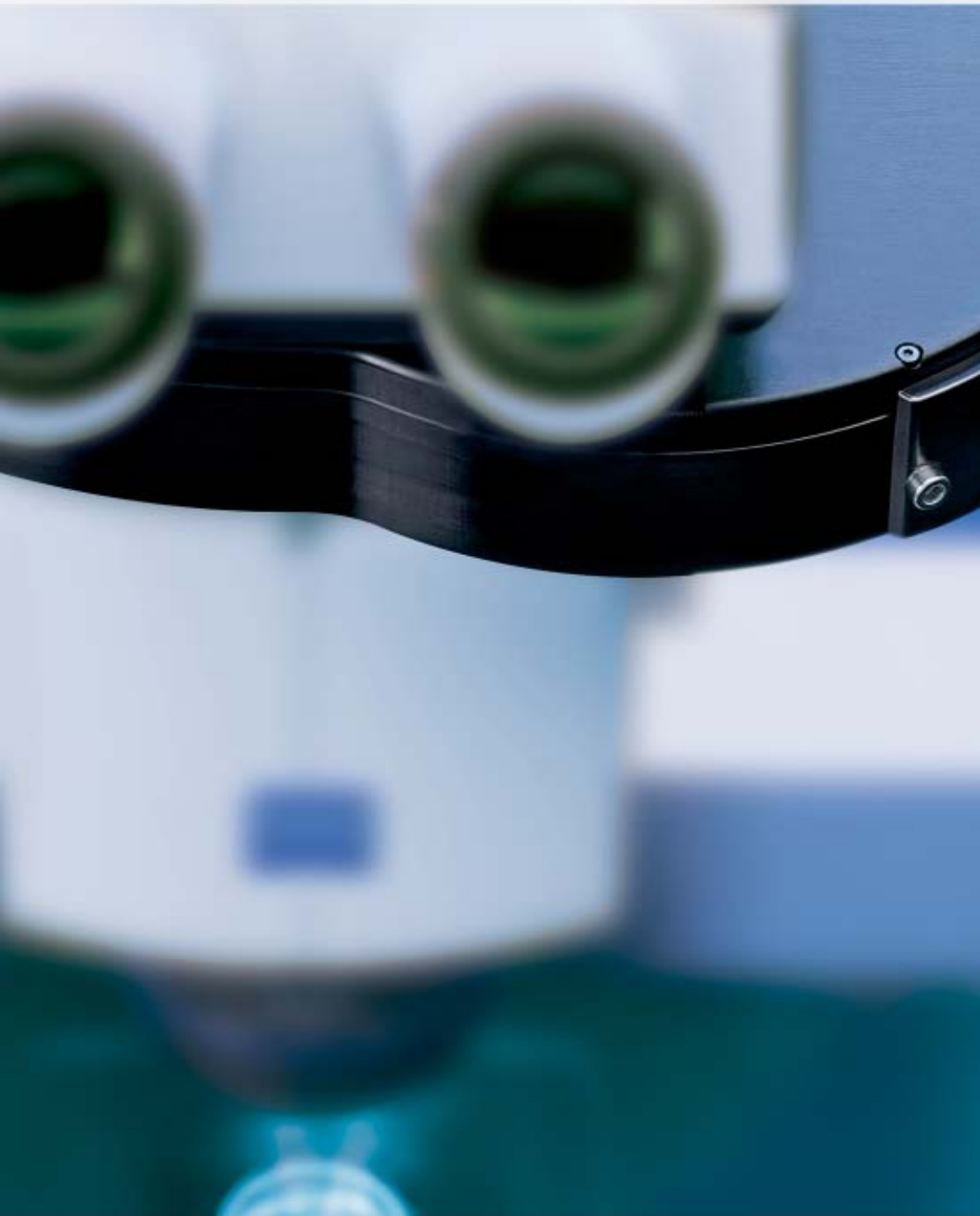


PentaFluar S **Signals from a Hidden World**



**Coaxial Fluorescence Module for
SteREO Discovery Stereomicroscopes**



We make it visible.

