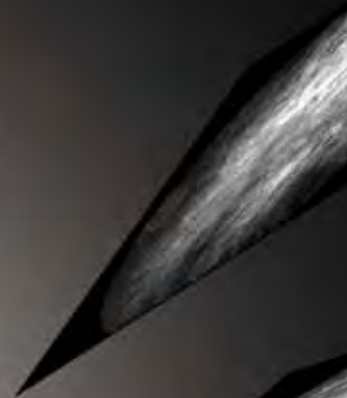
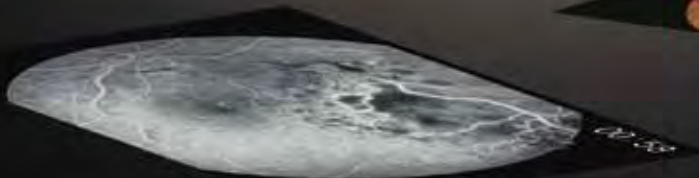




Technology for Life Science

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

Kowa *VX-10 $\alpha$*   
Kowa *VX-10*i**  
(With ICG function)

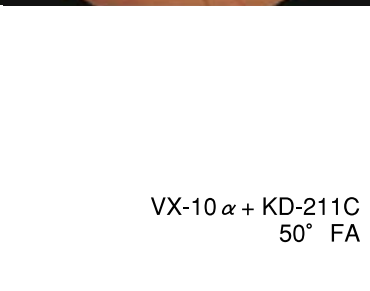


# VX-10 $\alpha$ / VX-10i, Two-In-One Non-Mydriatic and Mydriatic Fundus Cameras.

Highly effective and ergonomically designed,  
the ideal tool for eye-care photography!



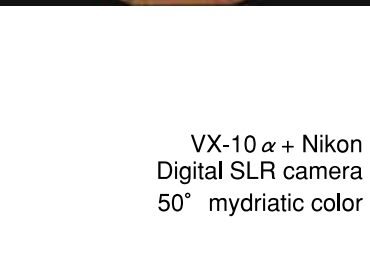
VX-10 $\alpha$  + KD-211C  
50° mydriatic color



VX-10 $\alpha$  + KD-211C  
50° FA



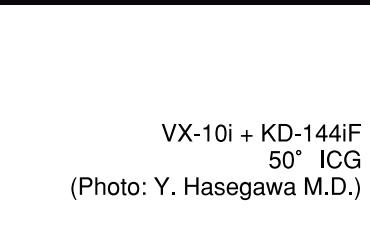
VX-10 $\alpha$  + KD-211C  
27° non-mydriatic color



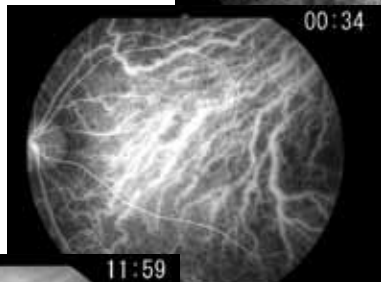
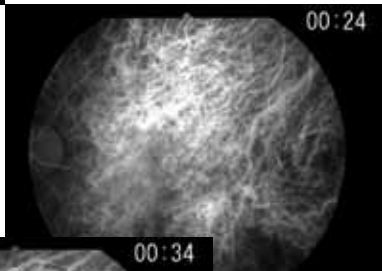
VX-10 $\alpha$  + Nikon  
Digital SLR camera  
50° mydriatic color



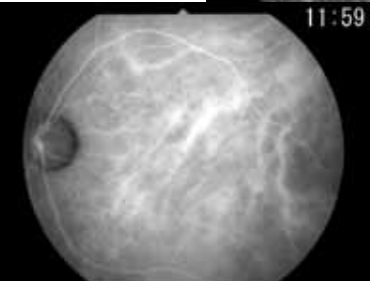
VX-10 $\alpha$  + Nikon  
Digital SLR camera  
50° FA



VX-10i + KD-144iF  
50° ICG  
(Photo: Y. Hasegawa M.D.)



early phase



middle phase

late phase

## Various Photographic Modes

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

### 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 30° 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  $\phi$ 4.0mm. (angle 45° or 27°)

### Non-Mydriatic Photography

#### ● 2 Optical Angles

In this mode, angles 45° and 27° can directly be selected, making enlargement fast and easy.

