RHGen

NEW

Humidity Controller for your Sample Environment

Sensor at Sample
Accurate humidity measurements and control around the sample

Smart Desiccant System
Automated self-contained drying mechanism allows long-term testing without dry air supply

Cross-system Compatibility
Humidity control compatible with Linkam devices and third-party chambers

Linkam

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Introducing the RHGen

The RHGen Relative Humidity Controller is designed to provide environmental sample control to the range of Linkam stages. It allows precise control of water vapour in the environment around a sample without the need for an external dry air supply.

The smallest change in RH% can have huge implications on the characteristics of a sample and how it behaves. When combined with a Linkam stage, or other sealed chambers, the RHGen can be used to control the RH% between 5%-90% at temperatures from ambient to 85°C (dependent on device).

Unlike many other humidity systems, the feedback sensor is located close to the sample block, ensuring accurate humidity control. The RHGen can be combined with light microscopy, Raman, FT-IR and X-ray to further characterise samples.

The RHGen controller is compatible with a wide range of Linkam stages, as well as third-party devices with sealed chambers. It is supplied with a small sealed chamber as standard, which can be used with humidity validation samples.

The system contains a specially designed, automated recycling desiccant system which, combined with the ability to top up the water even during a run, allows the system to provide humidity control for months at a time.

Features

Integrated Desiccant System
Ambient air is dried through a specially designed automatic desiccant recycling system which provides humidity control for months at a time without the need for a costly dry air supply.

Smart Compact Design
The small size of the controller conserves vital benchtop space and provides a neat compact humidity system. Magnetic mounting of the bottle and front panel enable easy water changing., even during an experiment

Sensor inside the sample chamber
A sensor is mounted inside the chamber to create a feedback loop to the controller ensuring precise reporting and control of RH between 5%-90% at temperatures from ambient to 85°C (dependent on stage).

Multi-system Compatibility
Humidity-compatible versions of Linkam's THMS600, LTS420 and MFS stages are available, along with support for other sealed chambers.

Inert Gas support
The optional Inert Gas Regulator (IGR) allows inert gases such as Nitrogen and Argon to be used as a carrier gas with the RHGen.

Validation
A variety of certified salt solutions are available from Linkam to accurately validate the humidity sensors.

Custom Options
Please contact us with details of your requirements.

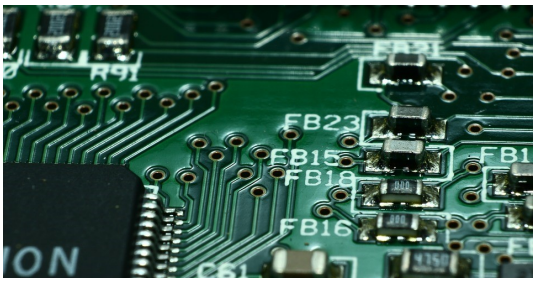
Application Examples

The precision humidity control of the RHGen is used in combination with Linkam stages and other sealed chambers for a range of applications in research and industry worldwide. These include:

Semiconductor and Electrical

Environmental stability is very important in the lifetime testing of all electronic devices. Leading multinational companies and research institutes use the RHGen to study water ingress on internal electrical components, polymeric films, aerospace and marine coatings.

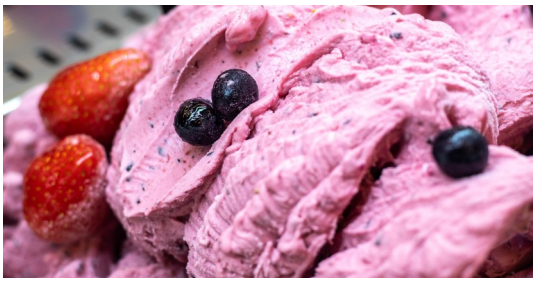
Photovoltaics	Conductivity	Corrosion



Food Research

The RHGen system is used by leading food and drink manufacturers to study the effect of humidity, or dry air, on food storage conditions, and how humidity affects food samples while heating.

Long-term Storage	Oral Processing	Microorganism Growth



Pharmaceuticals

The RHGen has many applications within the pharmaceutical field, from drug discovery to manufacturing and quality assurance. Humidity control facilitates the understanding of the behaviour and breakdown of pharmaceutical compounds, and how their packaging protects them.

Shelf Life	Dissolution	Packaging

Technical Specification

Humidity Range	5% - 90% RH (dependent on stage and with a stage temperature between ambient and 85°C)
Sensor Accuracy	Up to +/- 1.5%
Stability	+/- 0.5% (at control value)
Size	136 x 246 x 265mm
Compatible Linkam Stages	THMS600-RH, LTS420-RH, MFS-RH and others
Sealed Chamber Capacity	Maximum 2000ml

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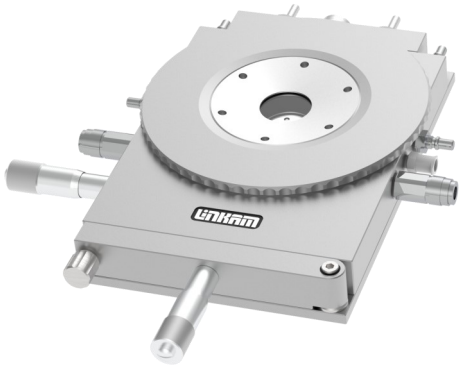

THMS600-RH

The THMS600-RH is based on our hugely popular THMS600, one of the most widely used heating and freezing microscope stages available.

The THMS600-RH is used in many applications where high heating/cooling rates and precise accuracy and stability are needed. The THMS600-H has a temperature range of < -195°C to 600°C (ambient to 85°C when using the RHGen).

The THMS600-RH adds the ability to control the humidity (when combined with the RHGen Relative Humidity Controller) inside the chamber alongside precise temperature control. The RH% is accurately controlled between 5%-90% (dependent on temperature).

MFS-RH

The MFS provides an ideal platform for analysing the tensile properties of materials in relation to temperature and other environmental conditions, including humidity control (when combined with our RHGen), or for in situ submerged measurements with our liquid cell.

The device features unparalleled accuracy and a variety of temperature range options from < -195°C up to 350°C (ambient to 85°C when using the RHGen), and humidity from 6% to 85% RH (dependent on temperature).

The MFS can be used for precise mechanical and optical characterisation including modulus analysis, single fibre strength tests, failure mode and fracture analysis, peel adhesion tests. It can also be customised for other applications with our custom-designed grips.

IGR— Inert Gas Regulator

The IGR provides a pressure regulated interface between the RHGen and external gas supply allowing inert gases such as Nitrogen and Argon to be used with the RHGen and other compatible Linkam stages.

The use of an inert gas as the carrier gas contributes to creating an experimental chamber with a precisely controlled atmosphere. Replacing oxygen with an inert gas enables the effect of RH on your sample to be directly investigated, without the effects of oxidation.

Use the RHGen and IGR in combination with temperature control to replicate unique terrestrial (and extra-terrestrial) atmospheric conditions while characterising your sample.

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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