PentaFluar S

Retrofittable Fluorescence Module for SteREO Discovery Stereomicroscopes

Thanks to the discovery and harnessing of fluorescent proteins, the stereomicroscope has become a mainstream tool in molecular biology examinations. In addition to developmental and cellular biologists, there are an increasing number of materials scientists and quality inspectors who require highly resolved, rich-contrast, three-dimensional fluorescence images.

Documentation

Equipped with an AxioCam digital camera and AxioVision software, the stereomicroscope becomes a complete system for image analysis, image management and archiving. Software solutions tailored to various applications are available.



PentaFluar S - Highly Resolved, Rich-Contrast 3D Fluorescence Images



*Screening of *C. elegans* with the SteREO Discovery.V12 equipped with the PentaFluar S module and the X-Cite 120 Fl illuminator.*



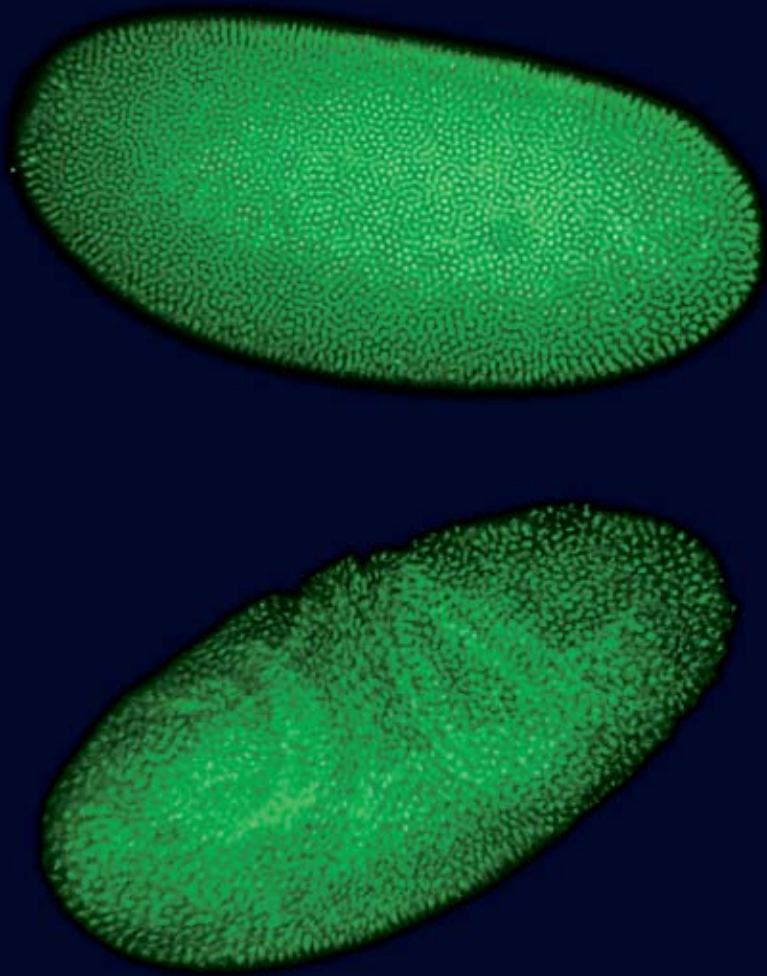
Nematode *C. elegans* on an agar plate, GFP fluorescence

These transgenic organisms express GFP in two different tissues. In the muscle cells of the body wall, GFP is localized in cell nuclei and mitochondria, whereas the muscle tissue of the pharynx stores it in the cytosol. By means of these molecular markers, the researcher can identify genotypes, distinguish between single and multiple mutants, and investigate the tissue specificity of the promoters used.

*Objective: Achromat S 1.5x,
magnification 150x**

*Specimen: Dr. C. Eckmann, Max Planck Institute
of Molecular Cell Biology and Genetics,
Dresden, Germany*

**Viewing magnification*



Embryos of the fruit fly *Drosophila melanogaster*, immunofluorescence

The most important transformations in *Drosophila*'s embryogeny take place in its gastrula stadium, which lasts 20 min. These embryos were marked with an antibody against methylated DNA and stained with Alexa Fluor 488. This staining is maintained through the gastrula and gradually disappears during the subsequent stages of development.

