Canon

CR-2 AF
CR-2 PLUS AF

Digital Retinal Camera

Non-Mydriatic Cameras

The CR-2 AF and CR-2 Plus AF

Non- Mydriatic Cameras with an extensive array of automated functions.
The auto functions make daily operation much easier. For patients with ocular opacities, involuntary eye movement, lack of cooperation and small pupils, the possibility of full manual control is always available.

CR-2 AF

CR-2 Plus AF

Infrared Anterior Imaging

Fundus Autofluorescence Imaging

Photometric Auto Exposure

Adjusts the optimal intensity of the observation light and flash intensity in real-time.

Auto Switching from Anterior to Retina

When aligned correctly on the pupil, the retinal observation mode will be activated automatically.

Auto Shot

Once the alignment, working distance and focus are correct, the picture will be taken automatically.

Auto Focus

Fast and accurate automatic focusing.

Multifunctional joystick

It provides most functionalities of the camera, including the focusing. The up and down movement is even powered for very comfortable operation.

Vari-angle screen

For optimized viewing angles, so the camera can be operated while seated or standing up.

Short reaching distance

The compact design allows the operator to easily keep the patient's eye open with one hand and permits an excellent view of the patient's eye.

Ergonomics

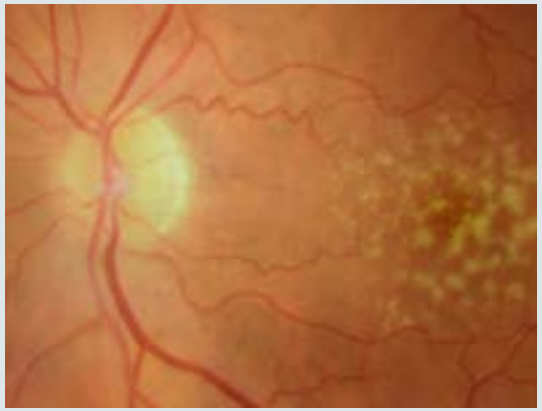
Specially shaped surface to act as grip, easy handling for quick and efficient image capture.

32.5 MP Purpose-built digital camera

Canon, as world-leading camera manufacturer, has created a unique digital camera: the EOS Retina - specifically for ophthalmic photography. Dedicated algorithms in the internal DIGIC image processor provide optimal Image parameters for retinal imaging . It results in the best possible retinal image, with representation of true colors.

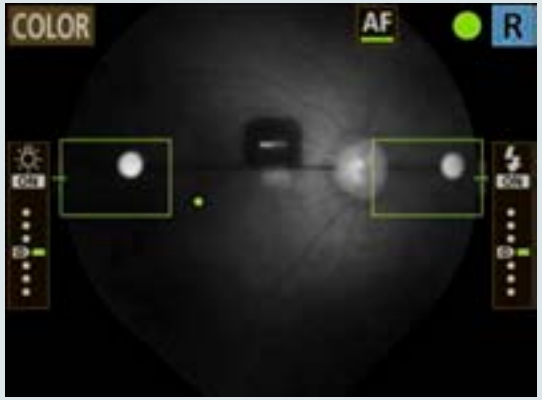
Optimal image parameters for retinal imaging

Dedicated image processing reduces the gradation of overexposure: low-intensity sections (macula) are clearly visible, while the high-intensity area of the optic disc is not too bright.



Fully integrated

Functionalities of the retinal camera are fully integrated with the EOS Retina. The camera body can be exchanged easily when upgrading to a newer model or service requirements, a great advantage over built-in digital cameras.



