

# Microscope Cameras

## VLA-FDM-SC412 Microscope Cameras

Precise focusing + high-definition output

- AFDM Auto-Focus and Dynamic Matching
- High-definition and high-frame-rate imaging performance
- Strong compatibility and convenient integration
- Scene-specific Imaging Optimization



One Platform Many Possibilities

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Get a Quote



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## Overview

### Introduction:

VLAFFDM-SC412 is an integrated digital microscope system that combines an electric continuous zoom lens, an automatic focusing module, a high-sensitivity CMOS camera, and an intelligent lighting system. It is specifically designed for scenarios such as industrial inspection, medical observation, teaching, and scientific research.

Its core technical architecture includes:

- Electric continuous zoom lens
- Automatic focusing system 4K imaging module
- Low noise

As part of VenusLab's selected imaging product portfolio, AFDM412 features both industrial-grade and scientific research-grade performance as well as ultra-high cost-effectiveness, enabling researchers, engineers, and educators to achieve more precise adaptation to scenarios.

### Features:

- 5 groups 16 elements EMZO with 0.0218~0.392X, 18 zoom ratio, supports auto and manual focus
- 250mm standard working distance with 205~255mm depth of field
- Sony 1/2.8" 4K Starvis CMOS with high signal-to-noise ratio
- 4K HDMI/USB/ETH/WiFi multiple video outputs
- 4K/1080P auto switching according to monitor resolution
- SD card/USB flash drive for captured image and video storage, support local preview and playback
- Built-in mouse control software XFCamView, all functions can be realized with USB mouse

### Dimension:



## Specifications

Specification of VLAFFDM-SC412	
White Balance	Auto White Balance
Color Technique	Ultra-Fine Color Engine
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK (Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)
Recording System	Still Picture or Movie
Operating Environmentt	
Operating Temperature(in Centidegree)	-10~ 50
Storage Temperature(in Centidegree)	-20~ 60
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH

Software Environment	
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 8.1 /10(32 & 64 bit ) /ToupViewOSx(Mac OS X)/ToupLiteLinux/ToupLite
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory: 4GB or More
	Ethernet Port: RJ45 Ethernet Port
	Display:19" or Larger
	CD-ROM

## Packing List

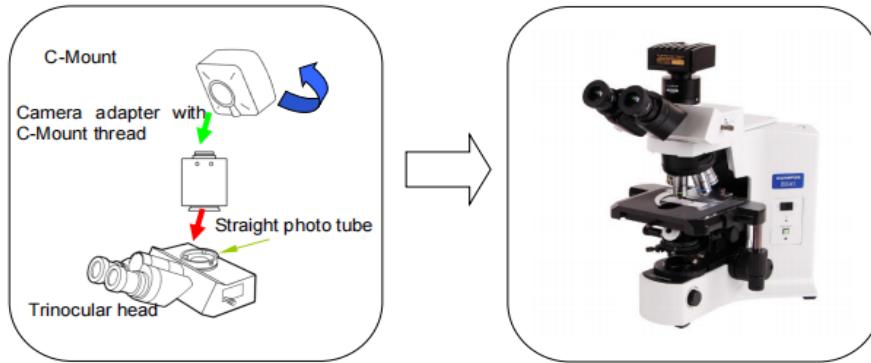


Standard Packing List		
A	Gift box: L:220cm W:220cm H:110cm (1pcs, 2.0kg/box)	
B	AFDM412	
C	Power Adapter: Input: AC100~240V 50Hz/60Hz, Output:DC 12V 3A	American Standard: Model: HKA03612030-7K : UL/CE/FCC (With American Standard AC Power Cable)European Standard: Model: HKA03612030-7K : UL/CE/FCC(With European Standard AC Power Cable)EMI Standard: FCC Part 15 Subpart BEMS Standard: EN61000-4-2,3,4,5,6
D	USB Mouse	
E	HDMI Cable	
F	USB2.0 A male to A male gold-plated connectors cable /2.0m	
G	CD (Driver & utilities software, Ø12cm)	
Optional Accessory		
H	Ethernet cable	
I	LED Ring Light(DRL-5076A-NPC)	
J	USB flash drive	
K	USB WLAN adapter	
L	SD card(16G)	
M	Calibration kit	106011/TS-M1(X=0.01mm/100Div.);106012/TS-M2(X,Y=0.01mm/100Div.);106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.)

