

CR

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CR-2 AF  
Digital Retinal Camera



## CR-2 AF

The CR-2 AF is a Non Mydriatic Camera with extensive auto functions. Taking images with a Canon retinal camera has never been easier!

The camera offers fast and accurate Auto Focus, Auto switching from anterior to retinal observation and Auto shot but also the unique photometric Auto Exposure where the flash and observation light intensity is determined automatically during every examination, based on real-time measurement of retinal reflectance, for perfect images in a single capture, regardless of pupil size or ethnicity.

For patients with ocular opacities, involuntary eye movements, lack of co-operation and small pupils the CR-2 AF also provides full manual control.



## See the smallest details, don't miss pathology

Canon was the very first company to introduce a Non Myd Retinal Camera as far back as 1976. The CR-2 AF was built on that legacy; it is equipped with superb Canon optics and Canon's own EOS digital camera technology, with its renowned image processing capabilities, has been adapted exclusively for Canon retinal cameras to offer optimal retinal imaging, for the highest image quality.

In addition, the unique Canon Opacity Suppression feature largely suppresses the effects of cataracts and other ocular opacities.



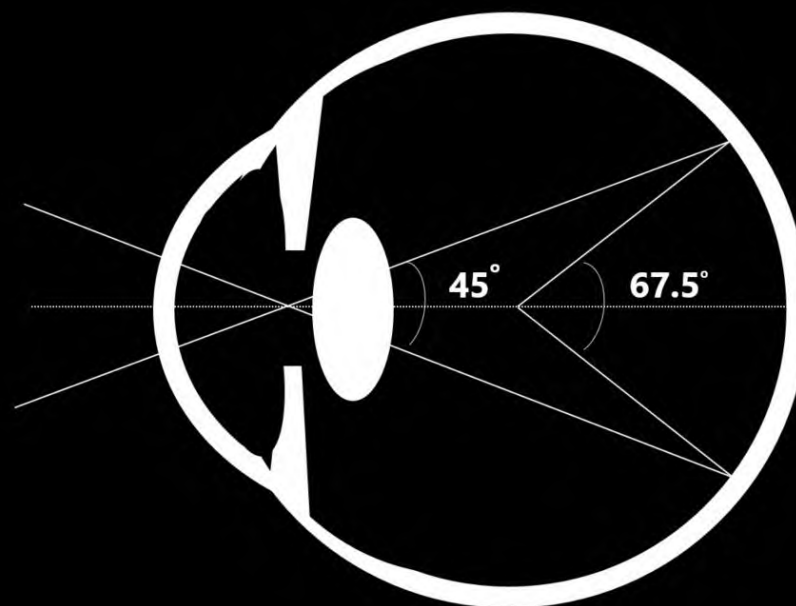
## Ease of use

The compact design of the CR-2 AF results in a short reaching distance and allows the operator to easily keep the patient's eye open with one hand and permits an excellent view of the patient's eye. The stage part has a specially shaped surface to act as a grip; it provides easy handling for quick and efficient image capturing.



## 45 degrees

CR-2 AF provides Non Mydriatic images at a 45 degrees angle (67.5 degrees when using center of eye ball as reference).



Angle of incidence vs central angle of view

## Centralized controls and multifunctional joystick

Operation panel with Centralized controls and multifunctional joystick for intuitive operation. Switches are illuminated for easy operation in darkened rooms.

The multifunctional joystick combines many functions:

It is used to control the up and down movement of optical head, which is powered for effortless operation.

Besides the shutter release button there is an alignment button to switch between view of anterior eye and retina and a focus ring that can be used for manual focus control.



## Low flash photography

In addition to the photometric Auto Exposure, the CR-2 AF offers low flash photography. This reduces patients' discomfort greatly, It improves workflow since images of both eyes can be taken without hindered by pupil restriction. Ideal for photophobic patients.

## Fixation Lamp shifting presets

The CR-2 AF offers the possibility to preset 4 fixation lamps patterns for the internal fixation. Each pattern has a maximum of 9 positions. Suitable to be used with various screening protocols.



