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VAO

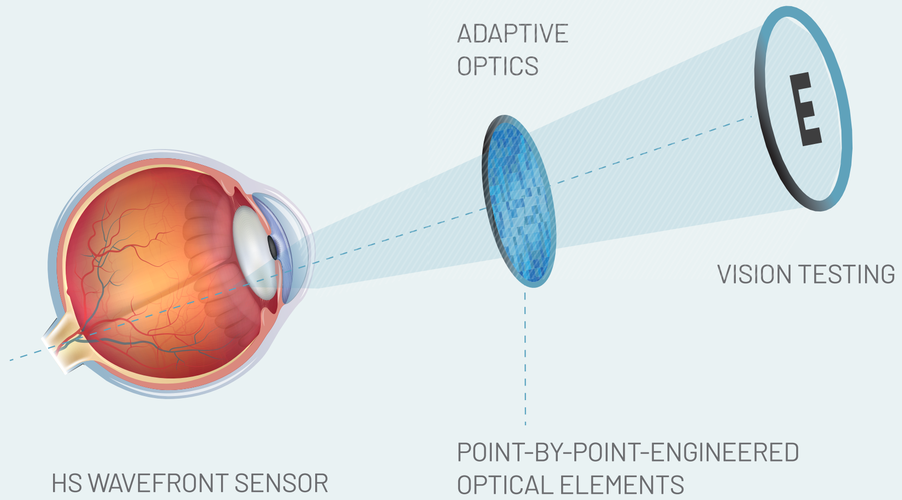
VISUAL ADAPTIVE
**OPTICS SIMULATOR**


VOPTICA
SMART VISUAL OPTICS

# HAVE FULL **CONTROL**
## OVER THE TEST AND THE OPTICS

- **Objective wavefront aberrometry.**
- **AO* subjective correction refinement (refraction + HOA**).**
- **Simulation that provides a real experience of different optical profiles.**

## A TRUE-TO-LIFE **EXPERIENCE**




*Adaptive Optics. **High Order Aberrations.

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# 3-IN-1 DEVICE

## (PHOROPTER, AUTOREFRACTOMETER & ABERROMETER)

**Integrate VAO as your gold standard for eye exams and refractive surgery procedure**

### MEASUREMENT OF OCULAR ABERRATIONS

Obtain your patients´ objective refraction and higher order aberrations automatically.

### MEASUREMENT OF SUBJECTIVE REFRACTION

Obtain the visual prescription by interacting with your patient.

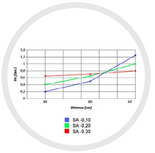
### VISUAL TESTS

Select the best optical solution through a broad variety of advanced visual tests (High & Low Contrast VA, Contrast Sensitivity, Jackson Cross Cylinder, etc..)

## ALLOW YOUR PATIENT TEST

# DIFFERENT OPTICAL SOLUTIONS

## BEFORE SURGERY



### DEPTH OF FOCUS WITH SPHERICAL ABERRATION

The depth of focus protocol will guide you to induce different amounts of spherical aberration to extend depth of focus of a presbyopic patient.

### IOL SIMULATION

VAO is the only instrument able to load any type of IOL profile to allow the patient experience different optical solutions.

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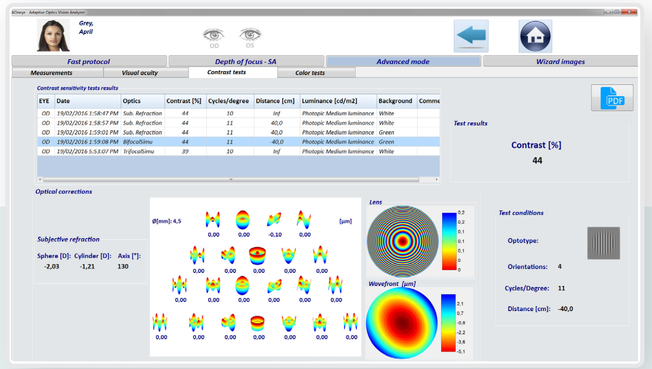
# A VARIETY OF SW MODES
# **FOR YOUR PATIENTS**

## FAST MODE
- Guided clinical protocol

## ULTRA FAST
- Rapid clinical assesment
- Aberration
- Subjective refraction
- Visual acuities
- Glasses presciption




## ADVANCED
- All functionalities in one mode

## DEPTH OF FOCUS

**Each of your examinations are saved automatically and are available at any time in the database for patient follow-up.**

1. Monitor your clinical results .
2. Clinical results in excel file.
3. Analyze your patients results in a PDF report .

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# THE MOST ADVANCE TECHNOLOGY
# **AT YOUR FINGERTIPS**

- Fast evaluation and time reduction in the clinic.
- Simulation able to reproduce all optical profiles.
- Compact, easily integrated into the clinical practice.
- Exceptional diagnostics.
- Exportable database.
- Agile and efficient software.
- User-friendly interface.
- Full-HD touch screen.
- PDF results ready to save, print and send.
- Compatible with clinical software.


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# TECHNICAL **SPECIFICATIONS**

## Aberrometer specifications

| | |
|---|---|
| Aberrometer principle | Hartmann-Shack |
| Pupil sizes | 3 - 8 mm |
| Zernike order | 2nd – 8th order |
| # of micro lenses in maximum pupil | 315 |
| Range defocus | ± 9 D |
| Range astigmatism (negative cylinder convention) | 9 D |
| Range higher order aberrations (4.5 mm) | ± 1 µm |

## Laser specifications

| | |
|---|---|
| Wavelength | 780 nm |
| Maximum laser energy at the corneal plane | 60 µW/cm$^2$ |

## Adaptive optics

| | |
|---|---|
| Phase modulation | LCoS |
| Wavelength range | VIS |
| Number of pixels | 1920 x 1080 |
| Pixel size LCoS | 8 x 8 µm |
| Linearity of modulation | 2 π @ 532 nm |
| Artificial modulation pupil | 4.5 mm |
| Modulator input: Standard wavefront map | Zernike polynomials |
| Modulation input: Custom wavefront map | Upload as csv-file |

## Test stimulus

| | |
|---|---|
| Stimulus screen | HD micro display |
| Colors | > 16.7 million colors |
| Grey levels | 256 |
| Field of view | 3.8º x 2.1º visión angle |

## General specifications

| | |
|---|---|
| Dimensions (L x W x H) | 0.89 x 0.36 x 0.56 m |
| Weight | 25 kg |
| Power input | 230 VAC (50 Hz) |
| Nominal power | 200 W |
| Connectivity | USB, Ethernet |

LASER 1

ISO 13485:2016

Manufactured by: Voptica S.L, Spain.

CE 0476

kiwa

MP-TR_008

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