

## Extended Integral TEMPERATURE CONTROL

The iceCUBE&BOX system enables experiments above, at, and below ambient temperature. The integral design provides the microscope setup with the thermal and positional stability required for live imaging, and gives the user flexibility and freedom of choice with respect to sample formats, objectives, stages, as well as stage- and table-mounted add-ons.

The recirculating precision air heater with fuzzy-logic control quickly and reliably compensates for external disturbances and the cooling compressor extends the control range well below ambient temperature.

The iceCUBE & BOX temperature control system is available for any microscope on the market.

The BOX is custom-designed for you in order to meet your equipment- and application-specific. Special features can be integrated on demand.

Our design enables unhindered access to the controls of the microscope and stage area.



iceCUBE  
precision air heater with cooling compressor



iceCUBE&BOX  
on a Leica DMIRB with  
integrated perfusion setup

## FOR ALL MICROSCOPES

Leica, Nikon, Olympus, Zeiss, upright,  
inverted, wide-field, confocal...

## Features

- Our BOX (microscope enclosure) is fully custom-designed
  - Optimally fit for complex hardware setups
  - Application-specific and special ergonomic requirements can be taken into account
- Integral design encloses the whole microscope
  - Optimal thermal stabilization and focus stability
  - Allows the usage of table-mounted equipment (e.g. micromanipulators)
- Front access openings with flexible silicon rubber curtains
  - Unhindered access to microscope controls and stage area without opening doors
- Large side wing doors
  - Enhanced large-scale access (e.g. for mounting stage components)
- Lamp pillar is directly tiltable without adjusting any openings etc.
- The BOX is entirely made from flat panels held together with thumb screws
  - Individual panels can be easily modified or replaced
  - Front panels can be removed and remounted in a few seconds
  - Quick assembly and disassembly without tools
  - BOX can be stored in a compact format
- Air heater is mechanically uncoupled from the microscope and table
- Top-down flow design with diffuser filters
  - Constant defined air flow
  - Stable temperature distribution
  - Dust is continuously removed
- High-throughput recirculating system
  - Faster reaction to disturbances
  - Low heat dissipation
- The BOX is made of Makrolon™ (polycarbonate) which provides superior thermal, mechanical and chemical stability (virtually unbreakable, resistant to ethanol, max. temp. 140° C, low flammability, self-extinguishing) compared to the commonly used PMMA (acrylic, "Plexi glas")
- Optional features include (but are not limited to):
  - Black anti-reflective coating for laser safety and stray-light removal
  - Faraday shielding for electrophysiology applications
  - "Floating" design avoids transmission of shocks or vibrations (e.g. when touching the BOX) to the microscope

## Technical Data

<i>Controller</i>	Advanced PID with fuzzy-logic self-tuning
<i>Air flow</i>	Top-down recirculating with speed control
<i>Sensor</i>	Pt-100 thin-layer RTD
<i>Range</i>	typ. 10°C to 50°C *
<i>Stability</i>	± 0.1°C at sensor location
<i>Precision</i>	± 0.3°C at sensor location
<i>Safety</i>	Automatic shut-down at 70°C
<i>Communication</i>	RS 232C serial interface
<i>Voltage</i>	230 VAC
<i>Consumption</i>	Heating 150 W to 600 W max. Cooling 350 W
<i>BOX material</i>	Makrolon™(polycarbonate)
<i>Compatibility</i>	All inverted and upright microscopes
<i>Options</i>	CO <sub>2</sub> and humidity control

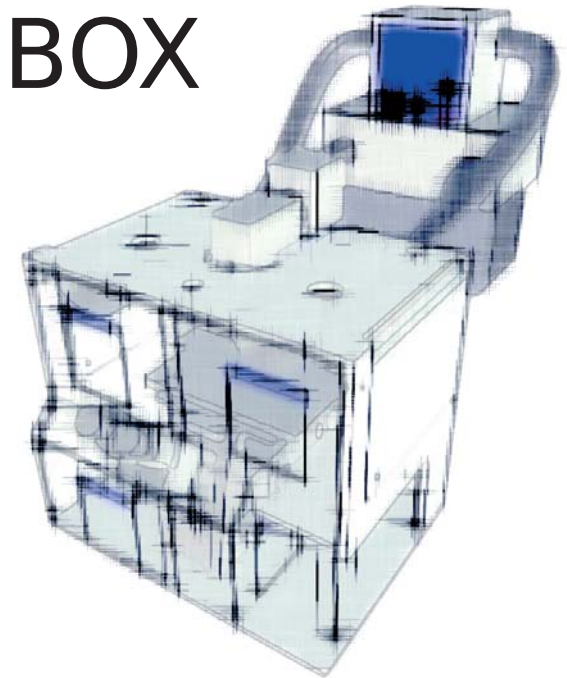
\* at 20°C ambient temperature

Life Imaging Services  
Efringerstrasse 79  
CH-4057 Basel  
Switzerland

Fon +41 61 711 64 61  
Fax +41 61 711 64 62  
E-mail [info@lis.ch](mailto:info@lis.ch)  
Web [www.lis.ch](http://www.lis.ch)

LIFE IMAGING SERVICES

# iceCUBE & BOX



Temperature  
Control System  
for  
Microscopes