

Desktop Cooler

Simple stress-free cooling



OxfordCryosystems



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For uncomplicated sample cooling, the Desktop Cooler (DTC) is hard to beat. The DTC refrigeration unit and a dry air source; that is all that's required to deliver a cold gas stream with a temperature range of 170 Kelvin to room temperature.

The DTC combines the convenience of a non-liquid system with the low maintenance and low cost associated with the traditional Cryostream. The integrated mechanical cooler means that the DTC can produce a cold dry air stream down to 170 K without the need for liquid nitrogen, eliminating the need to ever refill a Dewar again.

The mechanical cooler does not require a separate helium compressor, which means that cooling water is not required and maintenance is reduced to virtually zero. The DTC is simple to set up and control and can be left running for weeks at a time.

Certainly, for those working within this temperature range, the DTC offers convenient and simple cooling at an attractive price.

Features of the Desktop Cooler

- No liquid nitrogen required
- Compact self-contained system, no cooling water required
- Temperature range of 170 - 290 Kelvin
- No consumables and virtually zero maintenance
- Stable system, can be run for weeks at a time
- Custom-written software allows all control and monitoring of system via PC

Mode of Operation

The DTC refrigeration unit cools compressed dry air (or nitrogen gas if required) to temperatures ranging from 170 - 290 Kelvin.

This cool gas is then delivered to the sample via a vacuum insulated transfer line and delivery nozzle. The dimensions of the nozzle are the same as the Cryostream, meaning that a Varibeam support stand can still be used to support and position the gas delivery head if required. The unit also delivers a second stream of dry air (or nitrogen gas if preferred) at room temperature which acts as the shield gas, preventing icing of the sample.

The Desktop Cooler consists of:

- DTC refrigeration unit fitted with flexible transfer line and delivery nozzle
- 2-stage rotary pump
- Power supply

Optional AD51 Dry Air Unit

Dry compressed air or nitrogen gas is cooled by the DTC and is then delivered to the sample. Many labs have access to a piped-in dry air or nitrogen supply which can be used directly by the DTC. If dry air is not available however, Oxford Cryosystems can supply the AD51 dry air unit. The AD51 and its predecessor, the AD41, have been used for many years with the 600 and 700 series Cryostreams.

The AD51 offers:

- Variable flow up to 25 litres / minute
- Dry air with a dew point of better than -70°C

Customers with air-sensitive samples may prefer to use a nitrogen gas generator, such as that used with the Oxford Cryosystems Cobra. Details are available on request.

Alternatively, if the system will be used infrequently for air-sensitive samples, a nitrogen gas cylinder can be used as the DTC source on these occasions.

The Oxford Cryosystems Philosophy

When you buy a product from Oxford Cryosystems, you are investing in over twenty years of research and development in low temperature devices for X-ray crystallography. We see your low temperature device as more than an accessory; to us, it is central to your research. We know that if your low temperature system were to let you down, then we would have let you down.

Because of our focus on low temperature systems, you will find that every one of our products has superior functionality, reliability and control. The Desktop Cooler is supplied with a brand-new version of our PC software Cryopad, which allows complete control of the system via a simple and attractive user interface. All the control software for our devices is written in-house by scientists with an intimate knowledge of the cooler and its applications.

A perfect example of our superior engineering is the unique gas delivery nozzle design which is used by the Desktop Cooler. Experience and development have led us to create the ideal laminar flow system ensuring that the likelihood of ice forming anywhere near the sample is virtually zero, and that the temperature at the crystal is accurately mapped and stable.

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

Desktop Cooler	
Temperature range	170 - 290 Kelvin
Gas flow rate	5 litres per minute
Temperature stability	1 Kelvin
Cool down time to 170 Kelvin	30 minutes
Length of transfer line (to end of nozzle)	1650 mm
DTC dimensions & weight	235 mm W x 370 mm H x 395 mm D, 22kg
DTC Power Supply	
Dimensions & weight	142 mm W x 130 mm H x 336 mm D, 2.6 kg
Mains power supply	90 - 264 V, 47 - 63 Hz
Rotary Pump	
Dimensions & weight	127 mm W x 202 mm H x 322 mm D, 10.8 kg
Mains power supply	115/230 V, 50/60 Hz
Lab nitrogen or dry air supply (if available)	
Gas pressure	1.5 to 4 bar
Gas flow	Approx 25 litres per minute
Atmospheric dewpoint of gas	-70°C or better
AD51 dry air unit (optional)	
Gas flow	Up to 25 litres per minute
Dimensions & weight	660 mm W x 415 mm H x 300 mm D, 42 kg
Mains Power supply	230V 50Hz or 100/115V 50/60Hz
Power Consumption	1500VA

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...

Oxford Cryosystems has designed our low temperature devices to be as efficient and economical to maintain as possible, and the Desktop Cooler is a prime example of this philosophy. The DTC requires almost no service work at all and no consumables are required. The only component that will require any servicing at all is the AD51 dry air unit which can be serviced by the user or at our offices in the UK and USA.



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