

# OCULUS SOLUTIONS for detecting Glaucoma









# Glaucoma

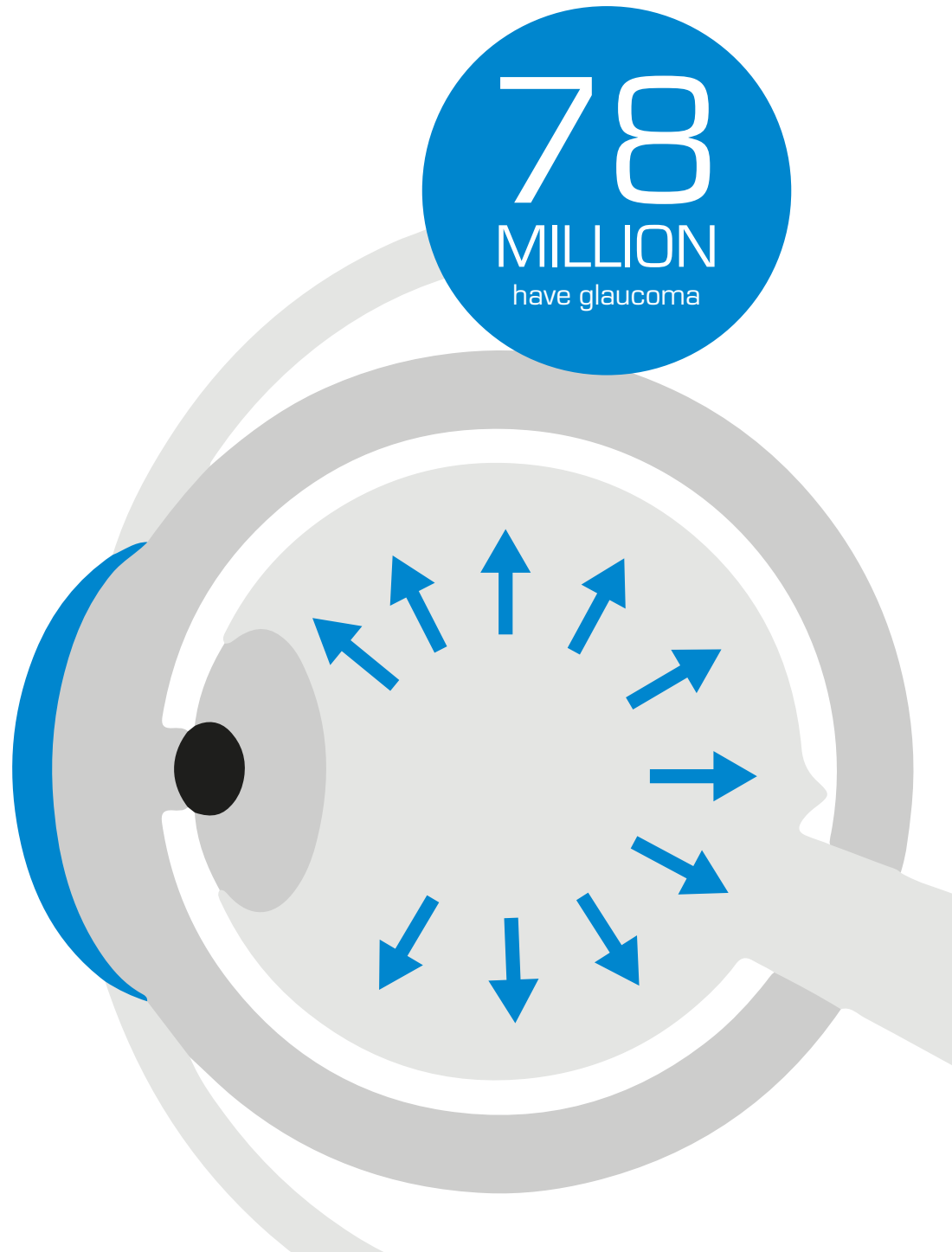
## the silent blinding disease

Glaucoma is a group of eye diseases that cause progressive damage of the optic nerve at the point where it leaves the eye to carry visual information to the brain. If left untreated, most types of glaucoma progress (without warning nor obvious symptoms to the patient) towards gradually worsening visual damage and may lead to blindness. Once incurred, visual damage is mostly irreversible, and this has led to glaucoma being described as the “silent blinding disease” or the “sneak thief of sight”.

