

Microscopy

Biology

The techniques, their resolution, and what each can show.

Resolution limits by technique.

Type	Resolution	Can view
Light microscope	~200 nm	Living cells, colour
TEM	~0.5 nm	Internal ultrastructure; dead only
SEM	~3–10 nm	Surface, 3-D; dead only
Confocal	~200 nm	Optical sections, fluorescence
Super-resolution	~20 nm	Beyond the diffraction limit

The light microscope's limit is set by the wavelength of light. Electron microscopes use a far shorter wavelength.