ATF8100

Auto-focus,Auto-scan

Super FOV Fluorescence Microscopic

Datasheet

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Description

ATF8100 is a Auto-focus,Auto-scan Super FOV Fluorescence Microscopic designed by Optosky，two light sources are available,100W digital mercury lamp power supply and LED fluorescent light source. A third-order filter is used to filter the light source, and a six-hole turntable epi-fluorescence device (optionally with B, G, UV, and V filters) can be used to switch between different color filters to collect fluorescent signals in different wavelength bands.

The ATF8100 is TE-cooled down to -20℃, high sensitivity and high resolution spectrometer, which can perform spectral analysis on the target in the imaging area with a resolution of <2nm.

ATF8100 is loaded with 50X50mm large-area electric scanning platform,supplemented by advanced and fast super-large image stitching algorithms, thus achieve the functions of rapid scanning and large-area imaging.

The ATF8100 is equipped with a highly stable autofocus system that can dynamically adjust the focal length of the target in real time to achieve the best imaging effect.

The ATF8100 is connected to the computer via a USB 2.0 interface, and has advanced and easy-to-use PC-side control software, which can achieve perfect experimental operation.

Model	Explanation
ATF8100	5-mega pixels CCD
ATF8100A	TE-COOLED 20-mega pixels high performance sCMOS, -15℃, sensitivity increased by 50%

Features

- TE-cooled down to -20℃， high sensitivity and high resolution spectrometer
- Large area automatic scanning, automatic image splicing
- Real-time autofocus
- Powerful image acquisition and analysis software
- Excellent infinity chromatic aberration correction optical system to ensure excellent resolution and clarity
- Six-hole rotating disk fluorescence device, provides a variety of fluorescent excitation block selection
- Five-hole turntable phase contrast device, equipped with 4X/10X/20X/40X/100X and other infinite flat field phase contrast objectives, can be used for phase contrast and bright field observation
- Novel integrated frame provides excellent stability and operability
- Modular structure design, multi-functional combination to ensure the versatility of the system
- Large visual field eyepiece, field of view up to 23mm, more flat and comfortable observation
- Two - shift three - eye observation tube,100% observation; 20% observation, 80% photography at the same time

Applications

- Research Lab
- Hospital and Biochemical Lab
- Hospital Clinical Test
- University Teaching

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1.1 Specification

Parameters	Specifications	Remarks
Spectral detection system (different wavelengths can be customized, see spectrometer selection)		
Spectral detection range	300-1100nm，200-400nm、500-1100nm、350-810nm optional	
Resolution	1 - 2.5 nm	
Light path structure	f/4 cross asymmetric C-T optical path	
Spectral detector	2048 pixels CMOS	
Integration time	1ms-60min	
Sensitivity	1300 V/(lx·s)	
Dark noise	0.4mV/RMS	
Signal to noise ratio	>800:1	
Dynamic Range	10000：1	
Spectrometer interface	SMA905	
Epi-fluorescence system		
Light source (choose one)	100W digital mercury lamp power supply or LED fluorescent light source	
Six-hole turntable epi-fluorescence device	Standard three-channel switching: blue excitation B, green excitation G, purple excitation Uv	
Excitation filter set	Blue excitation wavelength:450~490nm	

(three channels)	Emission wavelength：515nm Green excitation wavelength:495~555nm Emission wavelength：595nm Violet excitation wavelength：380~415nm Emission wavelength：475nm	
Microscopic optical system		
Optical system	OTICS infinite distance chromatic aberration correction optical system	
Magnification range	40X～1600X	
Eyepiece	10X wide field of view, high eyespots flat field eyepiece, field of view Φ22mm (Φ23mm optional)	
Infinite distant flat field achromatic objective lens	Standard configuration 4X/10X/20X/40X (other optional)	
Observation tube	Hinged trinocular observation tube, tilted at 30°, interpupillary distance adjusted from 48mm to 76mm, three eyepieces and two gear shifts	
Converter	Internal tilt type internal positioning five-hole converter	
Focusing device	Coarse and micro coaxial focus adjustment, coarse adjustment belt elastic adjustment, and the focus of the upper limit device	
Microscope stage	Steel wire transmission stage (X axis does not protrude), double clip structure	
Focusing mirror	N.A.0.9/0.13 Swing-out focusing mirror,with variable light bar	
Transmission lighting system	6V/30W Halogen lamp（Wide voltage input：100V～240V）, Field light bar, adjustable center	
Camera	Equipped with 320/5 megapixels and other digital camera system for bright field shooting	
	Equipped with 310/5.1 megapixel CCD digital camera for professional picture shooting	
X、Y axis Electronic control two-dimensional platform		
Moving range	50 X 50 mm	
Mobile resolution	0.1 μm	
Positioning accuracy	1 μm	
Scanning speed	20mm/s	
Focusing method	Electric, real-time focusing	
Z axis（Electronic control, auto focus)		
Focusing accuracy	≤ ±0.2 μm	
Maximum distance	20 mm	
Focusing speed	No more than 10 s	
Dimensions	290 X 210 X 220 mm	
Weight	9.3 kg	
Software		
Function	Visual imaging and real-time fluorescence spectrum detection	

