Auto refractors and keratometers

HRK-8100A

Automatic refraction with central and peripheral keratometry.

The Huvitz HRK-8100A is a wavefront autorefractometer/keratometer. A microlens array containing hundreds of small lenses provides numerous data points for precise assessment of refractive errors. Higher-order aberrations are displayed as a Zernike map to improve understanding of the patient's eye and support clinical decisions. Dedicated modes measure eyes with intraocular lenses or cataracts, while a colour viewing mode assesses contact lens fit.



HRK-8100A · Equipment view

Sources and documentation

Request a quote

View product

Generated on 2026-11-29

This product sheet is prepared by ASEM. It does not replace the manufacturer’s official documentation or instructions for use.

Key advantages

Automatic refraction

Sphere from −30 to +25 D; cylinder up to 12 D.

Sources and documentation · Source checked on 2026-10-05

Peripheral cornea

Central and peripheral keratometry in one examination.

Sources and documentation · Source checked on 2026-10-05

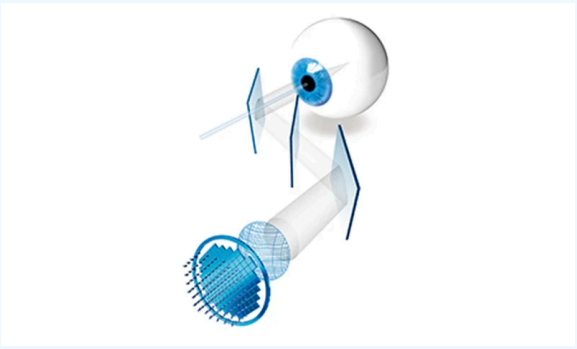
Lens curvature

Contact lens curvature measurement.

Sources and documentation · Source checked on 2026-10-05

Visualise the wavefront

The refractive map represents variations used in optical analysis.



HRK-8100A · Manufacturer diagram

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

Sources and documentation

Sources and documentation · Source checked on 2026-08-30

Detail aberrations

Zernike analysis organises aberrations in a dedicated view.

Sources and documentation · Source checked on 2026-08-30

Compare measurements

The report groups refraction and keratometry values for structured review.

Sources and documentation · Source checked on 2026-08-30

Objective measurement

A workflow dedicated to refraction data acquisition.

Organised settings

Useful information remains accessible in the interface.

Connected flow

Results can join the practice refraction workflow.

Capabilities in practice

Refractometry

Sources and documentation

Keratometry

Sources and documentation

Peripheral keratometry

Sources and documentation

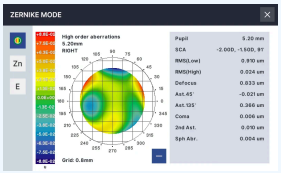
Lens curvature measurement

Sources and documentation

Read aberrations on a Zernike map

The micro-lens array measures the wavefront. Alongside sphere, cylinder and axis, the Zernike map displays coma, trefoil and spherical aberration, among others.

- Sphere, cylinder and axis results.
- Zernike representation of aberrations.



HRK-8100A · Manufacturer report

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

Sources and documentation



HRK-8100A · Manufacturer diagram

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

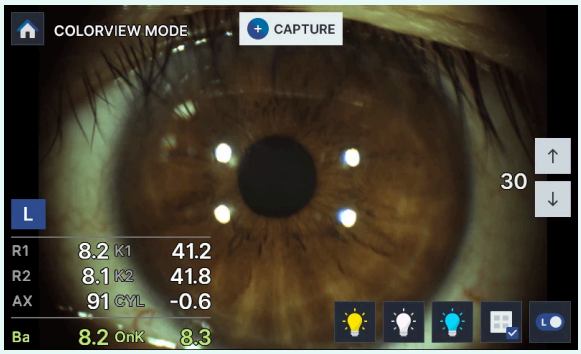
Sources and documentation

Sources and documentation

Add observation to the measurements

IOL and retro-illumination modes complement measurements in the described implant and lens-opacity situations. Color View provides a colour view of the eye and contact-lens fitting.

- Colour camera and white LED for Color View.
- Separate IOL and retro-illumination modes.



