WavePAK

Scheimpflug Imaging System



Bring modern, advanced anterior-segment imaging to your clinic or hospital. Contact EVOptica for current technical support and service terms.

Triple C-Blue® Technology

The original manufacturer developed Triple C-Blue, a blue-light Scheimpflug system with three CCDs.

WavePAK Software Modules

WavePAK follows the software quality and reliability standards of the instrument range. Modules available for anterior-segment analysis include:

- Image processing and editing.
- 2D/3D surfaces: view all four anterior-segment surfaces individually or together in 2D or 3D; rotate, enlarge, analyze curvature in diopters, and more.
- Printing: generate a personalized report, print to PDF or send by email.
- Glaucoma analysis: measure and monitor changes in the angle between the iris and anterior cornea.
- Export examinations in PDF format for iPhone, iPad and tablets generally.

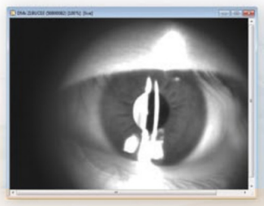
Benefits for the Physician

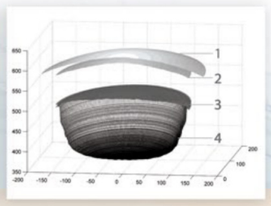
- Fast examinations, with an average examination time of 20 seconds reported in the original brochure.
- Noncontact instrument; the source states that technologists and office staff can also operate it.
- Integrated anterior-segment analysis, including pachymetric measurements, supports examination workflow.

Image Capture and Processing









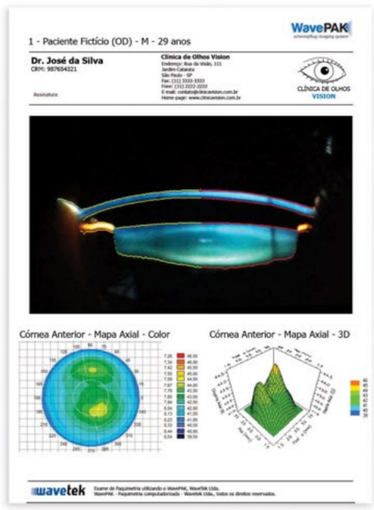
WavePAK offers straightforward image capture and high-quality images through a simple alignment system based on the central pupil image. The image-processing module uses 360 images captured by three high-resolution cameras. In the 3D viewer, the user can enlarge, rotate and make point measurements with the mouse cursor, providing a broad set of analysis tools to support diagnosis.

Surface illustration number	English caption
1	Anterior cornea
2	Posterior cornea
3	Anterior crystalline lens
4	Posterior crystalline lens

Comprehensive, Detailed Reports

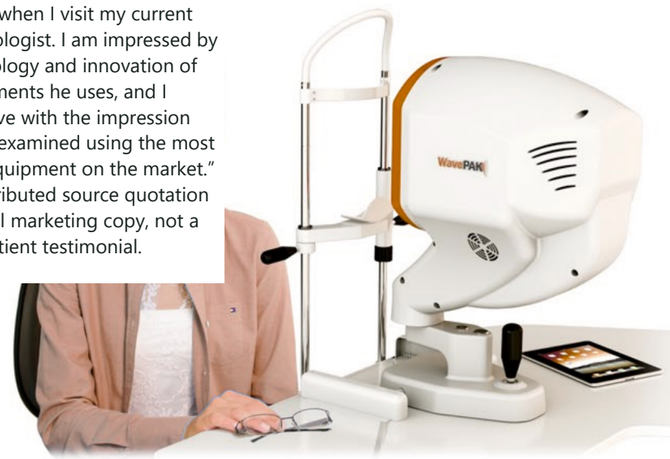
WavePAK reports provide detailed examination information to support the physician's diagnosis. Reporting-module features include:

- Print a choice of examination-related images and 2D or 3D maps, including the Scheimpflug image.
- Print the clinic logo.
- Print patient, clinic and physician information, with space for the physician's signature if desired.
- Space for notes or customized text containing the physician's diagnosis or recommendation for that patient.
- Local or network printing, or delivery by email.