Photometric Auto Exposure

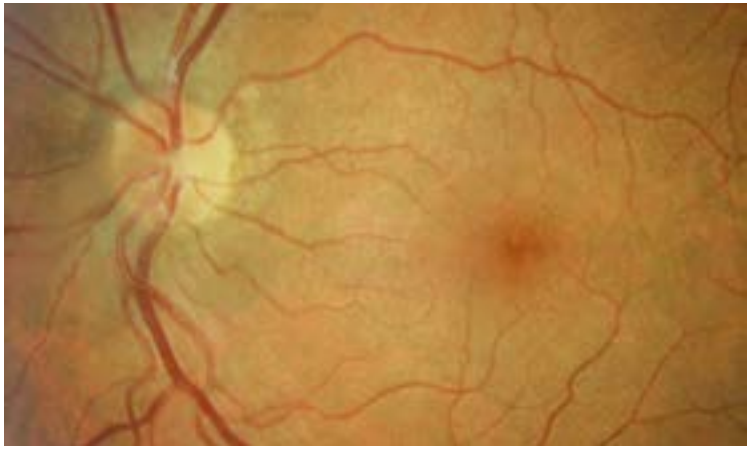
This unique method automatically adjusts the optimal intensity of the observation light and flash intensity in real-time, depending on the reflected light from the retina. Always correct exposure, independent of ethnicity or pupil size. Retaking images is not required and saves time in daily pratice. Additionally, there is a low flash mode to reduce patients' discomfort or for taking images of both eyes without waiting.

45 Degrees images

The imaging standard for retinal screening.
(67.5 degrees when using center of eye as reference)

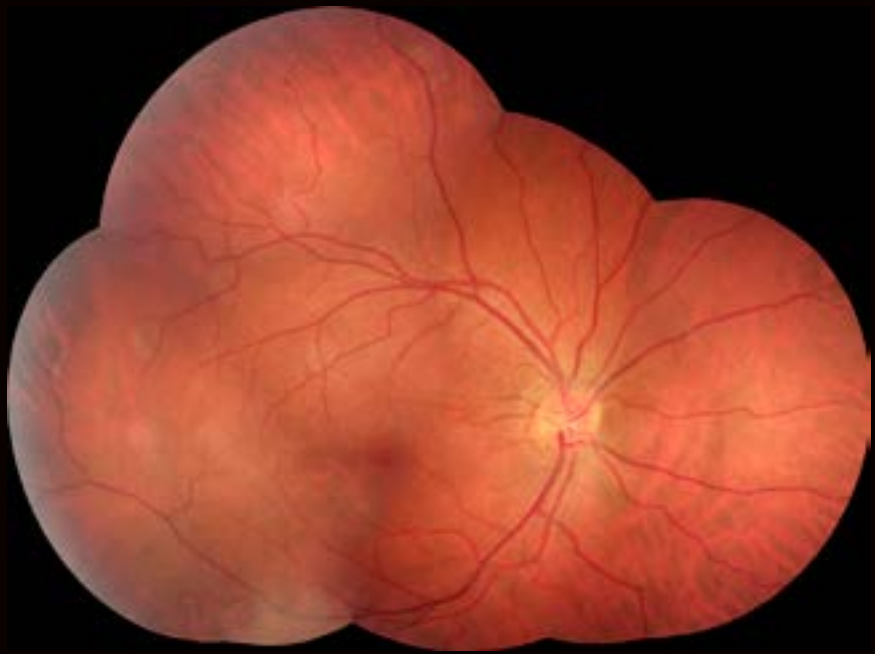
X 2 Magnification

Digital zoom (30 degrees image) without any loss of image quality.



Wide field Imaging

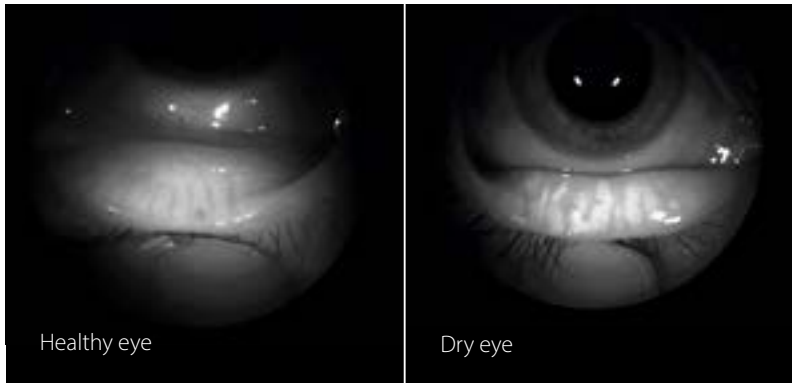
Combine up to 20 images into a wide field mosaic image covering an area of up to 100 degrees. The operator is assisted by automatic fixation light guidance.