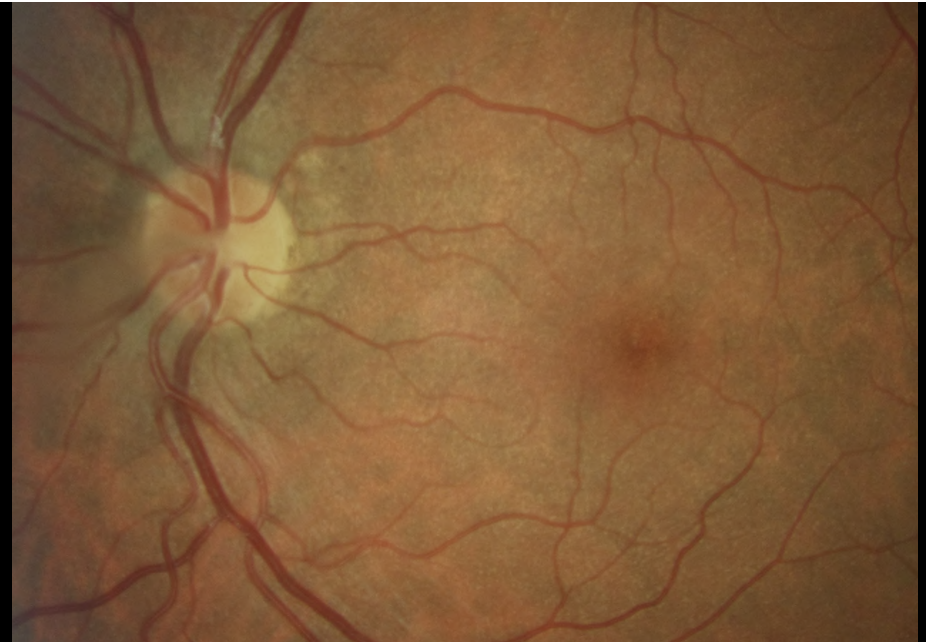
## Portability

The CR-2 AF was designed to be transported to a another location very easily. The camera only weighs 15 kg and has special grips for easy carrying. The RX Capture software can easily be installed on a laptop and images can be easily uploaded afterwards to a server. It makes the device very suitable for mobile screening. The entire configuration can be easily transported in dedicated transport case.



## 2X magnification

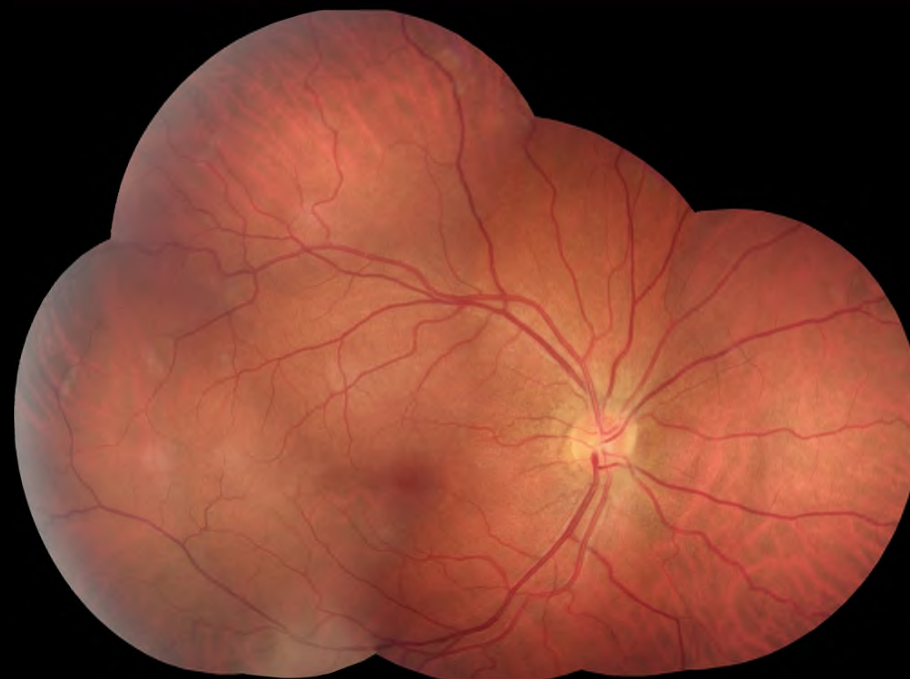
In addition the CR-2 AF is equipped with a 2X button that provides a 2x digital magnification or depending on a setting, a 30 degrees image.



## Widefield Imaging

Utilizing optional Mosaic software, up to 20 images can be combined into a high resolution wide field image including the peripheral retina (up to 85 degrees).

The automatic fixation light guidance of the retinal camera can be of assistance in capturing the images.





