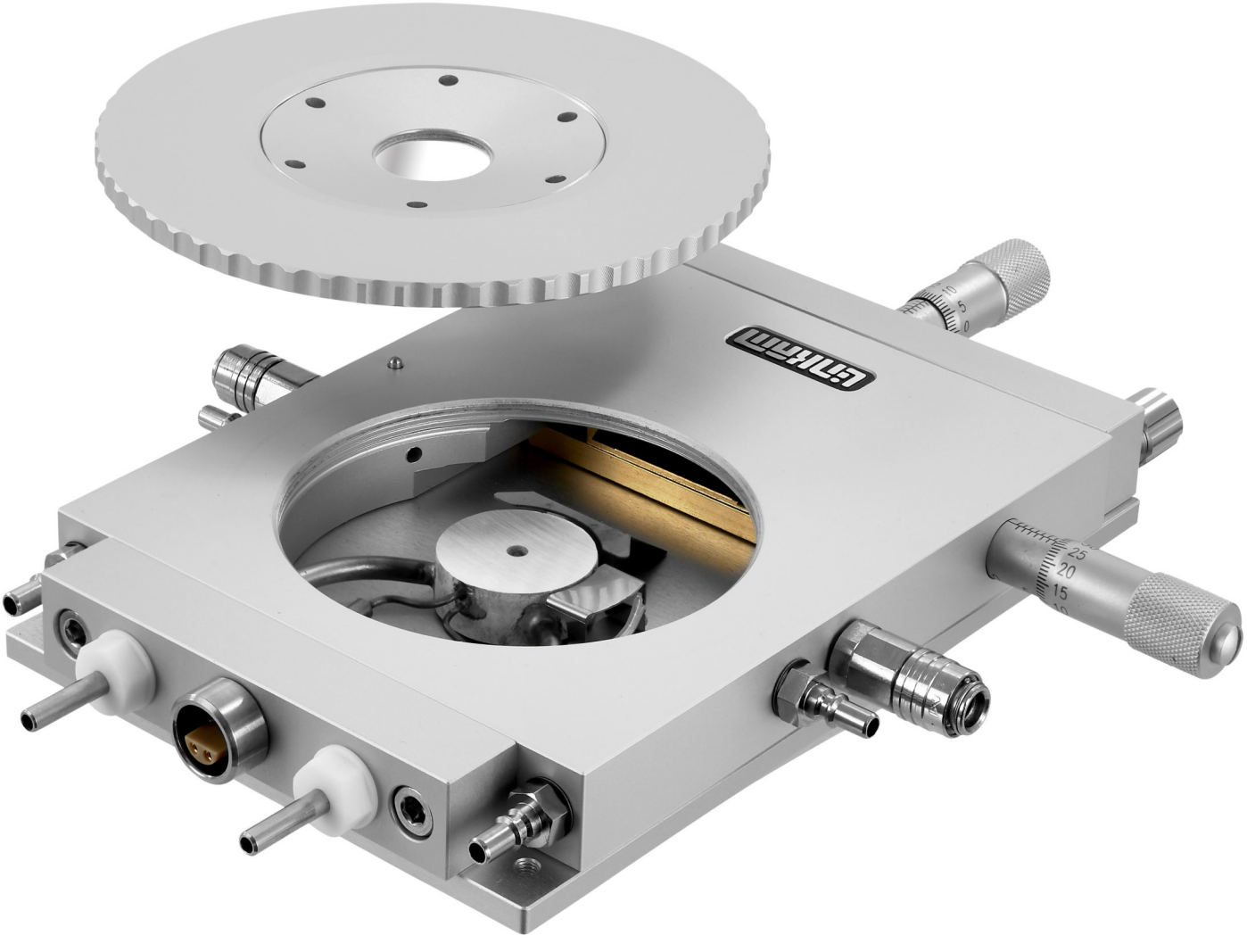
FTIR600 / FTIRSP600 / FTIR600MSO

Powerful Research Stages for IR Microscopy and Spectroscopy



Heating and Freezing
Temperature range from < -195°C up to 600°C

Versatile
Can be configured for IR or Raman spectroscopy

Stage Windows
Various material types available for optimum IR transmission

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Introducing the FTIR600 / FTIRSP600 / FTIR600MSO

Linkam's FTIR600 series has been adapted from our market-leading high precision THMS600 stage to allow infra-red analysis of samples from < -195°C up to 600°C, covering a wide range of applications from pharmaceutical compounds to polymers using most benchtop IR microscope systems.

The FTIR600 stages have been designed to be used in applications where rapid heating/cooling rates and high levels of accuracy and stability are required, and are supplied in three standard versions:

- **FTIR600** for horizontal mounting to IR microscopes.
- **FTIRSP600** for vertical mounting in horizontal IR beam spectrometers, incorporating a vertical sample holder and detachable base plate for either free-standing or attachment to a bracket in the spectrometer chamber.
- **FTIR600MSO** for mounting onto a motorised table with a 160 x 110mm recess.

All FTIR600 stage types are supplied with quartz windows as standard, allowing the user to tailor their stage for optimal IR transmission with the choice of optional Zinc Selenide (ZnSe), Barium Fluoride (BaF_2), Potassium Bromide (KBr), Calcium Fluoride (CaF_2) or Sapphire ($Al2O_3$) stage windows.

A system requires one of the FTIR600 stage types and a T96-S temperature controller which is available with either NEXUS software for computer control, or a LinkPad touch screen for stand-alone control. For cooling below ambient temperatures an optional LNP96-S liquid nitrogen pump is also available.

