

SmartMicroOptics S.r.l.
SMO—US Corp.

DIPLE



DIPLE products catalogue — 2023-24

Who we are

SmartMicroOptics S.r.l. is a spin-off of the Italian Institute of Technology (IIT). It was founded in 2016 with the mission to provide everyone with the tools to explore the micro-world. SMO-US Corp. is its subsidiary in the US.

DIPLE is its brand new kit of powerful and portable microscopes for smartphone and tablet.

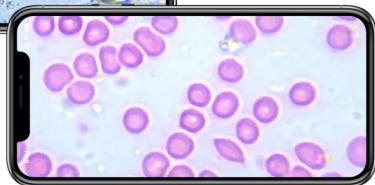
SmartMicroOptics (SMO) launched DIPLE with a successful Kickstarter campaign in the end of 2019; since then, SMO had shipped thousands kits around the World. Prestigious educational institutes already use DIPLE for their courses of Science subjects, as they recognized the unique mix of performance - portability - affordable price.



35x-200x



75x-500x

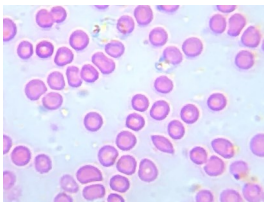


150x-1000x

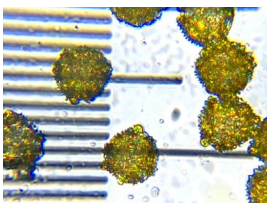
Different lenses for different technical applications

DIPLE

The revolutionary
microscope for any
smartphone



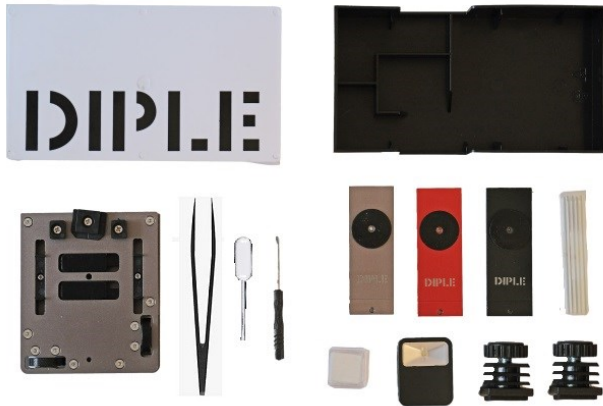
Human blood cells



Dandelion pollens

- Max resolution: 0.75 micron
- 0.5-0.7Kg
- Usable with any smartphone or tablet
- For microscopy in transmitted light





The most complete DIPLE Kit for microscopy in transmitted light.

Made up of the 3 Diple lens models (magnification of 35x, 75x and 150x) and the Fine stage, this kit is a versatile tool for exploring the microscopic world on standard glass slides. 3 different lenses for different levels of magnification and optical resolution below 1 micrometer.

The Kit contains:

- 1 Red lens
- 1 Grey lens
- 1 Black Lens
- 1 Fine stage
- 1 set of microscope slides (3 prepared slides, one plain slide, one micrometric ruler)
- 1 box with 100 coverslips
- 2 mechanical feet (for use with large phone or tablets)
- pipette
- tweezers



DIPLE Red & Grey & Standard Stage

The DIPLE Kit for microscopy in transmitted light most requested from educational institutes.

Made of 2 DIPLE lens models (magnification of 35x, 75x) and the Standard stage, this kit is a versatile tool for exploring the microscopic world on standard slides, at an affordable price. 2 different lenses with different level of magnification, both user friendly and usable with solid and liquid samples.

Many accessories are in the box, to facilitate scientific applications.

The Kit contains:

- 1 Red lens
- 1 Grey lens
- 1 Standard stage
- 1 set of microscope slides (3 prepared slides, two plain slide)
- 1 box with 100 coverslips
- 2 mechanical feet (for use with large phone or tablets)
- pipette
- tweezers



DIPLE Red & Standard Stage

The most affordable DIPLE Kit for microscopy in transmitted light .

