Kowa

Technology for Life Science

Two-In-One Non-Mydriatic and Mydriatic Fundus Cameras.

Kowa VX-10

Kowa VX-10i

(With ICG function)

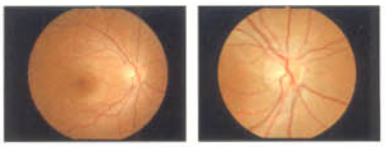
VX-10 / VX-10i, Two-In-One Non-Mydriatic and Mydriatic Fundus Cameras. Highly effective and ergonomically designed, the ideal tool for eye-care photography!

Various Photographic Modes

Non-Mydriatic Photography

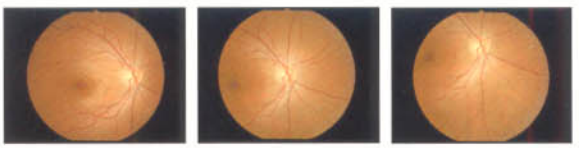
2 Optical Angles

In this mode, angles 45°and 22°*A can directly be selected, making enlargement fast and easy.



Fixation Lamp Switching

3 fixation lamps: 2 internal lamps (posterior and central optic nerve head) and 1 external lamp (peripheral) are also selected in one touch switch, for easy guidance to the targeted area.



Mydriatic Photography

Mydriatic fluorescein angiography and mydriatic color photography are possible in this mode. In the mydriatic fluorescein mode, the fluorescein filter is inserted and removed electrically; in the mydriatic color mode, the use of optional filter enables red-free photography.

2 Optical Angles

In this mode, angles 50°and 25°*B are possible, directly selectable.

Small Pupil Photography

For patient 's eye with insufficient pupillary dilatation, the built-in small pupil mode enables photography if the pupil diameter is more than ø4.0mm. (angle 45°only)

*A VX-10i : 27°
*B VX-10i : 30°

Non-mydriatic color / mydriatic color / fluorescein angiography in just one camera!
The new VX-10i, featuring an optional ICG function, is adding enhanced capabilities to an already powerful fundus camera.

The easy to use navigation panel located at hand allows the selection of 3 modes (non-mydriatic / mydriatic / fluorescein) with just one touch switch for fast operations.

Simple operations

Multiple Step Flash, Matching Point Method, Long Eye Relief Design, all were meticulously elaborated to make the VX-10 series the simplest thus most effective and accurate tools ever.

TV Observation Monitor

In the mydriatic color mode, alignment and focusing adjustment are possible with the LCD monitor.
The infrared observation light reduces light aversion and makes photography smoother.
In this mode, when the pupil diameter of the patient 's eye is superior than ø5.5mm, alignment and focusing adjustment with the LCD monitor, and 50°non-mydriatic photography are possible.

Chart, Data Card Photography

Chart, data card can easily be photographed with 35mm film.

Polaroid Film Photography

The large Polaroid printing area provides easy-to-read pictures.

Mydriatic color

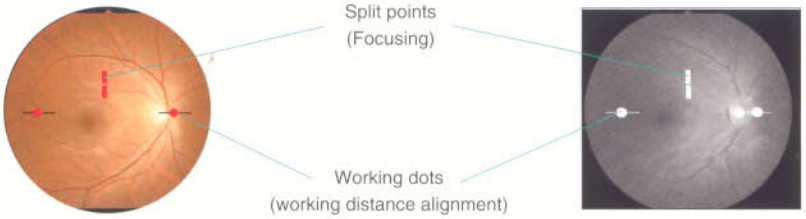
Non-mydriatic color

Multiple Step Flash for Proper Exposure in the Various Photographic Modes

A wide range of light exposures assures proper exposure in every mode.
Moreover, strobe light being extremely low when taking digital images, light aversion is significantly reduced.

Working Distance Guidance and Focus Detection Functions for Clear and Sharp Images

Alignment is made by simply adjusting the 2 right-and-left luminous spots with the joystick at hand; focusing adjustment is also easy with the point matching method.



Viewfinder
(mydriatic mode)

LCD monitor
(non-mydriatic mode)

Operationally Focused, Darkroom Adapted Navigation Panel

This navigation panel at hand has its buttons illuminated to allow quick and acute operations even in darkroom.
Only usable switch buttons are illuminated according to each mode.

Fixation lamp switch

Non-mydriatic

Mydriatic color

Mydriatic fluorescein

Clear Viewfinder with the Long Eye Relief Design

With a long eye distance, the clear viewfinder allows comfortable photography.

