

Canon

CR-2 AF

Digital Retinal Camera



CR-2 AF

**Requirements of Retinal cameras studied carefully.
Designed for unprecedented ease-of-use and
high quality.**

The CR-2 AF includes functions to process images for use with cataracts, and to enhance contrast.

The result is clear, high-definition images.

A range of auto functions like high-speed auto focus and auto shot make taking high-quality images a breeze.

Canon's CR-2 AF digital retinal camera for high-quality non-mydratric images, powered with a dedicated digital camera for fundus photography.





Convenient Auto Photography Functions

Automatic switching to fundus observation

Enhances operation and reduces time required for photography

Auto shot

Takes image automatically when alignment is complete

Auto focus

Automated alignment of split lines to a single line

Auto exposure

Automatically adjusts suitable light levels for observation and photography

Extensive Range of Advanced Functions

Better images with contrast enhancement

A contrast enhancement function has been added to make blood vessels easier to see compared to fundus images of the past

Opacity suppression

Provides greater visibility of optic nerve heads and blood vessels in unclear images affected by cataracts

Anterior IR photography

Takes anterior segment images in near-IR light for checking meibomian gland condition

Powerful Set of Features

Compact body

High functionality in a lightweight, 15kg body

Alignment monitor

Improves visibility during operation

Diopter compensation lens switching

Simple, with one-button operation

Greater usability

Joystick with key functions

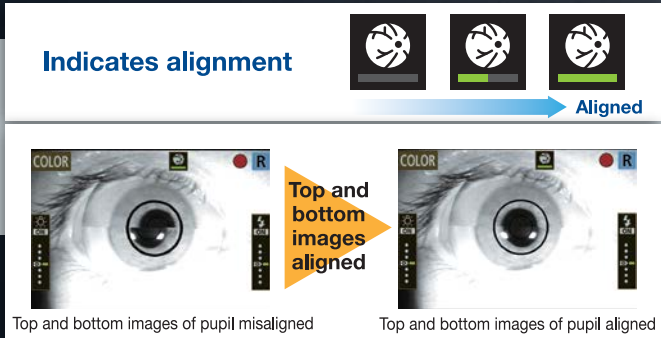
Dedicated digital camera for fundus photography

Designed for high-quality imaging

Auto focus and auto shot functions. Simple photography and image acquisition.

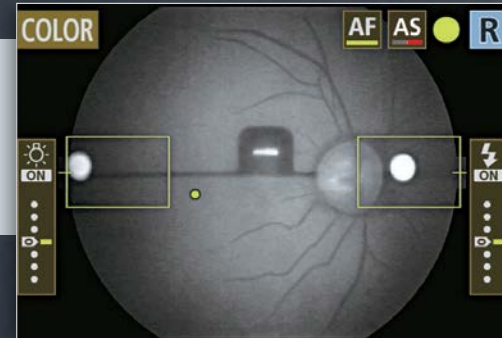
Alignment with Anterior Segment

Aligns the top and bottom of separated pupil images.



Switches Automatically to Fundus Observation

When aligned with the pupil image, the camera will switch automatically to fundus imaging.



Joystick with key functions Greater Usability

With alignment, focusing and shutter release button on the joystick, images can be taken easily with one hand. The control panel only features frequently used buttons, making it intuitive to use. The buttons also illuminate for added convenience when taking images in dark rooms.



Auto Focus/ Manual Focus Switching

Switching from auto focus to manual focus is simple using the joystick.

- Method**
- Manual** ▶ Press shutter release button halfway for 0.3 seconds ▶ **Auto** ▶
 - ▶ Turn focus ring ▶ **Manual**

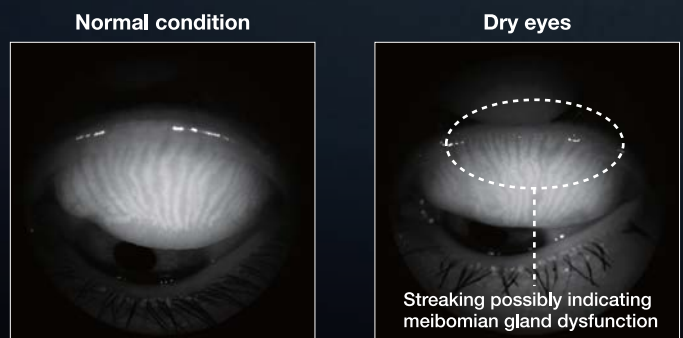
Auto/Manual Selection for Switching Anterior/Fundus Observation

Pressing the alignment button on the joystick manually switches between anterior and fundus observation images.

