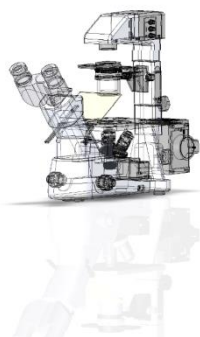


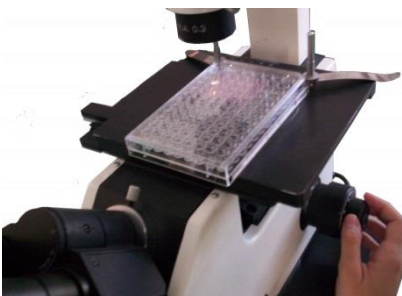
The art of innovation



MiOFI-1600

Inverted Fluorescence Microscope

This system is the top of the line for any experimentalist who wants to study cell cultures on slides, culture flasks, different sizes of petri dishes and multi-well plates



Several examples of MiOFI-1600 capabilities in the laboratory

The system is equipped with a fully motorized inverted microscope stand which allows all possible fluorescence experiments to be carried out. The software can provide control of the various illumination modules. This allows the user to juggle between different settings to enhance images through bright field applications. All other functions of the software allow the convenient operation and control of the microscope. The system comes with a built in motorized Z axis allowing high enhanced 3D images analysis technologies to be applied. Techniques such as 3D stacking and also structured illumination to enhance 3D insight in the fluorescence images can be applied. MicroOptik has an extensive list of image analysis techniques which can be applied in fluorescence microscopy.

MiOFI-1600 | Inverted Fluorescence Microscope

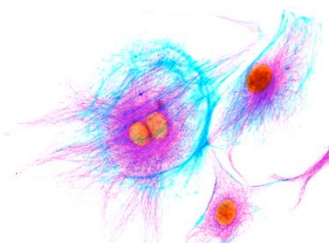
The MiOFI-1600 microscope system comes with many options.



Basic outlook of the MiOFI, see in the specification list all details regarding this system



MiOFI, equipped with advanced MiO Environmental & Incubator for Live Cell Fluorescence examination



Example of Mishell® (software) filter manager options to enhance Low Light Fluorescence images

Two camera's in one system

The system uses two different camera's
For fluorescence, 3 Mega pixels with larger pixel size
For Bright field 12 Mega pixel with larger pixel size and relevant adapters required.

Incubation system

The incubation system allows the experimentalist to carry out experiments under CO₂ and H₂O control. MicroOptik engineers have developed a very sophisticated environmental chamber for that. See page 2 of this flyer.

Software

The software is an extensive package allowing the user to carry out all sorts of experiments. All details are explained in the extensive Mishell® flyer.

Upgrade

MicroOptik assures s fully compatible for future up gradation.

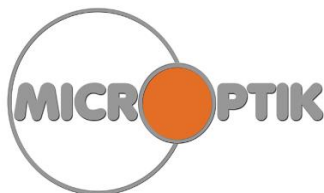


More information!

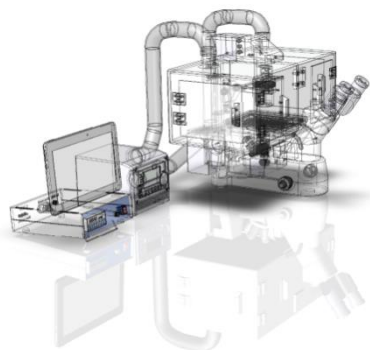
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MiO Environ & Incubation Chamber

This Live Cell Microscope Incubation chamber is used at clients with demanding tasks. The incubator shields of the experimental environment from the outside and is in all means very unique. This system offers considerable advantages in comparison with other systems. While for other incubators the control relies on passive, random diffusion of heated air from a single source to maintain the desired temperature set point. With these systems there is no hot air return vent and hence the heated air escapes from the system through cracks at the microscope / incubator junction in an uncontrolled, random fashion. These systems offer no temperature uniformity, suffer from focus drift and often experience electrical and vibrational interference from the heater. Also dramatic temperature drifts occur when the imaging environment is disturbed.

