



Optical Coherence Tomography Cell Monitoring

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

- Cell Concentration
- Cell Granularity
- 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, Rocking Bag, and PBS 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 Granularity
- 3 Track Size
- 4 Understand Size and Distribution of Cells
- 5 Monitor Streamed Image
- 6 Monitor Growth Statistics
- 7 Acquisition Control

OCTiCell™ Monitors Cells Growing in Motion

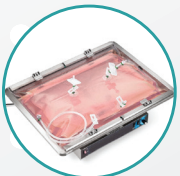
OCTiCell™ is an extremely versatile technology that can monitor cells in motion through any transparent surface. OCTiCell™ has been uniquely engineered to measure cell growth in a variety of bioreactor forms including: Shake Flasks, Impeller, Rocking-Bag, and PBS Bioreactors.



Shake Flask Bioreactor



Impeller Flask Bioreactor



Rocking-Bag Bioreactor



PBS Bioreactor

OCTiCell™ Specifications

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|--|------------------------------|
| Probe Dimensions | 18 × 18 × 39 mm |
| System Dimensions | 19 × 33 × 15 cm ³ |
| Cell Concentration Accuracy (Pearson's correlation with Innovatis CedexHiRes automated cell counter) | 0.99 |
| Mean Size Measurement Accuracy | +/- 1.5 µm |
| Cell Granularity Accuracy (Pearson's correlation with trypan blue staining) | 0.86 |
| OCT Imaging Beam Center Wavelength | 890 nm |
| OCT Imaging Beam Bandwidth | 185 nm |