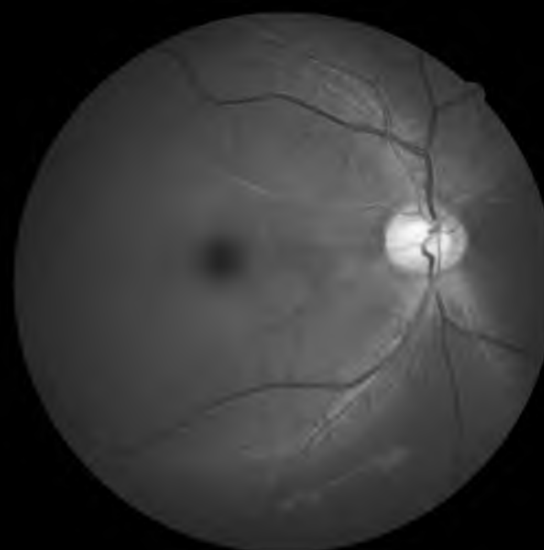
## Digital Redfree and cobalt image

Without having the requirement to take an additional image, the RX software can create a digital red free or cobalt image from the color image. It is based on the Canon EOS retina technology and proprietary image processing - using the original RAW image of the digital camera.

The image quality is fully comparable with images obtained with optical filters.



Digital Redfree

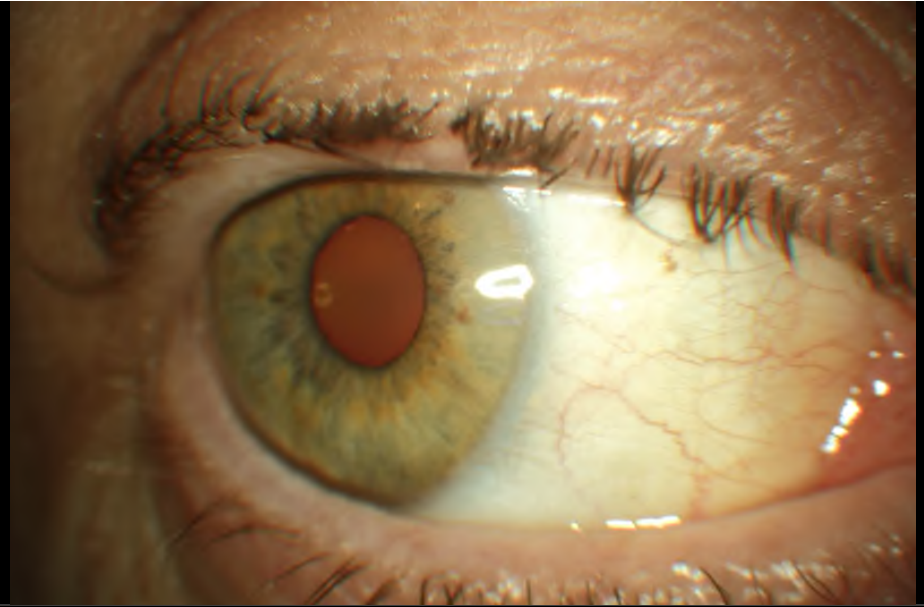


Digital Cobalt

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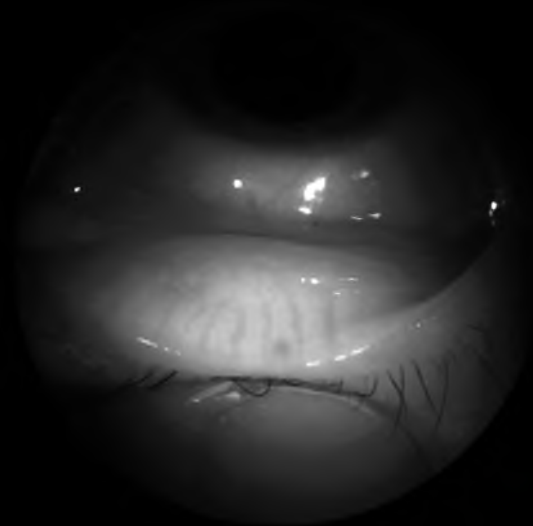
## Anterior Segment Photography

The CR-2 AF offers quick and easy anterior segment photography to document the cornea, pupil, eyelid and sclera.

