



## Specifications

Photography modes	Non-mydriatic color Mydriatic color Fluorescein fundus angiography (FA) Red-free (RF) Fundus autofluorescence (FAF)
Field of view	Non-mydriatic mode : 45°/27° Mydriatic mode : 50°/30° (SP:45°/27°)
Working distance	39mm(between the examined eye and the object lens)
Minimum pupil diameter	Non-mydriatic mode : φ4.0mm (SP φ3.5mm) Mydriatic mode : φ5.5mm (SP1 φ4.0mm/SP2 φ3.5mm)
Focusing	Split luminous bars coincidence
Range of focus adjustment for compensation of patient's refractive error	Without compensation : -12D to +13D Compensation - : -32D to -10D Compensation + : +10D to +35D
Range of diopter adjustment of the optical finder	-8D to +5D
Working distance adjustment	Luminous dot indication (ON/OFF switchable)
Light source	For observation : Halogen lamp For photography : Xenon flash lamp
Flash compensation	±5 steps

Internal fixation light	Central/disc/macula/peripheral
External fixation light	Red/green LED
Exposure	Appropriate exposure is automatically set based on the 37-steps (0.6WS to 300WS) of field angle, filter, and photography mode
Camera	Higher than 12 megapixel CMOS sensor
Monitor	7 inch wide-screen touch LCD
Adjustment range	Forward/backward:(gross) 90mm, (micromotion) approx. 17.5mm Leftward/rightward:(gross) 140mm, (micromotion) approx. 17.5mm Upward/downward: 30mm Tilting:(elevation) 11°, (depression) 15° Panning:(left/right) 30° horizontally
Recording medium	CF memory card
Interface	USB : VK-2 connection Printer connection Card reader connection LAN : Image output
Power saving function	Yes
Power supply	Input : AC 120/230V 50/60Hz Power consumption : 250 VA 1500 VA (Max.)
Dimensions	390(W)×540(D)×720(H)mm
Weight	39kg/86lbs

## Options



Internal fixation target



Grip



Auxiliary forehead rest



FAF filter set

Images in the LCD monitor are compositions.

All other companies and product names stated here are trademark or registered trademark of each company.  
Specifications and appearances are subject to change without notice.



Distribution name : KOWA VX-20



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REF: K9L56\_1188500MK/K  
Printed in Japan.

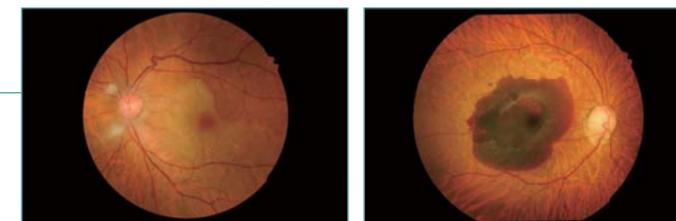


## Innovative design in full pursuit of retinal camera, both patient-friendly and easy-to-use for operator



### Enhanced photography features 5 photography modes including FAF\*

In addition to the non-mydratic color, mydratic color, fluorescein fundus angiography (FA), Red-free (RF) modes, fundus autofluorescence (FAF\*) mode is added to allow 5-modes photography. Also, the SP mode that allows photography of  $\phi 3.5$  mm of small pupils is equipped.



Non-mydratic color

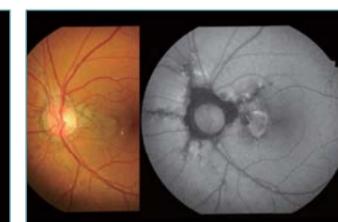
Mydratic color



Fluorescein fundus angiography (FA)



Red-free (RF)

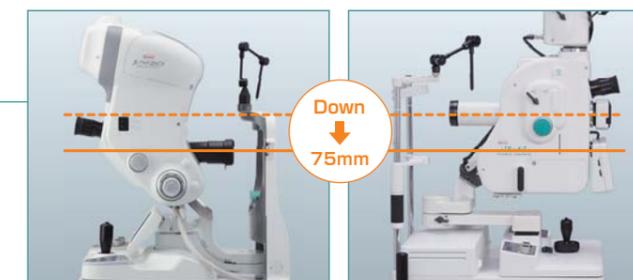


Fundus autofluorescence (FAF\*)

Photo : Showa University  
\*Option

### Updated design providing stress-free diagnosis

75mm reduced height of examined eye from our previous model ("VX-10" series), allowing photography in a relaxed posture.



