

## iLine M

# MULTIPLATE & MULTILAYER ADHERENT CELL MONITORING



### DIGITAL HOLOGRAPHIC 4D MICROSCOPE

This device has been developed for direct, non-invasive monitoring of adherent cell growth in multilayer cell culture vessels and bioreactors. The iLine M has built in functionality to monitor adherent cell confluency and cell density in real-time.

The advanced, easy to use software captures real time 3D images and quantitative data allowing for automatic cell counting and other cell specific measurements.

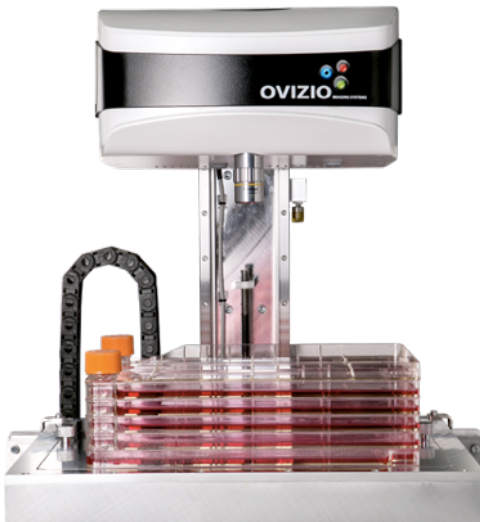
The total magnification is typically 250 to 500 X but can be adapted to fit the size of the cells to be observed.

#### Measurements

- Cell count
- Cell morphology
- Cell confluency

signature of each cell within the field of view and computes a cell count based on a sequence of holograms. The platform shows confluency and cell count per layer in a semi-automated way.

The iLine M can be used in R&D as well as in production settings and is ready to be integrated with a process control system via an OPC link.



### TECHNOLOGY

Ovizio's platform is based on patented Differential Digital Holographic Microscopy. This unique technology brings real-time label free monitoring to multilayer cell culture supports.

In Digital Holography, the scattered light beam from an illuminated object interferes with a reference beam on a CCD camera allowing for a 3D numerical reconstruction of the object. Images of objects captured in a hologram can easily be refocused post acquisition.

Differential Digital Holography is an evolution of this base technology that brings increased stability and an important size reduction of the instruments.

Digital Holography can construct intensity images, quantitative phase images and 3D images covering the shape and density of an object. The phase image is equivalent to the optical thickness of the sample.

The iLine M measures the specific holographic

#### FEATURES

- ① Multiplate and Multilayer monitoring
- ② Reducing operational costs up to 50%
- ③ No sampling, no sample preparation
- ④ Label free, non-invasive
- ⑤ Real-time
- ⑥ Improved QC and reproducibility
- ⑦ Environmental friendly (no waste)



## OSONE SOFTWARE

The iLine M is delivered in combination with the easy to operate OsOne software from Ovizio. This workflow driven package is intended to get beyond the burden of current cumbersome life sciences instrument applications and is focused on giving the user a straightforward experience.

OsOne allows the user to focus on the result of a measurement while offering all the tools required for a thorough investigation of the underlying data (this even at single cell level).

OsOne combines image acquisition and data analysis into an integrated and particularly

## CHARACTERISTICS

	5X	10X
Light source	Monochromatic LED 630nm (Red)	
Image types	Intensity and quantitative phase contrast image	
Sensor	CMOS camera 1920 x 1440 pixels - 3.63 $\mu\text{m}$ pixels	
Objectives	5x & 10x Mitutoyo Plan Apo Infinity-Corrected Long WD Objective	
Objective magnification	5x (real x2.5 - NA 0,14)	10x (real x5 - NA 0,28)
Horizontal resolution	2,75 $\mu\text{m}$	1,37 $\mu\text{m}$
Depth investigation by refocus	1.2 mm	450 $\mu\text{m}$
Typical magnification	150x	300x
Vertical resolution	<5 nm	<5 nm
Depth of focus	14 $\mu\text{m}$	3 $\mu\text{m}$
Working distance	34 mm	33,5 mm
Field of view	2090 x 2090 $\mu\text{m}^2$	1045 x 1045 $\mu\text{m}^2$
Acquisition rate	12 hologram/s	12 hologram/s
Main enclosure	943 (L) x 873 (W) x 965 (H) mm - 125 kg	
Control Box	410 (L) x 366 (W) x 216 (H) mm -14,5 kg	

## CONTACT HEADQUARTERS

### Ovizio Imaging Systems

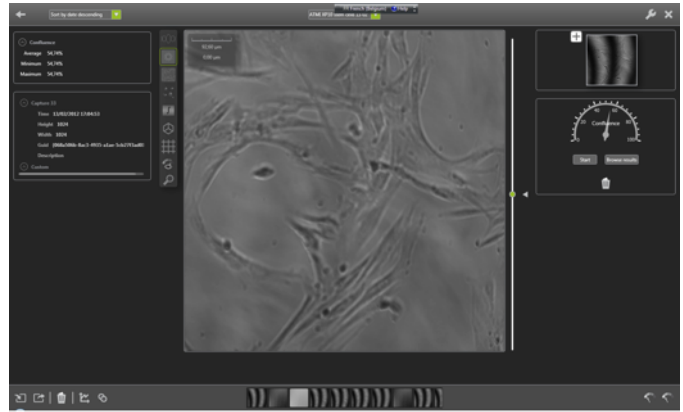
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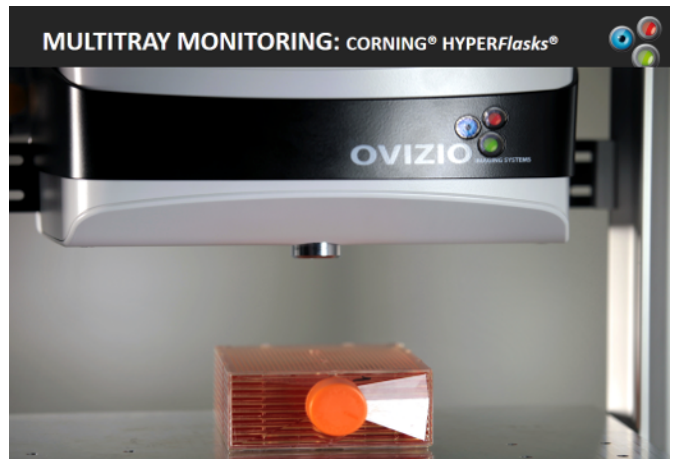
## APPLICATIONS

The iLine M product range is designed to monitor adherent cells directly in their recipient.

This platform matches most widely used cell culture vessels, including T-flasks, multi-well plates, chamber slides, etc...

The iLine M offers unique features in combination with multilayer cell culture vessels (often difficult to observe in a regular microscope) such as the:

- Corning® HYPERFlask®
- Corning® CellSTACK® products
- NUNC® Cell Factory Systems®



## OPTIONS

For further automation, the iLine M can be equipped with a desktop support and motorised stage.