HRK-8100A · Manufacturer capture

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

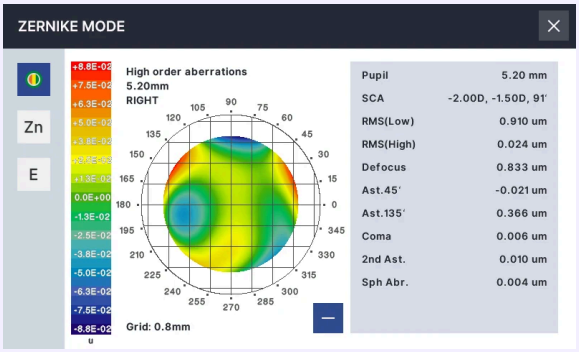
Sources and documentation

Sources and documentation

Detail higher-order aberrations

The Zernike map complements refraction values with a representation of wavefront components.

- Coma, trefoil and spherical aberration.
- Secondary astigmatism and tetrafoil.



HRK-8100A · Manufacturer report

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

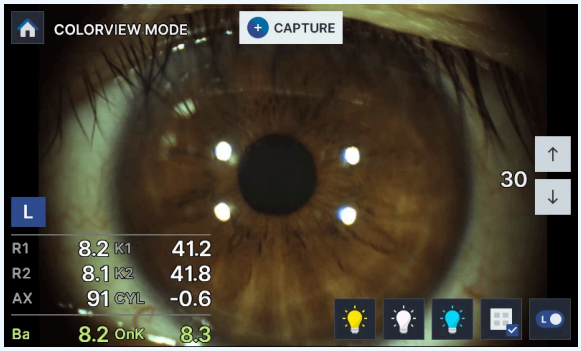
Sources and documentation

Sources and documentation

Position the diameter markers

Eye capture allows the iris and pupil to be measured in the dedicated mode.

- Diameter range from 2 to 14 mm.
- Colour view for contact-lens observation.



HRK-8100A · Manufacturer capture

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

Sources and documentation

Sources and documentation

Key functions

Wavefront technology: a Huvitz microlens array analyses multiple focal points in a light wavefront for precise detection of refractive errors.

Aberration map: alongside conventional sphere, cylinder and axis data, the HRK-8100A provides a graphical higher-order aberration map to support detailed ocular assessment and clinical decisions.

IOL and RET-ILLUM modes: designed for eyes with intraocular lenses or cataracts, these modes allow observation of lens opacity or corneal damage associated with contact lens wear.

Colour viewing mode: a colour CCD camera and white LED illumination assess contact lens fit, a function previously associated with slit lamps.

Intuitive interface: consistent icons and muted colours reduce visual fatigue and facilitate navigation.

Medical features

Wavefront analysis:

A microlens array provides detailed measurement of refractive errors and aberrations.
Zernike aberration map:

Displays higher-order aberrations for detailed assessment of the eye's optical quality.
Specialised IOL and cataract modes:

Dedicated assessment for eyes with intraocular lenses or cataracts.
Contact lens assessment:

Colour viewing assists precise contact lens fitting directly on the instrument.
LED technology and CCD camera:

Enhanced images and measurements support clinical precision.

The HRK-8100A in medical practice

Precise, fast assessment:

Wavefront technology and Zernike aberration mapping provide detailed refractive error analysis for accurate prescriptions.

Comprehensive eye assessment:

Dedicated intraocular lens and cataract modes accommodate patients with complex conditions and provide reliable measurements.
Personalised care:

Colour contact lens viewing assists fitting, reducing discomfort and improving patient satisfaction.
Time savings for professionals:

An intuitive interface and advanced functions support efficient consultations.

Patient comfort:

Non-invasive measurement and advanced technology make examinations more comfortable while providing high-quality results.

Zernike

Wavefront analysis:

A microlens array provides detailed measurement of refractive errors and aberrations.
Zernike aberration map:

Displays higher-order aberrations for detailed assessment of the eye's optical quality.
Specialised IOL and cataract modes:

Dedicated assessment for eyes with intraocular lenses or cataracts.