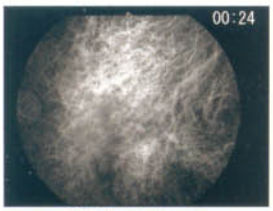
The new VX-10i, camera of extended possibilities

With the optional ICG filter, VX-10i becomes the perfected fundus camera performing all non-mydriatic color, mydriatic color, FA and ICG!!

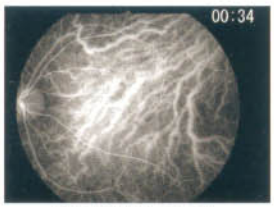
Enhanced with new capabilities

Featuring almost all VX-10 functions, the use of the optional ICG filter enables ICG angiography, in which mode LCD monitor observation is also possible. Besides, the use of the optional 1.4 mega pixel black and white CCD camera allows high-resolution ICG still image photography.

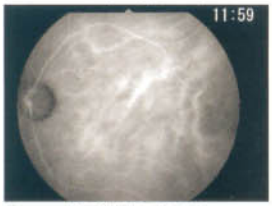
The mydriatic mode enables 50°and 30° photography. The angle 30°is particularly effective for retinal disease diagnosis(angle 50°only for ICG).



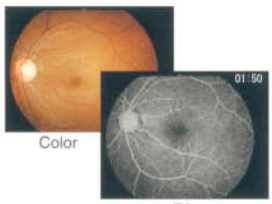
ICG (early phase)



ICG (middle phase)



ICG (late phase)



Color

FA

Photo: Y.Hasegawa M.D., Iwate Pref. Hanamaki-kosei Hosp.

Multifunction Navigation Panel

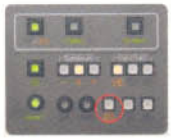
Combined with photographic modes and digital imaging device, the navigation panel strengthens its functions.

Light Intensity when using Flash Photography in ICG Mode

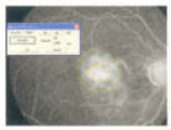
In ICG mode, the "Camera Switching Button" operates as a "High / Low Switching Button" for flash light intensity compensation; from early phase to late phase, still images are always taken at proper exposure.

Extended Capabilities when Linked to the Digital Imaging System "Kowa VK-2"

When taking ICG still images through the optional filter:
-When the "EXT button" is ON, still images (early phase image) can be taken from moving images without flash.



-When the "EXT button" is OFF, flash is used (late phase image).
When using the optional 1.4 mega pixel B/W CCD camera to take still images, the "EXT button" in the ON position makes the camera sensibility higher, allowing brighter late phase images.



PDT Mode Display (when linked to VK-2)

Measuring the maximum diameter of the lesion, it decides of the laser irradiation range.

Adapted to the Newly Developed CCD camera

Adapted to High-Pixel Digital CCD cameras

Combined with the 2.1 mega pixel × 3 (total 6.3 mege pixel) CCD camera (KD-630C) or the 2.1 mega pixel color CCD camera (KD-211C), images are taken in increased quality (also adapted to the existing Analog 3CCD Sony DXC-990). Furthermore, the 1.4 mega pixel black and white CCD camera (KD-144i) has been newly developed exclusively for high-resolution ICG images..

Examples of combinations with the VX-10 exclusive video adapter

Kowa KD-630C
Image size:
1600×1216pixels

Kowa KD-211C
Image size:
1600×1216pixels

Sony DXC-990
Image size:
640×480 pixels

Example of combinations with the VX-10i exclusive video adapter

Adapted to KD-630C, KD-211C, and Sony DXC-990 cameras. In addition, one of those 3 can be fixed while the KD-144i is attached.
Kowa KD-144i
Image size:
1344×1024 pixels

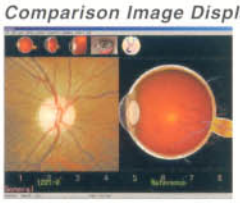
Linked to VK-2, Adapted to Internal Networking

Linked to the Digital Imaging System VK-2, all images can be saved and shared through a LAN (Local Area Network),enabling establishment of an internal network system of your own.