Anterior Infrared Photography

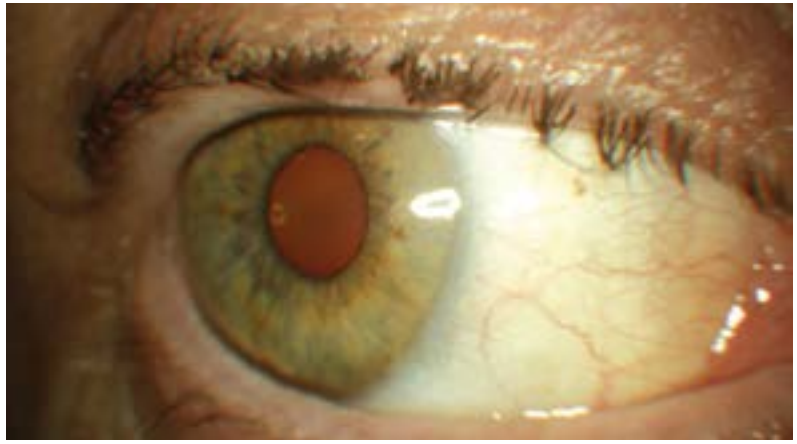
Use the anterior IR Photography mode to check the condition of the Meibomian glands, an important factor related to dry-eye conditions.

This mode is only available on the CR-2 AF.



Anterior Photography

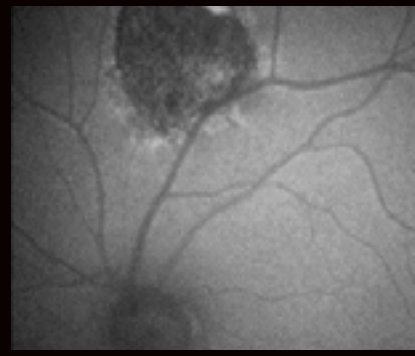
Quick and easy anterior segment photography to document the cornea, pupil, eyelid and sclera.



Fundus Auto Fluorescence (FAF)

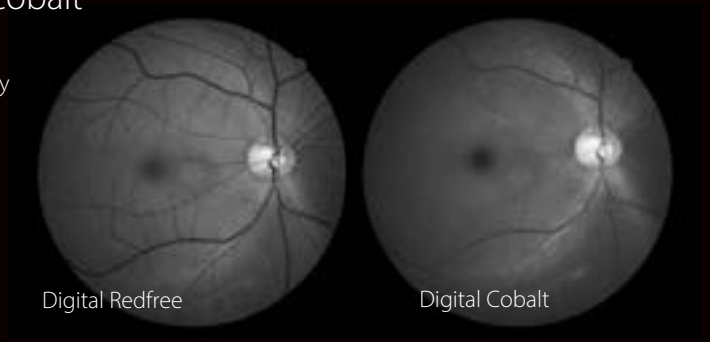
FAF imaging is non-invasive and provides information that may otherwise not be clinically detectable.

Available on CR-2 Plus AF only.



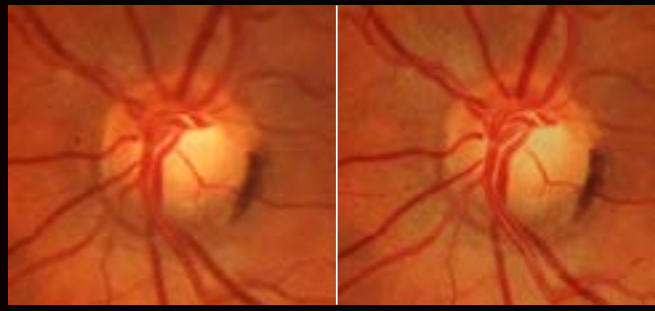
Digital Redfree and cobalt imaging paragraph

The images will be automatically generated from the original RAW color image data. It is not required to capture any additional images. Canon's proprietary image processing provides an image quality fully comparable with optical filters.