(Source: WGA, <https://wga.one/wga/what-is-glaucoma/>)

-  **78 million** have glaucoma
-  **111.8 million** are predicted to have glaucoma **by 2040**
-  Glaucoma is the most common cause of **irreversible blindness**
-  In many cases, glaucoma may be **asymptomatic**, meaning it shows no symptoms; half of those living with glaucoma are unaware that they are affected
-  Every **1 in 200** people **aged 40** have glaucoma, which rises to **1 in 8** by aged **80**.
-  The **earlier** the diagnosis, the **less damage** will be done and the more vision will be saved!

(Source: WGA, 2020)



**78**  
**MILLION**  
 have glaucoma

# Patients don't see their scotoma!

The normal driver's view



Common textbook illustration of a glaucomatous field defect



The patient's view: no apparent scotoma



“Glaucoma is one of the **leading causes of irreversible blindness**, but with early treatment, the damage may get limited and sight may be saved.”

Fabian Lerner  
President World Glaucoma Association

“By **promoting regular testing**, we also want glaucoma patients to get their relatives involved, as the chances of them getting glaucoma are **10 times higher** than someone with no glaucoma history in their close family environment.”

Ivan Goldberg  
Co-Chair World Glaucoma Week Committee



# The Glaucoma Experts from OCULUS

OCULUS has a number of methods and options to offer when it comes to glaucoma screening, follow-up and patient management: Tonometry, perimetry, tomography, pachymetry and, new to the range, the Biomechanical Glaucoma Factor for early detection of normal tension glaucoma (NTG) as well as biomechanically corrected intraocular pressure (bIOP). All this is available from OCULUS.



# TONOMETRY

## INVESTIGATIONS

- Non-contact tonometry
- Biomechanically corrected IOP (bIOP)
- Biomechanical Glaucoma Factor (BGF)

## YOUR BENEFITS

- Independent risk factor for glaucoma
- Easy screening for normal tension glaucoma (NTG)
- IOP follow-up chart
- Email directly to patient along with follow-up appointment

## MATCHING PRODUCTS

- Corvis ST®

# PERIMETRY

## INVESTIGATIONS

- Threshold and supra-threshold perimetry
- Central and peripheral visual field
- Versatile glaucoma exams

## YOUR BENEFITS

- Tests as fast as 45 seconds to maximum 3 minutes
- Early recognition of risks for glaucoma
- Efficient progression analysis
- Extended assessment by predicting morphological parameters

## MATCHING PRODUCTS

- Smartfield
- Easyfield® C
- Centerfield® 2
- Twinfield® 2

# TOMOGRAPHY

## INVESTIGATIONS

- Tomography of the anterior eye segment
- IOP correction tables

## YOUR BENEFITS

- Entire anterior segment in 2 sec
- Fast Screening Report for detecting glaucoma
- Make use of the evaluation of anterior chamber angle, depth, volume and corneal pachymetry data based against normative data

## MATCHING PRODUCTS

- Pentacam®
- Pentacam® HR
- Pentacam® AXL
- Pentacam® AXL Wave

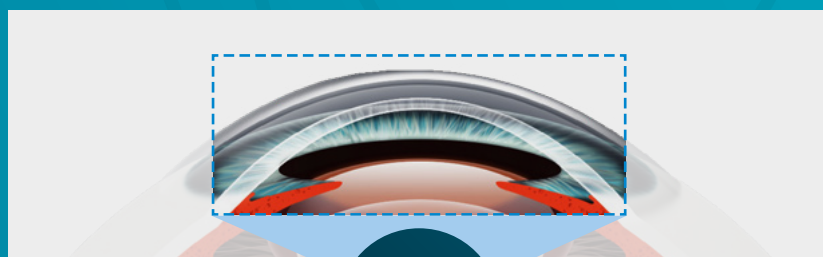
# Expert of Tonometry

## Corvis® ST

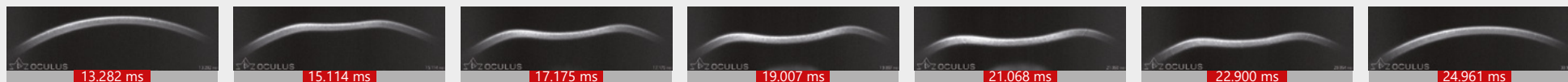
Air pulse tonometry is used for contactless measurement of intraocular pressure, which, in combination with pachymetry, is an important diagnostic indicator of glaucoma. The Corvis® ST from OCULUS can do even more however: its non-contact tonometer with an inbuilt high-speed camera shows the response of the cornea to an air pulse in a short film sequence of more than 4 300 images per second.