Designed for a smoother workflow

Measure central and peripheral cornea

Peripheral keratometry records curvature and eccentricity around the centre. The fitting guide brings together blue-light observations and keratometry values.

- Curvature review beyond the corneal centre.
- Curvature and eccentricity parameters.

Sources and documentation

Designed for daily practice

Prepare centration before measurement

Automatic tracking and height controls support patient positioning.

- Up and down controls.
- Acquisition guidance in the interface.

Sources and documentation

Technical specifications & documentation

Brand
Huvitz

Model
HRK-8100A

Technology
Refractor / auto-refractor

Clinical use
Diagnostics and biometry

Minimum sphere
-30 D

Vertex distance 12 mm.

Sources and documentation

Maximum sphere
25 D

Sources and documentation

Maximum cylinder
12 D

Sources and documentation

Minimum pupil diameter
2 mm

Sources and documentation

Adjustment ranges
Vertical 30 mm; lateral 10 mm; longitudinal 10 mm; chin rest 60 mm

Sources and documentation

Power supply
100–240 V AC ; 50–60 Hz

Sources and documentation

Dimensions
524 × 262 × 439 mm

Sources and documentation

Weight
20.5 kg

Sources and documentation

Vertex distance 12 mm.



HRK-8100A · Manufacturer diagram

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

Sources and documentation

Downloads & resources

- https://huvitz.com/wp-content/uploads/2025/02/20241203_HRK-8100A_eng_catalog_v2.pdf
  Source checked on 2026-10-05
- https://huvitz.com/en/product/hrk-8100a/
  Source checked on 2026-08-30
- https://huvitz.com/en/product/hrk-8100a/
  Source checked on 2026-10-18
- https://huvitz.com/wp-content/uploads/2025/02/20241203_HRK-8100A_eng_catalog_v2.pdf
  Source checked on 2026-10-18

Your questions about HRK-8100A

What is the documented Minimum sphere of HRK-8100A?

-30 D — Vertex distance 12 mm.

Sources and documentation

What is the documented Maximum sphere of HRK-8100A?

25 D

Sources and documentation

Which configuration should I confirm for HRK-8100A?

Vertex distance 12 mm.

Sources and documentation

Which iris and pupil measurements are described?

The brochure describes image-based diameter measurement from 2 to 14 mm. This is separate from refraction, keratometry and colour-observation modes.

Sources and documentation

What does the Zernike map add to SPH/CYL/AX results?

It represents coma, trefoil, spherical aberration, secondary astigmatism and tetrafoil, among others. These components complement the standard refractive values.

Sources and documentation

Which viewing modes are described?

The manufacturer page distinguishes Color View, IOL and retro-illumination. The colour camera and white LED support eye observation; the contact-lens fitting guide uses blue illumination.

Sources and documentation

Related products



HRK-9000A

Huvitz

Auto refractors and keratometers

Refraction and ocular surface assessment in one instrument.

View product



HRK-1

Huvitz

Auto refractors and keratometers

Refraction, keratometry and contact lens fitting assistance.

View product



HTR-1A

Huvitz

Auto refractors and keratometers

Refraction, cornea and intraocular pressure in a combined platform.

View product



Eyestar 900

Haag-Streit

Optical biometry

Optical biometry and keratometry in a system using EyeSuite.

View product

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Browse related areas of the ASEM catalogue. These links do not extend the indications of this device.

Diagnostics and biometry

More than a device, a long-term partnership

Discuss your project with ASEM: equipment selection, installation, training and technical support.



Service illustration

Installation

Discuss the installation requirements and configuration with our technical team.

Learn more

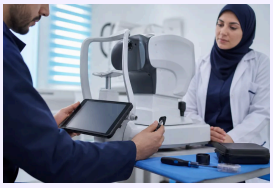


Service illustration

Training

Ask about the training and familiarisation available for your equipment.

Learn more



Service illustration

After-sales service

Contact ASEM for technical assistance and the support appropriate to your equipment.

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Service illustration

Expert advice

Tell us about your clinical needs to discuss a suitable equipment selection.

Learn more

Contact a specialist | Explore all products | Manufacturer website

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