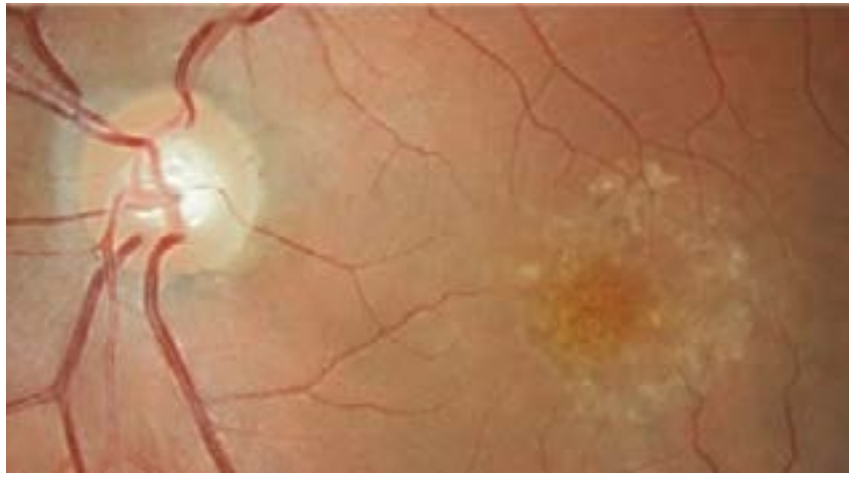
Stereo Photography

Capturing stereo pair is made simple with guidance by the EOS Retina: simply follow the stereo guide marks as they appear on the LCD display.



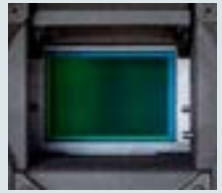
High Definition image quality

See more than ever before with the new Canon EOS 32.5 MP Digital camera and latest high quality optics. Canon was the first company to introduce a Non Mydriatic camera in 1976. Building on that legacy and incorporating Canon's latest optical and digital camera technologies into its retinal cameras, results in an unrivalled retinal image quality.



32.5 MegaPixel

This extraordinary high sensor resolution really maximizes the information provided by the sophisticated optics of the retinal camera, to visualize even the smallest details.



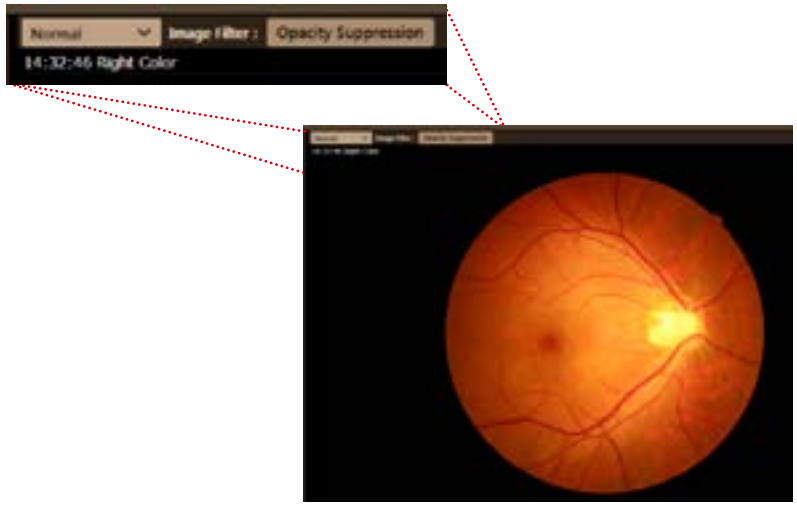
DLO (Digital Lens Optimizer)

It is fundamentally impossible to make a perfect lens: every lens will exhibit a greater or lesser degree of optical irregularities. Digital technology inside the EOS camera provides the ability to adjust the images for these shortcomings. It can sharpen the image by correcting the aberrations of the optical system. It provides improved sharpness of the blood vessels and optic nerve fibres and colors are shown even more clear.

Canon Opacity Suppression

When obtaining retinal images, ocular opacities can cause several problems. Canon's patented Opacity Suppression is a unique and sophisticated software tool, that based on all available information from the EOS Retina sensor, will largely suppress the effect of ocular opacities on color images.

Canon's Opacity Suppression can be used while capturing the image, but also afterwards when making the report.



Original image

Canon Opacity Suppression

Original image

Canon Opacity Suppression

Ocular opacities will result in scattering of the light and will make the edges of the blood vessels appear blurred, and the difference in brightness of the retina will be reduced, making it very difficult to distinguish between structures. Additionally a cataract eye will cause images to appear more yellow.

With Canon Opacity Suppression the original brightness and color of the retina will be restored and the blood vessels will appear much clearer.

