

FM 100 Fluorescence Microscopy System Help Manual



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1 System principle

Fluorescence Microscope is a microscope used to observe fluorescent or phosphorescent substances. The principle of fluorescence microscopy is to use excitation light of a specific wavelength (or band) to illuminate the sample. The excitation light is absorbed by the fluorophore and emits emitted light with a longer wavelength. The emission filter can be used to separate the emitted light from the excitation light. The emitted light is irradiated onto the detector to achieve fluorescence imaging. In recent years, fluorescence microscopy systems have been widely used in biological research, such as observing fluorescently labeled biomolecules, which makes fluorescence microscopy increasingly important.

2 System parameters

- Standard working distance series / long working distance series objectives (optional);
- Imaging light path: 1X (Tube lens focal length 180 mm), different magnifications can be customized;
- Imaging light path image surface size: 25mm ;
- Imaging light path spectral range: visible light;
- Camera interface: C/M42/M52, etc. optional;
- Lighting method: Critical lighting / Kohler lighting optional;
- Illumination source: LED light source with power 3 W and wavelength 365nm ;
- Fluorescence module: DAPI single bandpass UV filter (excitation film 365nm, emission film 445nm, dichroic mirror 405nm) , can be customized;

Table 1 Standard working distance objective lens parameters (45mm parfocal length)

Order code	Magnification	NA	WD/mm	Focal length(mm)	Resolution(um)	OFOV(mm)	IFOV(mm)	Thread
Flour5XA	5X	0.15	20	3.6	2.23	5	25	M20*0.705
Flour10XA	10X	0.30	15	18	1.1	2.5	25	M20*0.705
Flour20XA	20X	0.40	10	9	0.75	1.25	25	M20*0.705
Flour50XA	50X	0.80	2.5	3.6	0.41	0.5	25	M20*0.705

Table 2 Long working distance objective lens parameters (60mm parfocal length)

Order code	Magnification	NA	WD/mm	Focal length(mm)	Resolution(um)	OFOV(mm)	IFOV(mm)	Thread
Flour2.5XA	2.5X	0.075	6.2	80	4.46	10	25	M26*0.705
Flour5.0XA	5X	0.15	23.5	40	2.2	5	25	M26*0.705
Flour10XA	10X	0.30	22.8	20	1.1	2.5	25	M26*0.705
Flour20XA	20X	0.40	19.2	10	0.8	1.1	25	M26*0.705
Flour50XA	50X	0.55	11.0	4	0.6	0.44	25	M26*0.705

4 Application

4.1 Biomedical field applications

In the field of biomedicine, fluorescent dyes are mainly used to label samples, so that cells and submicroscopic cellular components can be accurately and detailedly identified under a fluorescence microscope. Figure 2 shows an image of BPAE cells stained with DAPI fluorophore and captured using an FM100 series microscope system.

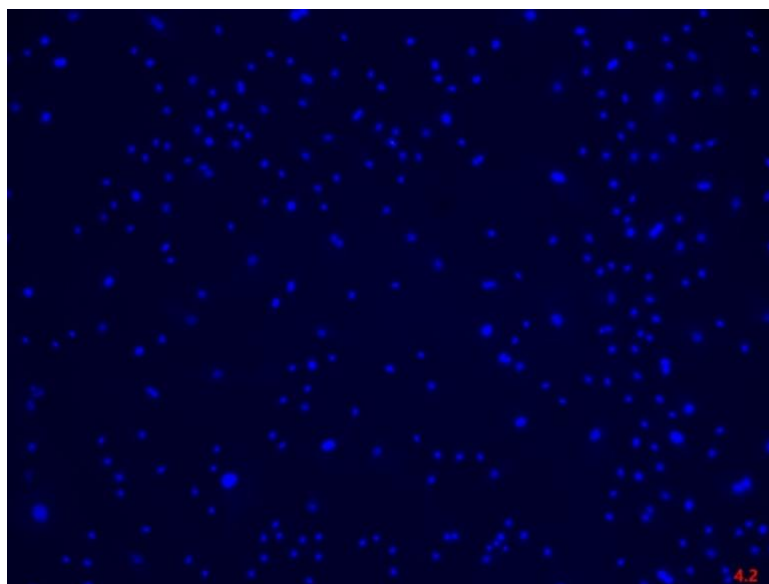


Figure 2 FM100 series microscope system (10X objective lens) captures BPAE cells (365 nm excitation light)

4.2 Paper industry applications

Figure 3 shows an image of paper taken using an FM100 series fluorescence microscope. Under 365nm excitation light, the bleach in the paper is clearly imaged, but the presence of the bleach cannot be observed with the naked eye.

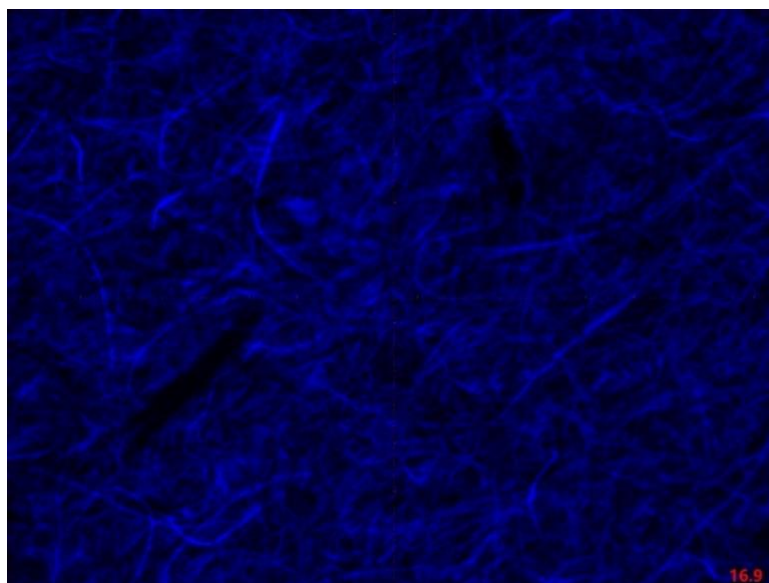





Figure 3 FM100 series microscope system (10X objective lens) (365nm excitation light)

5 Contact information

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