Takes anterior segment images in near-IR light for checking meibomian gland condition

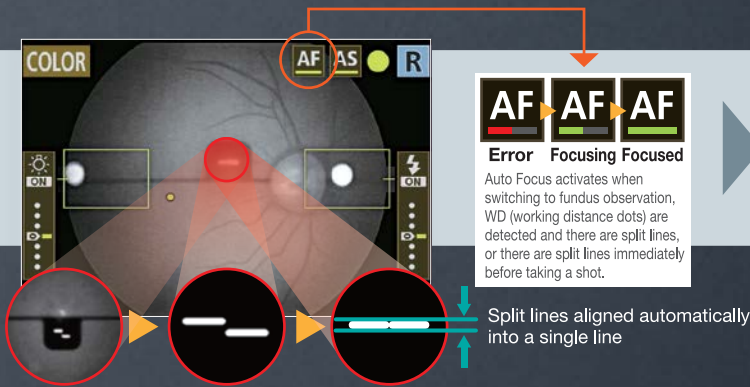
Anterior IR Photography

The CR-2 AF provides anterior IR photography for taking images in near-IR light, a wavelength that is easily reflected by meibomian glands. This means the condition of meibomian glands that have a large influence on dry eye can be checked.



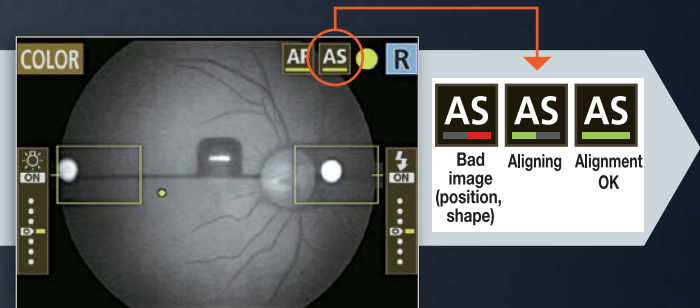
Auto Focus

After switching to the fundus image, split lines in the middle of the screen are aligned automatically into a single line.



Auto Shot

Takes an image automatically once AE, auto focus and WD adjustments are completed. Makes photography easy without missing the right moment.



Better operational visibility Observation Monitor

Anterior segment images can be zoomed in for easier observation. Image brightness can also be increased for better visibility of the working distance dots when observing the fundus.

Approx. double the conventional zoom Larger anterior segment images makes alignment easier.

CR-2 → CR-2 AF
Approx. double zoom

Greater WD brightness Makes the working distance dots easier to see.

Better fundus imaging quality Nerve heads, macular regions, blood vessels shown in greater clarity.

Brighter

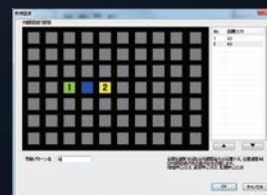
Designed for high-quality imaging Equipped with Dedicated Digital Camera for Retinal Photography

The use of a dedicated digital camera reproduces light and dark gradients accurately, with retinal imaging providing a wealth of information suited to diagnosis.

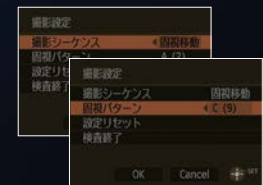


Simple Registration of Internal Eye Fixation Lamp Movement Patterns

Up to 9 positions and 4 patterns can be registered for the internal eye fixation lamp that guides the eye. Registering target locations like edges, macular center or nerve head center in advance automatically moves the fixation lamp for each photograph.



Setting screen



Dedicated digital camera rear panel menu

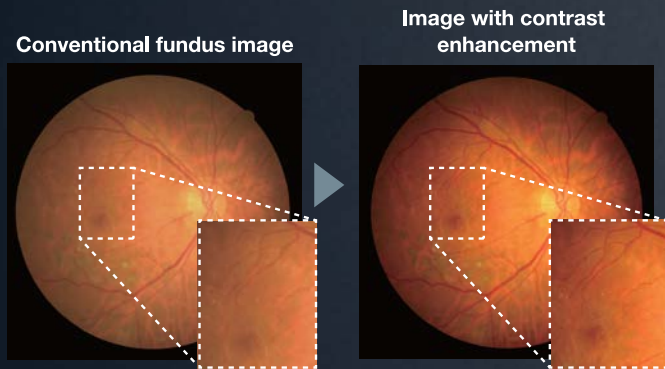


Fundus imaging (guided by fixation)

- Fixation patterns can be selected on the observation monitor.
- Auto focus/auto shot is available even when taking photographs of the patient's eye guided by the fixation lamp.