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1.2 Schematic diagram of fluorescence spectroscopic imaging microscope

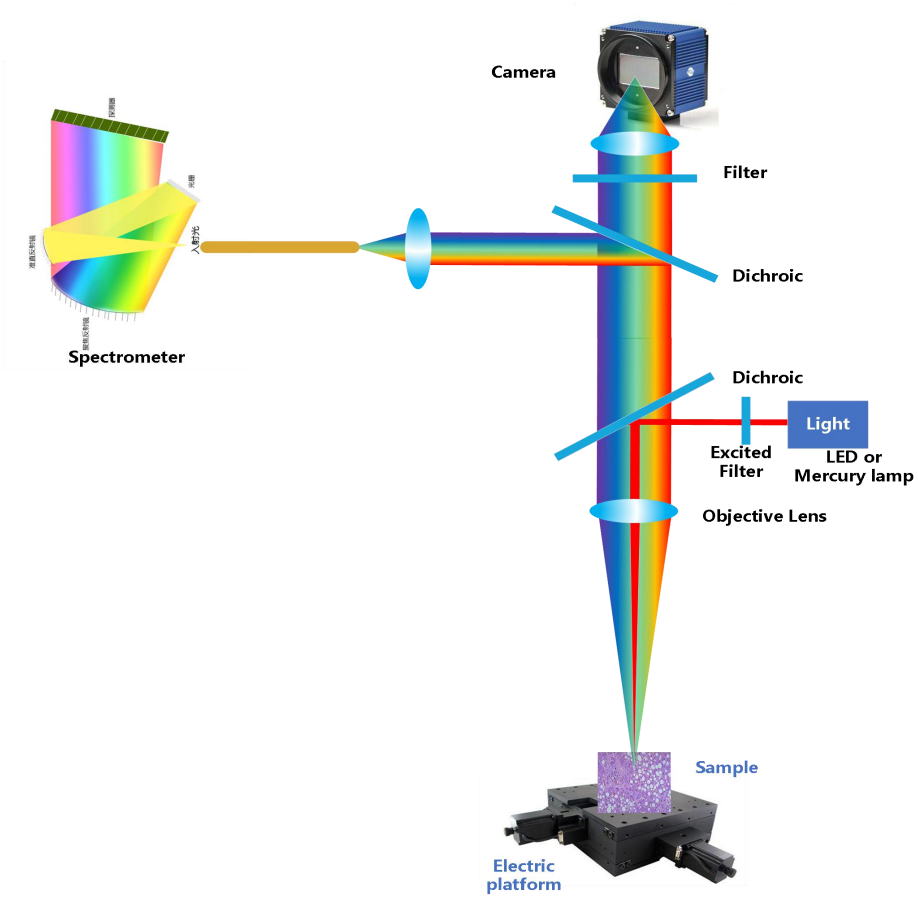

Figure1. Schematic diagram of fluorescence spectroscopic imaging microscope

1.3 Epi-fluorescence intermediate and spectrum collection intermediate

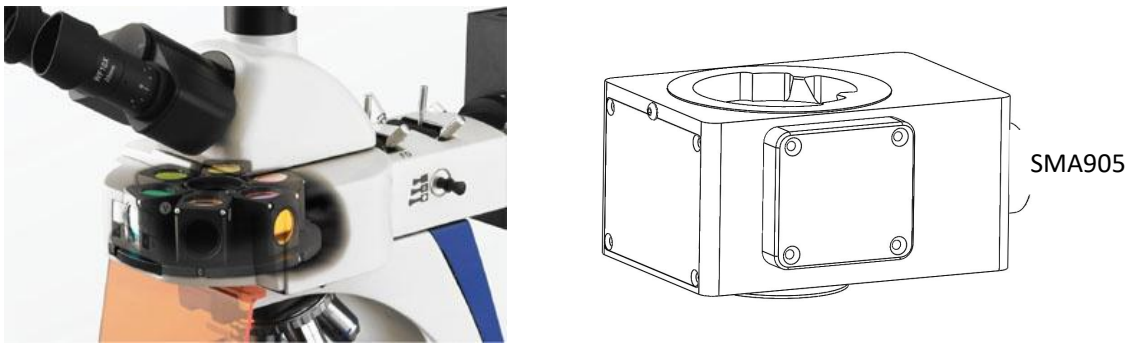

Figure2. Epi-fluorescence intermediate (left) and spectrum collection intermediate (right)

