



FLUOLED® Easy **High efficiency illuminator for transmitted light fluorescence**

- **High efficiency with standard objectives: no need for dedicated fluorescence lenses.**
- **Fits on existing bright field microscopes: no need for reflected light illuminator**
- **Good price/performance ratio**

FLUOLED® Easy is an integrated optical solution for fluorescence microscopy on transparent samples consisting of a unique, proprietary illumination system with a high power solid-state (LED) source replacing mercury and xenon arc-lamps found in reflected light microscopy. The fluorescence light source is used in transmission mode.



FLUOLED® Easy on Olympus CX41 microscope

Olympus is a trademark of Olympus Corporation.

Application examples:

- IFA (Immunofluorescence Assays- autoimmune diagnostics)
- Bacteriology (*Mycobacterium tuberculosis*, *Cryptosporidium*, *Trychinella spyralis*)
- Education

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Philosophy and goals

FLUOLED® Easy is a conveniently priced system to transform an existing bright field microscope into a unit capable of fluorescence.

It is particularly indicated for those applications where high illumination intensity is required when using low to medium power objectives, typically 10x, 20x and up to 40x and 50x. The kit is installed and dismantled within minutes, not requiring any alignment of the light source.

Light is provided by an inbuilt light emitting diode (LED) ensuring many years of operation.

Different from other LED devices, FLUOLED® Easy does not require an existing epi-fluorescence illuminator mounted on the microscope. So fluorescence becomes possible on microscopes where the original accessories are not available any more.

Battery pack operation is possible allowing fluorescence microscopy in the field.






General Characteristics

FLUOLED® Easy is designed to attach to a standard bright field microscope, where halogen white light function remains intact; this means transmitted light observation is possible without major changes in the optical configuration.

The fluorescence light source is used in transmission mode and will not void any warranties. FLUOLED® Easy is ideal for those applications on transparent samples where low to medium power lenses are used and cost savings on optics are important.

Material	Machined aluminum, anodized (black)
Weight (including packaging)	4 Kg
AC:DC power converter	100-240VAC 50/60Hz input, output 12V
Power cord	according to IEC 53, length < 2 metres (78,7")
Wire gauge	18 AWG
Operating temperature	5°C to +40 °C (41°F to 104°F)
Storage temperature range	5°C to +40 °C (41°F to 104°F)
FLUOLED® Easy is available in the following colour configurations:	450nm Royal Blue 480nm Blue 535nm Green

	FLUOLED® Easy	Excitation
	ROYAL BLUE	450 nm
	BLUE	480 nm
	GREEN	535 nm



FLUOLED® Easy is made in accordance with the followings standards:

EMC std.:

EN 55015:2006

EN 61547:1995 +A1:2000

EN 61000-3-2:2006

SAFETY std.:

EN 62471:2008

EN 60950:2006

Technical documentation kept by : Fraen Corporation S.r.l.

Microscope compatibility

Most diffused microscope models FLUOLED® Easy is available for:

Olympus: CX21, CX31, CX41, BX41, BX43, BX51

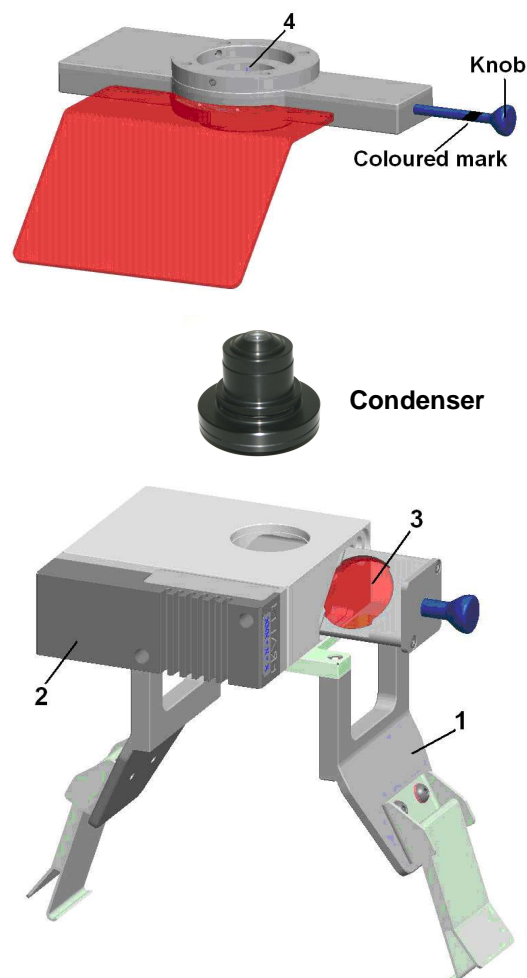
Nikon Instruments: E 200, E 400, E 600, E 50i, E 55i

Leica Microsystems: DM 1000, DM 2000, DME

Please inquire for models from other brands

Mechanical characteristics and layout information

- Installation and dismantling within minutes.
- Dedicated condenser made by Fraen for optimized illumination efficiency.



The adaptor (1) is clamped over the microscope base and holds the light emitting diode (2) inside. A 45° mirror (3) reflects light emitted by the diode through the condenser on the sample. Form and shape of adaptor may change from figure.

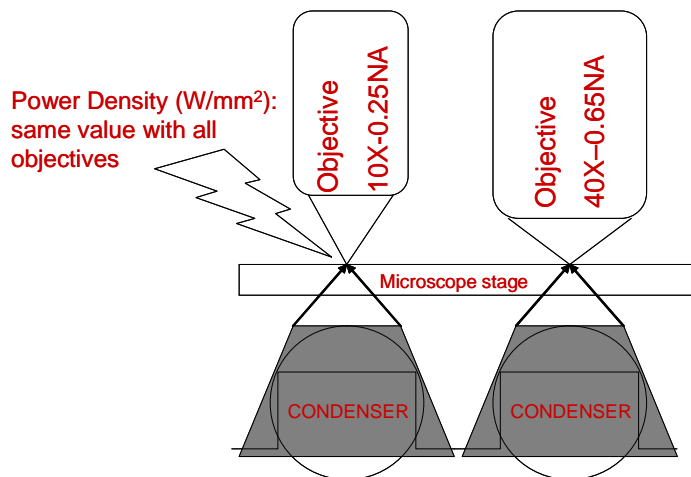
Fluorescence emitted by the sample is filtered by an optical filter (4) before reaching the observer. A knob on the filter carrier allows to select the position: when the knob is pushed in, LED light is automatically switched on. When the knob is pulled out, LED light is automatically switched off in order to allow transmitted white light observations.

A coloured reference mark on the knob helps to identify which position is selected.

Optical Characteristics

- Highly efficient optical system
- Excellent illumination uniformity on sample
- Optical components completely protected from external contaminating agents

FLUOLED® Easy works in transmitted light fluorescence excitation, where light emitted by the diode (LED cassette) is used in transmission mode rather than reflected mode. Bright field microscopy is not affected since the halogen white light function remains intact, which means transmitted light observation is possible without major changes in the optical configuration.



In transmitted light fluorescence the condenser creates a specific power density of light on the sample, which is a fixed value. Objectives with smaller numerical aperture typically have a larger diameter of the front lens and therefore are able to capture more light emitted by the sample. Furthermore conveniently priced objectives have less glass inside allowing a very high signal intensity at low magnification (10x, 20x). At 40x or 50x still very good illumination is achieved.

Excitation light remains constant when changing the objective, regardless of numerical aperture, and consequently always the same area is illuminated.