peri vision

Visionary Eye Testing

VisionOne™
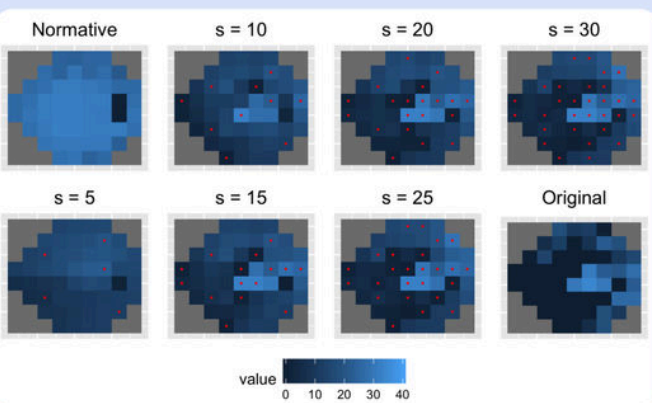
The VR eye testing platform setting a new standard for visual fields

Download our Product Brochure

SORS: A new standard in VFT [1]

Top left shows the starting visual field with age-normalized values. Bottom right shows the true visual field to be estimated. In between, the sequentially estimated visual fields using S 2 {5, 10, 15, 20, 25, 30} location measurements. Red points show the corresponding S tested locations.

SORS (Sequentially Optimized Reconstruction Strategy) is a novel, AI-based visual field (VFT) strategy developed by the University of Bern and the Inselspital / University Hospital Bern, Switzerland's largest eye clinic. SORS learned an optimal path to test a glaucomatous eye based on a training data set of thousands of visual field tests. It uses the learned correlations between the retinotopic test locations to reconstruct untested locations with high accuracy. This in turn allows strong reductions in test time.

STRONG CORRELATION WITH GOLD STANDARD [2]

SORS achieved strong correlations with Dynamic Strategy (DS), a gold standard in clinical practice. For instance, the model with 36 tested locations (SORS 36) demonstrated MD correlations with an R of 0.91 (p<0.0001). Reported R values for the correlation of MD values between DS and SORS remained very high even when the number of test locations was reduced to a third. Moreover, the correlation for tested and untested locations hardly differed, further demonstrating the strength of this novel visual field method.

(d) MD correlation (36 locations tested)
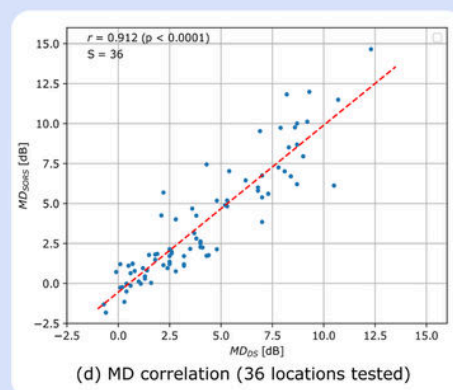
IMPROVED RELIABILITY [3]
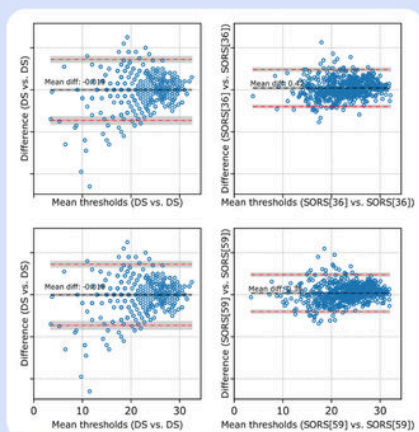
SORS also managed to perform optimally with regards to test-retest variability. Its test-retest variability was smaller than that of Dynamic Strategy: i.e. standard deviations and limits of agreement for SORS test-retest differences were smaller than those for DS. This suggests that SORS VFTs are reliable enough to decouple glaucoma progression from measurement variation. The variation between SORS and DS was also similar (even smaller) than DS test-retest variability, as illustrated by the standard deviation and limits of agreement lines. This points to non-inferiority of SORS compared to DS.
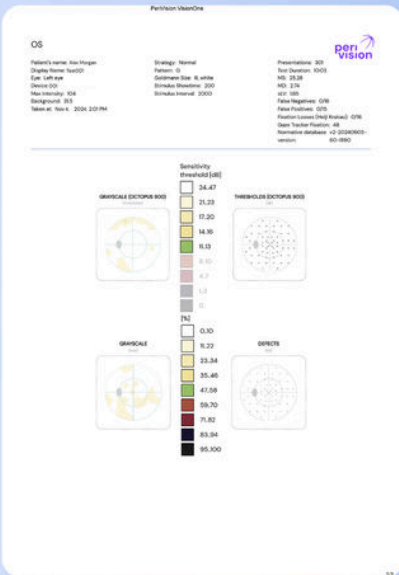
Bland–Altman agreement graphs for SORS vs. DS, DS vs. DS, and SORS vs. SORS for SORS testing 20, 36, and 59 (all) locations given row-wise. The black dotted line corresponds to the mean difference, and red dotted lines correspond to 95% limits of agreements (mean ± 1.96 SD). Light-grey areas are confidence intervals on the mean and limits of agreements.