Objective: Achromat S 1.5x,
magnification 150x*

Specimen: Sameer Phalke, Institute of Genetics,
University of Halle, Germany

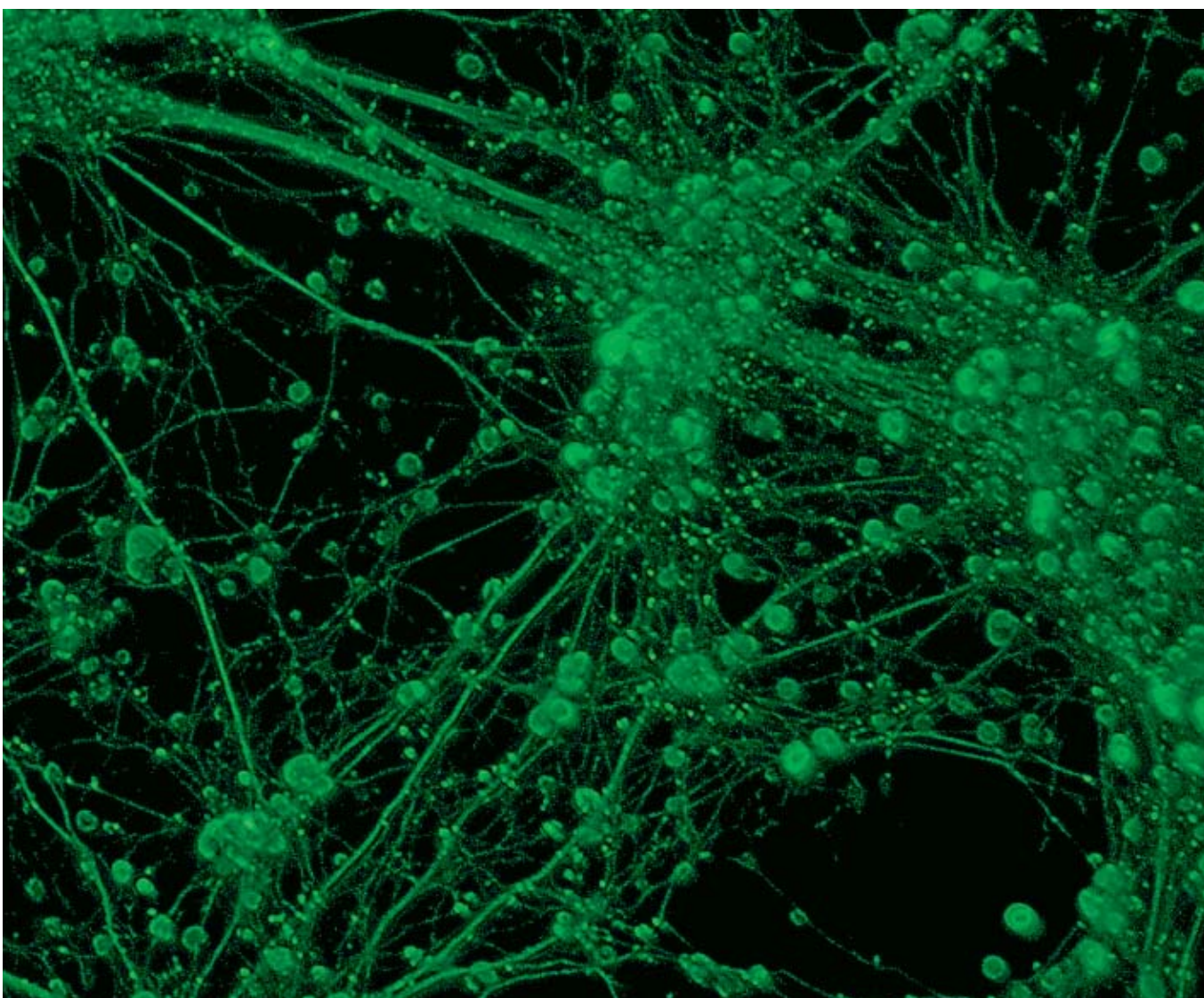


Nematode *C. elegans* on an agar plate, oblique illumination, brightfield transmitted light

This mutant has a defect in its egg deposition organ, the vulva. Therefore, its offspring develop inside rather than outside the mother. Young animals in the first larval stage are clearly seen to have eclosed into the mother's body cavity. Such mutants can be recognized and studied at a very early stage.

