Leica MZ10 F

The Power of Fluorescence
The Leica MZ10 F Stereomicroscope with patented TripleBeam™ Technology for Routine Stereo Fluorescence

Living up to Life
Fluorescence Technology for Routine Use

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 the correct choice for quick sorting and screening tasks. The high resolution of 375Lp/mm and 0.125 numerical aperture (1.0× PlanAPO) provide the possibility to view small structures clearly and precisely. Combined with a large 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 rich in detail and reflex-free, with jet black backgrounds.

Flexible Solution
The Leica MZ10 F is very 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 optimized to meet the application requirement.

UV Protection
The substantial Leica UV precautions protect the user from damage through UV radiation. UV barrier filters are permanently installed in the observation beam paths. In addition, a UV protection screen above the specimen plane, a stray-light protection at the mercury lamp housing, and blank filter cartridges are installed in the empty filter positions.
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. The convenient observation of specimens is supported by the motorized focusing, high-performance transmitted-light stands and a variety of tubes and ergonomic accessories. The Leica MATS thermocontrol stage allows for observation of living samples in a controlled environment.

Intelligent Automation for Digital Fluorescence
For documentation of research results, Leica Microsystems provides a choice of powerful digital cameras. The Leica Application Suite (LAS) offers a multitude of options for automated image acquisition, analysis, measurement and comparative observation of images, processing, assembly, presentation, and sequencing. Efficiency in daily laboratory work is granted by the database modules of the LAS software. With a variety of modules available, LAS offers perfect results for multiple fluorescence recordings in cell biology, genetics, botany, and pharmacology.
**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**  Drug development; spotting ELI in cell structures; monitoring capillary flow with FITC  
**Parasitology**  Detecting bacteria on ticks  
**Agriculture**  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  
**Concrete**  Performing quality control for tar and bitumen  
**Papercrafting**  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  
**Edelsteinkunde**  Bewertung von Qualität und Wert, Erkennung von Einschlüssen

**Technical data Leica MZ10 F**

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

www.leica-microsystems.com