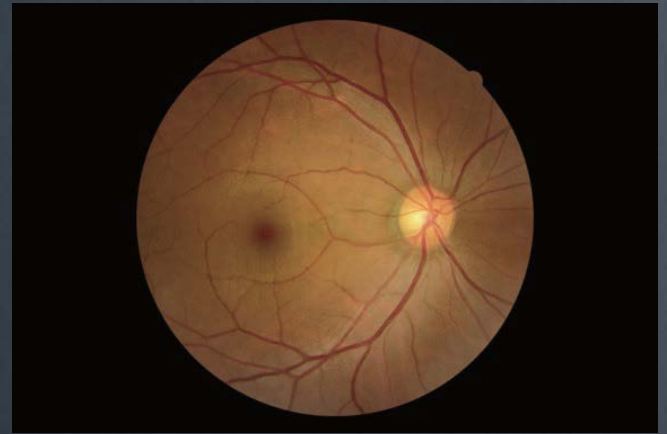
A contrast enhancement function has been added to make blood vessels easier to see compared to fundus images of the past
Better Images with Contrast Enhancement

This function enhances the redness and brightness of blood vessels and their surrounding areas to highlight the edges of blood vessels clearly. This produces sharper, crisper images even when the condition of the fundus and blood vessels is difficult to discern with normal photography, for better observation of the fundus.



Peripheral Illumination Compensation

Includes a compensation function to raise the brightness of the optical system near the edges of the fundus image, where it tends to be dark in normal photography. This makes observation of the edges easier than previous models.