Fundus Auto Fluorescence (FAF)

FAF Imaging is a diagnostic technique for visualizing the deposition of lipofuscin in the retinal pigment epithelium (RPE). It is easy and non invasive since FAF does not require an injection with a fluorescein dye. FAF has proven to be very useful for the early detection of age related Macula Degeneration (AMD), one of the leading causes of visual impairment. Recent studies indicate that FAF Imaging can also aid in the diagnosis of a variety of other diseases and even in the detection of intraocular tumors. FAF is only available on the CR-2 Plus AF.

Clinical gallery

Macular blood

AMD

"With the extra feature of FAF imaging we have discovered retinal changes we have not seen before and which makes us learn more about retinal changes and diseases every day we use the Canon retinal camera."

Rune Brautaset | Professor
Vice-chairman Committee for Higher Education
Head of division for Eye and Vision
Karolinska Institutet, St Erik's Eye Hospital,
Stockholm, Sweden.

Karolinska Institutet

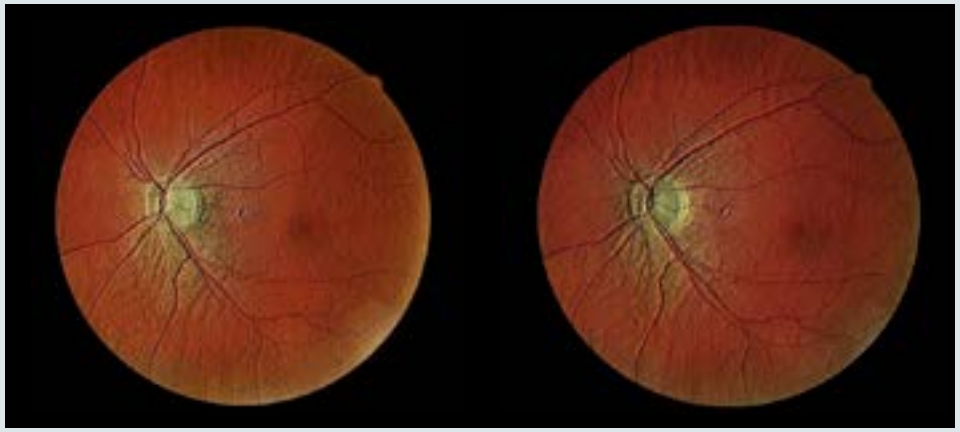
Images courtesy of Karolinska Institutet, Stockholm, Sweden.

Optimized workflow

Canon's Retinal Expert software (RX) has a very intuitive Graphic User Interface, making daily operation very pleasant. The software does not require the time consuming input of patient data manually but it can import lists from the practice management system or even a modality worklist in a DICOM environment. With the cache functionality - storing recent studies on the capture station - the access to previous examinations is considerably faster since there is no download waiting time due to limited network speed. It seamlessly integrates with other software such as the standard Command Line Interface and Launcher function (soft 1~3) of the Canon software. From your practice software, the RX software can automatically open on the patient for capturing or reviewing reports.

RX Software

RX Software offers an impressive arsenal of tools to assist your diagnosis and to create a clear and complete report. Use the emboss function on a retinal image, change its gamma value, adjust its brightness and contrast, change its color balance, add annotations to it, and analyze its C/D ratio. Images can also be rotated, flipped and mirrored.



Emboss Negative

The blood vessels stand out.

Emboss Positive

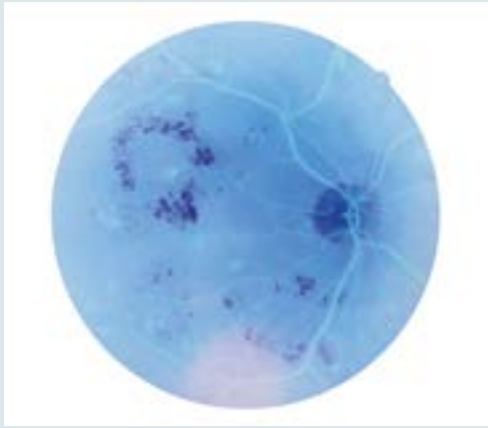
The optic disc stands out.

Annotations

Add a shape and text to a captured image.