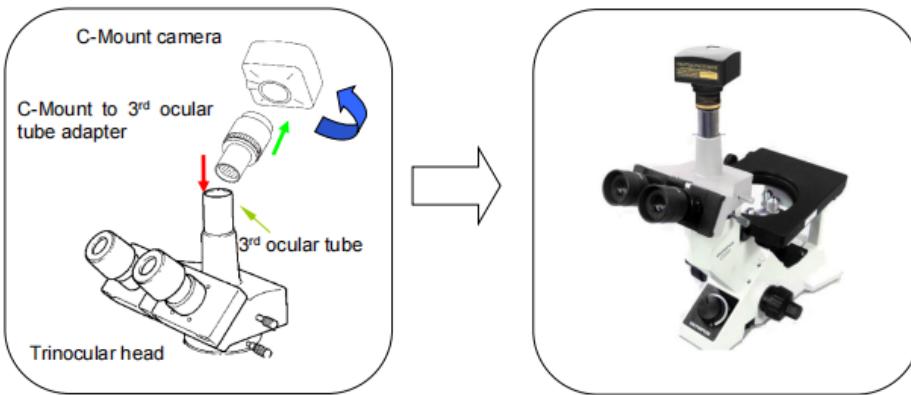
## Microscope Configuration

### Trinocular Digital Microscope

Step 1 Attach the C-mount camera and Adapter to the straight photo tube

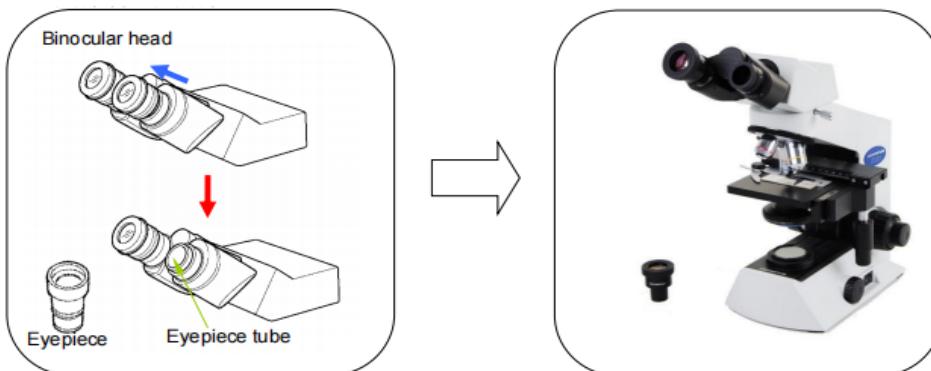


Step 2 Attach the C-Mount camera and adapter to the 3rd ocular tube or the other 2 eyepiece tubes

