

DIPLE
The Revolutionary Microscope For Any Smartphone

Thanks for purchasing DIPLE, a product designed and manufactured by SmartMicroOptics Srl.

With your smartphone and DIPLE you can have a microscope anytime. Within the portable box of size 175 mm x 100 mm x 40 mm and in less than 0.5 Kg, you will get powerful and extra-solid lenses and accessories for taking videos or pictures at the microscopic scale, with your phone.

You do not have to mount anything on the phone; just lay your device down on the DIPLE box, aligning the phone camera with the objective lens and with the light source under it.

You can also use your phone without removing your personal protective cover.

A minimal footprint for a microscope; but extremely powerful.

Patent Pending



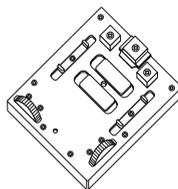
diple.smartmicrooptics.com

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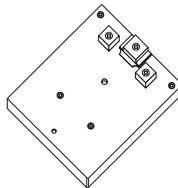
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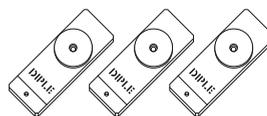
WARNING:
CHOKING HAZARD - Small parts.
Not for children under 3 years.



Fine Stage:
with fine stage the user can move a sample on common glass Slide (76 mm x 26 mm) using two screw-driven systems, along two perpendicular directions. Rotating the two wheels it is possible to shift the slide positioned over the light in controlled way. The Fine Stage can be used also like the Standard Stage, removing the two lateral elements that keep the glass slide or the slide shifter in position.*



Standard Stage:
remove the protective film from its surface; with the standard stage, the user shifts manually the sample under the DIPLE lens.*

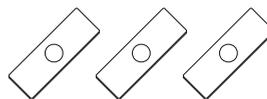


Lens Tiles:
up to 3 different objective lenses.*

Red Lens (35x, res. 3 micron)
Grey Lens (75x, res. 1 micron)
Black Lens (150x, res. 0.75 micron)

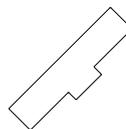


Up to 3 screws for fine regulation of the lens elevation.*



3 prepared glasses:
1 Zoology, 1 Histology, 1 Botanical
+1 plain slide for your samples.

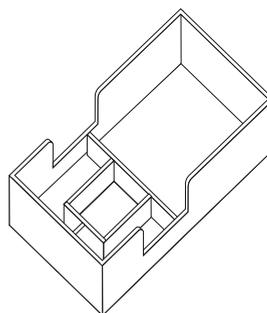
Optional:
1 microscope ruler
(0.01mm each division).



Slide Shifter:
use it under the glass slide, for fast, manual shift of the sample.



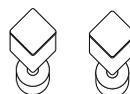
Coverslips:
for covering your samples.



Box:
container & structure supporting light, stage and your phone, when the product is in use.



Light source:
white LED for brightfield microscopy.
Works with two CR2032 batteries.



2 screw feet:
additional mechanical stands for the phone, if the box is not enough.



Screwdriver:
use it for releasing/adjusting the blocks that keep the lens tiles in position or, for the fine stage, the elements that keep the glass slide in position.



Pipette:
for liquid drops on slides.

(* depending on the purchased item.

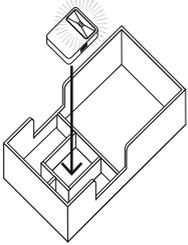
Instructions

Some steps in the use of DIPLE are in common in the use of Standard Stage and Fine Stage. The Fine Stage can be used like a Standard Stage, after removing the two elements that guide glass slides 76 mm x 26 mm, using a screwdriver.

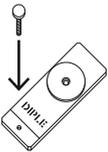
Info

Visit our website for examples, tutorials, tips & troubleshooting.

