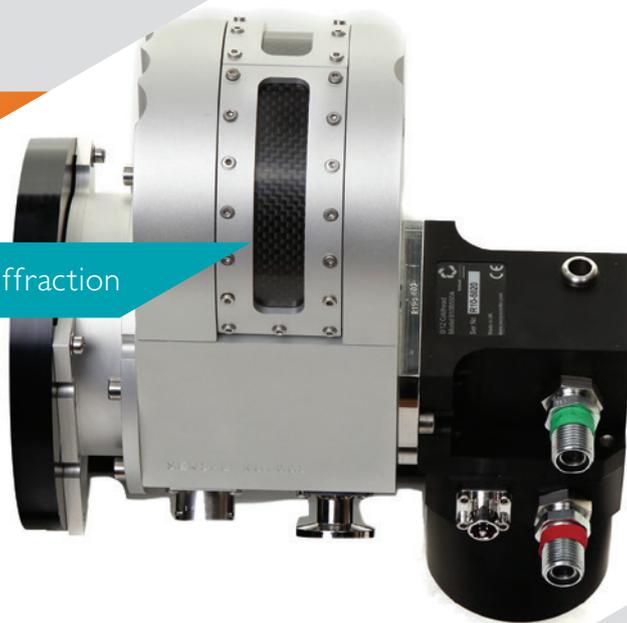
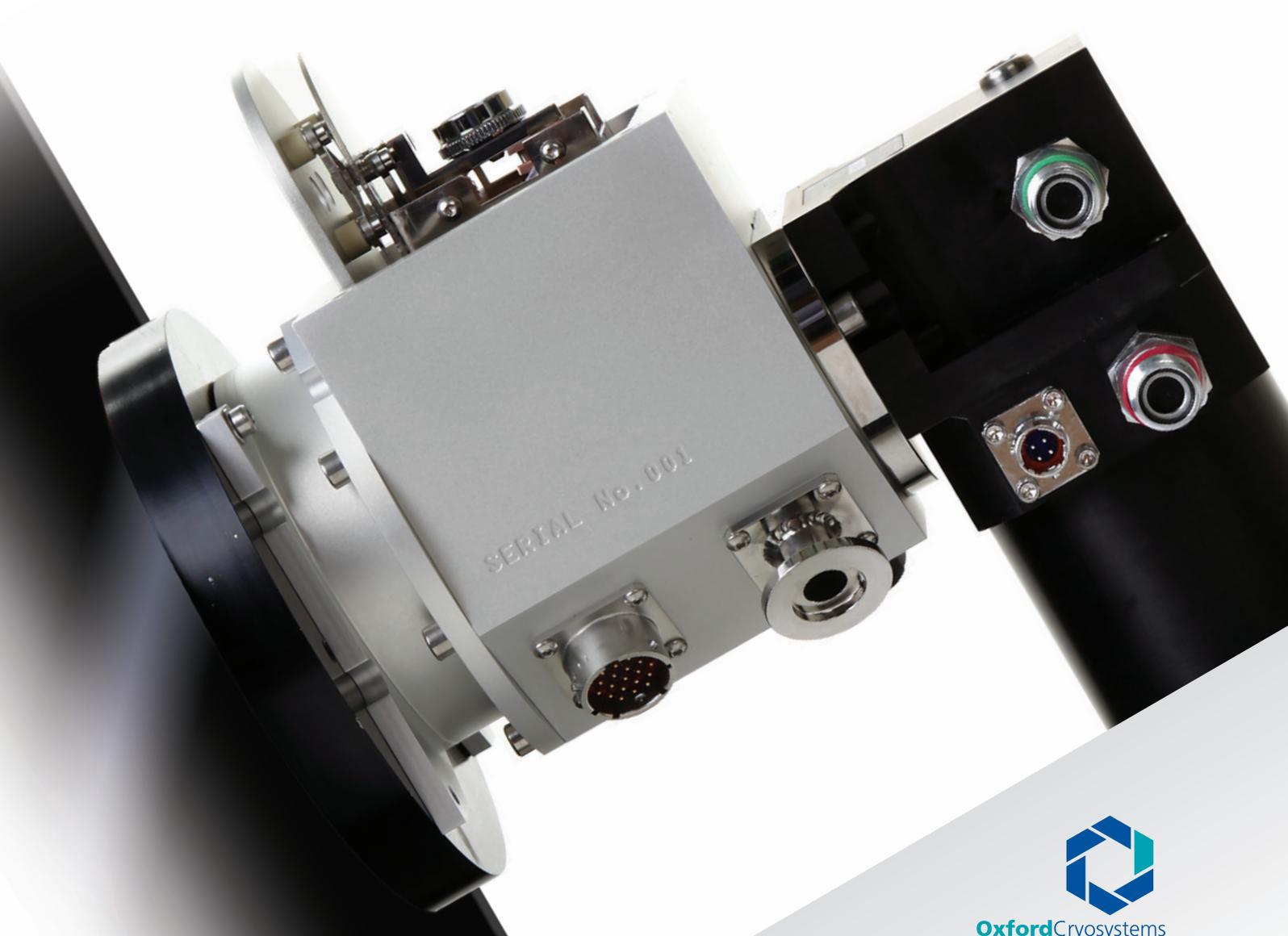