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1.4 Application case

1.4.1 Fluorescent actual shooting effect

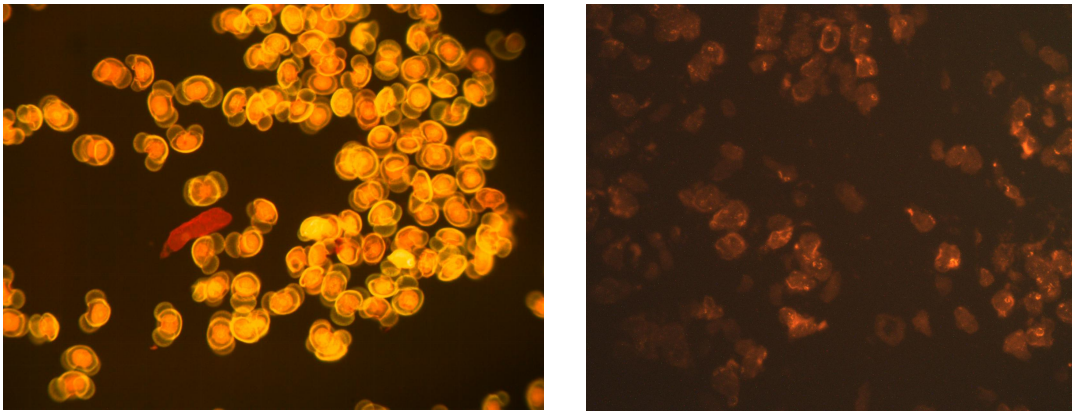
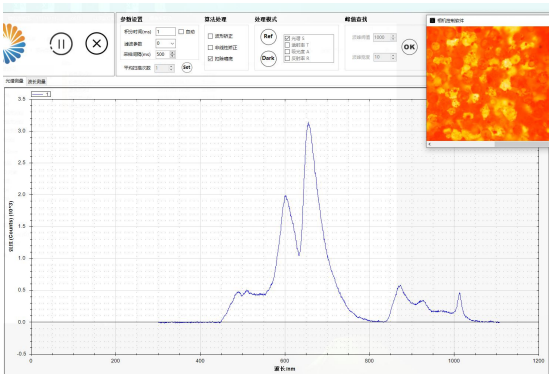
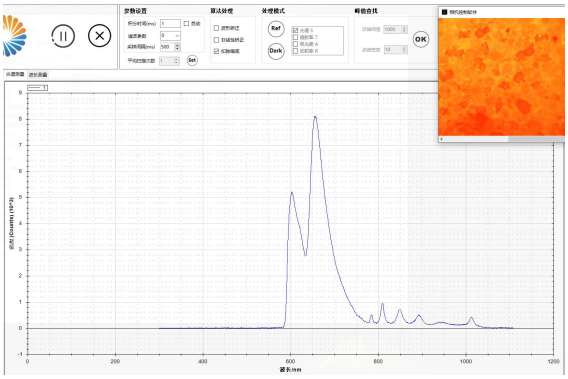


Figure3. Pollen（left）and Cancer tissue（right）actual shooting effect

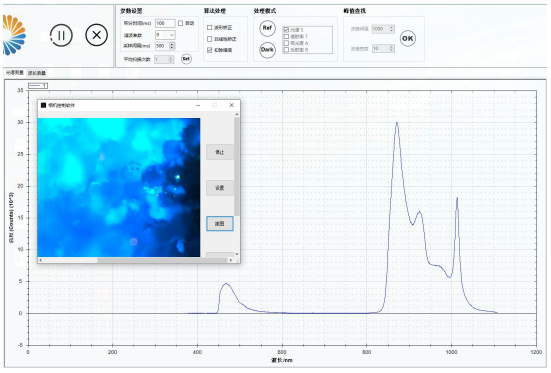
1.4.2 Fluorescence spectrum detection effect



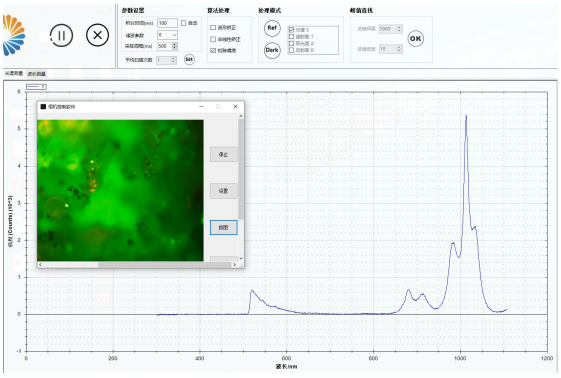
Pink phosphor (purple channel)



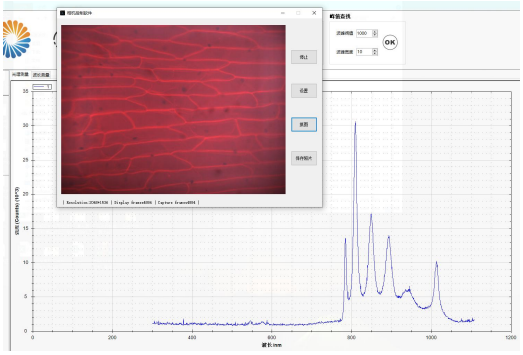
Pink phosphor (green channel)



Blue phosphor (purple channel)



Blue phosphor (blue channel)



Onion skin (green channel)