

# Fluorescence from 3D to High Resolution

**Leica Fluocombi III™ for Leica fluorescence stereomicroscopes**

**Leica**  
MICROSYSTEMS

To understand fundamental development and regeneration mechanisms, science resorts to genetic model systems. They offer an efficient means to trace genetic and molecular dependencies in a relatively short time and in large numbers. The results aid in building knowledge about the processes during development and healing of a person. The perfect solution is now available for all fluorescent-specific applications in the genetic engineering lab – from the selection of mutants to dissection and selection of a desired clone – the Leica FluoCombi III™.

### One for all

The Leica FluoCombi III™ is an extremely useful option for the Leica MZ16 F and MZ16 FA fluorescence stereomicroscopes. Expressed *Drosophila*, *C. elegans*, zebrafish or *Arabidopsis* can be sorted in the generous three-dimensional field of view and screened with the same instrument – at 460x magnification and 1500 Lp/mm resolution. In many cases, sensitive samples no longer need to be transferred to a light microscope.



### Accurate to 0.3 $\mu\text{m}$

The new Leica FluoCombi III™ accessory permits quick switching from a 1x objective with planachromatic or planapochromatic correction to a planapochromatic 5x HR (high resolution) micro objective. The FluoCombi III™ is parfocal and parcentric – once focused, the relevant location remains focused and centered at any magnification, in stereo and micro modes. Comfortable binocular observation is guaranteed at all times.

# ient selection, sorting and assessment

In stereo mode, the generous viewing fields, large working distances and an excellent depth of field facilitate manipulating and dissecting. The 5× HR objective permits the identification of the finest fluorescent features with a structural width of only 0.3µm. The zoom magnification changer of the fluorescence stereomicroscope is also effective in micro mode. The result is a total magnification of 736× for the Leica MZ16 F and MZ16 FA with 16× eyepieces and up to 920× with 40× eyepieces.

## **Highest resolution up to the edges of the field of vision: planapochromatic 5× high resolution micro objective**

Thanks to the application of the latest technologies, we have enhanced the imaging performance and correction of the new planapochromatic 5× HR micro objective while achieving a long working distance of 19mm. Only this objective will ensure a lack of vignetting – high resolution, a sharp image and brilliant fluorescence are guaranteed across the entire field of view, right up to the edge.