The Corvis® ST offers a new approach to detecting normal tension glaucoma (NTG) cases despite normal intraocular pressure. According to the Baltimore Eye Survey\*, 50 percent of POAG patients have an IOP below 22 mmHg.

\*Sommer, A., et al., Relationship between intraocular pressure and primary open angle glaucoma among white and black Americans. The Baltimore Eye Survey. Arch Ophthalmol, 1991. 109(8): p. 1090-5.



The availability of products and features may vary by country, and OCULUS reserves the right to change product specifications and design. Please contact your local distributor for current product availability in your country.



## Accurate IOP estimation with IOP/Pachy Display

The biomechanical corrected IOP (bIOP) takes corneal thickness, age and the biomechanical properties of the cornea into consideration. This enables an accurate IOP estimation even in case of altered biomechanical properties<sup>1</sup>.

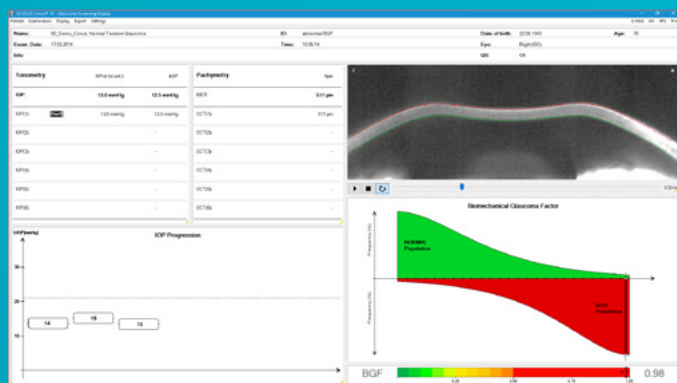
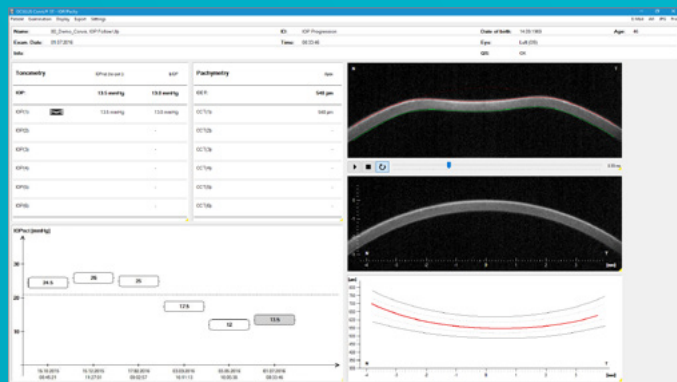
<sup>1</sup> Hun Lee et al.: Changes in biomechanically corrected intraocular pressure and dynamic corneal response parameters before and after transepithelial photorefractive keratectomy and femtosecond laser-assisted laser in situ keratomileusis: Journal of Cataract & Refractive Surgery 43 (12), 2017: 1495 -1503.

## Detecting the independent risk factor with glaucoma screening software

Intraocular pressure measurement will not indicate any elevated risk for glaucoma and also the optic nerve head might appear relatively normal. In Europe 30 to 40 percent of primary open angle glaucoma patients have a normal intraocular pressure, in Asia the incidence of NTG is even higher.

The Biomechanical Glaucoma Factor (BGF)<sup>2</sup> was developed for the Corvis® ST and is an independent risk factor for normal tension glaucoma and can be used to screen for NTG patients.

<sup>2</sup> Pillunat KR, Herber R, Spoerl E, Erb C, Pillunat LE.: A new biomechanical glaucoma factor to discriminate normal eyes from normal pressure glaucoma eyes. Acta Ophthalmol. 2019 Nov; 97(7)



