

## Minimum Specifications for Imaging Cells in Fluidigm Integrated Fluidic Circuits

A moderate- or high-resolution microscope system will allow imaging of cells in Fluidigm integrated fluidic circuits (IFCs). A microscope is recommended for confirming seeding, condition, and morphology of cells in all cell-based IFCs. The following is a list of recommended specifications for appropriate IFC imaging systems. To perform imaging of cells in IFCs, confirm that a microscope in your lab meets these specifications.

### Minimum Specifications for Imaging

Need	Recommended Microscope Setup
Highest-confidence sensing with automated scanning	Inverted compound microscope with phase contrast, fluorescence capabilities, and motion-control including: <ul style="list-style-type: none"> <li>• 10X phase contrast objective and matching transmitted light condenser phase ring</li> <li>• 10X plan apochromat objective</li> <li>• 20X plan apochromat objective (for sub-cellular resolution staining)</li> </ul> <p><b>NOTE</b> Any magnification &gt;20X requires long working distance objectives.</p> <ul style="list-style-type: none"> <li>• Automated motorized stage (XYZ) with positional accuracy better than 1.0 <math>\mu\text{m}</math> and an adapter for standard cell culture plates</li> <li>• All associated fluorescence imaging hardware:               <ul style="list-style-type: none"> <li>• Filter cubes—GFP and Texas Red<sup>®</sup> minimally recommended</li> <li>• High-intensity fluorescence source</li> <li>• 1M pixel or greater camera with 5e-dark noise or better and capable of full-frame capture at 10 Hz.</li> <li>• Workstation computer with dedicated graphics card</li> <li>• (Preferred) 1,920 x 1,200-capable monitor or better</li> <li>• Image processing software capable of stitching ~200 high resolution images</li> </ul> </li> </ul>
Highest-confidence sensing with manual scanning	Inverted compound microscope with phase contrast and fluorescence capabilities including: <ul style="list-style-type: none"> <li>• 10X phase contrast objective and matching transmitted light condenser phase ring</li> <li>• 10X plan apochromat objective</li> </ul> <ul style="list-style-type: none"> <li>• All associated fluorescence imaging hardware:               <ul style="list-style-type: none"> <li>• Filter cubes—GFP and Texas Red minimally recommended</li> <li>• High-intensity fluorescence source</li> <li>• (Preferred) 1M pixel or greater camera with 5e-dark noise or better and capable of full-frame capture at 10 Hz</li> <li>• (Preferred) Workstation computer with dedicated graphics, 1,920 x 1,200-capable monitor or better, and image processing software</li> </ul> </li> </ul>
Moderate-confidence sensing with manual scanning	In order from highest to lowest confidence: <ul style="list-style-type: none"> <li>• Inverted compound microscope with phase contrast capability with 10X phase contrast objective and matching transmitted light condenser phase ring</li> <li>• Upright compound microscope with DIC and 10X objective</li> </ul>

### Suggested Fluorescent Microscopes

The table is a list of suggest microscopes that have been tested by the Fluidigm R&D team.

Product Name	Company	Part Number
Automated Inverted Microscope	Leica <sup>®</sup>	DMi8
Axio Observer Z1	ZEISS	491912-0003-000

## Fluidigm Solutions for Single-Cell and Cell Biology Applications

Product	Description
C1™ IFCs	IFCs for single-cell capture on the C1 system
C1 Preamp IFCs	IFCs for single-cell capture and cDNA preamplification on the C1 system
C1 DNA Seq IFCs	IFCs for single-cell capture and amplification of genomic DNA from single cells on the C1 system
C1 mRNA Seq IFCs	IFCs for single-cell capture and generation of cDNA libraries on the C1 system
C1 mRNA Seq HT IFC	High-throughput (HT) IFC for single-cell capture and generation of cDNA libraries on the C1 system
Callisto™ Adherent Cell Culture IFC	IFC for adherent cell culture on the Callisto system
Polaris™ Single-Cell Dosing mRNA Seq IFC	IFC for functional genomic studies on single cells on the Polaris system, including dosing and time course studies

### For technical support visit [fluidigm.com/support](https://fluidigm.com/support)

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