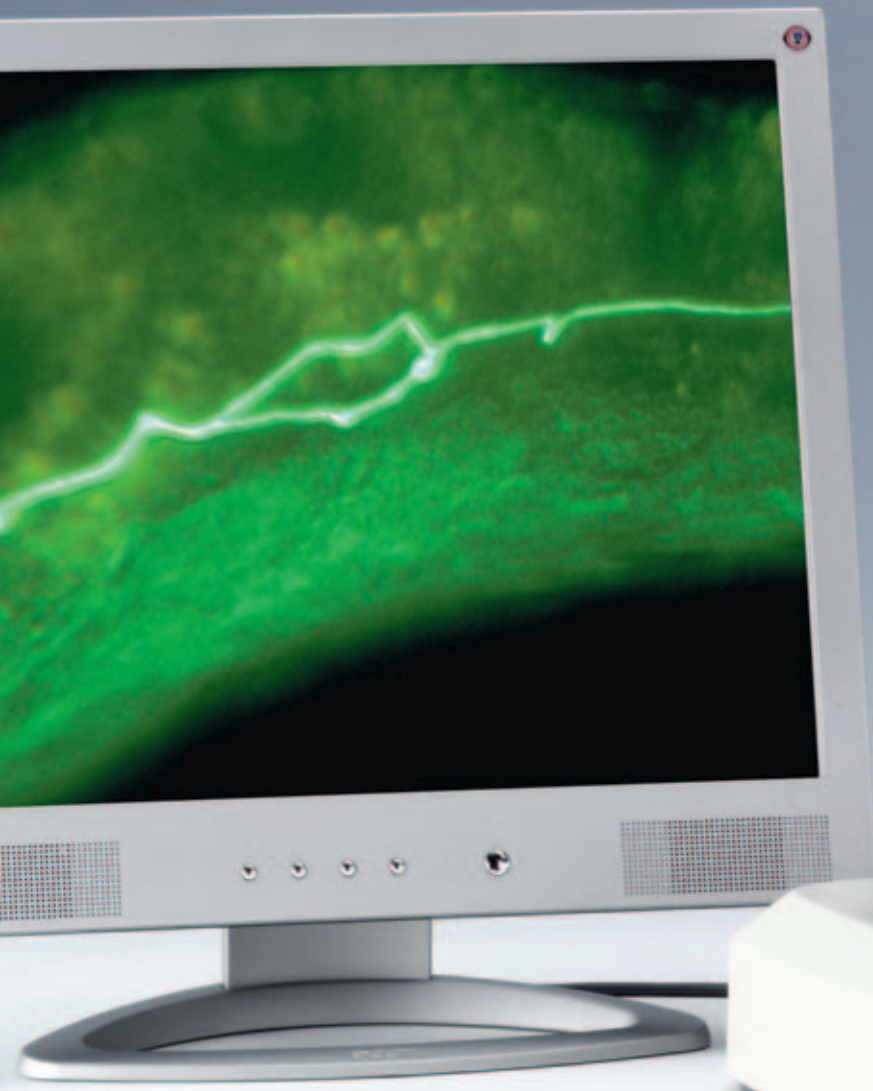


## **Ideal for the genetic engineering lab**

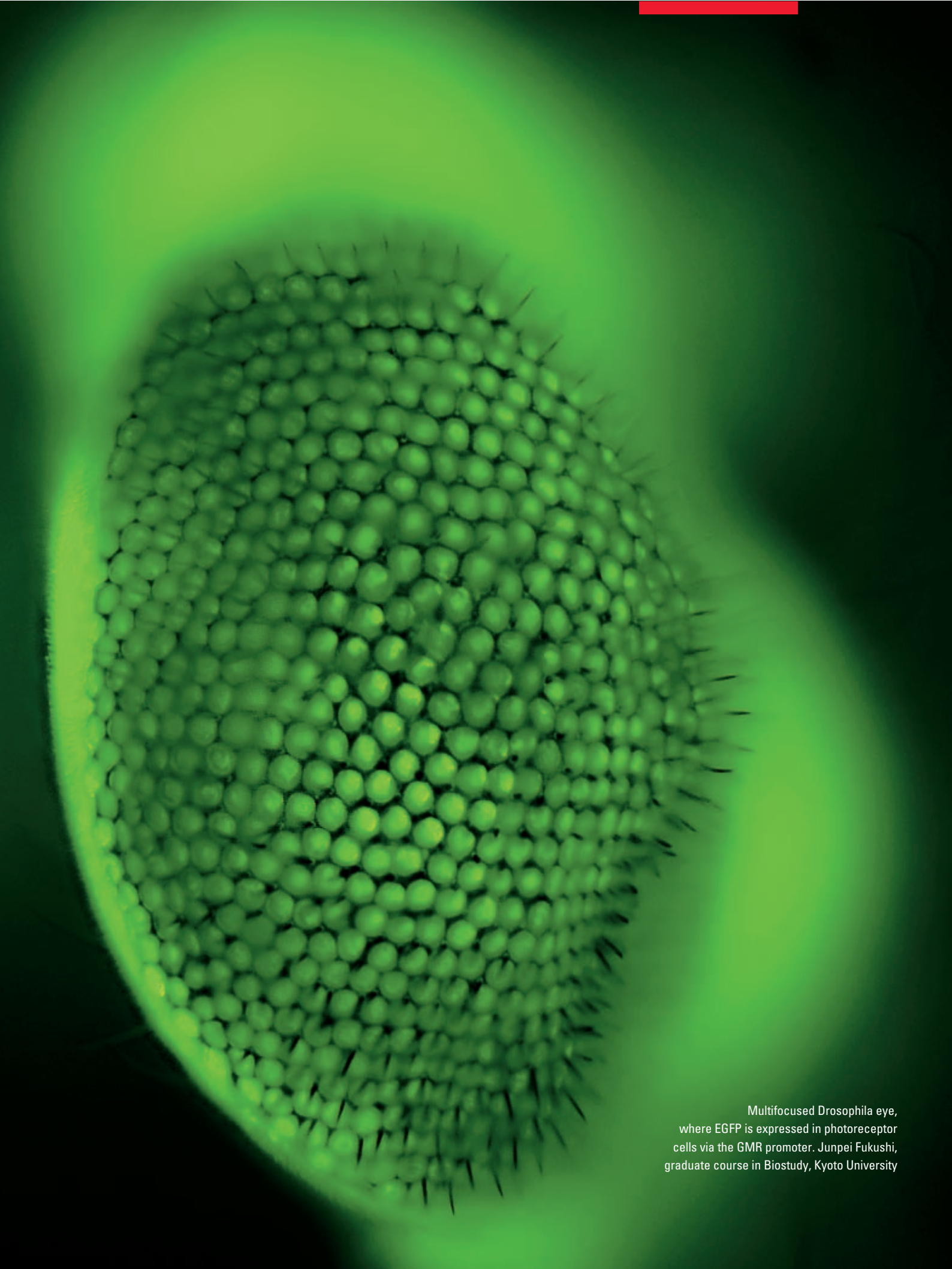
Any existing Leica MZ16 F and MZ16 FA fluorescence stereomicroscope can be quickly and easily converted to the ideal instrument for any fluorescence-specific application. Take advantage of numerous dichroic mirrors (GFP, GFP Plus, GFP Plant, CFP, YFP, Texas Red, DsRED and many others) and complete protection against UV radiation. Enjoy the benefits of motor drive for ergonomic focusing, sensitively and precisely position the samples on the gliding stage, and keep the sample temperature constant on the Leica MATS thermocontrol system.