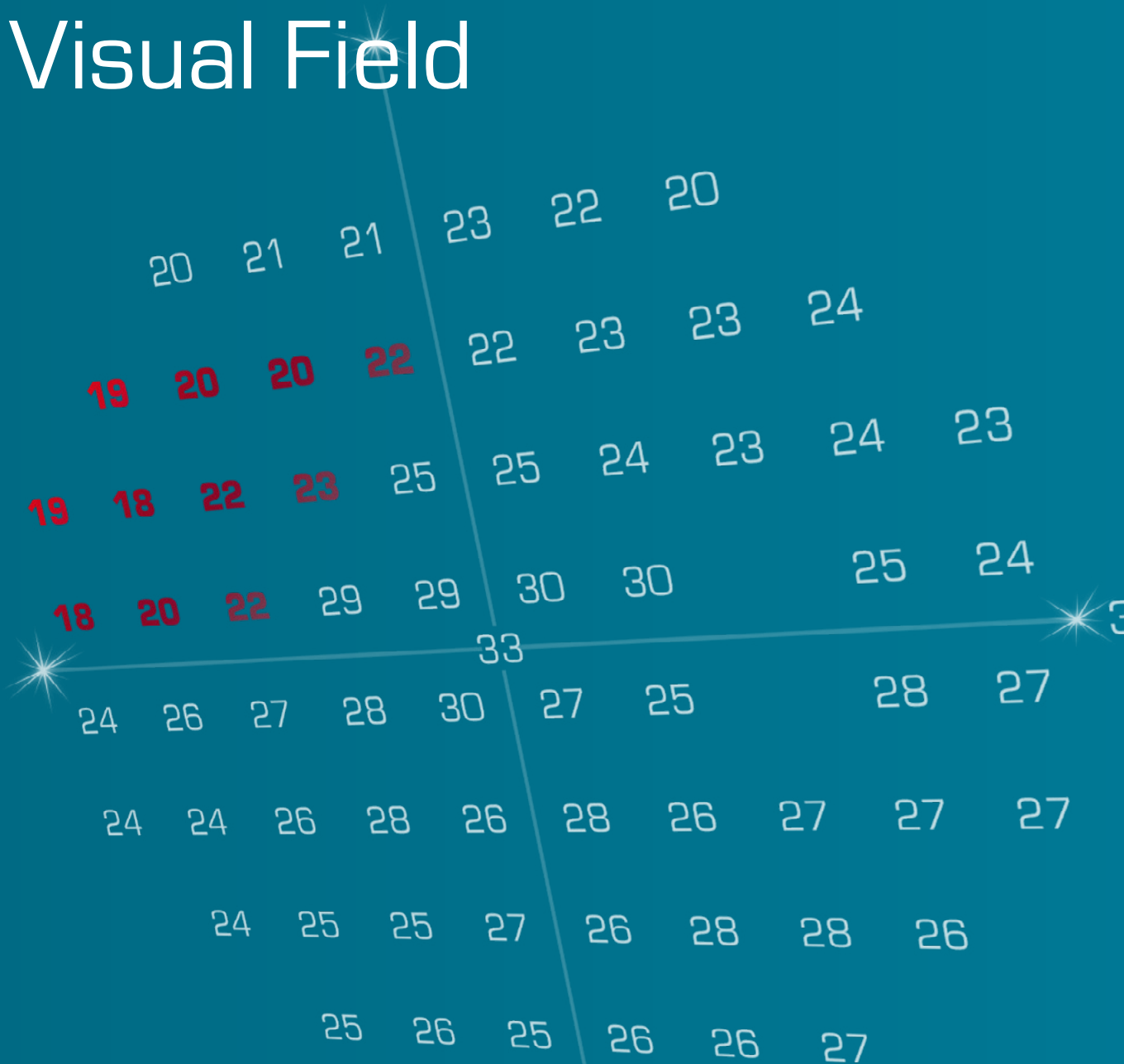


# Experts of the Visual Field

## OCULUS perimeters

Monitoring of retinal function has long been used in the diagnosis and follow-up of glaucoma. OCULUS has the right perimeter for every use: from spherical bowl perimeters covering a 90° visual field suited for all possible indications to compact devices covering the central visual field.

Even with an increasing number of various advanced imaging methods, perimetry remains the only method at hand for direct and comprehensive measurement of the visual function. Visual field tests continue to represent an important tool in early detection, staging and progression control of glaucoma. In the hand of an experienced practitioner, a perimeter is more than just a device for final confirmation of suspicions raised by previous diagnostic procedures; it can provide by itself precise and reliable information necessary for a diagnosis.





OCULUS offers a range of perimeters for every use: from 30° to 90° eccentricity, static and kinetic perimetry, portable or mounted on a purpose-designed table. All four perimeters are intuitive to operate and powered by extremely fast and reliable strategies – good for you, good for your patients.