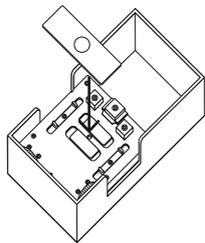
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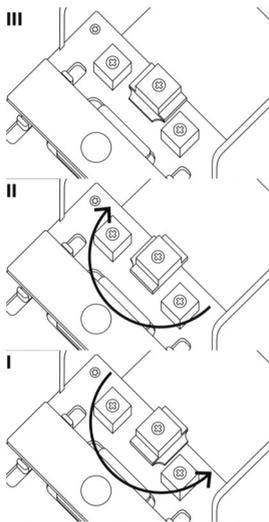
- 1** Turn-on the light: lift the stage vertically. The light source is in its site, under the stage. Remove the insulator foil from the batteries, before switching it on for the first time. Replace the light in its original position, with light on. The light must be aligned with the hole of the stage.



- 2** Under the stage you can find screws with knob, for the fine elevation of the objective lenses (one for each objective lens of your kit). Insert this screw in the hole near one end of DIPLE.



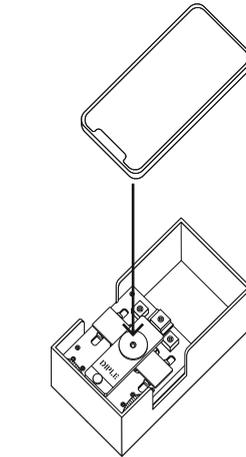
- 3** Place the sample: place your sample on a glass slide and position it in the center of the illuminated hole. The first time use one of the prepared slides in the box, to get practice on the focusing procedure.



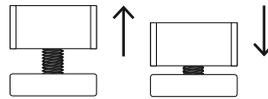
- 4** Set the black foot: Rotate the black foot with 3 steps following this rule of thumb:

- Low step (III) when you use the Black tile
- Higher step (II) when you use the Red tile
- Medium step (I) when you use the Grey tile or the Black tile

The higher the magnification, the lower the lens-sample distance.



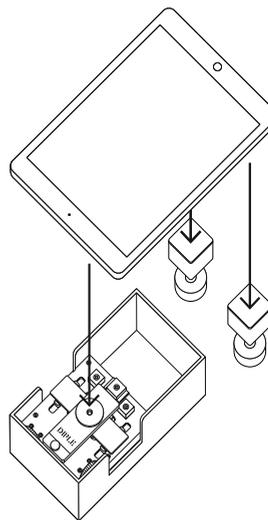
- 6** Place the phone: open your favorite camera APP. For aligning the phone lens on the DIPLE lens look in your screen and move the phone close to the tile, pointing to hole in the black ring; lay the phone on the box and on the black ring of the tile.



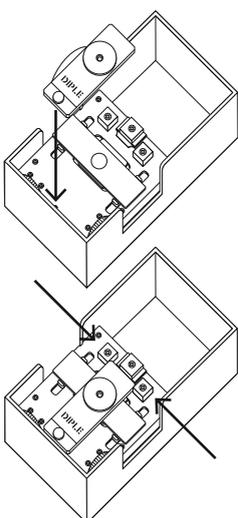
- 7** Screw feet use: the ideal imaging condition is with horizontal tile and horizontal phone.

If you look for a fine tuning, you can use the screw feet to manage the elevation of the phone, instead of the laying the phone on the box sides.

Use the feet also for tablets or large devices.

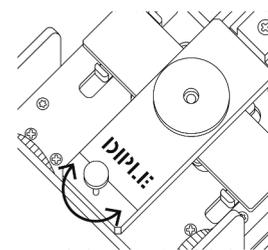


- 8** Focusing: lock the autofocus of your phone (feature that is also in our app, freely available from the website) once you see the light on your screen. Use the elevation screw to move up or down the lens, until you get the right focus.



- 5** Place the objective lens: the objective tile must be positioned keeping its side with the screw near the external part of the box. The screw must fit the little hole on the metallic plate of the stage. The writing DIPLE is on the top side of the tile.

The tile must fit within the 2 lateral blocks, when it lays on the selected step. The magnet on the rear side of the tile should help a stable positioning. Tight/release the blocks with a screwdriver, if needed (in particular, for the first setting).



- 9** Slide shifter: this part is an optional tool for helping fast, manual shifting of slides. Place it under the glass slide. It can be useful also in the case of preparations on non-standard slides, and with phone with central camera.