Hyperion Imaging System
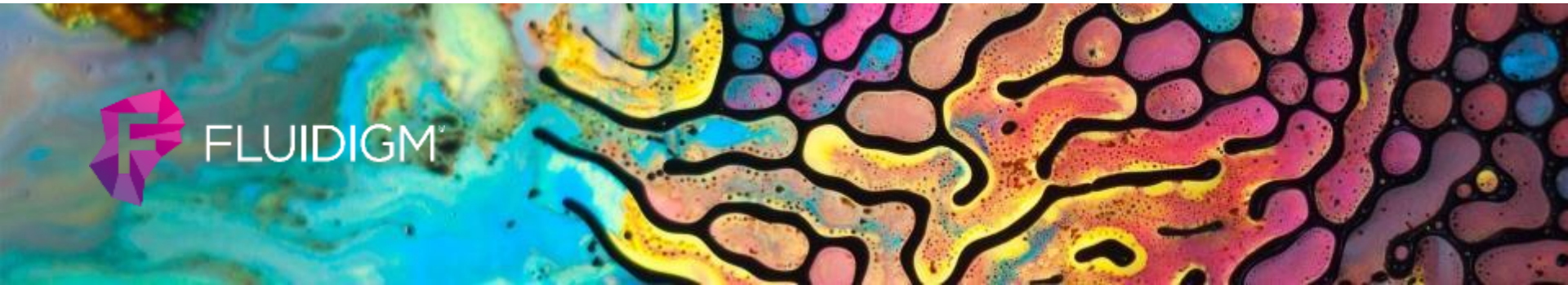
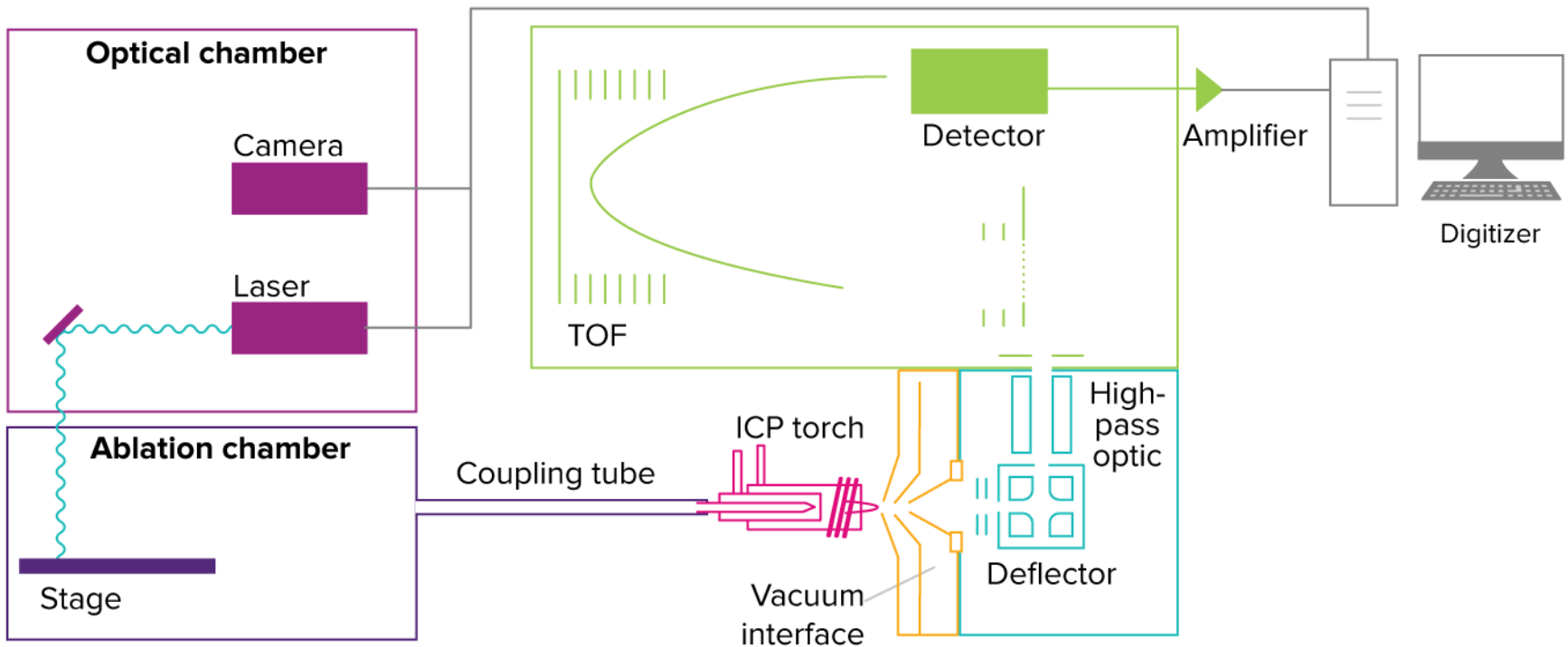## Introduction to Sample Acquisition
