eidon

The First True-Color Wide-Field Confocal Scanner

Company Profile

CenterVue designs and manufactures highly automated medical devices for the diagnosis and management of ocular pathologies, including those that represent the leading causes of blindness.

Our goal is to design Smartly Simple devices that enable Eye Care Specialists to better preserve patients' quality of vision by detecting preventable disease, and in doing so dramatically improve their quality of life.

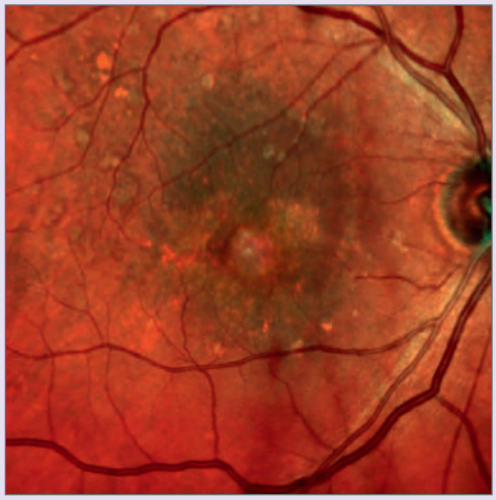
CenterVue is headquartered in Padova, Italy, with the US branch in Fremont, California. CenterVue is present in over 70 countries with its distribution network.

Confocal vs. non-confocal imaging

Enhancement of confocal Image Quality

SLO systems are superior to conventional fundus cameras in many ways, as they exploit a confocal imaging principle which limits the effect of backscattered light from deeper layers and provides enhanced image quality. Another major advantage of SLO systems is that they operate with much smaller pupils than conventional fundus cameras.

However, SLO systems do not provide color images, as they typically employ multiple, monochromatic, laser sources, resulting in black and white or pseudo-color images.



SLO, pseudo-color image

EIDON, true color image

Differently from existing SLO systems, EIDON is a scanning ophthalmoscope that uses WHITE light instead of monochromatic lasers, hence providing true color imaging and offering major benefits in terms of fidelity to real retinal appearance, no distortion and dilation-free operation.

Introducing Eidon

The first true color scanning ophthalmoscope

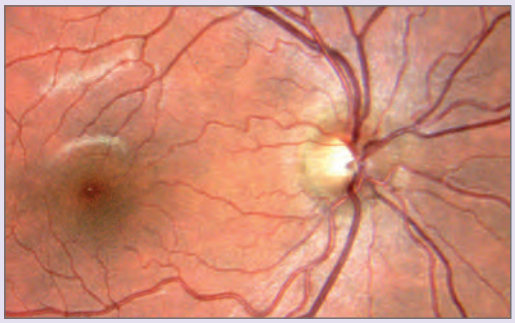
EIDON is the first system to combine the advantages of SLO with the fidelity of true color imaging, setting new performance standards in retinal imaging. EIDON provides unsurpassed image quality, 60° field in a single exposure, a unique, live, confocal view of the retina, three different imaging modalities and dilation-free operation, all integrated in a versatile system that provides new opportunities in retinal diagnostics.

The device is operated via a tablet with a multi-touch, high resolution, color display; it works with a dedicated software application and operates as a standalone unit. A joystick is provided when manual operation of the device is desired.

The importance of white-light confocal imaging

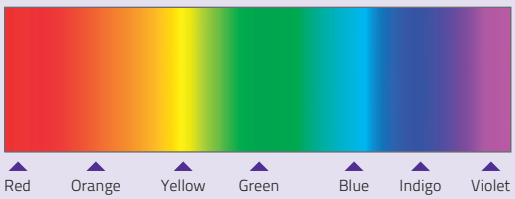
This particular technology facilitates diagnosis and monitoring of retinal diseases such as diabetic retinopathy, age-related macular degeneration and glaucoma. EIDON improves retinal diagnostics capabilities in that it offers:

- Greater contrast than a traditional fundus camera
- Preserved image quality in presence of media opacities such as cataract
- High resolution images
- No dilation down to 2.5 mm pupil
- No optic disc bleaching
- No saturation of the red channel like in traditional fundus cameras



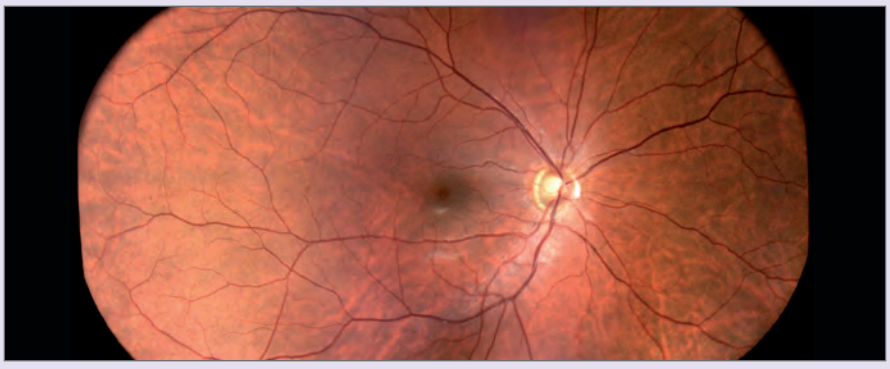
What you see is what it is !

The unique combination of confocal imaging and white light illumination offers superior image quality and color fidelity. Using white light, the retina appears as it looks when directly observed, as the entire visible spectrum is present in the captured image.



Wide field imaging

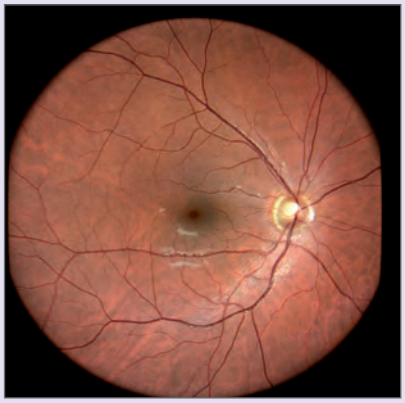
- Wide field optics allow imaging the central retina as well as the periphery.
- Infrared, live viewing of a wide field (out to 110°) is possible using the programmable internal fixation target.
- Fixation target can be displaced directly on the touch screen to frame different fields.
- An external fixation target is provided, for use in the counter lateral eye: 150° can be reached in manual mode.



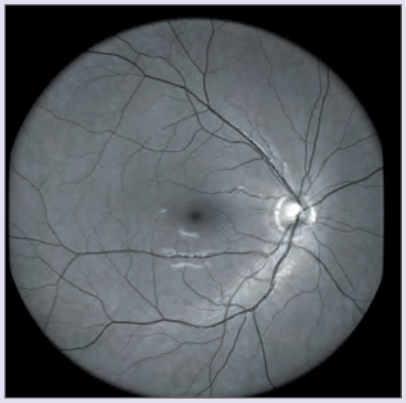
Multiple Imaging Modalities

Multiple confocal imaging modalities - true color, red-free, infrared - provide specific information concerning different layers.

- Red-free is useful to enhance the visibility of the retinal vasculature and retinal nerve fiber layer
- Infrared (825 – 870 nm) provides information corresponding to deeper layers (choroid)
- True color is obtained using white illumination (440 - 650 nm)



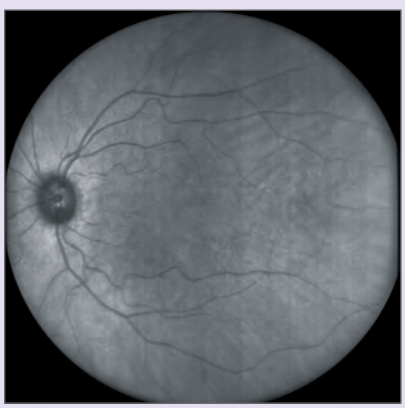
Central field, color



Central field, red-free

Color mosaic in automatic mode, 110°

Nasal peripheral field, color 60°



Central field, infrared image

Optic disc detail

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From fully automated to fully manual mode and everything in between

Intuitive commands provide total flexibility during use, ranging from fully automated control to manual operation.