Features:

- Unique, diffusion grid, combined with air input and return vents provide an air flow pattern for consistent, even heating, with no hot or cold spots in the chamber
- External heater that can be placed far enough from the system to eliminate electrical and vibrational interference from the heater
- High degree of temperature precision and stability
- Minimal focal drift after equilibrium is achieved—Accuracy $\pm 0.1^\circ\text{C}$ at the sample itself, and 0.2°C across the microscope stage (allowing for uniform heating of multiwell dishes)
- Airflow pattern and temperature uniformity eliminate dramatic changes in environmental temperature when the incubator door opens
- Ergonomic design for ease of use—The focus and x/y stage controls are outside of the incubator itself. Large doors allow easy access to the specimen and small ones for cords, tubing, etc.
- Precision, shielded temperature probe
- Simple, one person setup of the system

Live Cell Microscopy System Modules

This unique, acrylic Live Cell Imaging chamber, combined with an Environmental Control Unit (ECU) and an AirTherm controller, ensured precision control of your incubator environment.

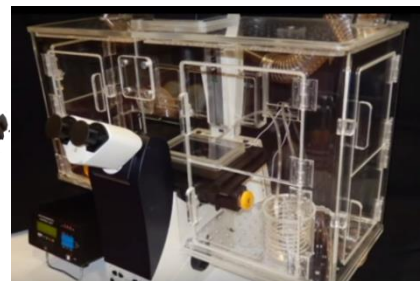
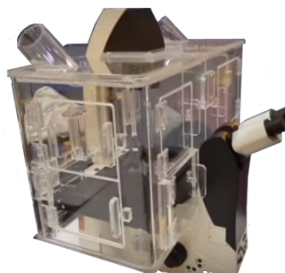
The ECU comes in four varieties so you have all the control you require. With the ECU-H5, you can control air flow and heating. In addition to air flow and temperature control, the ECU-HC and ECU-HCP let you control the CO_2 level. One has an internal sensor, and the other has a remote sensor that can be positioned inside the microscope chamber. Finally, the ECU-HOC adds control of the O_2 level, which is accomplished by displacing the oxygen with nitrogen. The first three ECU units are capable of controlling a simple, external heater, like the AirTherm Satellite (AirTherm-SAT) or a microscope lens warmer. The AirTherm-SMT can monitor and control both temperature and humidity inside the microscope chamber.

Microscope Environmental & Incubation Chamber. Temperature-, CO_2 -, O_2 & Moisture control.

Life Cell Microscopy enabled by a MiO Environ & Incubation Chamber



A complete set up of the MiO Environ & Incubation Chamber build around the MiOFI-1600 | Inverted Fluorescence Microscope



Some impressions of our MiO Environ & Incubation Chamber mounted around the MiOFI-1600 microscope system

New Possibilities for Live Cell Microscopy | Adapted to your needs!

The MiO Environmental & Incubation Chamber offers exciting possibilities for cellular microscopists to measure the living cells in-vivo. In an environment which can be accurately mimicked. MicroOptik offers a variety of microscopy configurations. All incubators are compatible with all commercially available cameras, light sources, filter wheels, motorized stages, and motorized nosepieces.

Incubation system with environmental control unit!

The incubation system allows the experimentalist to carry out experiments under CO_2 and H_2O control.

MicroOptik engineers have developed a very sophisticated environmental chamber for that. With this system we can monitor intracellular and extracellular events as they happen. In the past, dead cells were stained and examined under the microscope. Now, these small incubators can be used and placed on a microscope to allow live cells in culture to be directly observed. The system can control the temperature, airflow, moisture and also gasses like CO_2 or Oxygen. MicroOptik engineers are happy to discuss any application with the client. Software is linking the flow and heating devices through the controller. All possible recipes can be applied! The Operator manual explains all further details.



Controller for air flow, CO_2 , O_2 , temperature. The front panel of this ECUHOC displays four monitored parameters: CO_2 level, O_2 level, air flow, chamber temperature.

Software

The software is an extensive package allowing the user to carry out all sorts of experiments. All details are explained in the extensive **Mishell® catalogue**. In particular in the **The MiApp MiOFI-1600 & MiO Environmental & Incubation** section all the details of the system is explained.

Upgrade

MicroOptik assures fully compatible for future up gradation.

More information!

