



# Handheld digital microscope

MICROSCOPE WITHOUT EYEPIECES

The digital microscope uses a digital camera instead of an eyepiece to acquire images displayed in real time on a monitor or, if integrated, its LCD screen.

## Feature

- › **ZOOM:** depending on the model can go up to 1600x
- › **WEIGHT:** between 100 and 200 g
- › **BATTERY:** rechargeable, lasts for 4 up to 5 hours
- › **PHOTO & VIDEO:** some models have a storage memory (2.0MP/1440P)
- › **VISUALISATION & DATA ANALYSIS:** in 2D or in 3D
- › **LED LIGHTS:** between 6 and 8 lights. Some models allow you to adjust the brightness with bezel or buttons
- › **INTEGRATED SCREEN:** some models possess one of small size
- › **COMPATIBILITY:** it can be linked to a PC or a cell phone or a tablet
- › **PRICE:** between 50.00 and 70.00 €

## Keywords

CITIZEN SCIENCE

ENVIRONMENTAL EDUCATION

STEM - Science, Technology, Engineering and Mathematics

## How it works

Being both a desktop and portable instrument, it lends itself **to laboratory and field experiences**. For example, it can be used as a tool within **educational pathways to the study of chemistry and biology**.

By having a **built-in screen** or the option to **be connected to a screen** (such as a phone or tablet), during field activities it allows the user to see in the immediate what he or she is reading, thus studying live microscopic plant and animal **characteristics that otherwise cannot be observed**.

From the study of microorganisms, we can come together to understand how plants were formed, by whom they are inhabited, what problems they are afflicted with (e.g., disease, anthropogenic impact), how the scientific community works in monitoring and safeguarding.



**ATTENTION** - When choosing the model you intend to purchase, take into account your usage needs based on the characteristics of: memory, presence or absence of the built-in screen, and battery life.



## Best practices

Throughout Europe, various associations and organizations, **organize “BioBlitz” days**, a collaborative timed competition to discover as many species of plants, animals and fungi as possible, in a predetermined place, within a defined period of time. By recording nature nearby, everyone can support biodiversity conservation research by connecting with nature and enjoying the outdoors. In the case of the Bioblitz, a smartphone APP is used (see suggested video).

This practice could be replicable in Model Forests areas by organizing theme days such as “The Discovery of Plant Pathogens” using the digital microscope.

## Learn more about



### WEB

- › <https://conductscience.com/digital-microscopes-a-complete-guide/>
- › <https://www.parcomontebarro.it/news-eventi/bioblitz-lombardia-esploratori-della-biodiversit%C3%A0>
- › [https://www.isprambiente.gov.it/it/attivita/formeducambiente/educazione-ambientale/programma-di-iniziativa-per-le-scuole/programma-iniziativa-educazione-ambientale-ispra\\_as-2023\\_24-def-1.pdf](https://www.isprambiente.gov.it/it/attivita/formeducambiente/educazione-ambientale/programma-di-iniziativa-per-le-scuole/programma-iniziativa-educazione-ambientale-ispra_as-2023_24-def-1.pdf)



### VIDEO

- › <https://www.youtube.com/watch?v=fbgzy92JJGA>