

Microscope Formulas

'n' refractive index, 'λ' wavelength, 'NA' Numerical Aperture, 'f' focal length

Depth of Focus:

$$\frac{n\lambda}{(NA)^2}$$

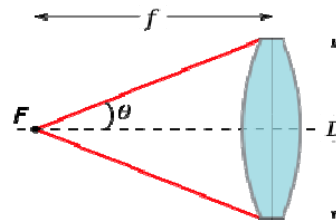
Depth of Field:

$$\frac{\lambda\sqrt{n^2-(NA)^2}}{(NA)^2}$$

Useful magnification Range:

Minimum= 500 X (NA)
Maximum= 1000 X (NA)

Numerical Aperture:



$$NA = n \sin(\theta) = \frac{nD}{2f}$$

f-Number:

$$= \frac{f}{D} = \frac{1}{2(NA)}$$

Resolving Power:

$$r = \frac{0.61 \lambda}{(NA)}$$