Made of one DIPLE lens models (magnification of 35x) and the Standard stage, this kit is a versatile tool for exploring the microscopic world on standard slides, at a very affordable price.

Accessories are included in the box, to facilitate scientific applications.

The Kit contains:

- 1 Red lens
- 1 Standard stage
- 1 set of microscope slides (3 prepared slides, two plain slide)
- 1 box with 100 coverslips
- 2 mechanical feet (for use with large phone or tablets)
- pipette
- tweezers



DIPLE Lux - The DIPLE system in reflected light

With your smartphone and DIPLE Lux you can have a very powerful digital magnifying lens, anytime.

You have not to mount or stick anything on the phone; just move the lens of your phone toward the lens of the DIPLE system and get in contact with it.

You can manage the lens-subject working distance slightly tilting the tile, like a typical magnifying lens, or using the elevation screw in the tile for fine tuning.

Model	Working distance	Magnification level (approx.)	Optical Resolution (micron)	Field of view (mm)
DIPLE LUX	2,5 mm	30x	3,2	1



DIPLE Red



DIPLE Grey



DIPLE Black



DIPLE LENSES

The DIPLE lenses are objective lenses designed with one or more internal optical components, and are made of plastic and glass.

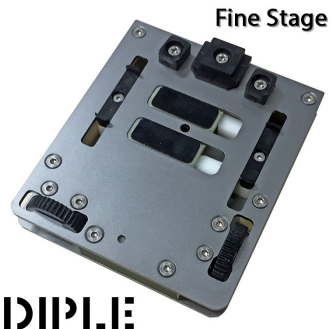
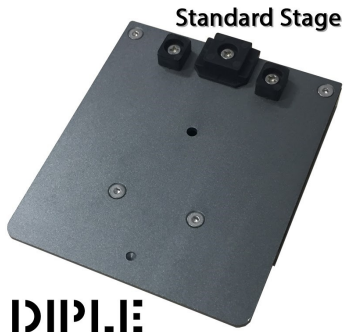
The outer side of the DIPLE lenses is made of flat glass. For this reason, they can be used in water immersion. In some cases, the water immersion can improve the performance and increase the working distance.

The high optical power of the DIPLE lenses gives a very short depth of field. In order to properly manage the focusing distance, an M3 –DIN464 screw is provided to control the elevation of each lens.

A black rubber ring is on the top of each lens to ensure a good grip with any phone model, while a magnetic plate is on the rear side of each tile, for a solid positioning over the DIPLE stage.

The approximated, equivalent numerical apertures (NAs) of the three objective lenses are 0.7, 0.55 and 0.4, respectively.

Model	Working distance	Magnification level (approx.)	Optical Resolution (micron)	Field of view (mm)
Black	0,3 mm	150x	0,75	0,2
Grey	0,5 mm	75x	1	0,6
Red	2,1 – 2,3 mm	35-40x	2,8	0,8 - 0,9

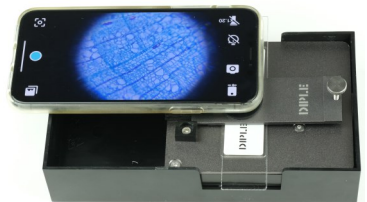


DIPLE STAGES

There are 2 possible stages usable in the DIPLE box:

STANDARD STAGE:

This stage supports samples of different size and shape. It is easy to use and it allows for many experiments of optics and biology. It is the most affordable choice and it has been the preferred stage from educational institutes. The samples should be moved manually, under the DIPLE objective lens.



FINE STAGE:

In many applications, a controlled movement of the sample is a mandatory requirement. For this reason, we offer a stage that perfectly suits the DIPLE box, with 2 screws driven system to shift a standard glass slide on the stage.

It is always possible to turn the Fine stage into a standard stage, removing the 2 slide-holding components with a screwdriver. This change could be useful also in case of non-standard samples.



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