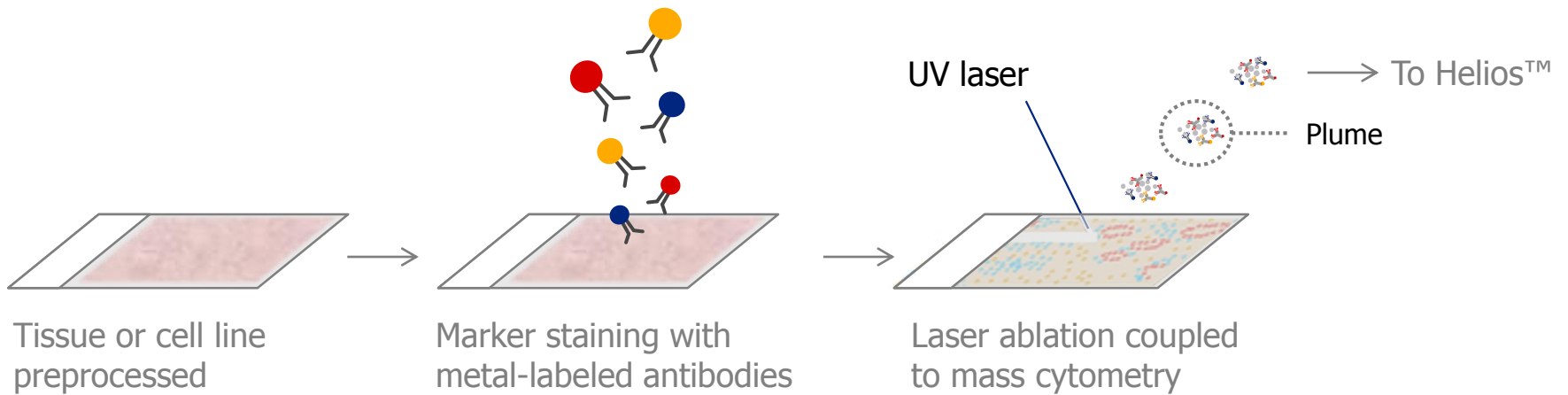
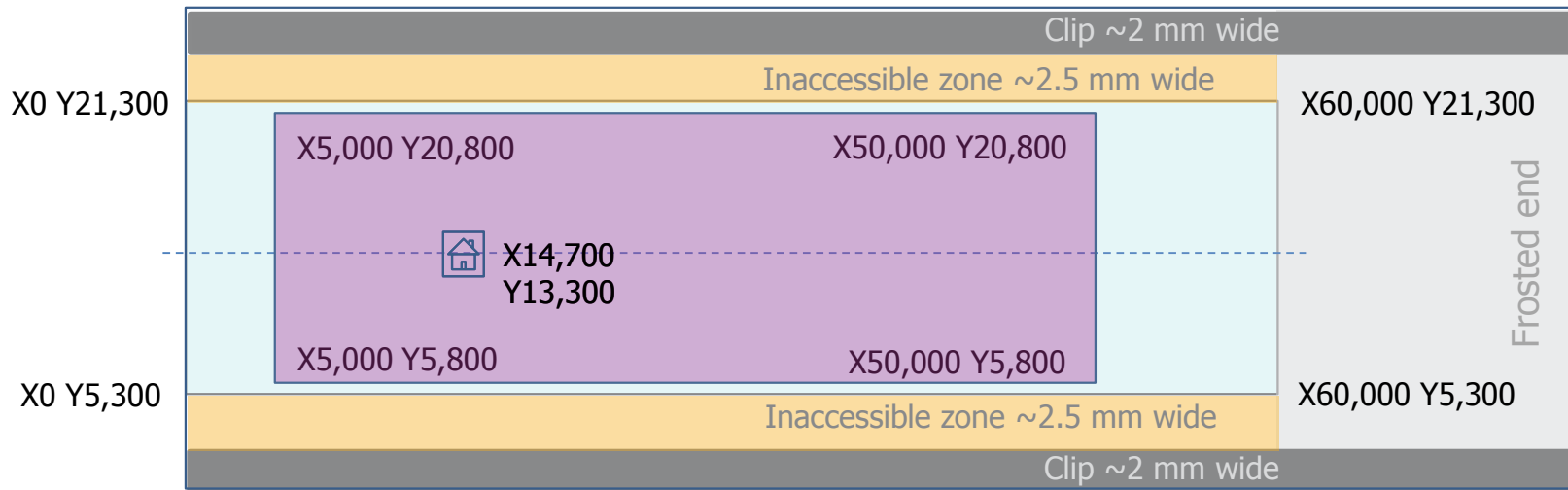# Hyperion™ Imaging System overview