1) Sequentially optimized reconstruction strategy: A meta-strategy for perimetry testing by Kucur, S. and Sznitman, R. (2017).
2) Comparative Study Between the SORS and Dynamic Strategy Visual Field Testing Methods on Glaucomatous and Healthy Subjects by Kucur et al. (2020).
3) idem

VisionOne™ benefits

✔ Free up staff with virtual assistant in multiple languages

✔ Free up space, test anywhere - even out of your clinic

✔ Offer a comfortable, ergonomic patient-experience

✔ Test multiple patients at the same time

✔ Work with standard outputs for EMR

✔ Up to 70% faster VFT with SORS

✔ Test without an eye patch

+30%
Average additional patient volume with PeriVision estimated by eye doctors in market survey [1]

-65%
Technician time for visual field with AI & automation [2]

~95%
Patients perceiving system as easy to use [3]
★★★★★

1) PeriVision online survey with 30-40 US ophthalmologists and optometrists.
2) Data obtained in PeriVision's clinical study in collaboration with Glasgow Caledonian School of Optometry.
3) Patient survey as part of clinical study described in Comparative Study Between the SORS and Dynamic Strategy Visual Field Testing Methods on Glaucomatous and Healthy Subjects by Kucuer et al. (2020)

Features & specs

Diagnostics

- **VFT Pattern :** 10-2, 24-2, 30-2, G, Esterman (120 degree), Screening 28, Kinetic*
- **VFT Strategies :** SORS, SORS screening, Normal Strategy, Dynamic Strategy, Supra-threshold
- VFT AI-supported progression analysis*
- Non-fixation perimetry*
- Visual acuity*
- Contrast sensitivity*
- Color vision*
- Amsler Grid*

Accessories

- **Custom lensholder****
- **Custom patient clicker**
- **2 headset controllers**
- **Protective case with charging capability**

Specs

- **Screen:** LCD
- **Resolution:** 3664 x 1920
- **PPI:** 773
- **Refresh Rate:** 90Hz
- **FoV:** 98 degrees
- **Weight:** 395g

- **Bluetooth:** 5.1
- **Wi-Fi:** 6
- **Position and Gesture Cameras:** YES
- **Eye Tracking:** YES
- **Virtual Assistant:** YES, in 8 languages
- **Fixation Method:** 1) Heijl Krakau 2) Active Eye Tracking

*Planned release in 2025
** Available in UK and USA, Planned Release in MDR region in 2025

About PeriVison

PeriVision was born out of the eye clinic of the University Hospital Bern in Switzerland to address the unmet clinical need for efficient and reliable visual field testing. At the core of our product are AI algorithms which optimize eye tests, automate assistance, control quality and provide valuable insights for clinical decisions.

We develop our solutions with leading clinics and in collaboration with eye doctors, technicians and patients. Our technology has been validated in clinical studies and we publish our research in peer-reviewed publications.

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info@perivision.com
www.perivision.com