Chimera

Cooling and heater chamber for powder diffraction



OxfordCryosystems



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Cooling and heater chamber for powder diffraction

The Chimera is the new variable temperature chamber for flat plate powder samples from Oxford Cryosystems, with a temperature range of 70- 525 Kelvin, and excellent stability of 0.1 Kelvin.

Unlike traditional cooling and heater chambers, the Chimera works by incorporating an Oxford Cryosystems single stage Gifford McMahon cooler, meaning that no liquid nitrogen is required.

The chamber offers cooling and heating in one simple system, with no adjustments or alterations required between temperatures. This means that the sample can seamlessly and accurately be ramped from as low as 70 K to as high as 525 K with variable ramp rates as slow as 1K/hour. For this reason, the Chimera will be extremely suited to applications such as phase transition studies, where it is extremely important to move very slowly and accurately through a specific temperature range.

The compact design means the Chimera can be easily fitted to a vertical goniometer from the front with a specific adapter plate designed for each type of goniometer.

Features of the Chimera

- Temperature range of 70 - 525 K and excellent stability of 0.1 K
- Ramp rates of 1-360 K/hour for complete temperature control
- Cooldown to 100 K from RT in 35 minutes
- Time from 100 K to open system at RT is 40 minutes
- Warm up to 525 K from RT in 40 minutes
- Time from 525 K to open system at RT is 50 minutes
- Compact head allows easy sample access and can be fitted to most popular vertical goniometers
- Ability to monitor and control remotely via Cryoconnector software and Oxford Connect website

Mode of Operation

A single stage Gifford McMahon (GM) closed cycle cooler made by Oxford Cryosystems is mounted within the body of the Chimera and operates using compressed helium gas provided by the Cryodrive compressor. It is important to note that there is no helium gas consumption in this system and the helium gas circuit in the Cryodrive/Coldhead combination is sealed.

The sample stage is cooled by conduction between the sample stage and the cold stage of the Coldhead. The Chimera sample temperature is measured at the sample stage.

Heat leaks within the coldhead are reduced by a radiation shield incorporating Aluminised Kapton windows, and the robust Chimera lid incorporates X-ray transparent windows of carbon fibre.

A number of 20mm diameter chromium plated copper sample stages are provided with the Chimera system, however different materials may be available at an additional charge.

A vacuum system (optionally supplied) is used to continuously pump the space around the cryostat to minimise unwanted heat leaks into the system.

Goniometer Mounting Plate

Oxford Cryosystems has worked with major X-ray companies to design a number of goniometer mounting plates, for different X-ray systems. Please discuss the best option with us or your local agent before ordering the system.