One Click Image Processing

A simple click on the icon for easy controls

Comparison Image Display



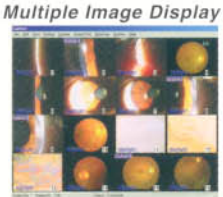
Patient 's fundus or slit images can be compared with a pre-registered reference model eye image

EDIT DATA

Annotations inputs on images

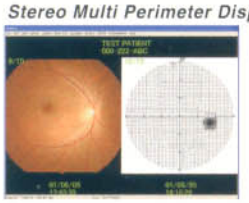
Enlargements

Multiple Image Display



2,4,6,9,16,36 images can be displayed at the same time

Stereo Multi Perimeter Display

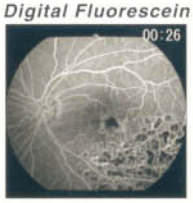


Combined with automatic perimeter

Digital Color

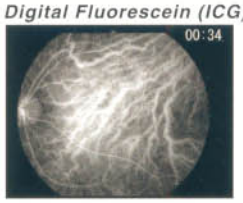
KD-211C

Digital Fluorescein (FA) (B/W with timer on display)



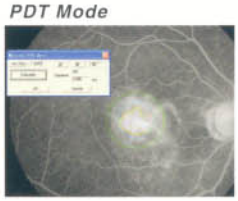
KD-211C

Digital Fluorescein (ICG)



KD-144i

PDT Mode



Digital Imaging System (Color • FA)

With both the VX-10 and the VX-10i, various digital imaging systems can be organized and the VK-2 system especially allows the composition of an ideal and original clinical environment, where all images can be shared anywhere as you wish through a LAN.

VK-2 High Performance Digital Imaging System

2.1 mega pixel × 3
(total 6.3 mega pixel)
CCD camera KD-630C

2.1 mega pixel
color CCD camera KD-211C

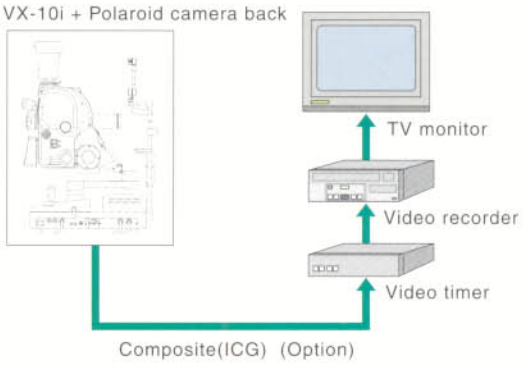
Sony 3CCD camera DXC-990

VX10 VX-10i *VK-2*

ICG (option) System

Color photography with 35mm camera, Polaroid. fluorescein angiography with 35mm camera.

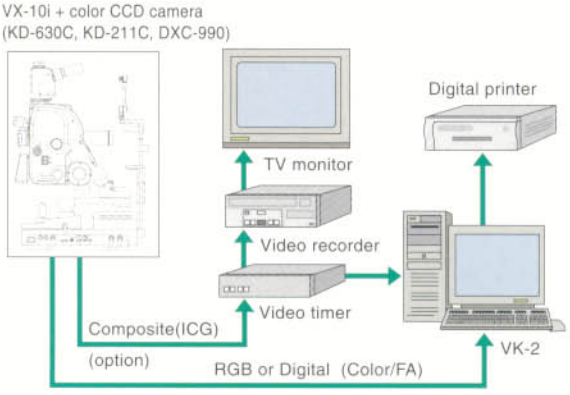
Moving Image Record only



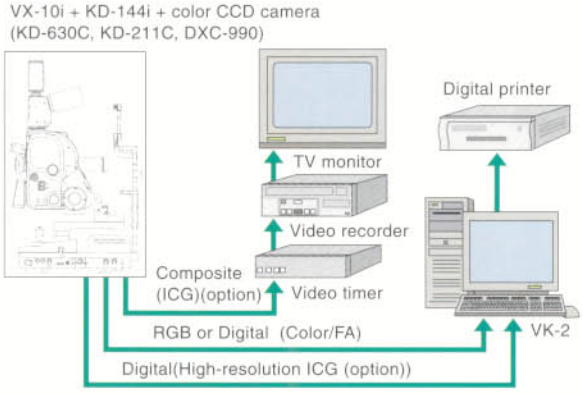
Color • FA • ICG (option) System

Digital image recording of all photography modes

Moving Image Record + Still Image Record (Color • FA • ICG (option))



Moving Image Record + Still Image Record (Color • FA • high resolution ICG(option))



Even more easier, even more user-friendly

VX-10 exclusive options

Video Adapters (For KD-630C, DXC-990)