#### ● Fixation Target Switching

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

### VX-10i's ICG Angiography

#### ● Optional ICG filter and KD-144iF

The VX-10i features almost all VX-10 $\alpha$  functions; using the optional ICG filters enables ICG angiography. In ICG mode, LCD monitor observation of the retina is possible. In addition, the use of the optional 1.4 megapixel black and white CCD camera allows high-resolution ICG still image photography.

#### ● 2 Optical Angles

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

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

## Simple operations

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

### Multiple Step Flash for 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, photophobia is significantly reduced.

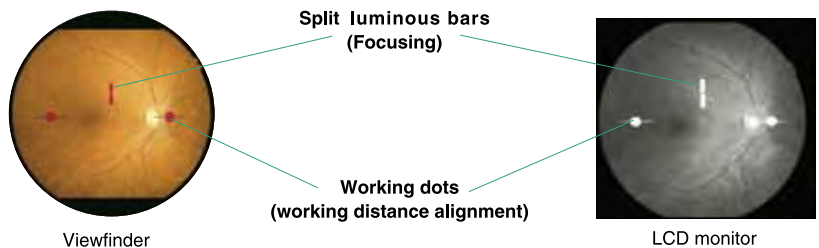


### LCD Observation Monitor

In the mydratric color and FA modes, alignment and focusing adjustment are possible with the LCD monitor, reducing photophobia and making photography smoother.

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

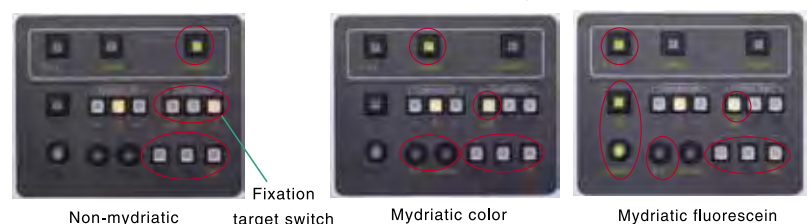
Alignment is made by simply adjusting the 2 right-and-left luminous spots with the joystick at hand; focusing adjustment is also easy with the point matching method.



### 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.



### Clear Viewfinder with the Long Eye Relief Design

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



VX-10 $\alpha$



VX-10i

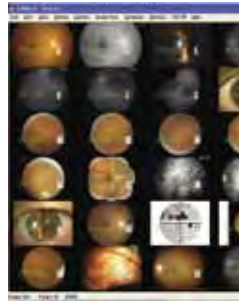


## Linked to Kowa VK-2, Adapted to Internal Networking

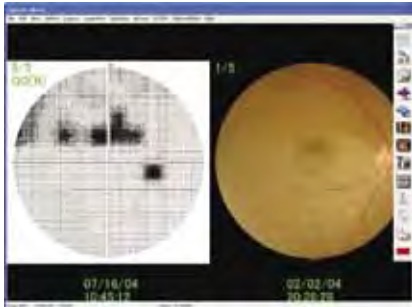
Both VX-10 $\alpha$  and VX-10i can be linked to the advanced Kowa VK-2 Digital Imaging System, enabling all images taken to be saved and efficiently organized. Furthermore, the VK-2 system is especially designed to create an ideal and original clinical environment where all images can be shared anywhere as you wish through a LAN (Local Area Network).