Objective: Achromat S 1.5x,
magnification 150x*

Specimen: Dr. C. Eckmann, Max Planck Institute
of Molecular Cell Biology and Genetics,
Dresden, Germany



***Primary culture of nerve cells from the cortex
of a rat embryo, immunofluorescence***

The neurons are marked with a monoclonal antibody against β -III-tubulin and stained with Cy2.

The round cell bodies accumulating in the neurospheres are plainly visible. From there, they form a neuronal network with dendritic and axonal processes.

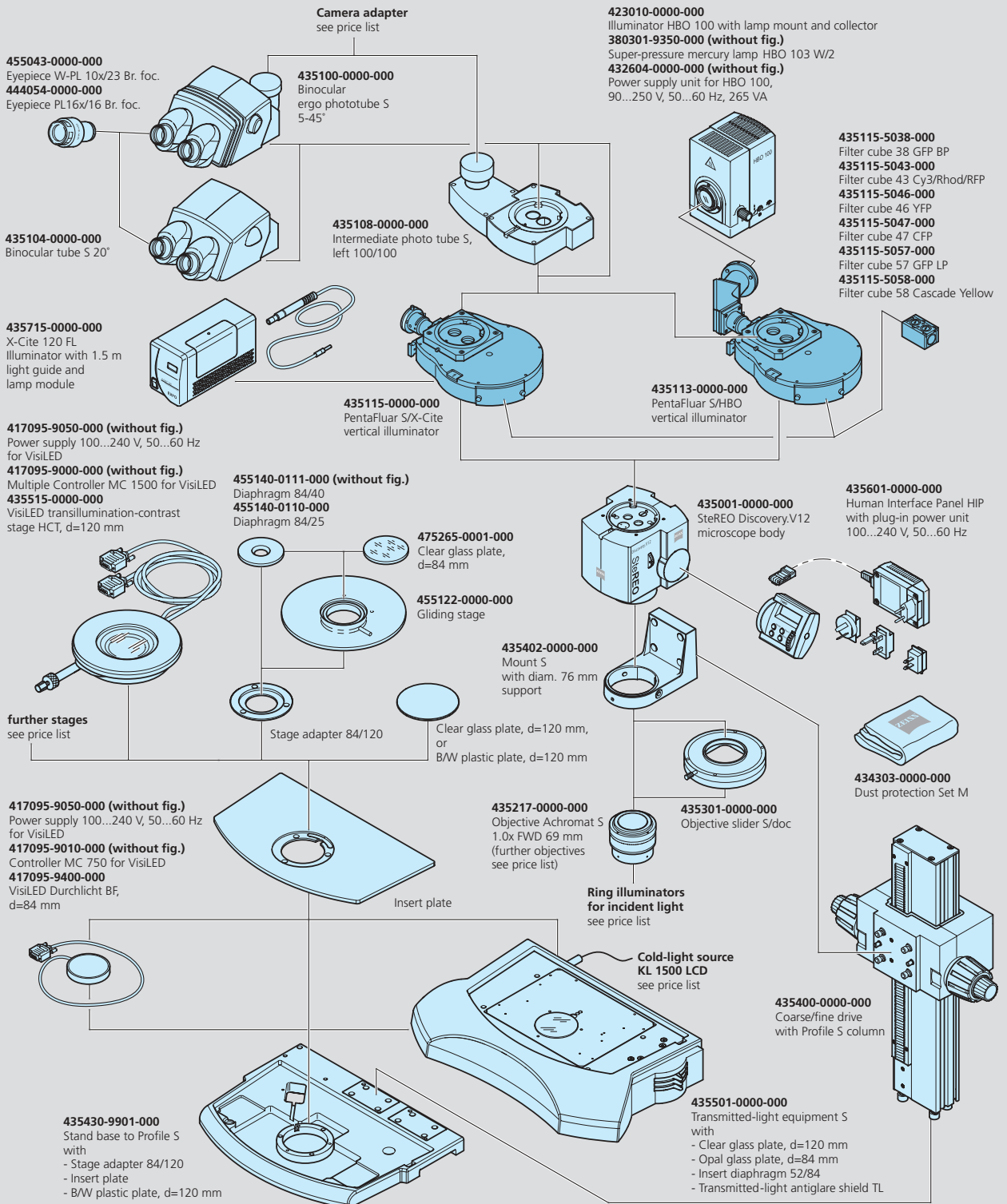
In primary cultures of this kind, the expression of various marker proteins and their distribution in the cells can be investigated extremely well.

