The Power of Fluorescence

The Leica MZ10 F Stereomicroscope with patented TrippleBeam™ Technology for Routine Stereo Fluorescence

Leica
MICROSYSTEMS

Fluorescence Technology for Routine Use

Leica MZ10 F Fluorescence Stereomicroscope
with EL6000 Illumination

The Leica MZ10 F fluorescence microscope supports researchers while viewing, sorting and selecting fluorescent specimens in the laboratory. With its excellent image contrast, 8× to 80× magnification, modular design and M-series accessories, the Leica MZ10 F fulfills all laboratory requirements with regard to fluorescence.

The 10:1 zoom range and high magnification, spanning from 8× to 80×, make this stereomicroscope a perfect choice for quick sorting and screening tasks. The high resolution of 375Lp/mm and 0.125 numerical aperture (1.0× PlanAPO) give the ability to view small structures clearly and precisely. Combined with the industry's largest choice of illumination systems, main objectives, and ergonomic accessories, the Leica MZ10 F is the ideal solution for routine fluorescence use.

The outstanding feature of the Leica MZ10 F: TripleBeam™, Leica's patented third beam path. This separate fluorescence illuminator ensures that light at all zoom positions is accurately guided through the correct path to ensure a dark background within the field of view. The high signal-to-noise ratio results in best-in-class contrast and high-quality fluorescence images that are detail rich and reflex-free, with jet black backgrounds.

Flexible Solution

The Leica MZ10 F is incredibly flexible to adapt to a researcher's individual needs. Leica offers a wide range of standard filters as well as custom filters for almost every fluorescence technique along with a variety of objectives and attachments to ensure that the MZ10 F is perfectly customized to meet each application requirement.

UV Protection

Leica has introduced strict precautions to protect users from the effects of intense UV radiation and the possibility of causing damage to the retina. UV barrier filters are permanently installed in the observation beam paths, such as a UV protection screen above the specimen plane, stray-light protection at the mercury lamp housing, and blank filter cartridges in the empty filter positions.

MZ10 F

Outstanding features

- 10:1 zoom range with high numerical aperture of 0.125 for excellent representation of small structures
- TripleBeam™, Leica's patented separate beam path for extremely intense fluorescence illumination
- FLUOIII™, Leica's patented, 4-position, rapid change filter system
- Wide range of standard filters and availability of custom filters for almost any fluorescence technique
- Comprehensive user protection against UV radiation
- Innovative contrast possibilities with Leica's high-performance transmitted light bases
- Wide variety of available objectives and accessories to provide the best solution for specific application requirements with respect to optical quality and working distance