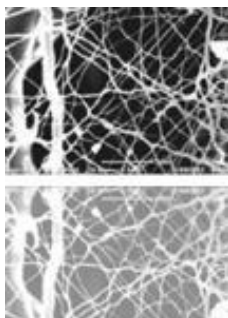
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Mishell®

Is perhaps the most sophisticated Image analysis software package available on the market today. Simple to use and incredible sophisticated when it comes to the specific application. Mishell has originally been designed to control an Image analyzer system developed by MicroOptik in conjunction with an Image analysis task. Still as to day this conjunction is valid. The software is delivered with all machine vision systems our company provides. However, as more and more clients became to realize the capabilities of the software we have offered our clients and others the software as a stand alone product. Therefore all the beautiful image analysis tools are not available and in one package.

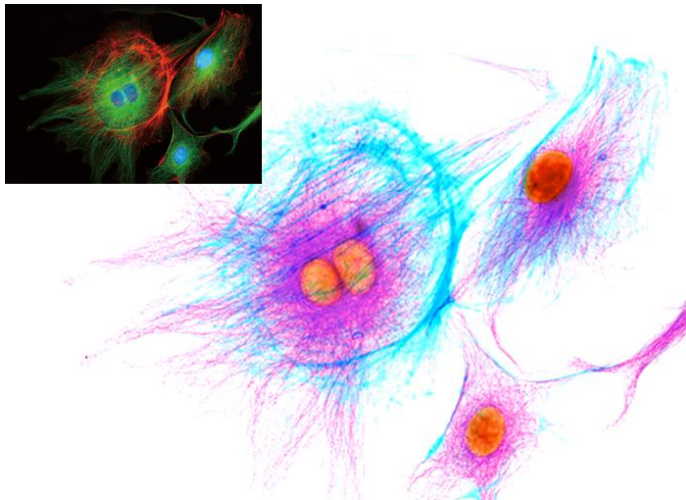
The complete Mishell package consists of the following building blocks: **MiCam** (camera interfacing), **MiMea** (2D measurements, size and shape parameters, profiling), **MiDab** (database), **MiMap** (contour plots), **MiReg** (reporting), **MiVim** (3D visualization), **MiPis** (particle size analysis), **MiFis** (fiber inspection), **MiMis** (morphology) **MiPor** (pore size analysis). Further in this flyer we will elaborate further on these building blocks. Each of these blocks have unique features which the user can choose. **MiAp** (Image Analysis Applications). With respect to the last: Mishell can interact with many devices MicroOptik provides which relates with images analysis. For a start, through Micam, Mishell can interact with practically any camera system on the market. Beyond that it can also be used to integrate all sorts of instrumental control features, like stepper motor -, heating & cooling-, Illumination-, temperature, IO- boards and many more. This is convenient for clients who want to set up a machine vision project. All has been programmed and the client simply has to connect all the devices with the wizard which comes with the package.:



Mishell links all hardware components together and makes it working as one analyzer system

Mishell Image analysis Software package a sophisticated Tool for infinite applications

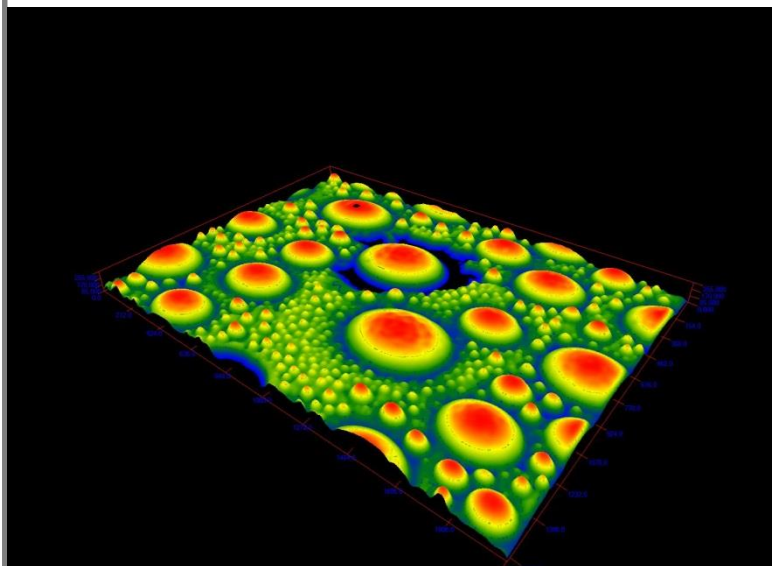
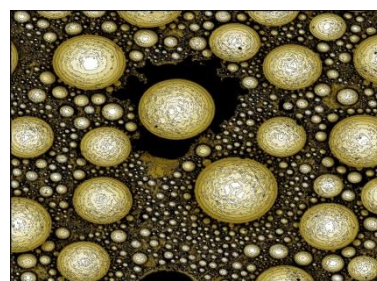
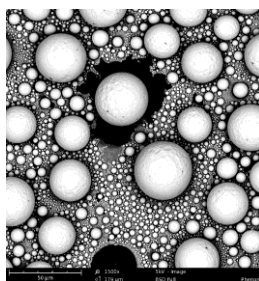
The MicroOptik Mishell Image analysis software package is the most sophisticated software of its kind available in the market.



