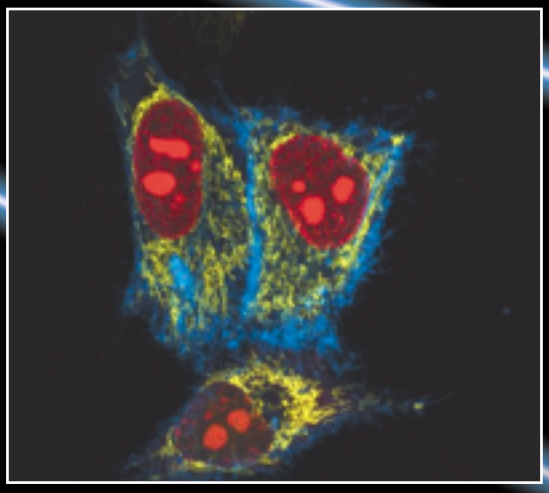
OLYMPUS®

FLUOVIEW LD405

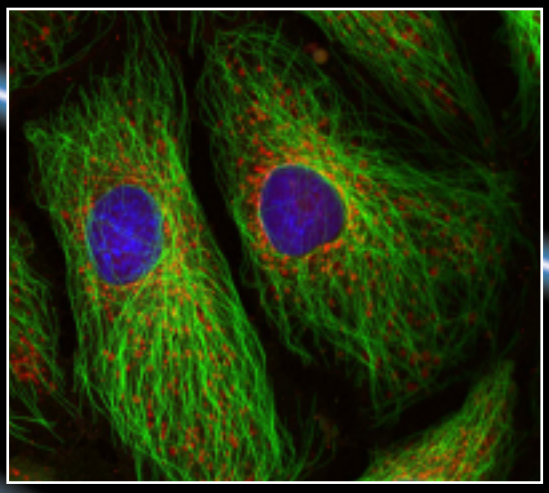
405nm DIODE LASER

FLUOVIEW 405nm diode laser
Stable, high-performance

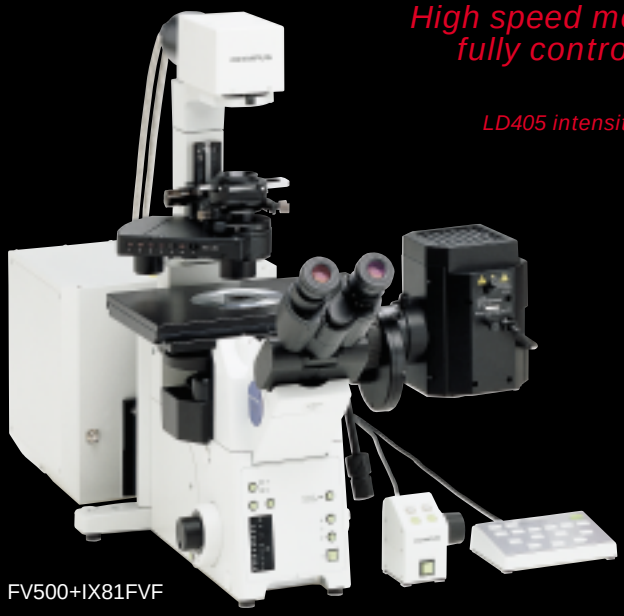


HeLa Cell
Protoplasmic membrane (blue): Sapphire-pm
Laser Diode 405nm excitation
Mitochondria (yellow): EYFP-mt
488nm excitation
Nucleus (red): DsRed-nu
HeNe-Green 543nm excitation

Data courtesy of:
Ms. Asako Sawano, Dr. Atsushi Miyawaki
RIKEN Brain Science Institute Laboratory for Cell Function Dynamics



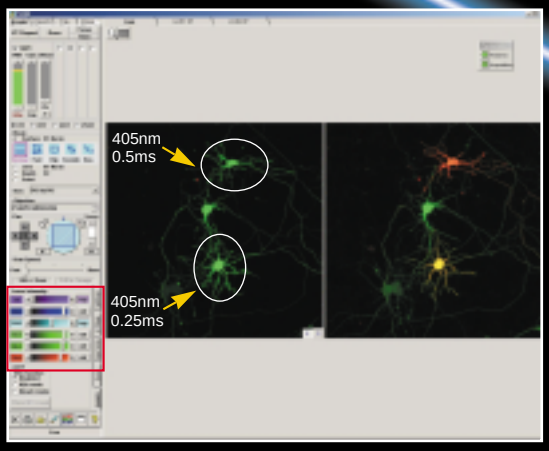
PtK2 Cell
Nucleus (blue): DAPI
Laser Diode 405nm excitation
Cytokeratin (green): Alexa 488
Argon 488nm excitation
Mitochondria (red): MitoTracker
HeNe-Green 543nm excitation



FV500+IX81FVF

High speed modulation fully controlled from software

LD405 intensity control



Mouse Hippocampal Neurons
Expression of the Kaede protein, a green fluorescing protein that turns red upon 405nm exposure, identifies mouse hippocampal neuronal dentrites derived from a single cell body.
Left: Kaede fluorescence (green) in hippocampal neuron cells before 405nm exposure.
Right: Kaede fluorescence in hippocampal neuron cells following 405nm exposure. Top cell (red) 0.5 sec exposure; Bottom cell (yellow) 0.25 sec exposure; Middle cell (green) no exposure to the 405nm laser diode excitation.