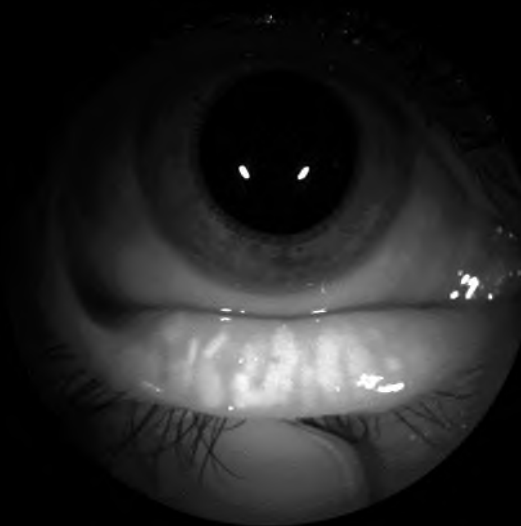


## Anterior IR photography

Using the IR Photography mode it is possible to photograph the condition of the Meibomian glands, an important factor related to dry-eye conditions. Failure of these glands will affect the quality and stability of the tear film, which in turn will produce classic dry eye symptoms.



Healthy eye

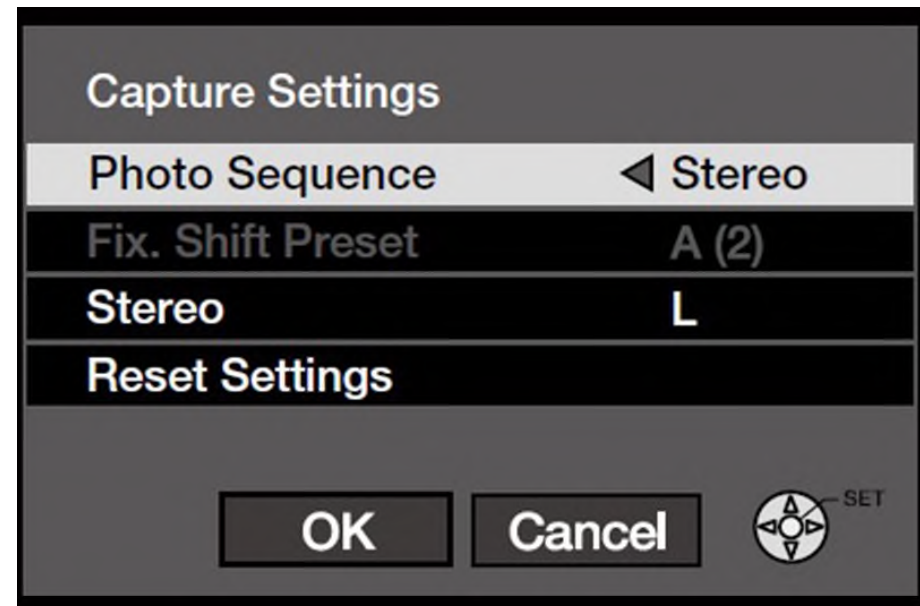


Dry eye

## Stereo Photography

The CR-2 AF is suitable for stereo photography as well, by taking two retinal images sequentially to form a stereo pair.

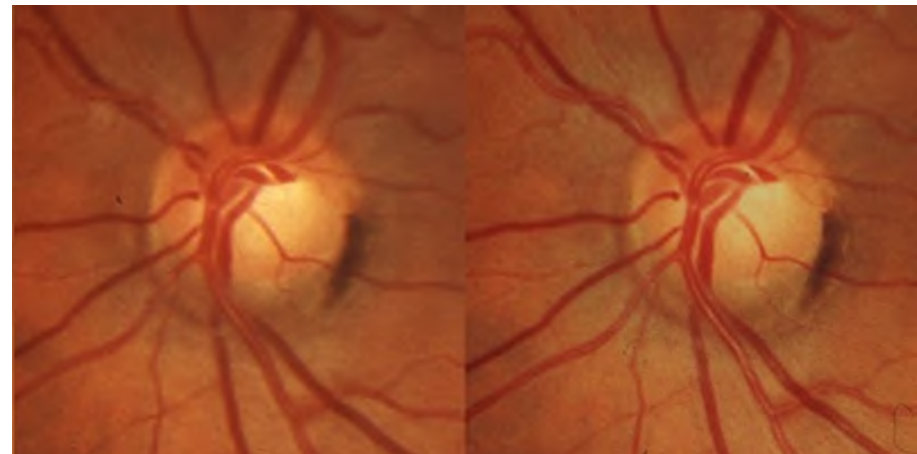
The capture sequence is simple with easy stereo guides that are shown on the observation monitor. Or create a stereo set manually and create a pair in the RX software.



Stereo guide marks

## Stereo viewing

A standard commercial optical stereo viewer can be used for reviewing. The individual images of the stereo pair can be aligned easily in the RX software to obtain maximum stereo effect.