# Unique software solutions for OCULUS perimeters!

## **SPARK**

Rapid Threshold Strategy

## **PATH**

Predicting Anatomy from Thresholds

## **GSP**

Glaucoma Staging Program

## **TNT**

Threshold Noiseless Trend



### Smartfield

Optimized for monitoring functional impairment in glaucoma

Standard automated perimetry

Ultra-high-luminance LCD screen

Up to 60° eccentricity



### Easyfield® C

Full-fledged compact perimeter,  
up to 30° eccentricity



### Centerfield® 2

Compact projection perimeter,  
up to 70° eccentricity

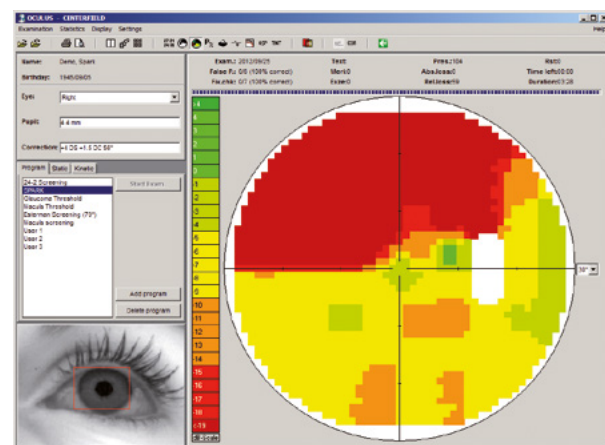


### Twinfield® 2

Versatile projection perimeter,  
up to 90° eccentricity



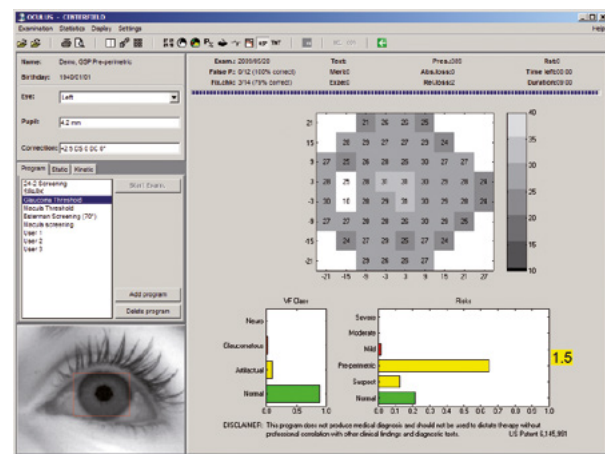
## Unique software solutions for OCULUS perimeters!



### SPARK

Fast and reliable threshold strategy

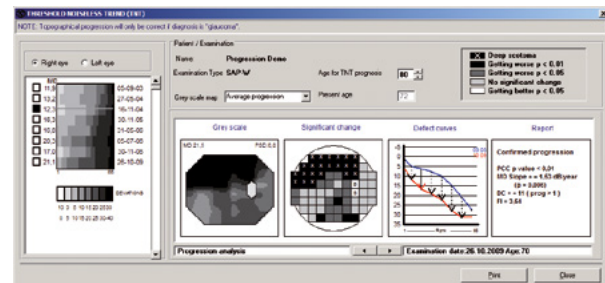
- Tests as fast as 45 seconds to maximum 3 minutes, independent of patient or disease advance
- Optimized for glaucoma patients
- Test variability reduced by 40 %



### Glaucoma Staging Program (GSP)

The integrated expert

- Your built-in glaucoma expert for early recognition and diagnosis of glaucoma
- Indicates early stages of glaucoma, even without obvious visual field defects (pre-perimetric)
- Glaucoma Likelihood Index (GLI): single parameter summary of the glaucoma risk classification