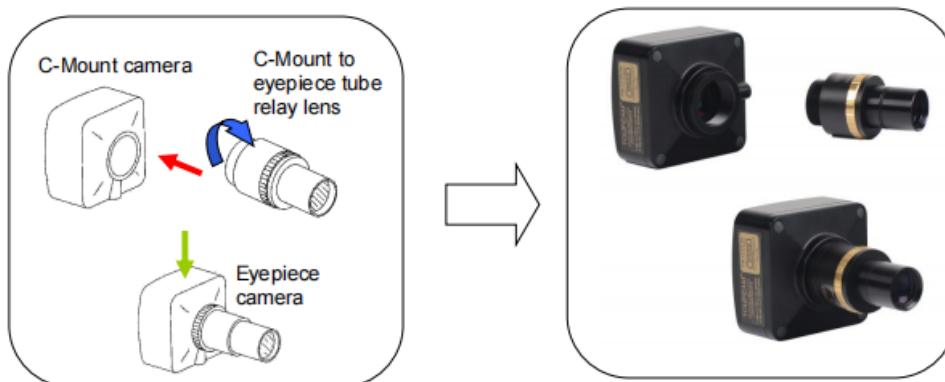


### Binocular Digital Microscope

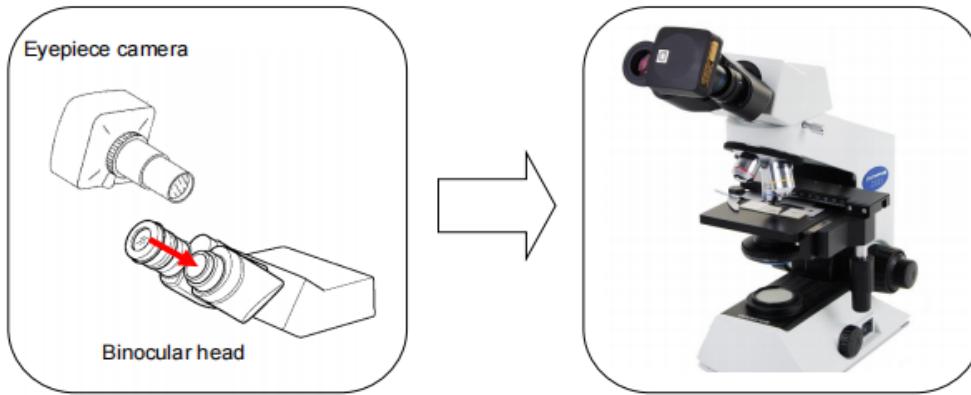
STEP 1: Remove the eyepiece from the ocular tube or the eyepiece tube



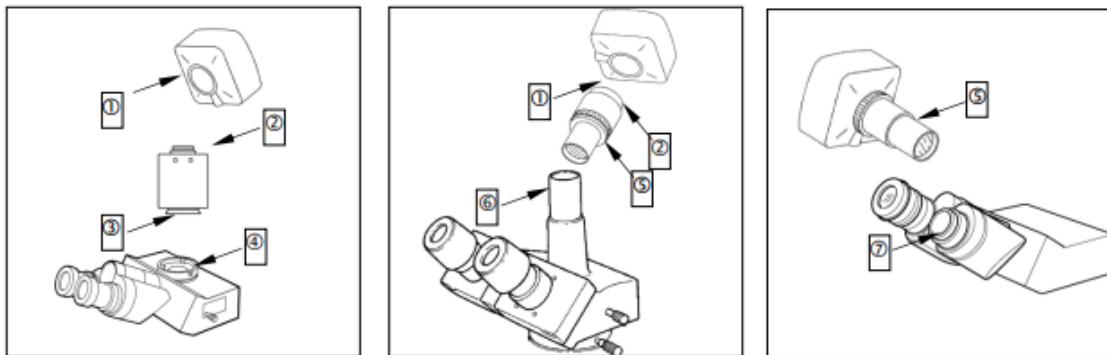
STEP 2: Attach (Screw) the camera Adapter to the C-mount camera



STEP 3: Attach (Insert) the eyepiece camera into the ocular tube or eyepiece tube



## Size Description of the Connection Parts



- Standard C-Mount: Dia.1 inch (25.4mm) female thread
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- Camera Adapter connector: size varies between microscope brands
- Straight photo tube: size varies between microscope brands
- Relay lens: standard eyepiece connector size, Dia.23.2mm (male)
- 3 rd ocular tube: standard eyepiece connector size, Dia.23.2mm (female)
- Ocular tube: standard eyepiece connector size, Dia.23.2mm (female)

## Explore Series

Model	Binning	Length x Width x Height	Exposure (ms)	G Sensitivity/ Dark Signal	FPS/Resolution	Weight
VLA-FDM-SC412-H4KPA	1x1	80mm x 80mm x 122mm	0.04~1000ms	300mv/0.13 with 1/30s	30@3840x2160(HDMI) 30@3840x2160 (NETWORK) 30@3840x2160(USB)	0.75kg

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

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