At any time it is possible to stop the automatic alignment and switch to manual mode using the joystick, while auto-focusing can be combined with manual adjustment.

Ergonomic and motorized chin rest. Improved cleaning ability of the patient rest cushions.

Touch screen interface and high resolution.

Digital joystick is used for manual alignment and focusing.

Connectors on the back include 3 USB ports and Ethernet.

Manual mode allows:

- Override of the auto alignment function
- Override of the auto-focusing function
- Placement of the fixation target at any position
- Override of the auto capture function

Automatic mode includes:

- Auto alignment of the instrument to the patient's pupil
- Automatic focusing to correct for spherical refraction (-12D + 15D)
- Automatic exposure and capture of single or multiple fields, in single or dual modality (color and/or infrared)

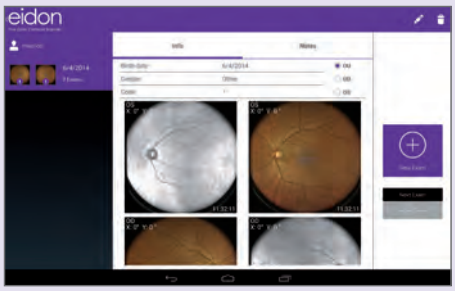
Connectivity Anytime Everywhere

EIDON offers embedded capabilities for Internet and network connectivity, both wired and Wi-Fi, for remote data viewing and secure data backup.

Enhancing patient comfort and practice workflow

LED flash technology guarantees maximum patient comfort as it uses a low power light source.
This in turn reduces pupil constriction and facilitates the test on non-cooperative subjects.

- User friendly software interface
- It takes no time to learn how to use
- Fully automated
- Compact device (no need for external computer)
- Exam time is less than one minute per eye (single field)
- High resolution Tablet



Technical specifications*

Class and type of applied part

1, B (according to EN 60601-1)

IP classification:

IPX0 (according to the degree of protection provided by the enclosure with respect to harmful penetration of particulate matter or water)

Image acquisition:

- Non-mydriatic (minimum pupil size 2,5 mm)
- Field of individual image: 60° (H) x 55° (V) captured in a single exposure
- Sensor resolution: 14 Mpixel (4608 x 3288)
- Light source: infrared (825 - 870 nm) and white LED (440 - 650 nm)
- Wide field Mosaic: out to 110° (H) x 95° (V) in automatic mode
- Wide field Mosaic: out to 150° in manual mode
- Working distance: 28 mm
- Resolution: 60 pixel/deg
- Optical resolution on the retina: 15 microns
- Pixel pitch: 4.9 micron

Other features:

- Imaging modalities: color, IR, red-free
- Automatic operation: auto-alignment, auto-focus, auto-exposure, auto-capture
- Auto-focusing adjustment range: -12D to +15D
- Dynamic, programmable internal fixation target, in every position of the field
- Tablet operated, with 10.1" multi-touch, color display
- Wi-Fi connectivity through tablet
- Ethernet connection through device
- Patient presence sensor
- Hard disk: SSD, 240 GB

Dimensions:

- Unit Size: W 620 x H 590 x D 360 mm
- Unit weight: 25 kg

Power supply:

- 100-240 VAC, 50-60 Hz
- Power consumption: 80 W (see label)

Accessories:

- External power supply
- 3D Joystick with holder
- Tablet with holder and USB cable
- User manual
- Lens cap
- Removable forehead-rest
- External fixation

* Specifications are subject to change without notice for improvement.

CE 0123

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True Color Confocal Scanner

" Eidon, three best ways to obtain:

Infrared light images to detect what
is invisible to the human eye

Confocal aperture for getting sharp images
with better visualization of details

Confocal white light technology to obtain
real color images through a small pupil."

Prof. G. Staurenghi - Eye Clinic Director
at University of Milan and Sacco Hospital

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