Stereo Pair

CR-2 Plus AF



## CR-2 Plus AF

The Canon CR-2 Plus AF Digital Non-Mydriatic Retinal Camera provides Color and Fundus Autofluorescence (FAF) imaging within a small compact design. FAF imaging will provide information on changes of the retina that can't be made visible with standard colour photography.

The camera offers fast and accurate Auto Focus, Auto switching from anterior to retinal observation and Auto shot but also the unique photometric Auto Exposure where the flash and observation light intensity is determined automatically during every examination, based on real-time measurement of retinal reflectance, for perfect images in a single capture ,regardless of pupil size or ethnicity.

The CR-2 Plus AF is equipped with a unique dedicated EOS digital camera for the highest image quality.





### See the smallest details, don't miss pathology

Canon was the very first company to introduce a Non Myd Retinal Camera as far back as 1976 The CR-2 AF was built on that legacy, it is equipped with superb Canon optics and Canon's own EOS digital camera technology, with its renowned image processing capabilities, has been adapted exclusively for Canon retinal cameras to offer optimal retinal imaging, for the highest image quality.

In addition the unique Canon Opacity Suppression feature largely suppresses the effects of cataracts and other ocular opacities.



Color



FAF

## Ease of use

The compact design of the CR-2 Plus AF results in a short reaching distance and allows the operator to easily keep the patient's eye open with one hand and permits an excellent view of the patient's eye. The stage part has a specially shaped surface to act as grip; it provides easy handling for quick and efficient image capturing.



## Centralized controls and multifunctional joystick

Operation panel with Centralized controls and multifunctional joystick for intuitive operation. Switches are illuminated for easy operation in darkened rooms.

The multifunctional joystick combines many functions:

It is used to control the up and down movement of optical head, which is powered for effortless operation.

Besides the shutter release button there is an alignment button to switch between view of anterior eye and retina and a focus ring that can be used for manual focus control.

Switching to FAF mode is simply a push of a button.



## Low flash photography

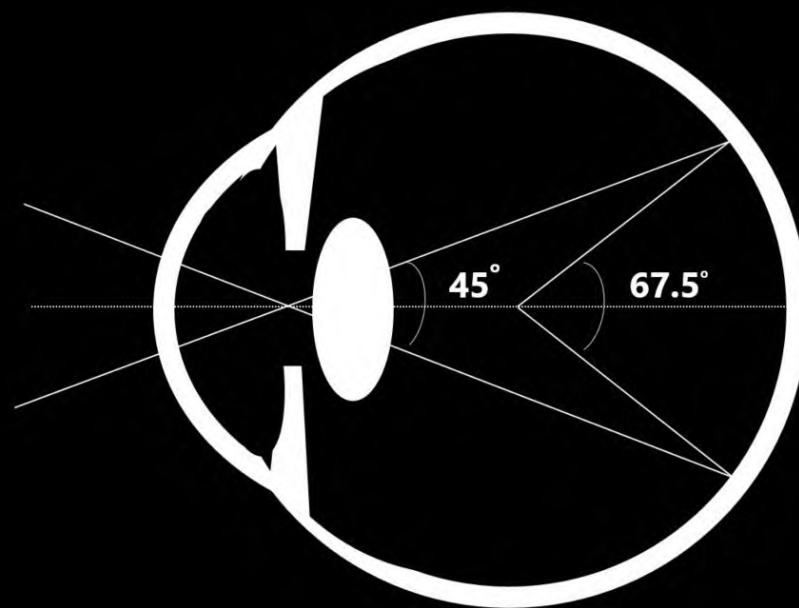
In addition to the photometric Auto Exposure, the CR-2 Plus AF offers low flash photography. This reduces patients' discomfort greatly, It improves workflow since images of both eyes can be taken without hindered by pupil restriction. Ideal for photophobic patients.

## Fixation Lamp shifting presets

The CR-2 Plus AF offers the possibility to preset 4 fixation lamps patterns for the internal fixation. Each pattern has a maximum of 9 positions. Suitable to be used with various screening protocols.

