Advancing the clinical efficiency of perimetry.

ZEISS Humphrey Field Analyzer 3

www.zeiss.com/hfa3

Seeing beyond

Detect faster, identify better, preserve longer.

With proven tools to streamline your glaucoma workflow with confidence.

The Humphrey® Field Analyzer 3 (HFA3) from ZEISS combines everything you value in a Humphrey with expanded testing options, enriched analysis, reduced patient test times, and simplified operation to streamline your workflow. HFA3 is the latest of several generations of Humphrey perimeters created in response to the needs of glaucoma practices for more informative and reliable test strategies, vigorous progression analysis, superior workflow efficiency, and enhanced cybersecurity.

Assess the threat of vision loss
Guided Progression Analysis™ (GPA™) helps augment treatment and prioritize glaucoma care by the probability of visual impairment.

Test quicker
SITA™ Faster reduces the 24-2 test duration without compromising the test quality and introduces 24-2C to deliver additional macular data.

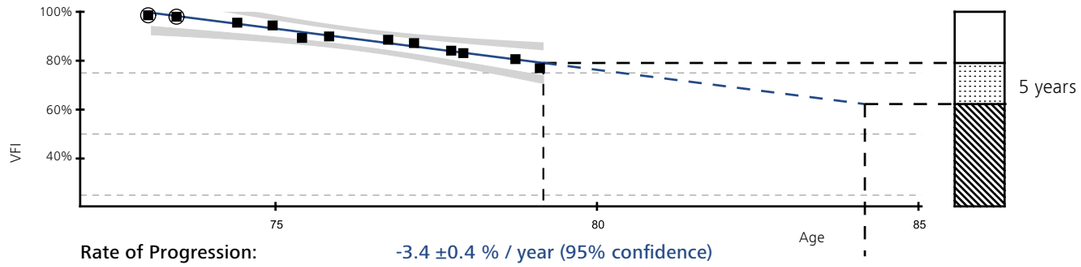
Improve test consistency
The HFA3 Liquid Trial Lens™ auto-loads the patient's vision correction and automates eye alignment to maintain eye gaze alignment throughout the test duration.

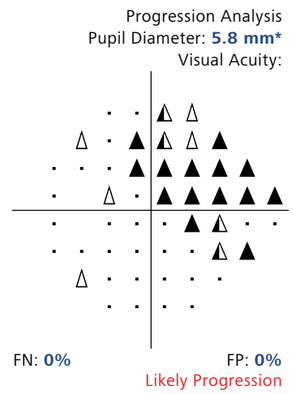
See the whole picture
Visual field function data from the HFA3 combined with structure imaging from ZEISS CIRRUS OCT provides integrated structure and function analysis.

Accurate insight. Improved outcomes.

Finding answers with Guided Progression Analysis.

GPA is a built-in feature, every HFA has it. GPA works with old and new SITA 24-2 and 30-2 test patterns from any HFA. For analyzing the 24-2C results, GPA will include all the test points of this new pattern enabling you to measure the patient's visual field function, across all the 62 test points of the test, and outline the prognosis aiding in a decision for an appropriate treatment.





Rate of progression: Visual Field Index Trend

How rapidly is my patient progressing in visual field loss? GPA trend analysis provides a quick view of the visual field condition and calculates what's to come. The Visual Field Index™ (VFI™) is a measure of the patient's overall visual function as compared to an age-adjusted normal population. It is a metric that represents the entire visual field and depicts a trend of the progression pattern. VFI is automatically calculated whenever five or more eligible visual field tests are available. VFI estimates the patient's possible future course if the trend continues without intervention and helps communicate visual field status to patients in an easy to understand graphic.

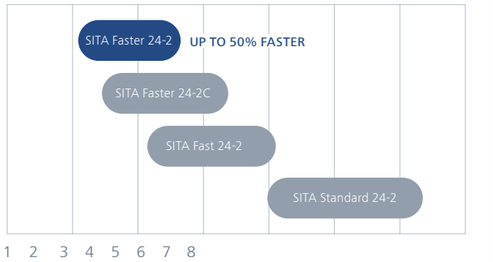
Glaucoma Change Probability

Is my patient stable, or getting worse? Use the Glaucoma Change Probability Maps to identify areas of the visual field that have changed beyond expected clinical variability. Progression events in consecutive visits are noted using symbols that show repeatable and significant deterioration at each test point. The text alerts are automatically generated whenever changes show consistent and statistically significant loss.

The language of perimetry.

Built on decades of clinical proof.

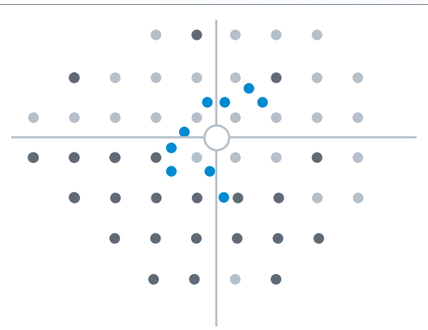
ZEISS HFA SITA strategies are the standard of care in visual field testing. SITA optimizes the information in the patient's responses, looks at the complete pattern of patient responses while thresholding, and continuously refines the measurements. SITA is efficient and accurate.