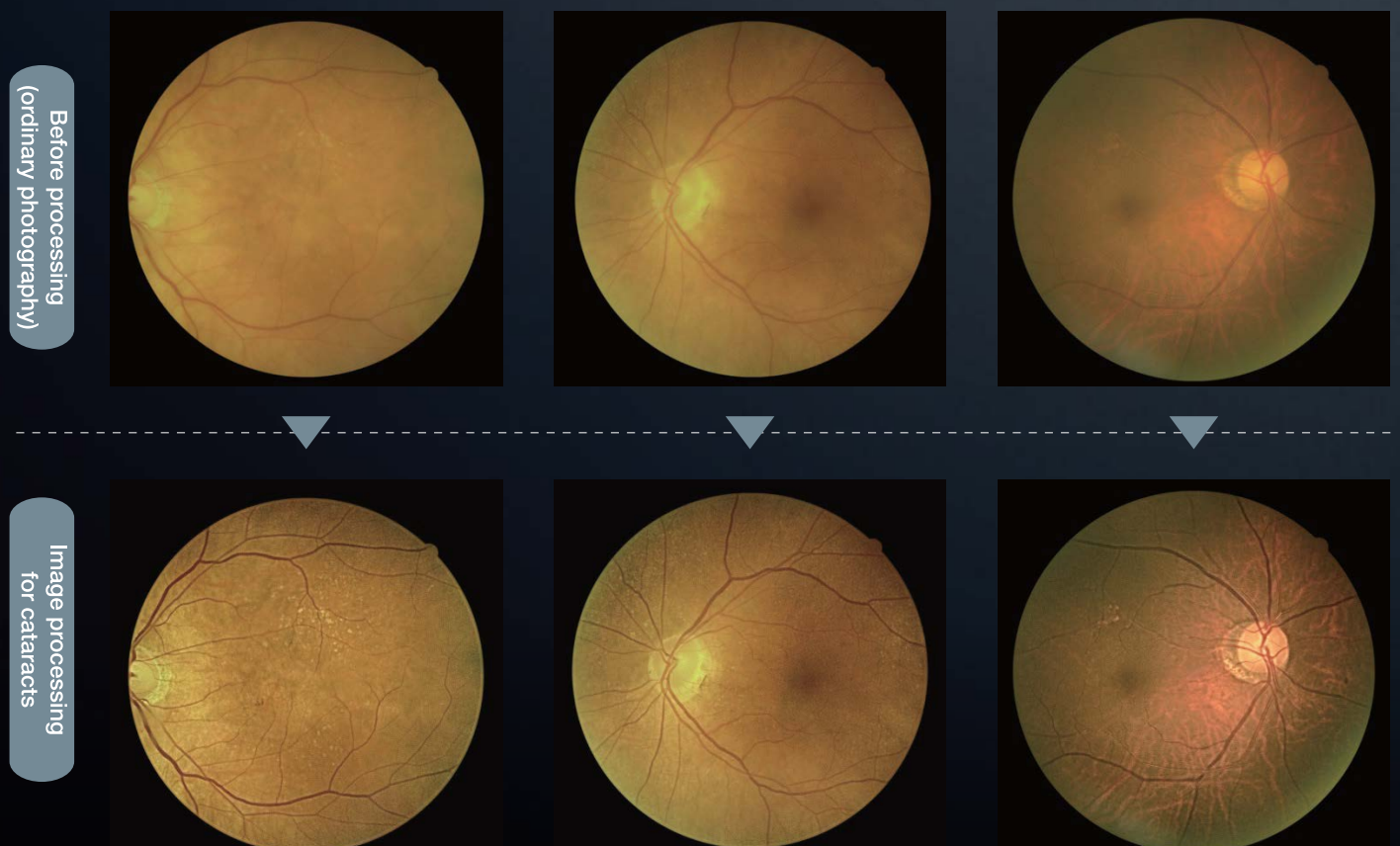


Provides greater visibility of optic nerve heads and blood vessels in unclear images affected by cataracts

Opacity Suppression

A function for image processing for cataracts can be run after photography to adjust unclear fundus images with cloudy opacity, such as with cataracts. The brightness and tone of

the photographed image is compared against a model of a healthy eye and adjusted, making observation of traditionally difficult optic nerve heads and retinal blood vessels easier.





CR-2 Plus AF

FAF photography



The CR-2 series includes the CR-2 PLUS AF capable of FAF photography. Switch from color photography to FAF photography with a single button. Auto shot is available using the same procedures as color photography, making acquiring FAF images quick and easy.



CR-2 AF / CR-2 Plus AF Specifications

	CR-2 AF	CR-2 Plus AF
Model	Non-mydriatric	Non-mydriatric
Photography mode	Color, digital red free, digital cobalt	Color, FAF, digital red free, digital cobalt
Auto functions	AE (auto exposure adjustment) / AF (auto focus) / AS (auto shot) / anterior-fundus observation switching	AE (auto exposure adjustment) / AF (auto focus) / AS (auto shot) / anterior-fundus observation switching
Automatic switching to fundus observation	Automatic/manual	Automatic/manual
Retinal observation	LCD monitor mounted on rear of digital camera unit	LCD monitor mounted on rear of digital camera unit
Field angle	45°	45°
Required minimum pupil diameter	φ 4.0 mm (SP mode: φ 3.3 mm)	φ 4.0 mm (SP mode: φ 3.3 mm)
Magnification function	2x (digital)	2x (digital)
Mounted digital camera	CR-2 AF digital camera unit	CR-2 Plus AF digital camera unit
Patient diopter compensation range	Without compensation lens: -10 D to +15 D / When using negative compensation lens: -31 D to -7 D / When using positive compensation lens: +11 D to +33 D	Without compensation lens: -10 D to +15 D / When using negative compensation lens: -31 D to -7 D / When using positive compensation lens: +11 D to +33 D
Working distance	35 mm	35 mm
Focusing	Split-line alignment type	Split-line alignment type
Working distance alignment	Anterior: Double-image/Fundus: Working dots	Anterior: Double-image/Fundus: Working dots
Internal eye fixation lamp	LED dot matrix	LED dot matrix
Observation light source	Infrared LED	Infrared LED
Flash source	White LED	Xenon tube
Operating range	Stage: Front/back: 70 mm, Left/right: 100 mm, Main unit up/down: 32 mm	Stage: Front/back: 70 mm, Left/right: 100 mm, Main unit up/down: 32 mm
Operating environment	Temperature: 10°C to 35°C / Humidity: 30% to 90%RH	Temperature: 10°C to 35°C / Humidity: 30% to 90%RH
Dimensions	W305 mm × L500 mm × H473 mm	W305 mm × L500 mm × H513 mm
Weight	Approx. 15 kg (including 0.8 kg digital camera)	Approx. 19.9 kg (including 0.8 kg digital camera)

Main Components

CR-2 AF/CR-2 Plus AF
CR-2 AF/CR-2 Plus AF main unit
Digital camera
Objective lens cap
Digital camera cover
Chin rest paper (100 sheets)
Dust cover

Options

CR-2 AF/CR-2 Plus AF
External eye fixation lamp

External eye fixation lamp



* Specifications and appearance are subject to change without notice.



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General Safety Information

- Make sure you read the manual before using the instrument.
- Use the correct power source and voltage shown.
- Make sure the instrument is properly connected to ground. Failure to do so may result in an electric shock if there is a malfunction or ground leakage.