## 45 degrees

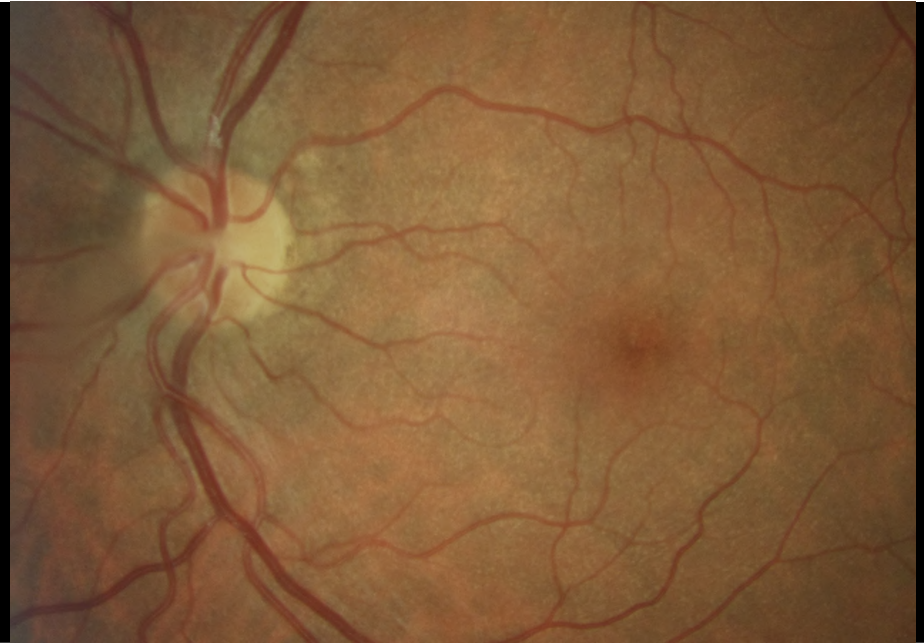
CR-2 Plus AF provides Non Mydriatic images at a 45 degrees angle (67.5 degrees when using center of eye ball as reference).



Angle of incidence vs central angle of view

## 2X magnification

In addition the CR-2 AF is equipped with a 2X button that provides a 2x digital magnification or depending on a setting, a 30 degrees image.



## Fundus Autofluorescence (FAF)

A diagnostic technique for documenting the deposition of lipofuscin in the retinal pigment epithelium (RPE). It is easy and non invasive and provides information that may otherwise not be clinically detectable.

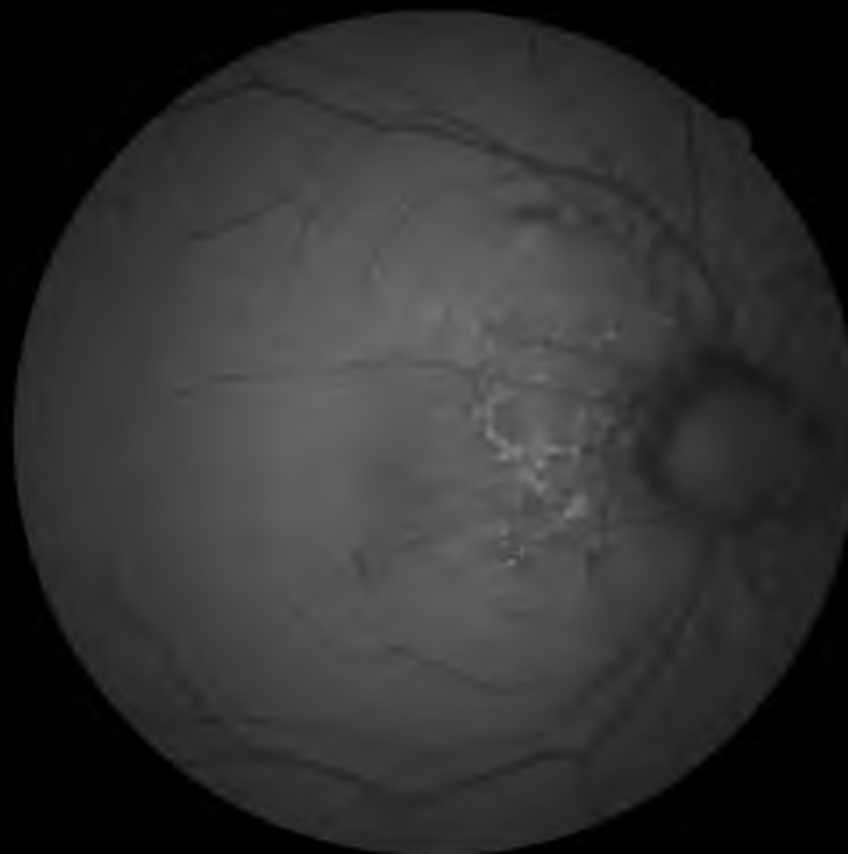
It can be a valuable asset in diagnosing retinal disease.

Since the introduction of fluorescein angiography (FFA) in 1959, ophthalmologists observed that even without the use of fluorescein, parts of the fundus would show areas of faint fluorescence under certain conditions. This naturally occurring fluorescence is mainly caused by Lipofuscin. Lipofuscin is a fluorescent pigment that accumulates in the RPE as a metabolic byproduct of cell function.