Features

Wide Temperature Range
The temperature range spans from < -195°C (with the addition of an optional LNP96-S) to 600°C for a versatile range of experiments. The T96-S controller allows each stage to heat samples at a maximum rate of 150°C/min. Water-cooled stage bodies for work above 300°C.

High Degree of Accuracy and Stability
The embedded high quality Pt100 platinum sensor guarantees accuracy and stability throughout the temperature range.

Versatile
Can be configured with stage windows suitable for IR or Raman spectroscopy.

Quick-release Gas Ports
Simple and easy stage purging to allow atmospheric composition control.

XY Manipulators
Sample position can be controlled over 15mm of travel in both X and Y directions via the precision ground manipulators.

Custom Options
Please contact us with details of your requirements.

Application Examples

FT-IR is a popular technique due to its precision spectral analysis and non-destructive nature, gaining the possibility of in situ temperature and environmental control. Linkam's FTIR600 series can be widely used in a variety of applications:

Plastics and Polymers

The FTIR600 series can be used for thermal analysis of the molecular structure of polymeric composites, biomaterials, nano-fibres, and many other materials.

Geological Samples | Composite Materials | Food Analysis

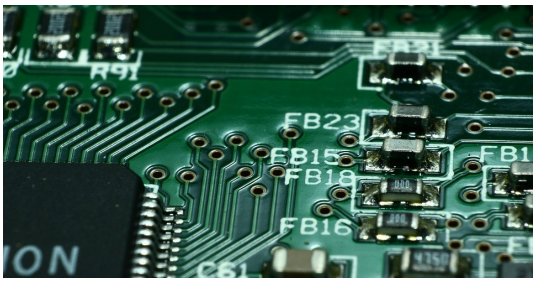
Pharmaceuticals

FT-IR spectroscopy is one of the most popular tools used in the analysis of pharmaceutical materials, and can non-invasively provide information on the thermal and in vivo stability and structure of many chemical and biological compounds.

Medical Applications | Bio-membranes | Protein Analysis

Semiconductor and Electrical

High temperature and atmospheric chemical characterisation via FT-IR is commonly used for analysis of semiconducting materials. IR spectroscopy is widely used across many research fields, from electrical devices to energy storage and renewable energy materials.



Photovoltaics | Liquid Crystals | Molecular Structure

Technical Specification

Temperature Range	< -195°C (with the addition of an optional LNP96-S) up to 600°C
Heating/Cooling Rates	Up to 150°C/min
Temperature Stability	< 0.01°C
XY Manipulation	15mm in X and Y
Sample Area	22mm diameter
Objective Lens Working Distance	4.8mm
Angle of admittance	Condenser 74° Objective 115°
Compatibility	IR and Raman Spectroscopy. Clamping options are additionally available for most microscopes.

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Discover More...

Control Options

Take control of your experiment with NEXUS software, or the stand-alone LinkPad touch screen, alongside the T96 temperature controller.

Both NEXUS software and a LinkPad can be used to control and monitor temperature and many other parameters including vacuum and humidity (dependent on system). The LinkPad provides an easy-to-use interface to the T96, for total control without a PC. Profiles with up to 100 ramps can be programmed, allowing simulation of complex processes.

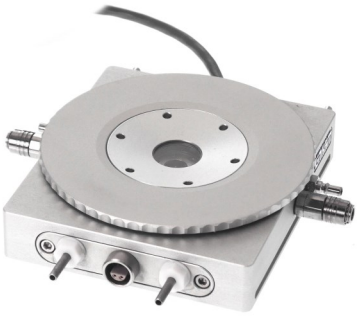
NEXUS software enhances this with data-logging, rewind logged data and images to review whilst still recording, data run comparison tools, advanced triggering functions and real-time graphical feedback. Optional modules to enhance your system include the NEXUS Imaging Module for synchronised image capture, the NEXUS Extended Measurements Module to measure key image features, the NEXUS 21CFR11 Module for data regulatory compliance, the NEXUS Reporting Module to create reports in Microsoft Word and the NEXUS TASC Module for image-based thermal analysis.

Imaging Station

The Imaging Station provides a digital imaging platform compatible with Linkam temperature and environmental control systems. Use our high-resolution camera to capture images and videos of your samples while controlling the temperature and environmental conditions.

The Imaging Station has been specially designed with a pivoted mechanism to allow greater access to your Linkam stage, making it quick and easy to access the chamber and change samples. It has a built-in LED light source for transmitted light with further options available for reflected light, polarisation and phase contrast imaging.

The Imaging Station is also compatible with a range of long working distance objective lenses which can be easily switched with the quick-release mechanism



DSC600 and DSCX600

Linkam's DSC600 and DSCX600 are novel single cell DSC/DTA systems which are optimised for simultaneous imaging and heat flow measurements. Their unique design allows the cell to be used on a variety of systems, including optical microscopes, FT-IR and Raman spectrometers.

The DSC600 enables the user to measure and image thermal phase transitions (such as melting points and glass transitions) of a wide range of substances whilst accurately controlling temperature from < –195°C to 600°C.

The DSCX600 has been specifically optimised for use with X-ray systems including WAX/SAX and synchrotron systems. The low mass single furnace ensures rapid heating and cooling rates (up to 130°C/min) and a fast response time so that manufacturing processes may be replicated.

Contact Details

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We make scientific instruments that help characterise materials from polymers to biological tissue and metals to composites. Our instruments are used for research by the world's most advanced scientific organisations and companies. Each of our instruments are designed and manufactured in-house by our team of highly experienced electronics, software and mechanical design engineers. We design and develop solutions for sample characterisation by collaborating with the best scientists in the world. Will you be next?

Linkam products are constantly being improved, hence specifications are subject to change without notice.
TASC products are a family of techniques developed by Prof. Mike Reading (Cyversa) and Linkam.

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