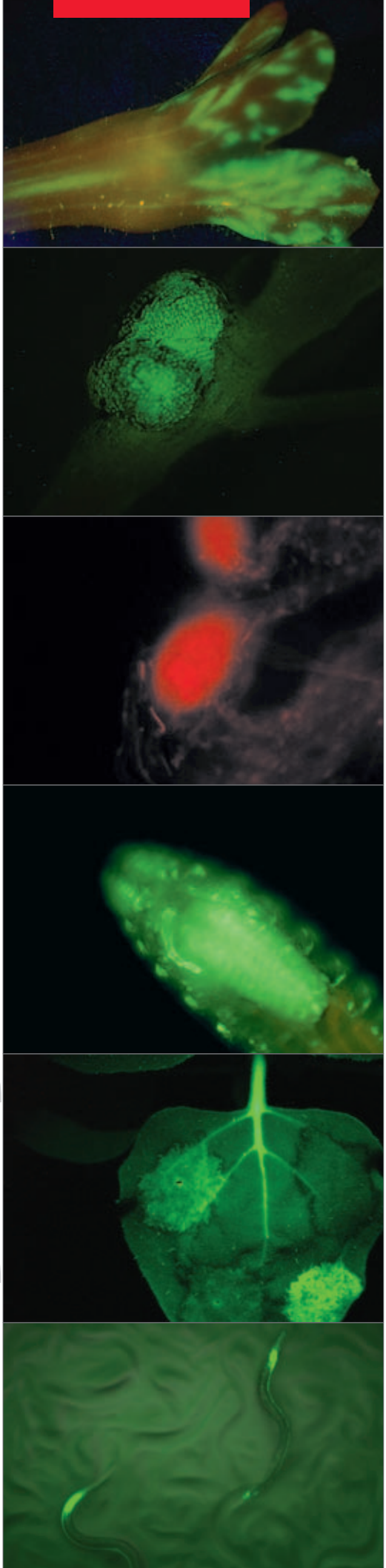
Accessories to Enhance Your Daily Work

Leica's comprehensive range of accessories provides a solution for every research requirement. For example, FluoCombiIII lets you rapidly switch between stereomicroscope and light microscope objectives; the convenient observation of specimens is supported by the integrated Leica ICD or powerful Leica DFC digital cameras, motorized focusing, high-performance transmitted-light stands and the ErgoModule™; the Leica MATS thermocontrol stage, additional observation tubes and further accessories are available for measuring and polarization.

Intelligent Automation for Digital Fluorescence Recording

LAS (Leica Application Suite) software equips the user with a multitude of options for image measurement, comparison, processing, assembly, presentation, and sequencing. LAS software brings efficiency and economy to scientific photomicrography and is also well-suited for industrial image recording and processing. With a variety of modules available, LAS offers perfect results for multiple fluorescence recordings in cell biology, genetics, viviology, plant biology, and pharmacology.

routine science



Biotechnology and Medical Applications

Anatomy	Monitoring capillary flow
Biology	Researching gene expression in chicken embryos, fruit flies, threadworms, zebrafish, fish otoliths marked with alizarin red
Genetics	Detecting cellular and protein expression; sorting and dissection; monitoring developmental processes
Biomedicine	Viewing pneumatic seals on pacemakers
Neurology	Viewing gap junctions on muscles and nerves
Ophthalmology	Studying cell development in rat eyes
Pharmacology	Drug development; spotting ELI in cell structures; monitoring capillary flow with FITC
Parasitology	Detecting bacteria on ticks
Agronomy	Researching seeds, genetic expression, transgenics, and bacteria recognition
Botany	Studying plant cells, plant surfaces, soil samples, and parasites
Hydrology	Evaluating water quality (bacterial and other pollutants), filtered water, and cell structures in and on a filter membrane
Forestry	Developing environmentally-acceptable methods of pest control (investigating viruses on pests)

Industrial Applications

Electronics	Inspecting solder paste on SMDs, epoxy resin on SMD plates, luminescent coatings on TV monitor tubes, and quality of polymer castings for embedding integrated circuits
Semiconductors	Inspecting for foreign particles and photo resists
Oils	Examining organic and inorganic oils
Polymers	Detecting foreign particles; identifying non-polymerized parts; examining beads (polymer pellets used in chemical measurements and analyses)
Precision Engineering	Inspecting cemented areas on mechanical or optical components
Metalworking	Detecting cracks and surface defects, contamination on components, industrial quality control of welds, and fracture analysis
Materials Science	Inspecting cracks, fractures, welds, carbon bonding materials, fractures, and orientation of carbon fiber
Bitumen	Performing quality control for tar and bitumen
Concrete	Inspecting for cracks and pores
Papermaking	Inspecting paper fiber coating; checking for inclusions
Forensics	Investigating textile fibers, body fluids, fingerprints, bank notes, and forgeries
Art Restoration	Detecting pigments and investigating forgeries
Gemology	Evaluating quality, value, and inclusions

Technical data	Leica MZ10 F
Zoom ratio	10:1
Optics carrier magnification	0.8× – 8×
Design principle	Common Main Objective (CMO) optical system
Standard magnification	8× – 80× (10x eyepieces + 1.0× objective)
Standard objective	Planapochromatic objective 1.0× (NA = 0.125)
Illumination	TrippleBeam™ – 3rd (separate) illumination beam path, adapts automatically (via zoom) to Field of View (FOV)
Filter changer	FLUOIII™ – 4 position, manual
Illumination control	Manual excitation shutter
FOV diameter	131 – 1.31mm (max/min)
Resolution (max)	1.33µ (750lp/mm)
Numerical aperture	0.25 (max)
Ratch positions	1 / 1.6 / 2 / 2.5 / 3.2 / 4 / 5 / 6.3

Winner 2005

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For more technical details and additional information about this instrument, please contact your Leica representative or your Leica dealer.

www.leica-microsystems.com/MZ10_F

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