*Objective: Achromat S 1.5x,
magnification 150x**

*Specimen: Dr. H. Braun, FAN GmbH ZENIT Magdeburg,
Germany*

PentaFluar S -

Perfectly Integrated into the Modular System of SteREO Discovery Stereomicroscopes





Fluorescence filters

The magazine holds up to five different filter cubes. Each filter cube contains a fixed excitation filter and two emission filters.



Light sources

To suit their applications, users may choose between the HBO 50 or HBO 103 maximum-pressure mercury lamps for high energy, and the X-Cite 120 illuminator with liquid light guides for exceptionally uniform illumination.



Transmitted light

The Model S transmitted light module with added flexibility of mirror adjustment permits not only brightfield and darkfield modes, but also oblique illumination for countercontrasting in fluorescence applications.



Specimen stages

They facilitate the positioning of important specimen details and, above all, help preserve precious specimens. The 110x110mm sliding stage permits sensitive adjustment within a large range.

The large, low profile, scratch-proof working surface of the SteREO Discovery.V12 facilitates the screening of specimens in Petri dishes and other culture vessels.



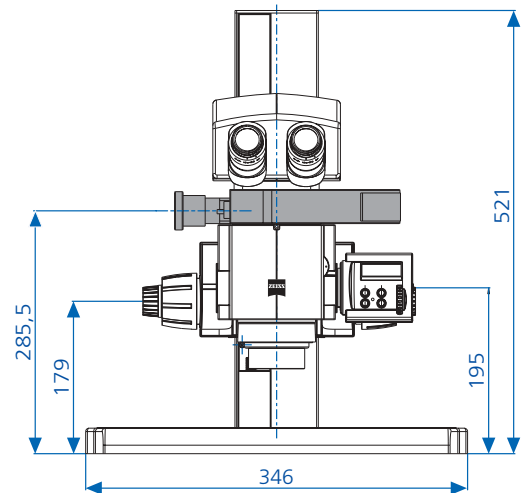
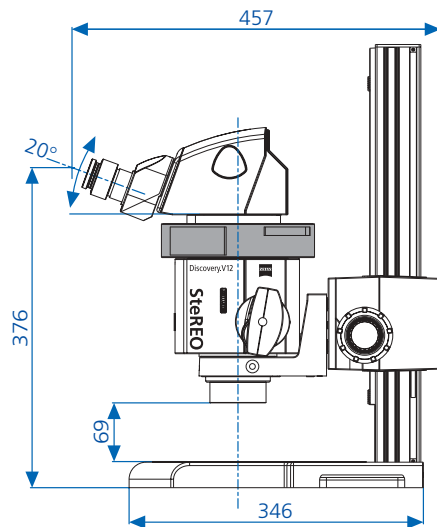
Objectives

Name	FWD*
Factor	(mm)
Achromat S	
0.63x	115
Achromat S	
1.0x	69
Achromat S	
1.5x	28
Plan S	
1.0x	81

Eyepieces

WPL 10x/23 Br.** foc***		PL 16x/16 Br. foc		W 25x/10 foc	
Magnification	Object field (mm)	Magnification	Object field (mm)	Magnification	Object field (mm)
5x ... 63x	46 ... 3.7	8x ... 100.8x	32 ... 2.5	12.5x ... 157.5x	20 ... 1.6
8x ... 100x	28.8 ... 2.3	12.8x ... 160x	20 ... 1.6	20x ... 250x	12.5 ... 1
12x ... 150x	19.2 ... 1.5	19.2x ... 240x	13,3 ... 1.1	30x ... 375x	8.3 ... 0.7
8x ... 100x	28.8 ... 2.3	12.8x ... 160x	20 ... 1.6	20x ... 250x	12.5 ... 1

* FWD = free working distance **Br. = high eyepoint for spectacle wearers *** foc = focusable



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