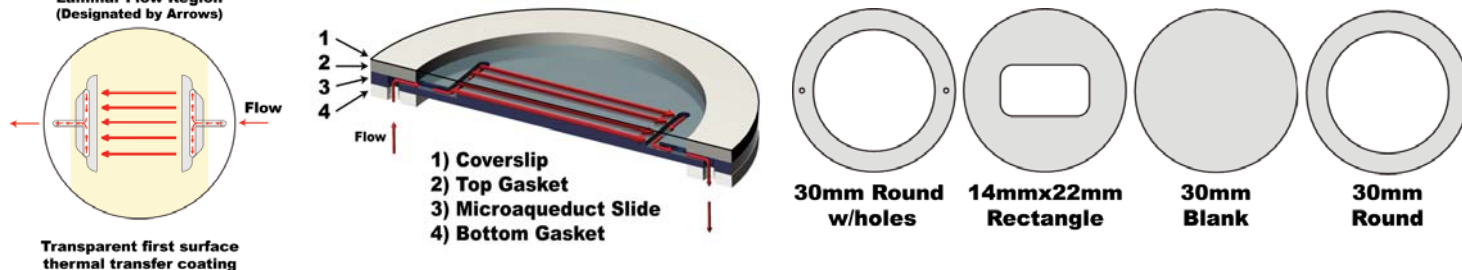


FCS3 Chamber - Non heating - Flow Cell

The Bioptechs FCS3Chamber is a non heating, parallel plate flow cell where cells are grown on a 40mm glass coverslip. This coverslip is then incorporated into a perfusable fluid optical cavity that is compatible with all modes of microscopy, and its geometry can be easily defined by the user. This Optical Cavity is secured into a fixture on the stage of the microscope where it can be perfused with media or remain static. Media that comes into one of the ports on the side of the chamber, emerges in a fluid optical path where the media is precisely directed over the cells. The media is collected within the optical cavity and directed out of the chamber on the other side. The flow characteristics of the media while in the optical cavity, are easily modified by selecting gaskets of varying geometry that direct the flow. A fluid pathway is formed by separating the Microaqueduct slide from the coverslip containing cells with a single silicone gasket. This gasket can be any thickness from 50 micron to 1mm and any lateral geometry you choose or create. This arrangement allows the user to define the flow characteristics. Therefore, you are not limited by the geometry of the optical cavity instead you select or create it! Fluid access to this flow channel is made through two 14-gauge needle stock tubes protruding from the sides of the chamber top. These tubes provide fluid connection to two perfusion holes in the Microaqueduct slide that interface two "T" shaped grooves cut into the inner surface of the Microaqueduct slide. The "T" groove allows the media to seek the path of least resistance and become nearly laminar before flowing across the cells.

Microaqueduct Slide Perfusion
 Laminar Flow Region
 (Designated by Arrows)



By simply changing the upper gasket you can change the volume and flow characteristics of the chamber. This gasket can have any internal geometry you desire and can be any thickness from 0.1mm to 1mm. The drawing above shows the standard shapes of the gaskets that we include with every FCS3. We also include solid blank gaskets for you to custom fit to your application. Once you have found the shape that works best for your experiment you can contact us to have a die made to those specifications. Custom shapes are available, please see the FCS2 or FCS3 page on the website for additional gasket shapes.

Cleaning:

Laboratory soap and water can be used for general cleaning of the chamber, microaqueduct slides, gaskets and coverslips. For sterility the chamber top, pressure plate, microaqueduct slide, gaskets and coverslips can be autoclaved on a short cycle (15 minutes @ 121 C). The chamber top and base is stainless steel. If spillage occurs inside chamber base simply wash or rinse then autoclave. The entire chamber including pressure plate can be sterilized by an alcohol wipe, UV or Ethylene Oxide sterilization. Alcohol or other harsh chemical contact to the silicone gaskets should be avoided as degradation will occur. If you have any questions please feel free to contact Bioptechs.

