



Optical Coherence Tomography Cell Monitoring

OCTiCell™ provides continuous, non-invasive, non-destructive, real-time, in-line monitoring of bioreactors for:

- Cell Concentration
- Cell Viability
- Cell Aggregation
- Culture Contamination

Benefits of OCTiCell™

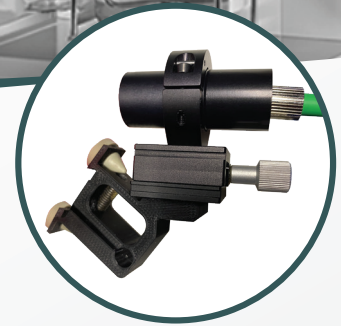
OCTiCell™ provides quantitative data on cells in a bioreactor without the need for any consumables and is consistent with traditional invasive sampling and cell counting methods.

RESEARCH & DEVELOPMENT:

- Research conditions for growing cells
- Optimize and establish protocols for consistent cell growth
- Lower time, labor, and material costs associated with process development

PRODUCTION

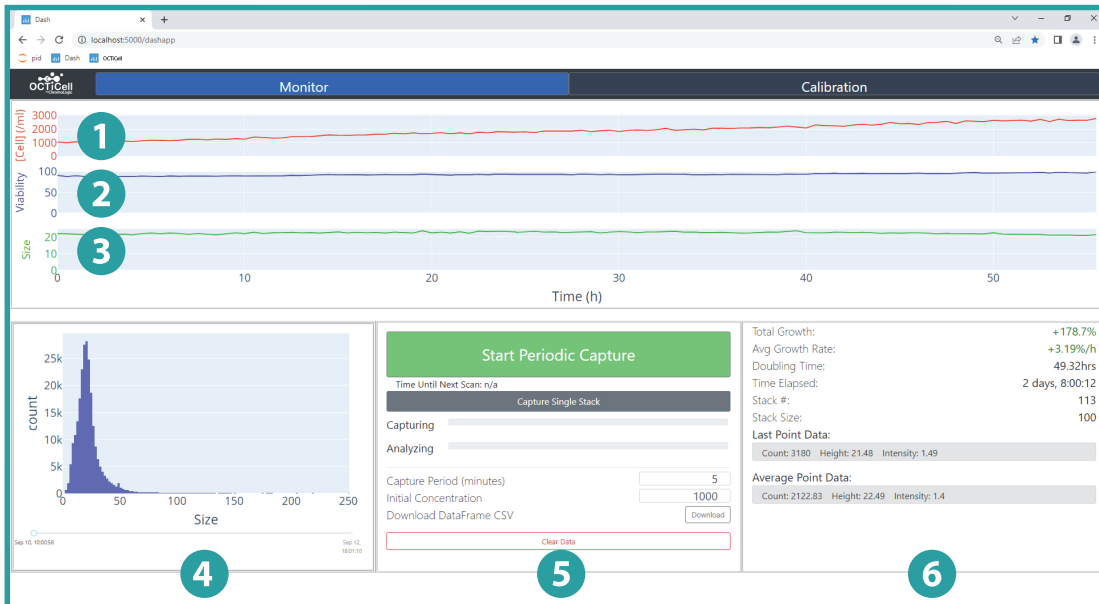
- Continuous data for monitoring production quality for GMP
- Remote (web) monitoring that enables rapid intervention
- Integration with other IoT sensors for complete batch-records and root-cause analysis



Key Features of OCTiCell

OCTiCell™ Operation and Compatibility

- Can be used with a wide variety of bioreactors including: Shake Flasks, Impeller Bioreactors, and Rocking Bag Bioreactors.
- Includes fiber optic probes for easy integration with bioreactors placed within incubators.
- No reagents required.
- No contact with cells/medium so no sterilization requirements.
- Requires no changes to reactors.



OCTiCell™ User Interface

- Fully automated data collection.
- Web (Browser) Based Graphical User Interface for local and/or offsite monitoring. No software download required.
- Can be integrated with other control / PLC protocols.

- 1 Track Concentration
- 2 Track Viability
- 3 Track Size
- 4 Understand Size and Distribution of Cells
- 5 Acquisition Control
- 6 Monitor Growth Statistics

OCTiCell™ Monitors Cells Growing in Motion

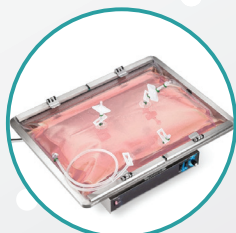
OCTiCell is an extremely versatile technology that can monitor cells in motion through any transparent surface. OCTiCell has been uniquely engineered to measure cell growth in a variety of bioreactor forms including: shake flasks, impeller bioreactor, and rocking-bag bioreactors.



Shake Flask Bioreactor



Impeller Flask Bioreactor



Rocking Bioreactor

OCTiCell™ Specifications

Probe Dimensions	18 × 18 × 39 mm
System Dimensions	21.6 × 53.3 × 40.6 cm
Cell Concentration Accuracy (Pearson's correlation with Innovatis CedexHiRes automated cell counter)	0.99
Mean Size Measurement Accuracy	+/- 1.5 μm
Cell Viability Accuracy (Pearson's correlation with trypan blue staining)	0.86
OCT Imaging Beam Center Wavelength	890 nm
OCT Imaging Beam Bandwidth	185 nm