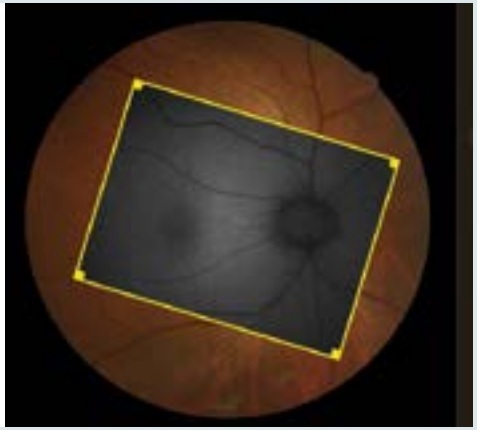
Cup/disc measurement

Measure the optic nerve papillary area.



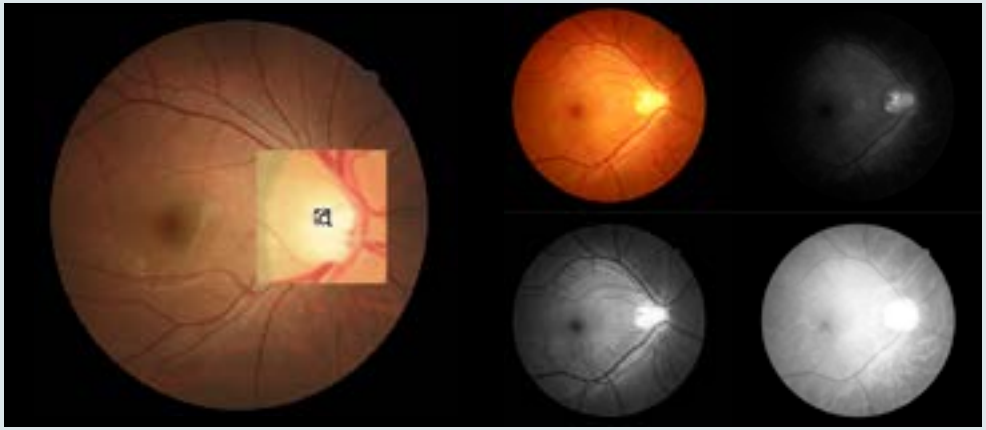
Color

Inverts the color of an image to assist diagnosis.



Overlay

Overlay two images to see differences and changes in pathology.



Loupe function

To assist diagnosis.

RGB Channel view

View separate RGB channels.

Single Eye Report

Offers various ways to display multiple images of the same examination. With the Color/RGB button, the color image can also be displayed in separate RGB channels.

Mosaic

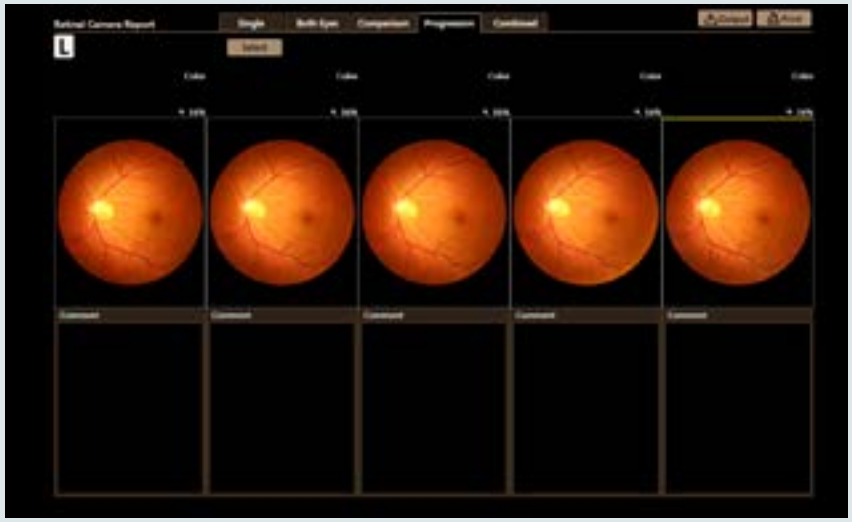
Automatic stitching of up to 20 images for a very wide combined image.

Comparison Report

Displays images of the same side eye with previous studies to compare them. With the overlay functions, changes over time of the retina can be observed more clearly.