Typical test time ranges in minutes (mean ±std.dev.)[1]

SITA test duration

SITA Faster 24-2 improves clinical workflow and patient satisfaction with the fastest test time in HFA threshold testing. Approximately 50% faster than SITA Standard, SITA Faster 24-2 is also about 30% quicker than SITA Fast, yet clinically equivalent.



24-2C test pattern

The SITA Faster 24-2C test adds 10 test points to the 24-2 pattern. They were selected to examine areas along physiologically relevant nerve fiber bundles susceptible to glaucomatous defects. These extra test points are included in the Single Field Analysis (SFA) and GPA analysis of the 24-2C tests.[2-5]

"There is compelling evidence that even in early glaucoma cases, the macula may be affected, but you need to use an adequate test to make sure that damage is real."

Dr. C. Gustavo De Moraes of Columbia University, New York

[1] Heijl A, Patella VM, Chong LX, et al. A new SITA perimetric threshold testing algorithm; construction and a multi-center clinical study. *Am J Ophthalmol.* 2019 Feb:198:154-165:
[2] Hood D, Nguyen M, Ehrlich A, et. al. A Test of a Model of Glaucomatous Damage of the Macula With High-Density Perimetry: Implications for the Locations of Visual Field Test Points. *Transl Vis Sci Technol.* 2014 May; 3(3): 5.
[3] Traynis L, De Moraes CG, Raza AS, et al. The Prevalence and Nature of Early Glaucomatous Defects in the Central 10° of the Visual Field. *JAMA Ophthalmol.* 2014 Mar;132(3):291-7
[4] De Moraes CG, Hood DC, Thenappan A, et al. 24-2Visual Fields Miss Central Defects Shown on 10-2 Tests in Glaucoma Suspects, Ocular Hypertensives, and Early Glaucoma. *Ophthalmology.* 2017 Oct;12 4(10):1449-1456.
[5] Hood DC, Slobodnick A, Raza AS, et al. Early glaucoma involves both deep local, and shallow widespread, retinal nerve fiber damage of the macular region. *Invest Ophthalmol Vis Sci.* 2014 Feb 3;55(2):632-49

Maximize the uptime of visual field testing.

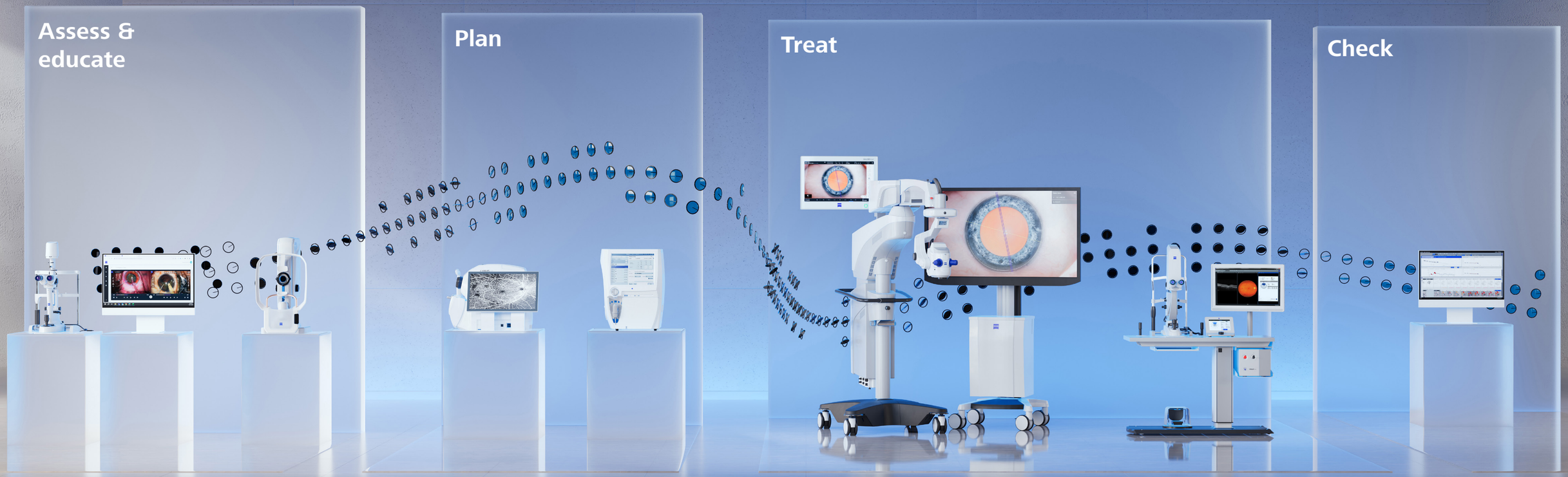
With secure data and support.

ZEISS HFA3 features enhanced cybersecurity and serviceability designed to meet ever-evolving compliance and security needs for ensuring uninterrupted operation and data protection while allowing customization per the practice and IT preferences.