The Oxford Cryosystems Philosophy

When you buy a product from Oxford Cryosystems, you are investing in nearly thirty years of research and development in low temperature devices for X-ray crystallography. We see your low temperature device as more than just an accessory; to us, it is central to your research.

Because of our focus on low temperature systems, you will find that every one of our products has superior functionality, reliability and control. For example, the Chimera is built on our proprietary software platform which allows the constant monitoring of a wide range of different inputs and outputs within the system. The controller then manages a number of unique relationships such as sample temperature as a function of coldhead motor speed or heater power.

Oxford Connect

Chimera incorporates our new Oxford Connect feature. By using our Cryoconnector software and registering your system on Oxford Connect, you will be able to:

- Start, program and stop your Oxford Cryosystems device from your PC, tablet or smartphone
- Easily access historical performance data on the Oxford Connect website
- Enable remote technical assistance, allowing faster support of your device
- Receive email notifications when your device status changes

These are just a few of the many unique design features engineered into all Oxford Cryosystems' low temperature devices. We take great pride in taking our product development that bit further, so that our customers benefit from the most stable, reliable and efficient devices available.

Technical Specifications

| Chimera | |
|--|---|
| Temperature range | 70- 525 Kelvin |
| Temperature stability | 0.1 Kelvin |
| Cool down time to 70 Kelvin (from RT) | 35 minutes |
| Warm up time to 525 Kelvin (from RT) | 40 minutes |
| Chimera coldhead dimensions & weight | 120 mm W x 302mm L x 259 mm H, 6 kg |
| Chimera window materials | Chimera lid incorporating carbon fibre windows, thickness: 0.3mm Aluminised Kapton radiation shield, thickness: 0.025mm |
| Chimera sample mounts | 2 x 20mm diameter Chromium-plated copper flat sample holder 2 x 20mm diameter Chromium-plated copper sample holder with 1mm recess |
| Chimera Controller | |
| Dimensions & weight | 135 mm x 244 mm x 287 mm, 7.1 kg |
| Mains Power supply | 220/240V 50/60Hz or 100/115V 50/60Hz |
| Power Consumption | 250VA |
| Helium compressor (Cryodrive) | |
| Cryodrive weight | 80 kg |
| Cryodrive dimensions | 447 mm W x 450 mm H x 560 mm D |
| Mains power supply | 200, 220 or 240 V at 50 Hz or 200, 208 or 220 V at 60 Hz |
| Cooling water supply | See pre-installation document, but typically 5 litres/minute at 12-20°C |
| Turbomolecular Vacuum Outfit (optionally supplied) | |
| Dimensions & weight | 510 mm W x 740 mm H x 360 mm D |
| Mains Power supply | 220/240V 50/60 Hz or 115V 50/60Hz |

Support for all our customers...

Aside from our development expertise, Oxford Cryosystems have also gained an excellent reputation over the past twenty years for customer service and support.

Whilst Oxford Cryosystems' products are known for their reliability and ease of use, users may occasionally require advice on technical aspects of their system. Technical support is offered to all Oxford Cryosystems customers on all products. There are no time limits, no expensive telephone numbers and no small print. If you need support, you'll get it - it's that simple!

Service when you need it...

Although Oxford Cryosystems design their devices to be as efficient and economical to maintain as possible, products such as the Chimera, due to its mechanical components, will need reasonably regular maintenance.

Therefore, Oxford Cryosystems offers a choice of pre-paid scheduled maintenance packages for complete peace of mind, or the more traditional reactive servicing approach. Whatever route you choose, you can be assured that we will advise you of the optimal service intervals. We simply don't believe in annual servicing for the sake of it - if your product needs servicing only every 3 years, or even every 5 we will tell you! For further details on the service packages we offer, simply contact your local Oxford Cryosystems office or agent.



Head Office
 3 Blenheim Office Park
 Lower Road Long Hanborough
 Oxford OX29 8LN United Kingdom
 Tel: +44 (0)1993 883488
 Fax: +44 (0)1993 883988
 info@oxcryo.com
 www.oxcryo.com