Lipofuscin deposition normally increases with age, but may also occur from RPE cell dysfunction or an abnormal metabolic load on the RPE. FAF imaging can visualize the deposition of lipofuscin in the retinal pigment epithelium (RPE). Areas of excess Lipofuscin accumulation will appear hyperfluorescent. But when RPE cells die or are absent, LF disappears, leading to hypofluorescence.

Am I missing something without FAF?

In this example it is clear that the FAF image is showing additional clinical information that can't be seen in the color image!





## Green Spectrum

The Canon CR-2 Plus AF utilizes green light spectrum to stimulate the retina and captures the emission in the yellow-orange spectrum- utilizing carefully selected matching optical filters. Using the green spectrum may provide more detail in the fovea, as where blue light tends to be absorbed by the high concentration of macular pigments. Additional advantage of green light is that the longer wavelength tends to have less absorption by the crystalline lens of the eye, especially in patients with cataracts.

### CLINICAL FAF images

Normal distribution of lipofuscin



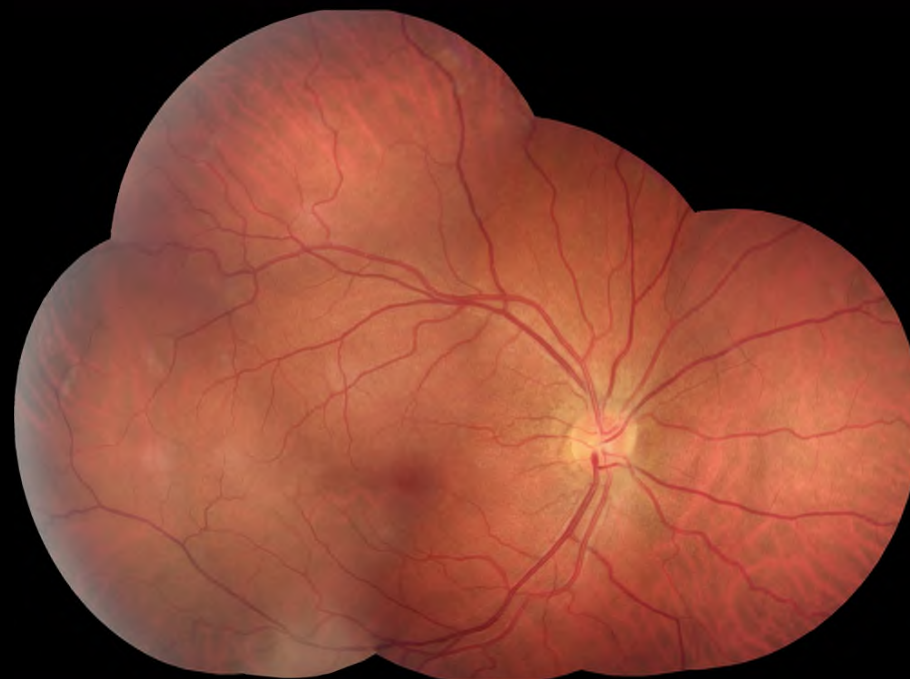
Retinal pigment epithelial atrophy



## Widefield Imaging

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Digital Redfree

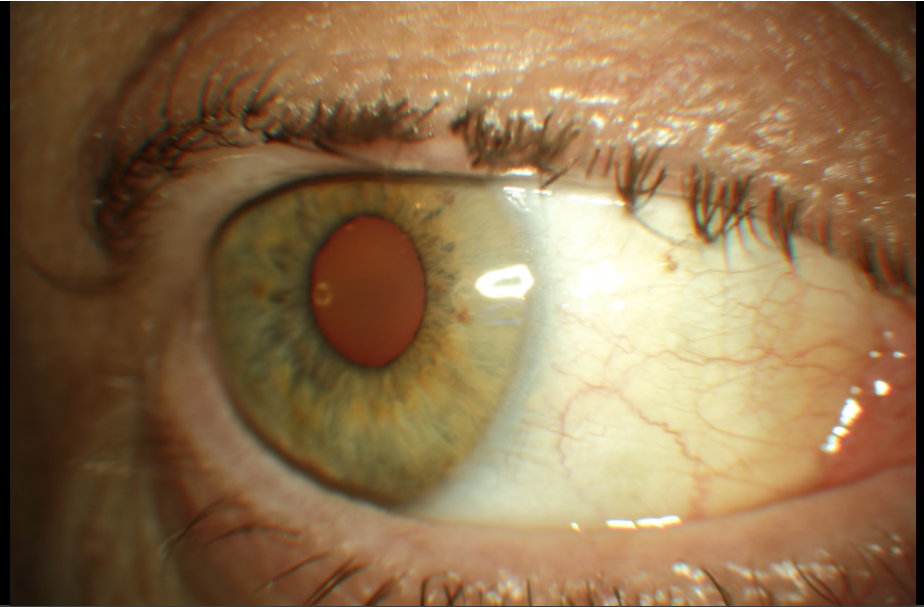


Digital Cobalt



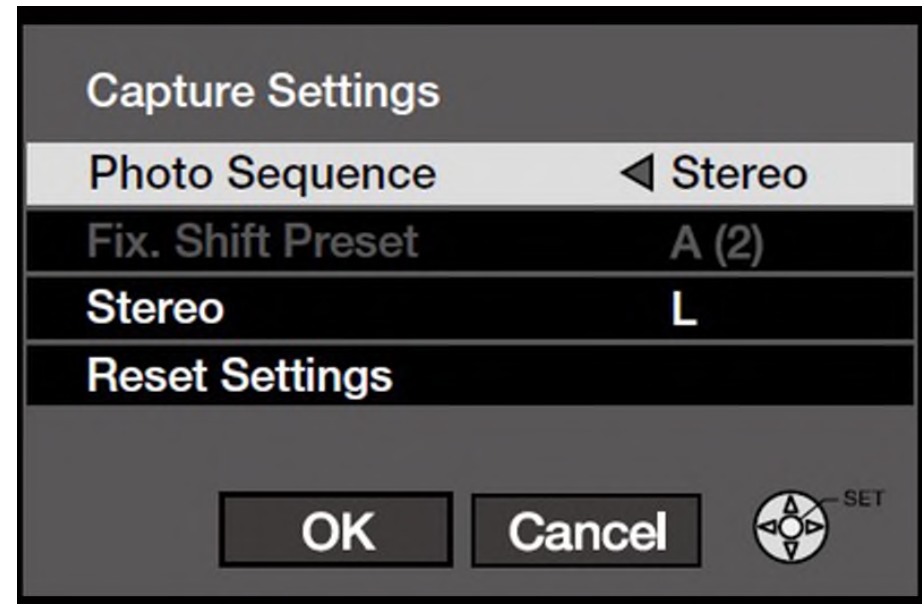
## Anterior Segment Photography

The CR-2 Plus AF offers quick and easy anterior segment photography to document the cornea, pupil, eyelid and sclera.



## Stereo Photography

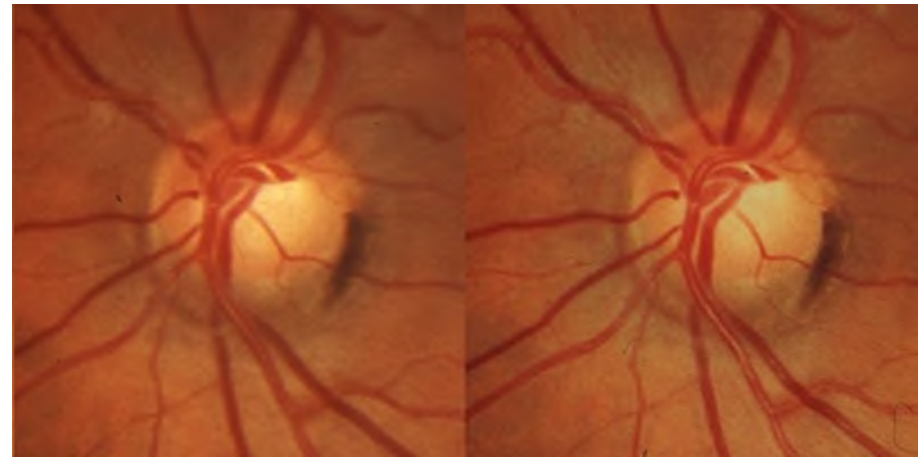
The CR-2 Plus AF is suitable for stereo photography as well, by taking two retinal images sequentially to form a stereo pair. The capture sequence is simple with easy stereo guides that are shown on the observation monitor. Or create a stereo set manually and create a pair in the RX software.



Stereo guide marks

## Stereo viewing

A standard commercial optical stereo viewer can be used for reviewing. The individual images of the stereo pair can be aligned easily in the RX software to obtain maximum stereo effect.



Stereo Pair



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