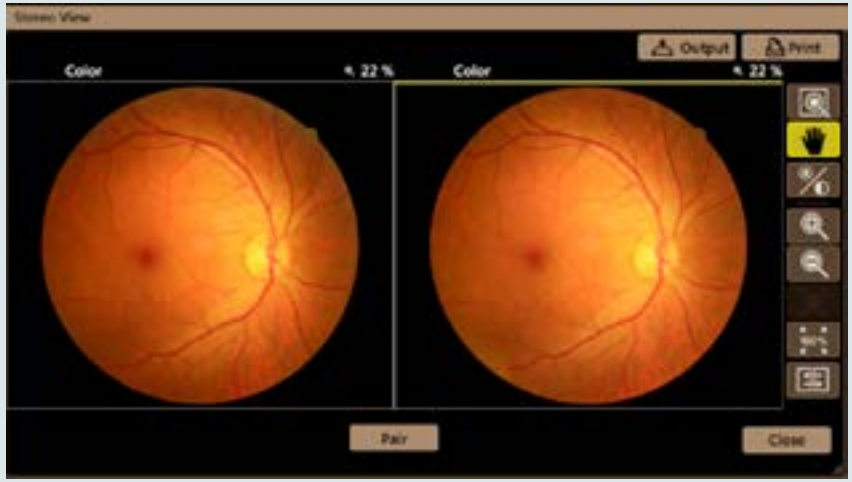
Both eyes Report

Compare left and right eye together.



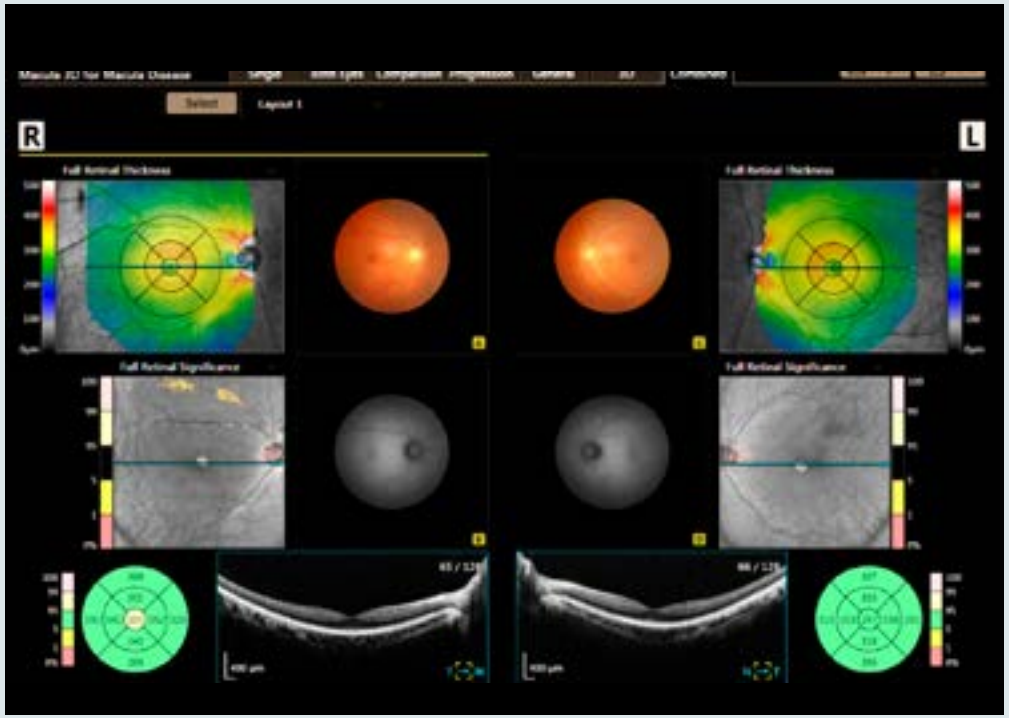
Progression Report

Observe progression over time; select up to 5 past examinations for comparison.



Stereo Photography view

Pair and view two images.



Combined Report: OCT + Retinal image

Shows the analysis results of retinal images, accompanied with OCT Images, obtained with a Canon OCT. The fully automatic image exchange offers a great workflow advantage over combination units.

Clinical gallery

Idiopathic Intracranial Hypertension

Massive papilledema with pericapillary cotton wool spots and haemorrhage in the nerve fibre layer.

