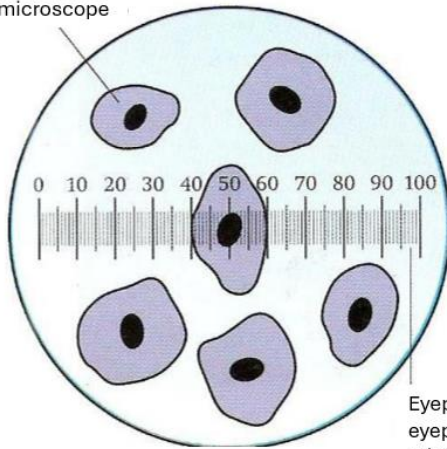


OCULAR MICROMETER AT A GLANCE

As a rule of thumb (with an eyepiece scale (graticule) 10mm in 100 parts):

Objective magnification	Each small division Equals (in mm)	Each small division Equals (in μm)
10x	0.01	10
20x	0.005	5
40x	0.0025	2.5
100x	0.001	1

Cells on a slide on the stage of the microscope



Eyepiece graticule in the eyepiece of the microscope

On 40x objective:

1 division = $2.5 \mu\text{m}$
Cell size = 20 divisions
= 20×2.5
= $50 \mu\text{m}$

On 100x objective:

1 division = $1 \mu\text{m}$
Cell size = 20 divisions
= 20×1
= $20 \mu\text{m}$

Principle

A typical eyepiece scale looks like this:



It is 10mm in length and each mm is divided into 10 parts.

So each small division = $0.1 \text{mm} = 100 \mu\text{m}$.

The eyepiece scale is located at the primary image of the microscope. So it is in focus with image of the specimen.

The specimen is magnified onto the scale by the **magnification of the objective**. So, the actual amount of specimen superimposed on the scale is: $0.1 \text{mm} \div \text{Objective magnification}$.

References

Microtec Microscopes. Calibration of Microscope Eyepiece Graticule 2014 [Available from: https://www.tecmicroscopes.co.uk/wp-content/uploads/2014/08/Microtec_Graticule_Calibration.pdf].