

Factors Influencing the Resolution of the Confocal Laser Scanning Optical Microscope

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This paper describes the imaging principle of the confocal laser scanning microscope, discusses various factors that influence the resolution of the confocal laser scanning microscope, including the diameter of the pinhole in the front of the detector, stray light and the numerical aperture. By using the theory of diffraction optics, this paper demonstrates the reason why confocal imaging achieves a super resolution capability. Finally, through the experiment, a new method of reducing the stray light and increasing the resolution are proposed.

Key Words: confocal; microscope; resolution; stray light