Branch Arterial Occlusion

Pale retinal area inferior to the fovea, in the first bifurcation of the lower retinal artery, a cholesterol embolus can be seen.

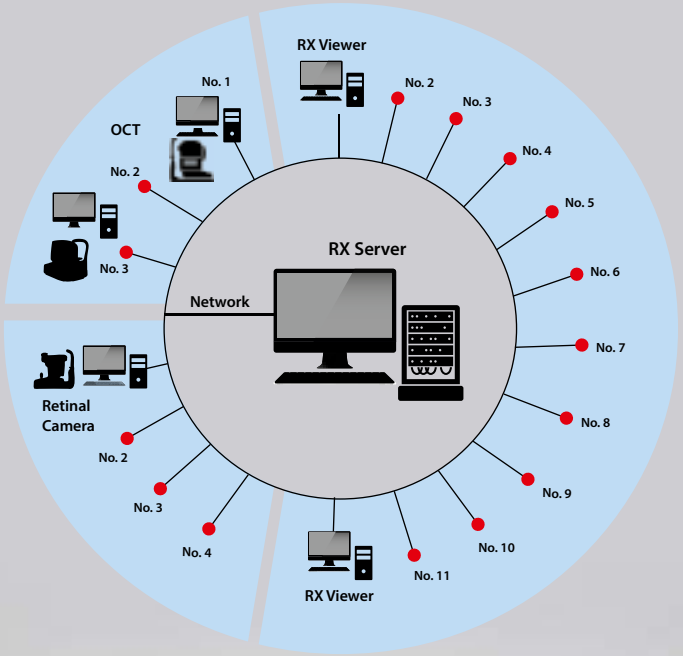
Central Venous Occlusion

Flame shaped retinal haemorrhages along with tortuous and dilated veins.

Tuberous Sclerosis

Mulberry-like white tumors of the optic disc and retina.

A scalable IT solution to match all your patient data and connectivity requirements



Canon Medical's Retinal Expert (RX) Ophthalmic Software Platform ranges from stand-alone installations to server-based multi-access solutions, combining Canon's retinal cameras and OCTs. The multi-modality platform is designed for seamless integration into your existing EMR system or practice management software and also offers cloud based storage solutions. RX Software is fully DICOM compliant - included as standard.

With comprehensive anonymization tools, central account and user management, as well as advanced logging capabilities, Canon's RX software is fully GDPR compliant. The software protects the privacy of your patients and allows you to properly document your studies.

Stand alone

The RX Capture software is fully integrated with Canon retinal cameras and enables capturing, reviewing and reporting in stand-alone mode. It also serves as a database including archiving.

Viewing station

RX Viewer software allows you to access all patient data for reviewing and reporting from remote locations while the database remains on the RX server.

Server solution

With the RX server software you can connect multiple modalities and viewers while storing all images and patient data on a centralized server.

RX

Specifications

Features	CR-2 AF	CR-2 PLUS AF
Resolution in Megapixels	32.5 MP	32.5 MP
Color. Digital Red Free, Digital Cobalt	YES	YES
FAF photography mode	NO	YES
Anterior photography	YES	YES
Anterior IR photography	YES	NO
Angle of view	45 ° / 2 x digital magnification	45 ° / 2 x digital magnification
Minimum pupil size (SP Mode)	Ø 4,0 mm (Ø 3,3 mm)	Ø 4,0 mm (Ø 3,3 mm)
Working Distance	35 mm	35 mm
Low flash mode	YES	YES
Observation light source	IR LED	IR LED
Flash light	LED	Strobo tube
Observation Monitor	3,0 inch LCD Monitor	3,0 inch LCD Monitor
Video output	Full HD on an external monitor	Full HD on an external monitor
Auto Focus	YES	YES
Auto Shot	YES	YES
Auto Switching (from anterior to retina observation)	YES	YES
Auto Exposure	YES	YES
Dimensions: w x d x h (mm)	305 x 500 x 473	305 x 500 x 513
Weight (kg)	15,0	19,9
Optional Accessories	External fixation light (EL-1F)	External fixation light (EL-1F)

For PC requirements please consult our authorized dealer

Canon

https://eu.medical.canon

Model number: CR-2 AF, CR-2 Plus AF
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Canon Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485. Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

Made For life