Technology, Speed and Patient Experience

Historical promotional quotation in the original brochure: "I feel reassured when I visit my current ophthalmologist. I am impressed by the technology and innovation of the instruments he uses, and I always leave with the impression that I was examined using the most modern equipment on the market." This unattributed source quotation is historical marketing copy, not a current patient testimonial.

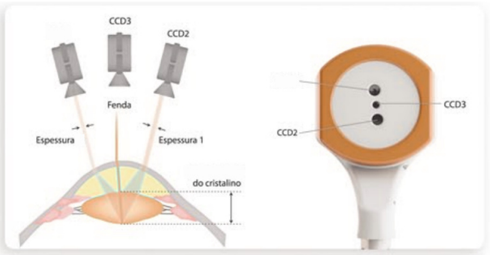


Portable and Mobile Diagnosis

PDF files provide an interface for iPad, tablets and iPhone. Physicians can receive examinations in their office or by email to review them or show them to patients without paper printouts. The source describes use over the clinic's local Wi-Fi network or 3G without wires or cables. Tablets and mobile phones also provide a paper-saving way to deliver examination copies to patients.



Triple C-Blue Scheimpflug Principle



The two lateral cameras, CCD1 and CCD2, provide positioning and focusing and simultaneously capture the 360 Scheimpflug images. The pupil camera is aligned with the blue super-LED slit, labeled CCD3, to provide central alignment. The source also describes measurement of crystalline-lens thickness and early cataract detection to help the physician and patient assess surgical timing.

The original brochure describes Triple C-Blue as a patent-pending blue-light Scheimpflug system with three CCDs. As illustrated, the three CCDs are positioned so that image capture and correction for distortions caused by saccadic movements and refractive-index differences are compensated, supporting the accuracy of the final result even when reflected beams from the anterior segment have different thicknesses.

Technical Support and Maintenance

WavePAK combines modern electronics with an ergonomic housing for versatility and robustness. Side ventilation helps support operation during intensive use and challenging temperature and humidity conditions. The original brochure emphasized its Brazilian development and manufacture, serviceability and local parts supply. Contact EVOptica for current maintenance, replacement-parts availability and service terms.

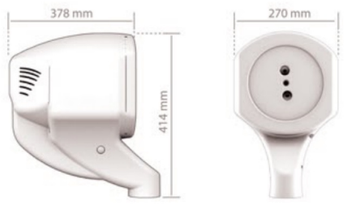


Technical Specifications

Specification	Source configuration
Photographic coverage	10 × 10 mm (central camera and 2 lateral USB cameras)
Magnification	1.3×
Working distance / focal distance	40 mm
Image processing	360 images
Measured meridians	180, at 1-degree increments
Measured points	162,000
Software	Developed in Brazil for the Microsoft Windows platform; original offer included free upgrades for 1 year
Software maps and modules	Axial and instantaneous (tangential) curvatures in diopters and curvature radius in mm; Zernike elevation; wavefront and optical-aberration calculations for all anterior-segment surfaces: anterior cornea, posterior cornea, anterior lens and posterior lens
Database	For thousands of patients; described in source as virtually unlimited, capable of storing millions of patients and examinations. Back up by copying a single file to various media, including USB drive
Monitor	19-inch color LCD or LED
Computer (CPU)	Pentium dual-core or higher
Voltage	110/220 V
Power consumption	Normal 65 VA; maximum 190 VA
Dimensions with table	1383 × 960 × 396 mm
Optical head dimensions	414 × 270 × 378 mm
Weight	9 kg

Other Software Features

Feature	Source description
Early ectasia detection	Topographic and pachymetric maps; anterior and posterior elevation maps; pachymetric progression curve
Corneal aberrometry	Complete Zernike-polynomial maps; foveal-image simulation using ray-tracing algorithms; MTF (Modulation Transfer Function), PSF (Point Spread Function), Strehl ratio and others
Anterior chamber assessment	Depth map of the entire chamber; iridocorneal-angle measurement
Crystalline-lens assessment	Lens densitometry; early cataract detection
Holladay analysis	Preoperative cataract assessment; intraocular-lens calculation in corneas that have undergone surgery



Representative: contact EVOptica.

Historical development: the original R&D and Engineering team in Sao Carlos, Sao Paulo, Brazil developed this principle. INPI patent registration was pending at publication.

Trademark footnote: trademarks belong to their respective manufacturers and are cited for clarification only.

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