### Threshold Noiseless Trend (TNT)

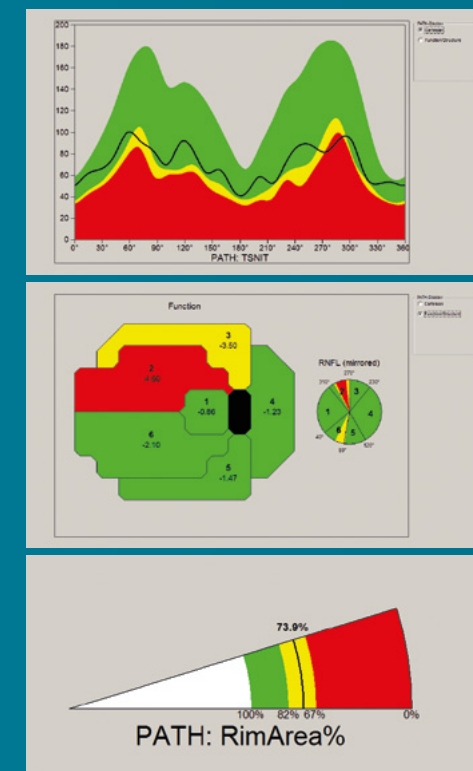
Efficient glaucoma progression analysis

- Objective criteria and reduced noise
- Cumulative grey map for straightforward overview
- Predicts monocular and binocular field

## PATH

Predicting Anatomy from Thresholds

It is generally accepted that in glaucoma there is a close connection between the visual function and the anatomical structure of the retina and the optic nerve head. Based on the high reproducibility of visual field measurements using SPARK, the novel PATH evaluation module provides a prediction for morphological parameters such as retinal nerve fibre layer (RNFL) thickness or the relative area of the neuroretinal rim.



# Experts of Tomography

## The Pentacam® family

### Quick detection of glaucoma with the Fast Screening Report

Glaucoma is one of the most common eye diseases. The Fast Screening Report is a tool for detecting it quickly. Make use of the evaluation of anterior chamber angle, depth, volume and corneal pachymetry data based against normative data.



The Pentacam® provides automatic evaluation of the anterior eye segment, from the anterior corneal surface to the posterior lens surface using a rotating Scheimpflug camera. The non-contact measuring process takes only 2 seconds and performs up to 50 single captures. In total, up to 138 000 true elevation points are detected and processed to a 3D model of the anterior eye segment.



### Pentacam®

The Gold Standard for anterior segment tomography



### Pentacam® HR

High-resolution Scheimpflug images of the anterior eye segment



### Pentacam® AXL

Anterior segment tomography and optical biometry



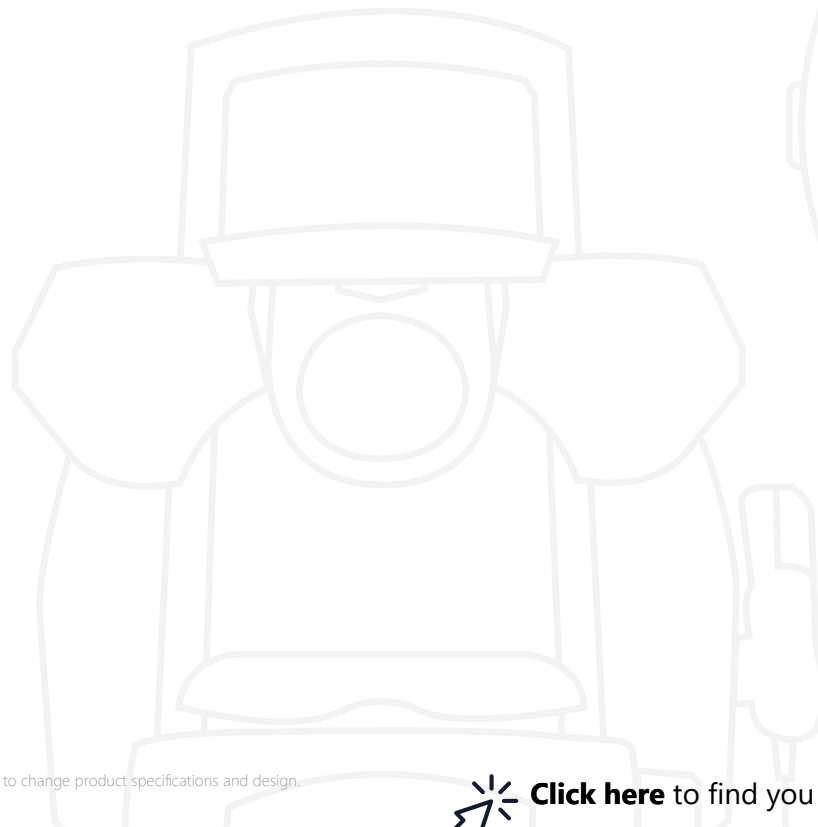
### Pentacam® AXL Wave

The next generation


Scheimpflug-based tomography

Axial length and refraction

Total wavefront and retroillumination



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 **Click here** to find you local distributor!

## Contact us!

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