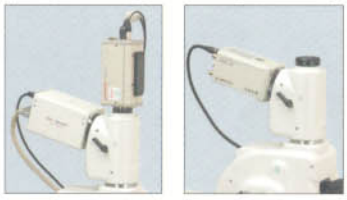
With KD-630C With DXC-990

Video Adapters (For KD-211C)

With KD-211C

VX-10i exclusive options

Video Adapters (For KD-144i,KD-630C,DXC-990)



With KD-144i + KD-630C With DXC-990

Video Adapters (For KD-144i, KD-211C)

With KD-144i + KD-211C With KD-211C

Internal Fixation Devices

ICG Filter

VX-10 / VX-10i Common Options

Grip

This grip allows the patient to be perfectly stabilized and allows a smooth and safe photography.

Green Filter

Manual setting of this filter in the mydriatic color mode allows red-free photography to obtain high contrast fundus blood vessels and retina.

Polaroid Camera Back

35mm Camera Back

Digital Imaging System Kowa VK-2

Technology for Life Science

Two-In-One Non-Mydriatic and Mydriatic Fundus Cameras.

Kowa VX-10 Kowa VX-10i

(With ICG function)

	VX-10	VX-10i
Photographic Angles	Mydriatic 50° 25° Non-Mydriatic 45° 22°	Mydriatic 50° 30° (50° for ICG (option)) Non-Mydriatic 45° 27°
Photographic Magnification ※1	50° ⇒ 2.0× 25° ⇒ 3.6×	50° ⇒ 2.0× 30° ⇒ 3.0×
Picture Size	35mm Film φ26mm×22mm Oval Polaroid Film Myd. φ84.5mm (vertical 71.5mm, horizontal 79mm Max.) Non-Myd. φ76.1mm (vertical 71.5mm, horizontal φ76.1mm)	
Working Distance	39mm (between objective lens and cornea)	
Minimum Pupil Diameter	Non-Mydriatic mode φ4mm Mydriatic mode φ5.5mm (small pupil mode φ4mm)	
Focusing Luminescence	Point Matching Method (ON/OFF switch)	
Diopter Compensation Range (Patient 's Eye)	−12D ~ +13D +10D ~ +35D (with + compensation lens) −10D ~ −32D (with − compensation lens)	
Diopter Adjustment Range	−8D ~ +5D	
Working Distance Adjustment	2 luminescent points display (ON / OFF switch)	
Viewing Illumination	12V 50W Halogen lamp	12V 100W Halogen lamp
Flash for Photography	300WS Xenon flash lamp	
Flash Compensation	± 2 steps	± 3 steps
Internal Fixation Lamp	4 fixed dots right or left eye switching (Non-Mydriatic mode)	
External Fixation Lamp	red / green, blinking	
Internal Fixation Device	Fixable (option)	
Amount of Exposure	300WS ~ 0.6WS 19 steps Proper exposure automatically set, based on angle of field and film sensitivity	
Filter	Barrier & exciter filter, electronic powered insertion	
Fluorescein Photography	Photographic interval: 1 frame / sec. or at will	
ICG Function	−	Option
Monitor	5.6 inch, LCD monitor	
Video Input	Composite	−
Video Output	−	Composite (ICG images (option))
Data Imprinting	Timer and handwritten data	
Audible Warning	End of film, timer counter (ON / OFF selectable), tonal volume adjustment function	
Film Speed	35mm color film: ISO100 Fluorescein: ISO400 (3 times development) Polaroid Film: ISO600	
Movement Range	Forward / backward (gross) 90mm (micromotion) approx. 22mm Left / right (gross) 140mm (micromotion) approx.22mm Up / down 30mm Tilt (angle) 15° (+angle)8.5° Horizontal swing (left/right) 30°	
Input ※3	AC100/117/220/240V 50/60Hz	AC100/120/230V 50/60Hz
Power Consumption	1800VA (max) 180VA (standard)	1500VA (max) 280VA (standard)
Dimensions	400(W)×520(D)×752(H)mm ※2	
Weight	approx. 40kg ※2	approx. 37kg ※2

※1 When using 35mm film, 0D
※2 With Polaroid camera back
※3 220V, 230V, 240V for Europe

※ Polaroid is a registered trademark of Polaroid Corporation, USA
※ All other companies and product names stated here are trademark or registered trademark of each company.
※ All specification and external design are subject to change without prior notice.

CE TÜV

Distribution name: KOWA VX-10
Distribution name: KOWA VX-10i

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