VX-20

VX-10α (Previous model)

### Instant image filing software is equipped.

The instant image filing feature allows ID management of images, browsing, and direct output to the external printer. In addition, images can be output to every electric medical records of any manufacturers through the network, not to mention by connecting to the image filing system Kowa VK-2.



### Optical variable 2 angles

Field of view can be switched between  $45^{\circ}/27^{\circ}$  in non-mydratic mode or between  $50^{\circ}/30^{\circ}$  in mydratic mode by a simple pressing of a button.

### Fundus can be observed through the optical viewfinder.

In mydratic mode, the fundus can be observed through the optical viewfinder, allowing photography of images exactly as viewed. This feature is particularly helpful for photographing peripheral part of the retina.

## VX-20, simple operation with various useful features, supporting smooth daily medical practices!

### Design:Chin rest

- ▶ Eye level indication can be easily seen even in the darkroom.
- ▶ Stable chassis that makes it easy to assist in eyelid opening.



### Design:Tilt angle

- ▶ The downward tilt angle has been expansion to 11 degrees.
- Thus, facilitating upward-angle shoots, which have been difficult with the conventional models.
- \* As with compared to our previous models.



### High resolution photography

- ▶ The special digital camera built-in.
- ▶ The easy image storage.



### Wide-screen touch LCD monitor

Wide-screen touch LCD monitor is employed, on which the image is displayed in the center with touch panel icons effectively placed along both sides of the screen. It also provides easier operation with the easy-to-see touch LCD monitor.



### Focusing on design for operability

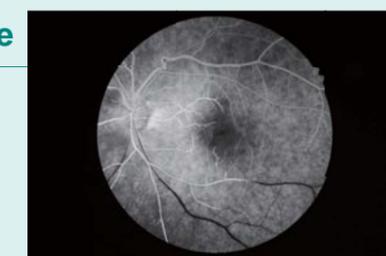
Only usable switch buttons are illuminated according to each photography mode, enabling smooth and quick photography even in the darkroom. Moving chin rest up/down and switching field of view are electrically performed, that can be operated at hand.



### SP (Small Pupil) photography mode

In mydriatic mode, either  $\phi 3.5\text{mm}$  or  $\phi 4.0\text{mm}$  can be selected. In non-mydriatic mode,  $\phi 3.5\text{mm}$  is available.

- \* The SP mode is not supported in RF mode.
- \* With  $\phi 3.5\text{mm}$  photography, some eyes may cause a flare around their circumference.



Photography with  $\phi 4.0\text{mm}$   
Photo: Showa University

### Fixation light switching

Central/disc/macula/peripheral, and external fixation light can be switched with a single touch of a button.



### Custom buttons

Photographic sensitivity, diaphragm, and photographic intensity can be set by the user. Depending on the patient, photographic settings can be easily adjusted with simple operations, for example, by increasing the sensitivity to allow patient-friendly photography or to compensate the insufficient light intensity for the FA later phase.

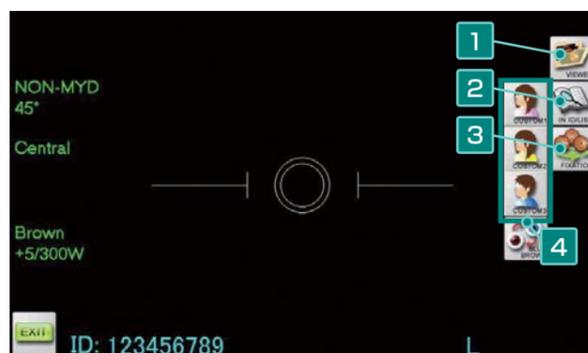
### Photography with monitor observation

In mydriatic color, FA, RF, and FAF modes, photography under the monitor observation that can reduce the photophobia of the patient is also possible, in addition to the normal viewfinder observation.