Data courtesy of:
Ms. Ryoko Ando, Dr. Atsushi Miyawaki
RIKEN Brain Science Institute Laboratory for Cell Function Dynamics

Excellent functionality and stability for DAPI observation of cell nuclei, time-lapse observation of living cells, and photo activation

Excellent laser intensity stability

Thanks to a new feedback function, the LD405's exceptional light stability reduces excitation intensity error to less than 1%. Light emitted from the fiber is self-adjusted to maintain a stable excitation output, improving data reliability. In addition, stable temperature control by the Peltier element prevents excitation wavelength fluctuation due to temperature-induced changes in the laser diode element. This is particularly effective in time-lapser observation of living cells in which fluorescence intensity is monitored over time.

Unique laser modulation

The unit's unique laser modulation, equivalent in function to an AOTF, permits high speed control of the LD405 excitation light intensity and allows any selected laser intensity to be directed on to any point within a designated area of the sample without use of an AOTF. Such modulation reduces unnecessary photobleaching of the specimen, permits sequential scanning for reduced cross talk, and permits multiple ROI scans within a single field. (This functionality requires combination with AOTF laser control of visible light laser systems.)

Upgrade existing FV300/500 systems

This unit can be added on to your own FV300 / FV500 system.
For the FV500, attachment is made via the UV port available on the scanner. For the FV300, an input port can be configured through the side panel.

Space-saving design

Use of a semiconductor laser contributes to the compact design of this unit. And since no cooling device is required, heat and noise output are minimal compared to air-cooled or water-cooled lasers.

Special objectives for LSM

Changes in refractive index adversely affect the intensity and apparent distance during deep confocal imaging. Water immersion type objectives are recommended for observation of biological samples because the refractive index of the objective is the same as the specimen.
The PLAPO40XWLSM and PLAPO60XWLSM objectives perfectly correct spherical and chromatic aberrations in the 400-750nm wavelength range.

Objectives	N.A.	W.D. (mm)
PLAPO40xWLSM	0.9	0.15
PLAPO60xWLSM	1.0	0.15
PLAPO60xOLSM	1.1	0.13

Cover glass thickness range: 0.17±0.01mm

Specifications

Output	Higher 6mW (intensity at fiber output)
Wavelength	405nm
Wavelength Width	-3nm, +5nm
Fiber length	3m
Usage temperature/humidity	10~35°C, 30~80%
Laser class	3B
Laser noise	±1% or less (1Hz~1MHz, 23°C)
Fiber	Single mode fiber
Feedback	Control: laser intensity stabilization and wavelength stabilization by Peltier element and temperature feedback circuit
Shutter	Integrates mechanical shutter
Laser intensity control	Built-in
Modulation	Software controlled laser intensity modulation according to combination with visible light laser combiner system (1) 1% - 100% modulation in 1% steps in ms speed with neutral density laser combiner system (2) ultrafast micro second intensity modulation with AOTF laser combiner system
Dimensions & weight	Laser head: 70(W) X 70(H) X 70(D)mm, 500g D127 (with manipulator cover combination)
	Controller: 210(W) X 100(H) X 730(D)mm, 2700g

ISO 9001 Certification — Design and production adheres to ISO9001 international quality standard.

ISO 14001 Certification — Design and production at the Olympus Optical Co. Ltd. Ina Plant conforms with ISO14001 specifications for environmental management systems.

Specifications are subject to change without any obligation on the part of the manufacturer.

OLYMPUS®
www.olympus.com

OLYMPUS OPTICAL CO.,LTD.
San-Ei building, 22-2, Nishi Shinjuku 1-chome, Shinjuku-ku, Tokyo, Japan
OLYMPUS OPTICAL CO.(EUROPA) GMBH.
Postfach 10 49 08, 20034, Hamburg, Germany
OLYMPUS AMERICA INC.
2 Corporate Center Drive, Melville, NY 11747-3157, U.S.A.
OLYMPUS SINGAPORE PTE LTD.
491B River Valley Road, #12-01/04 Valley Point Office Tower, Singapore 248373
OLYMPUS OPTICAL CO.(U.K.) LTD.
2-8 Honduras Street, London EC1Y OTX, United Kingdom.
OLYMPUS AUSTRALIA PTY. LTD.
31 Gilby Road, Mt. Waverley, VIC 3149, Melbourne, Australia.
OLYMPUS LATIN AMERICA, INC.
6100 Blue Lagoon Drive, Suite 390 Miami, FL 33126-2087, U.S.A.