

iLine F MICROSCOPE

Automate your cell- & gene-based
therapeutics development
and vaccine production



VISIT [OVIZIO.COM](https://www.ovizio.com)



Benefits

The **iLine F microscope** provides unique **online, non-invasive, dye-free** suspension cell counting via **accurate, continuous real-time** monitoring. Our algorithms automatically detect different cell quality attributes such as viability (dead or alive), counting, activation state, and clusters.

The microscope captures holograms of cells as they travel through the disposable BioConnect fluidics system, which connects the microscope to the bioreactor.

The fluidics system is activated via a unique membrane pump, which works in the same way as a heart and has been proven to preserve cell integrity. Sterility is assured, and continuous cell counting and monitoring can be carried out without sample consumption, thanks to the **closed-loop setup**.

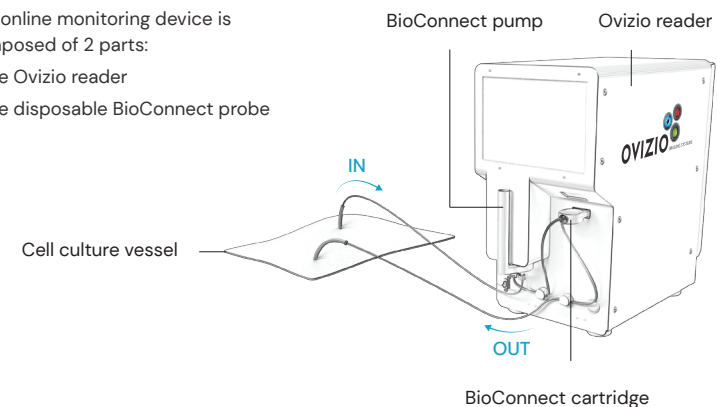
Transfer of Ovizio's technology from one site to another is a very convenient and straightforward experience since it is operator independent and much less time-consuming.

The result:

- No manual operations, no waste of sample
- Accelerate process development and characterization
- Improve product understanding
- Reduce costs

Our online monitoring device is composed of 2 parts:

- the Ovizio reader
- the disposable BioConnect probe



Features

Benefits



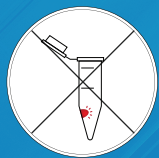
Automation
& AI

Accelerate process development & characterization
Increase measurement accuracy
Increase yield



Real-time
attributes

Improve process & product understanding



Dye-free &
no sampling

Reduce costs
No contamination risk



No waste of
biological material

Improve waste management

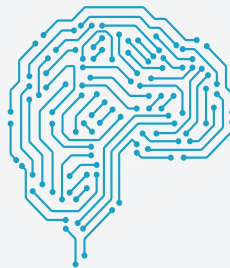
BioConnect & OsOne software



The BioConnect can connect to almost any type of bioreactor, including (but not limited to) rocking motion bags, benchtop, single-use/disposable, and even larger scale stainless-steel bioreactors. Aseptic connection is achieved through welding (C-Flex or PVC) or using Luer locks.

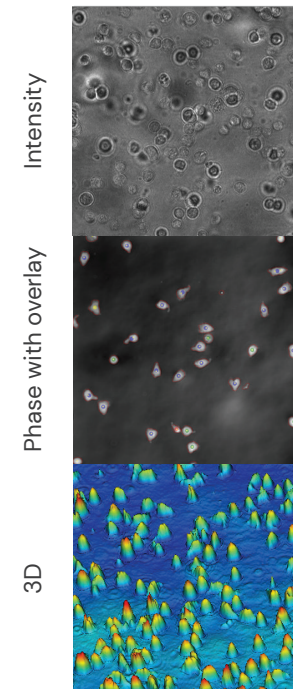
The OsOne software is at the center of Ovizio's microscopes. Designed to deliver an attractive user experience, OsOne is built for easy data acquisition and thorough quantitative data analysis of suspension cell cultures. The intuitive interface and wizard enable a rapid understanding and navigation of the app, providing a solid connection between the user and the device.

