Bioptechs Micro-Environmental Control Systems

Bioptechs | BOPT-FCS

Bioptechs micro-environmental control systems provide precision temperature-controlled, closed-system perfusion chambers for live-cell imaging, available for inverted (FCS2) and upright (FCS3) microscopes, compatible with all microscopy modes and all major brands.

SPECIFICATIONS

FCS2 aperture	22 mm imaging aperture; 23 mm or 30 mm open aperture (chamber top)
FCS3 aperture	22 mm
Coverslip	40 mm glass #1.5 (both FCS2 and FCS3)
Gasket thickness	0.1–1.0 mm (user-selectable)
Temperature accuracy	±0.2°C
Temperature range	Ambient ±5°C to 50°C (±0.2°C); up to 99°C (±0.5°C) extended range
Thermal control method	ITO first-surface (Microaqueduct Slide)
Perfusion tubing	1/16" (C-Flex, Tygon compatible)
Microscope compatibility	All brands; FCS2 (inverted), FCS3 (upright)

FEATURES

- FCS2 Chamber: inverted microscope, parallel-plate high-NA flow cell, 22 mm imaging aperture (23 mm or 30 mm chamber top)
- FCS3 Chamber: upright microscope, laminar perfusion with Köhler illumination, no air curtain required
- Delta T Dish System: ITO-coated dish bottom for long-term time-lapse without specimen transfer
- Patented Microaqueduct Slide with ITO coating for first-surface thermal control
- Temperature accuracy: ±0.2°C (ambient to 50°C)
- Gasket thickness range: 0.1 mm to 1.0 mm (user-selectable geometry)
- Laminar, modified, and defined-shear flow configurations
- Closed system compatible with CO_2/bicarbonate and organic buffers
- 40 mm coverslip (#1.5) for high-resolution optics
- Compatible with 1/16" perfusion tubing (C-Flex, Tygon)
- Compatible with all microscope brands and imaging modalities
- Complete range of accessories: objective heaters, stage warmers, perfusion pumps, controllers

APPLICATIONS

- Live-cell fluorescence and confocal microscopy
- Long-term time-lapse cell imaging
- Shear stress experiments on adherent cells
- Microinjection, electrostimulation, micromanipulation
- Electrophysiology recordings under optical observation
- Tissue slice imaging
- Developmental biology, oncology, immunology, neuroscience
- Calcium signalling and ion channel studies