Laser ablation overview

Tissue or cell line preprocessed

Marker staining with metal-labeled antibodies

UV laser

Plume

To Helios™

Laser ablation coupled to mass cytometry
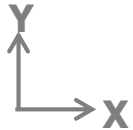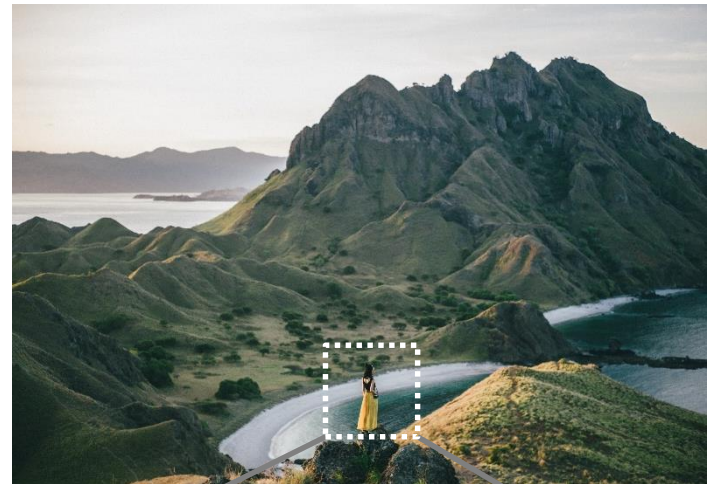
Slide orientation

Dimensions of accessible area: 60,000 µm (X) by 16,000 µm (Y)

Dimensions of Fluidigm
validated addressable area: 45,000 µm (X) by 15,000 µm (Y)
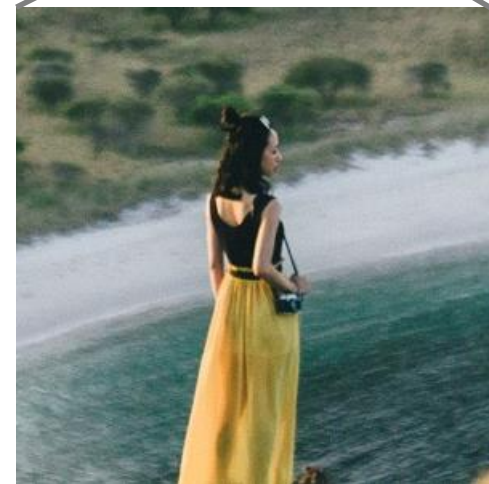
Panorama and region of interest

Panorama
- A high-level image of a section of your slide (or all of it)
- Panorama is just an image.
- Panorama does not get ablated.

Region of interest (ROI)
- A part of your panorama that you are interested in ablating
- ROI gets ablated.

Defining a panorama

Region of interest
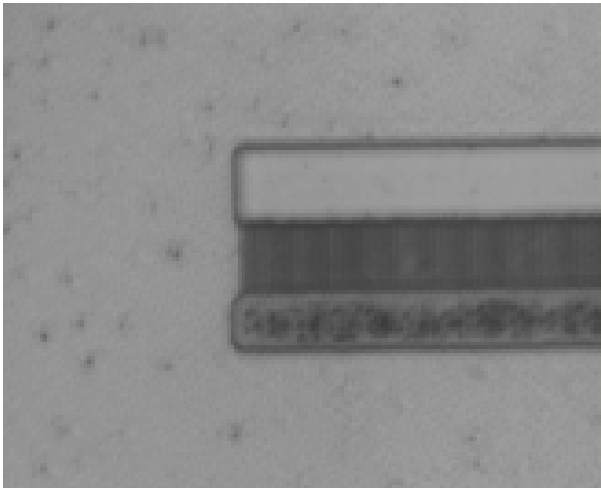
Ablation energy

Ablation energy: Energy of the laser beam delivered to the sample. It can be varied by the energy attenuator.

Laser is calibrated to ablate tuning film using the attenuator settings of 0 dB. This setting will have to be increased over time as the laser ages.

Ablation energy

Unablated region

Optimal: clear (bright) ablation region

Too high: cutting through glass

Too low: leaving ghost material behind

It is important to check ablation energy to ensure proper sample ablation.
- Use an area that is not needed for data collection.
- Ensure that the sample is ablated completely.
- Do not overablate samples and etch the glass slide.

Summary

Certain regions of a slide cannot be ablated due to restrictions governing the movement of the stage.

Select a region of your sample to generate a panorama.

Within the panorama, select an ROI to ablate.

Ensure that the proper ablation energy is used.

Simplify the complex quest to understand and apply biology.

For Research Use Only. Not for use in diagnostic procedures.