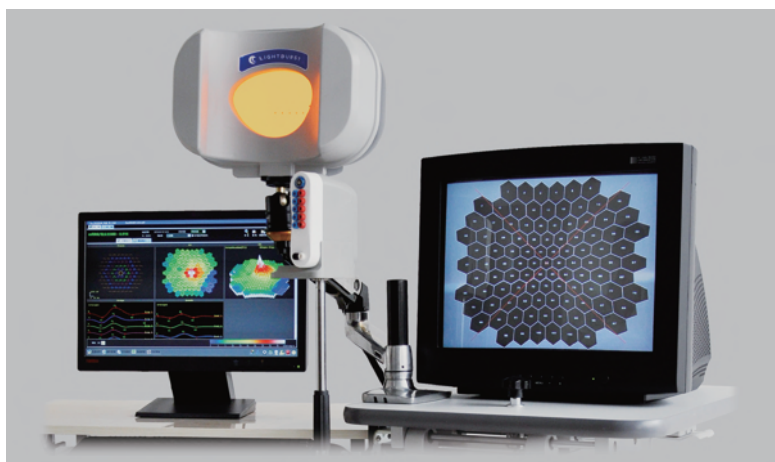
Chinese, English, French, Russian, Arabian, Spanish, Portuguese are supported by IFA. The embedded universal input method enables it to input operator's native language. The report will be automatically generated into your native language according to your option.



Instant Networking & E-Report

Benefits from the supported DICOM protocol, IFA can be configured to connect with any EMR system which conforms to the DICOM standard.

Together with Visual Electrophysiology, Better Pathway Diagnosis



Visual Electrophysiology - RetiMINER series

Specification	IFA-900	IFA-950	IFA-960
Stimulus Generation	Front Projection LED		
Max Temporal Range	90°		
Testing Distance	30cm		
Background Illumination	31.5 asb(10cd/ m ²)	100 cd/ m ²	
Stimulus Size	Goldmann III	Goldmann I-V	
Stimulus Intensity	0.08 asb ~ 10,000 asb (0 ~ 50 dB)		
Stimulus Duration	200ms, configurable		

TEST STRATEGY

Threshold Test Library	T10-2, T24-2, T30-2, T-Macula, T60-4, T-NS(Nasal Step)		
Threshold Strategy	Full Threshold, Fast Ladder, HISA, Standard Threshold		
Screening Test Library	S-40, S-64, S-76, S80, S-Armaly, S-60, S-NS(Nasal Step), SF-81, SF-120, SF-135		
Screen Strategy	Two Zone, Three Zone, Qualified Defect		
Blue/Yellow Perimetry	N/A	T24-SWAP, T30-SWAP	
Custom Testing	N/A	Customized Program	
Colored Perimetry	N/A	Blue Stimuli	Red Stimuli, Green Stimuli
Specialty Test Patterns	N/A	Social Security Disability, Monocular, Binocular, Superior 36, Superior 64	
Fixation Monitor	Heijl/Krakau blind spot monitor, Infrared video eye monitor, Gaze tracking, Fixation tracking, Pupil measurement, Blink control		
Software Features	Visual Field Index, Glaucoma Hemifield Test(GHT), Single field analysis, Serial field overview, HISA Analysis	Visual Field Index, Glaucoma Hemifield Test(GHT), Single field analysis, Serial field overview, HISA Analysis, SWAP analysis, Networking, Glaucoma Progression Analysis, DICOM Support	
Responder	Hand held, Foot pedal (Option)(for upper limb disabled)		

BUILT-IN SYSTEM

Operating System	Dedicated OS (immune for general computer viruses)		
Operator Interface	15" LCD touch screen, Keyboard & Mouse(Optional)		
Data Storage	≥32GB, More than 1,000,000 test results		
Data Backup	Flash Disk, Networking		
Networking	Ethernet		

OTHERS

Input Voltage	100-240V, 50 ~ 60Hz		
Power Consumption	150W		
Dimension	560 x 490 x 600 (mm) (W/D/H)		
Weight	25kgs		

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