Example of filter manager options to enhance Low Light Fluorescence images

All sorts of image analysis

One of the many functions MiVim has to offer (SEM Stereopair 3D visualization)



More information!

Ask our sales representatives for more information.

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MiOFI-1600 | Inverted Fluorescence Microscope & Environmental & Incubation Chamber

Specifications MiOFI-1600 | Inverted Fluorescence Microscope

Microscope Stand	Fully motorized inverted microscope stand with fluorescence, integrated light intensity manager and contrast manager for bright field applications and display for convenient operation and control of the microscope. It should also have inbuilt motorized Z-focus drive. 1.6x/2x magnification changer would be preferable.
Stage	Mechanical stage with universal specimen holder for cell culture flask, slides, different sizes of petri dishes and multi-well plates.
Eye Piece	Paired wide-field focusable 10X eye-pieces and adjustable diopter setting.
Transmitted Illumination	100W Halogen light source with fully motorized control of transmitted illumination. Fully motorized transmitted light axis with fast speed motorized shutter for multi-dimensional Imaging.
Light Attenuators	Motorized ND filters turret of 6 or higher positions for intensity regulation.
Motorized Condenser	Motorized, universal achromatic preferably with 6 or higher position turret disks. Motorized condenser should work for all objectives.
Objective Nose piece	Minimum 6 or higher position motorized objective nose pieces with faster movement.
Objectives	10X/ 0.25 - Plan-Achromatic objective or better 20X - Plan Apochromat Objective or better 40X- Plan- Semi Apochromat Objective or better 63X- Plan- Apochromatic NA or better
Fluorescence Attachments	Motorized Fluorescence illumination and operation
Reflector Turret for Fluorescence Filters	Motorized 6 or higher position reflector turrets. All the filters should be shift free.
Filters	High quality Band Pass (BP) Fluorescence filters for imaging of FITC, DAPI and Rhodamine. Controlling Stepper motor for Stop Flow sampling system.
Incubation System	Fully automated and programmable incubation system with temperature, CO2 and humidity control through software and touchscreen. System should be able to hold cell culture flasks, slides, different sizes of petri dishes and multi-well plates.
Controller 1	For Incubation system: For heating & cooling & humidity control Temperature control method Switching PID Temperature control sensor RTD CO2 controlled by Flokal® Mass flow controller ECU-H5 Controller with heat only ECU-HC Controller with CO2 and heat ECU-HOC Controller with CO2 and O2 ECU-HCP Controller with CO
Camera	For fluorescence, 3 Mega pixels with larger pixel size. For Bright field 12Mega pixel with larger pixel size and relevant adapters required.
Up gradation	System should be compatible for future up gradation to other modules.
Software	Automatic multi channel image acquisition, ROI imaging, Z stack acquisition, time lapse and should have future provision for wide-field acquisition, optical sectioning and deconvolution with optical sectioning. It should also have module for visualizing 3D image. Appropriate workstation with UPS backup and laserjet coloured printer to support the software should be provided. See Mishell ® catalogue.
PC	A modern Powerful Windows 8 OS desktop PC is provided with following specifications: SanDisk Ultra II SDSSDHII-120G-G25 Western Digital Blue WD10EZEX 1 TB Gigabyte GA-Z97X-UD3H Kingston HyperX Fury Black HX318C10FBK2/16 16 GB DDR3-RAM Intel® Core™ i7 i7-4790K Quad Core 4 x 4.0 GHz PNY VCQK2200-PB 4 GB Cooler master G750M 750 W Cooler Master black.
Warranty	Minimum 3 years warranty plus 2 years AMC.

More information! | Ask our sales representatives for more information. info@microptik.eu

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