Leica MZ16 F fluorescence stereomicroscope  
with Leica FluoCombi III™  
and Leica DFC digital camera



Leica Design by Christophe Apotheloz



Multifocused Drosophila eye, where EGFP is expressed in photoreceptor cells via the GMR promoter. Junpei Fukushi, graduate course in Biostudy, Kyoto University

# Technical data

<b>Leica FluoCombi III™</b>	
Type	Accessory with quick changer for Leica MZ16 FA and MZ16 F fluorescence stereomicroscopes, for one stereomicroscope objective (3D view) and one HR objective (microscopic resolution)
Optics	Multiple-coated high-performance optics, lead-free glass, maximum resolution with micro objective; beam splitter for binocular observation
Mechanics	360° rotation and lateral movement, TripleBeam™, fine focusing, safety focus stop
Parfocal / parcentric	Objective change between 1× plan or planapo and 5× HR objectives at constant image sharpness
Fine focusing	Adjustable fine focusing for micro objective, integrated
Dichroic mirror	GFP, GFP+, GFP Plant, UV, Blue, Green, CFP, YFP, Texas Red, DsRed, CY5, CY7, magnetically fixed
<b>Micro objectives</b>	
HR planapo objective 5×	With MZ16 F / MZ16 FA – Resolution: visible structure width 0.3µm, 1500 Lp/mm – magnification factor: 4× – numerical aperture: 0.5 – working distance: 19mm – magnification: 460× with 10× eyepieces / 736× with 16× eyepieces / 920× with 40× eyepieces.
Adapter	For Mitutoyo/Optem objectives
<b>Fluorescence stereomicroscopes</b>	
Designation	– Leica MZ16 F with 16:1 zoom – Leica MZ16 FA, motorized, with 16:1 zoom
Microscope type	Stereomicroscopes with patented TripleBeam® third beam path and patented FLUOIII® fluorescence filter system, lead-free glass
Rapid filter changer	horizontal FLUOIII® quick changer for 4 filter sets
Fluorescence filters	– Exciter and barrier filter sets: GFP, GFP+, GFP Plant, UV, Blue, Green, CFP, YFP, TXR, DSR, Cy3™, Cy5™ – slot for neutral density filter
Illumination	– TripleBeam®: 3rd beam path for fluorescence light – 100W- or 50W high-pressure bulbs, chromatically-corrected collector, focusable, lamp mount for centering
Extensive UV protection	UV protection screen, UV barrier filter, stray-light protection for lamp housing and dummy filter carrier for empty filter positions
Stereo objectives	1× planapo or plan: 0.14 NA, 423 Lp/mm resolution/2× planapo: 0.28 NA, 840 Lp/mm resolution
Working distance (stereo)	60mm (1× plan), 55mm (1× planapo), 15mm (2× planapo)
Eyepieces	Ergonomic wide-field eyepieces for eyeglass wearers 10×/21, 16×/14 with high field number, distortion-free, lead-free glass
<b>Accessories</b>	
Ergonomics	Apochromatic ErgoTube® with variable 10°–50° viewing angle, ErgoWedge® 5°–25°, trinocular tube, motor focus system with 0.7µ resolution, gliding stage
Stands	High-performance transmitted-light base HL RC™, transmitted-light bases bright field/dark field, incident-light bases, anti-vibration platform, 500mm focusing drive, coarse/fine with 1µm resolution
Specialty stages	Gliding stage, Thermocontrol System Leica MATS
Accessories	Analog and digital cameras, image processing and analysis software (IM1000, FW4000, QWin), measurement graticules

## Order numbers

10 447 324	Leica FluoCombi III™	10 447 284	Dichroic mirror GFP1
10 447 157	Objective planapo 1×	10 447 285	Dichroic mirror, GFP3
10 445 819	Objective plan 1×	10 447 287	Dichroic mirror, UV
10 447 243	HR objective planapo 5×/0.5 LWD, FAA 19mm	10 447 289	Dichroic mirror, YFP
10 447 085	HR objective 20×/0.42, FAA 13mm (please also order 10 447 338)	10 447 291	Dichroic mirror, Texas Red
10 447 338	Adapter for Mitutoyo/Optem objectives	10 447 293	Dichroic mirror, CY5
10 447 214	FluoCombi adapter for 1.6× objective planapo	10 447 295	Dichroic mirror, GFP2
10 447 185	Focusing drive, coarse/fine, with 500mm column for incident and transmitted-light bases	10 447 286	Dichroic mirror, Blue
10 447 041	Motor focus with 500mm column and power pack for incident and transmitted-light bases	10 447 288	Dichroic mirror, Green
10 446 301	Gliding stage	10 447 290	Dichroic mirror, CFP
		10 447 292	Dichroic mirror, DsRed
		10 447 294	Dichroic mirror, CY7

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