The OsOne software uses machine learning to display the different data captured in holograms



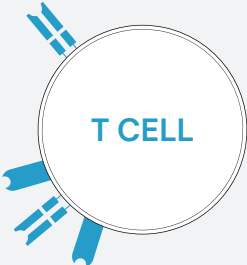
Cell Quality Attributes (CQAs)

- Cell viability
- Cell count
- Magnetic beads count
- Morphological changes
- Infection kinetics
- Activation-like state



Applications

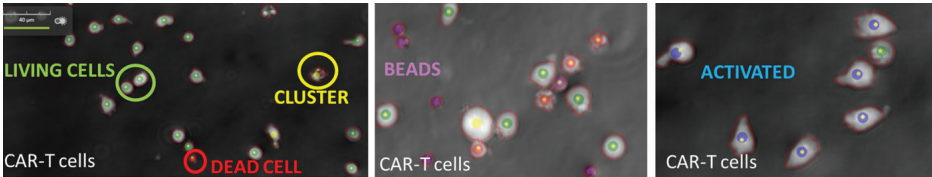
T Cell Quality Attributes,
directly in the
cell culture bag



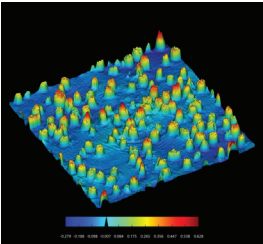
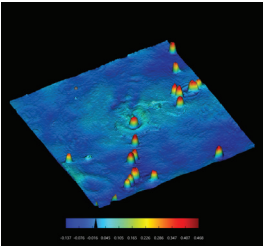
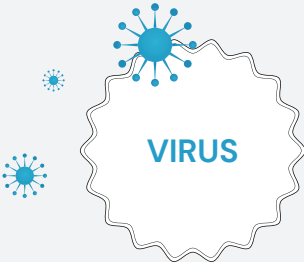
Assess cell viability - cell counting

Classification of beads

Track change of status



Percentage of
Sf9 cells infected
by baculovirus
in real time



START:
Healthy cells are visible as
a clear cone of light on
a 3D holographic image



END:
Infected cells have
multiple lower peaks at
the end of the culturing process



Specifications

Ovizio reader

Type	iLine F holographic transmission microscope
Light source	Partially coherent monochromatic LED 630 nm (red)
Sensor	CCD camera 2456 (H) x 2058 (V) – 8 bits
Microscope objective	Olympus LUCPLFLN20X microscope objective 20x – 0.45 NA
Total Magnification	22.2X
Horizontal resolution	1.5 μ m
Field of view	320 μ m x 320 μ m.
Acquisition rate	15 fps max
Data volume	128Mb per measurement point. Note: volume may vary depending on selected cell line
Input Power	100–240VAC ~ 47–63Hz – 100W

Integration capabilities

Device	322 (13.1" – L) x 212 (8.1" – W) x 400 (15.7" – H) mm – 12 kg
Shipment box	1000 x 555 x 670 mm = 371.85LT – 55kg

Physical data

Automation via RESTful web services	
OPC ready	

BioConnect

Cell concentration range	[0.1, 25]*10 ⁶ cells/ml. Note: cell concentration range may vary depending on cell line
Throughput	Average: 3.0 mL/min Maximum 11.6 mL/min
Cell travel time	Average: 153 s Minimum: 40 s
Tubing length	4m of silicon 1 x 3 mm + 20 cm of C-Flex 3.2 x 6.4 mm
Tubing diameter	Typical tubing size is O.D. 3 mm, I.D. 1 mm
Internal tubing volume	4.8 mL
Pump body volume	Variable: from 0 to 3.5 mL
Retention volume	4.8 mL to 8.3 mL Note: Retention volume of BioConnect only, other tubing added between vessel and BioConnect will increase these values
Autoclave sterilization cycle	Maximum 120°C – 20 minutes
Flow cell channel height	Between 150 and 200 μ m
Hygrometry	20–80% – non-condensing
Temperature	15–25 °C
Shelf life	12 months
Max overpressure	20 mbar

Note: these specifications may change without notice.