- Whether at rest or in transit, your ZEISS HFA3 data is secure with configurable BitLocker encryption and DICOM Transport Layer Secure (TLS) protocol.
- The embeddable database offers top-of-the-line data security and instant disaster recovery.
- Federal Information Processing Standards (FIPS) mode validated.
- ZEISS Smart Services allows for tech support to diagnose remotely without an onsite visit.
- Expedited assistance allows shorter time from questions to answers.

See the big picture.

HFA3 is an integral part of ZEISS Glaucoma Workflow.



ZEISS supports complex disease management by integrating critical data points necessary to make accurate decisions on treatment paths and providing at-a-glance history and progression trends with interactive analysis.

Assess & educate
Seeing first signs of glaucoma and building patient awareness

- ZEISS SL 800 & ZEISS SL Imaging Solution
- ZEISS CLARUS 500

Plan
Diagnosing and staging disease using standard of care in glaucoma

- ZEISS HFA3 Perimeter
- ZEISS CIRRUS 6000

Treat
Gaining upper hand in glaucoma management with laser therapy and high-precision surgery

- ZEISS VISULAS combi with SLT
- ZEISS ARTEVO 850

Check
Verifying if glaucoma is under control, defining optimum time and goal for intervention

- ZEISS Glaucoma Workplace

Instrument specifications

Stimulus	Maximum Intensity: 10,000 ASB
	Duration: 200 msec, 500 msec for Esterman tests, continuous for kinetic tests
	Wavelength: Broadband visible light
Visual Field Testing Distance	30 cm
Bowl Illumination	31.5 ASB
Maximum Temporal Range	90 degrees (90°)
Dynamic Range	50dB
Computer	Operating System: Windows 10 – 64 bit
	LCD Display with integrated touch screen
	Support for USB Keyboard & Mouse
	Internal storage: 250 GB minimum (capable of storing at least 200,000 test results)
	External storage: 6 external USB ports, Type A, USB 2.0 specification
	Networking: Ethernet Port
	Video output for external monitor (DisplayPort or HDMI)
Printer	PostScript printers, including shared network and/or wireless printers using a wireless USB adapter, or directly connected via Ethernet port
Physical Specification	Dimensions: 46 L × 52 W × 58 H (cm)
	Weight: 28.7 kg (63 lbs.)
	Background illumination
Electrical Range	100–120V~, 50/60Hz, 4.0A; 230V~, 50/60Hz, 1.8A

Technical specifications

		HFA models			
		830[1]	840	850[1]	860
Fixation control	Blind spot monitor	●	●	●	●
	Video eye monitor	●	●	●	●
	Gaze tracking X	X	●	●	●
	Head tracking X	X	●	●	●
	Vertex monitoring	X	X	●	●
Stimulus	White-on-white	●	●	●	●
	Red-or blue-on-white X	X	●	●	●
	Blue-on-yellow (SWAP™)	X	X	●	●
General testing features	Stimulus sizes	Goldmann I-V			
	Foveal threshold testing	X	●	●	●
	Automatic pupil measurement	X	●	●	●
	Liquid Trial Lens (AutoTLC)	X	X	X	●
	RelEYE eye review	X	X	●	●
Single Field Analysis	STATPAC™ SFA	●	●	●	●
	Total Deviation, Pattern Deviation, Mean Deviations	●	●	●	●
	Glaucoma Hemifield Test (GHT)	●	●	●	●
Progression Analysis	Guided Progression Analysis (GPA™)	●	●	●	●
	Mixed SITA	●	●	●	●
	24-2C specific GPA	●	●	●	●
	Trend Analysis, VFI	●	●	●	●
	Event Analysis, Glaucoma Change Probability Map (GCMP)	●	●	●	●
Threshold test library	24-2, 30-2, 10-2, 24-2C	●	●	●	●
	60-4, Nasal step, Macula	●	●	●	●
Threshold test strategies	SITA™ Standard, SITA Fast, SITA Faster, Full Threshold	●	●	●	●
	SITA-SWAP	X	X	●	●
Suprathreshold test library	C40, C76, C80c, C64, C-Armaly, Peripheral test patterns	●	●	●	●
Suprathreshold test modes	Age corrected, Threshold related, Single intensity	●	●	●	●
Specialty test library	Social Security Disability, monocular, binocular	●	●	●	●
	Esterman monocular, binocular, superior 36, 64	●	●	●	●
	Kinetic testing, Custom Kinetic[2]	X	X	●	●
	Custom Static patterns	●	●	●	●
Reference Databases	Normal population, Glaucoma subjects	●	●	●	●
DICOM data export[3]	OPV (Ophthalmic Visual Field) IOD (Information Object Definition) license for purchase	C	C	C	C
Remote assistance	Connectivity for remote tech support	●	●	●	●
Cybersecurity	Configurable BitLocker encryption & DICOM Transport Layer Secure (TLS) protocol Federal Information Processing Standards (FIPS) mode validated	●	●	●	●

● Always included X Not available C Country specific

[1] Models 830 and 850 are not available in the US.
[2] Kinetic testing on 840 is not available in the US.
[3] DICOM export is included, except US and China where it is optional for purchase.

For information about the ZEISS Humphrey Field Analyzer 3,
visit www.zeiss.com/hfa3

CE 0297

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