Enlargements



Multiple Images



Comparison with Perimetry



Comparison Image Display



One Click Image Processing



VX-10 $\alpha$

Kowa KD-211C Kowa KD-630C  
Sony analog 3CCD camera  
Nikon Digital SLR Camera

KD-144i  
Composite

VX-

### Adapted for the latest digital cameras

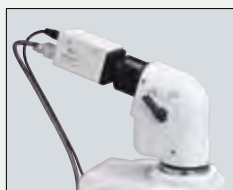
Adapted to the latest high resolution cameras for best detailed images possible

- 2.1 megapixel digital color CCD camera, Kowa "KD-211C"
- 2.1 megapixel  $\times 3$  (total 6.3 megapixel) CCD digital color camera, Kowa "KD-630C"
- 1.4 megapixel B/W digital CCD camera, Kowa "KD-144iF" exclusively for ICG photography

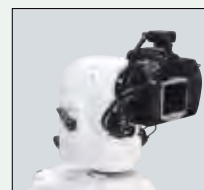
Examples of combinations with the VX-10 $\alpha$  exclusive video adapter



Kowa KD-630C  
Image size:  
1600 $\times$ 1216pixels



Kowa KD-211C  
Image size:  
1600 $\times$ 1216pixels



Nikon Digital SLR  
Camera





Video Display

**Montage Function,**

enhanced with advanced algorithm to obtain panorama images that are easy to observe: automatic positioning with fine rotation adjustments and smoothing function.



Montage

Normal lens



Blue filter



Negative filter



Magnifying Glass



PDT area measurement

F  
e(ICG)

10i

Sony analog 3CCD RGB color camera

Nikon Digital SLR camera

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

Adapted to KD-630C, KD-211C, Sony DXC-990 cameras and Nikon Digital SLR camera. In addition, one of those 4 can be fixed while the KD-144iF is attached.

Kowa KD-144iF  
Image size:  
1344x1024 pixels

With KD-144iF +  
Nikon



**Created to be easier,  
and more user-friendly**

**VX-10a exclusive options**

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



With  
KD-630C



With  
DXC-990

**Video Adapter  
(For KD-211C)**



With  
KD-211C

**Video Adapter  
(For Nikon Digital SLR Camera)**



**VX-10i exclusive options**

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



With  
KD-144iF +  
KD-630C



With  
DXC-990

**Video Adapters (For Nikon Digital SLR Camera)**



With  
KD-144iF +  
Nikon



With  
Nikon  
Digital SLR  
Camera

**Video Adapters (For KD-144iF, KD-211C)**



With  
KD-144iF +  
KD-211C



With  
KD-211C

**ICG Filter**



**VX-10a / VX-10i Common Options**



**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.

**Internal Fixation Device**



**Digital Imaging System  
Kowa VK-2**



**35mm  
Camera  
Back**



Technology for Life Science

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

Kowa VX-10α Kowa VX-10i  
(With ICG function)

Photographic Angles	Mydriatic 50° 30° (Small pupil mode: 45° 27°) (VX-10i : 50° for ICG(option)) Non-Mydriatic 45° 27°
Photographic Magnification ※1	50° ⇒ 2.0× 30° ⇒ 3.0×
Picture Size	35mm Film: φ26mm×22mm Oval
Working Distance	39mm (between objective lens and cornea)
Minimum Pupil Diameter	Non-Mydriatic mode φ 4mm Mydriatic mode φ 5.5mm (small pupil mode φ 4mm)
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 100W Halogen lamp
Flash for Photography	300WS Xenon flash lamp
Flash Compensation	± 3 steps
Internal Fixation Target	4 fixed dots right or left eye switching (Non-Mydriatic mode)
External Fixation Target	red / green, blinking
Amount of Exposure	0.6WS ~ 300WS 19 steps Proper exposure automatically set, based on angle of field and film sensitivity
Filter	Barrier filter, exciter filter electronic powered insertion
Fluorescein Photography	Photographic interval: 1 frame / sec. or at will
ICG Function	Option for VX-10i only
Monitor	5.5 inch, LCD monitor
Data Imprinting	Timer and handwritten data
Film Speed	35mm color film: ISO100 Fluorescein: ISO400 (3 times development)
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°
Power Supply	Input:AC100-240V 50/60Hz Power Consumption:280VA (normal) 1500VA (max)
Dimensions	400(W)×520(D)×620(H)mm ※2
Weight	35.5kg/78lbs ※2

※ 1 When using 35mm film, 0D

※ 2 Without video adaptor



※ All other companies and product names stated here are trademark or registered trademark of each company.

Distribution name: KOWA VX-10α

※ All specification and external design are subject to change without prior notice.

Distribution name: KOWA VX-10 i



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