## Instant image filing function

### Capture mode

The capture mode allows the user to input IDs and display the alignment images or images just captured.

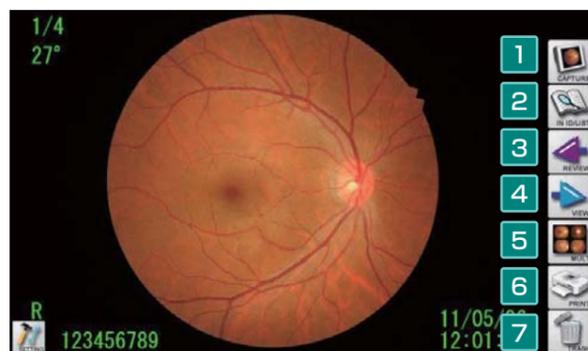


- 1 Viewer button**  
Used to switch from the capture mode to the viewer mode.
- 2 ID input button**  
Used to input the ID. Pressing this button to display the ID input screen.
- 3 Fixation light selection button**  
Used to select the fixation light. Pressing this button displays fixation light buttons to allow selection.
- 4 Custom buttons**  
Used to select user-set photographic conditions.

\* When connecting to the image filing system Kowa VK-2, the image just captured is displayed on the monitor of the image filing system.

### Viewer mode

The viewer mode allows the user to browse the images saved in the selected ID, and print or delete the displayed image.



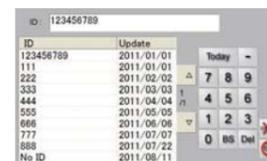
- 1 Capture button**  
Used to switch to the capture mode.
- 2 ID input button**  
Used to input the ID. Pressing this button to display the ID input screen.
- 3 Review button**  
The previously captured image will be displayed.
- 4 View button**  
The next captured image will be displayed.
- 5 Multi-button**  
4 images in the same ID will be displayed.
- 6 Print button**  
Print out the displayed image.
- 7 Trash button**  
Delete the displayed image from the CF memory card.

\*When connecting to the image filing system Kowa VK-2, the viewer mode is not available.

## Example of System Configuration

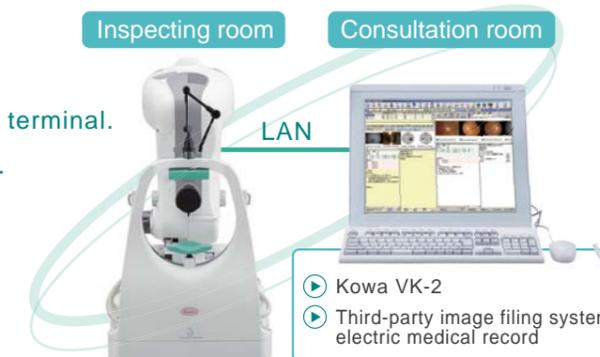
### Stand-alone

- ▶ Equipped with the instant image filing function using a touch panel.
- ▶ ID input from the card reader is possible.
- ▶ Multiple-image display (4 images).
- ▶ Photography data is saved in the CF memory card.
- ▶ Allows direct printing to the printer.



### Network

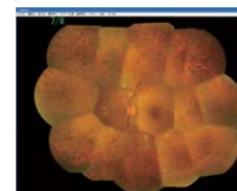
- ▶ Direct connection with the intranet via LAN.
- ▶ ID input from the Kowa VX-20 is possible.
- ▶ Photographic data can be saved in the network terminal.
- ▶ Allows direct printing using the preview display.



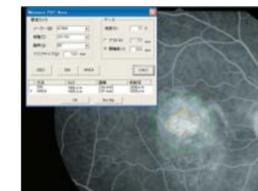
### Connecting to the image filing system Kowa VK-2

- ▶ All the captured images can be freely saved and managed.
- ▶ Data sharing on the intranet is possible.
- ▶ Equipped with the multi-timer function for FA photography.

#### Options



Automatic mosaic merge function  
Photo: Showa University



PDT irradiation area calculation support software

