



# HelioxVT™

A  $^3\text{He}$  sample-in-vacuum insert system compatible with  $^4\text{He}$  variable temperature inserts.

## Why choose HelioxVT

The **HelioxVT** range of single shot  $^3\text{He}$  systems allows users to access temperatures below 300 mK for extended periods.

A fully configured **MercuryiTC** provides total control of the **HelioxVT**, automating cool down from room to base temperature and simplifying integration into your measurement setup via a range of standard communication interfaces.

For more specific experimental requirements, we can offer tailored  $^3\text{He}$  systems designed to meet your needs.

## Precise control of magnetic field and temperature

The **HelioxVT** is designed to operate safely in integrated into cryo-magnet systems – allowing access to the lowest temperatures and the highest fields.

## Features

- Achieves less than 300 mK for more than 40 hrs and achieves 50  $\mu$ W of cooling power at 350 mK for over 6 hrs
- Fast turn around time for sample exchange
- HelioxVT uses a cold gas environment with a 50 mm access, therefore no liquid helium
- The sample temperature range of a new or existing VTI can be extended below below 300mK to be conservative and consistent.
- No liquid helium in the sample plane making the **HelioxVT** ideal for neutron or X-ray scattering experiments.
- Compatible with 50 mm diameter VTIs
- 1 K pot free design – no additional room temperature pumps make this a simple, self-contained solution.

## Magnetic Field Configuration

| Magnetic field requirement | Configuration  | Benefits   |
|----------------------------|--|--|
| Up to 14 T                 | HelioxVT with TeslatronPT Cyrofree superconducting magnet system | <ul style="list-style-type: none"><li>- No requirements for liquid cryogenes (or accompanying infrastructure)</li><li>- Complete turn-key solution for material characterisation</li></ul> |

## Key Specifications

|                       |  |
|-----------------------|--|
| Base temperature      | $\leq$ 300 mK for 40 hrs with no applied heat load |
| Cooling power         | < 350 mK for 6 hrs with 50 $\mu$ W applied         |
| Temperature range     | 300 mK to 300 K                                    |
| Temperature stability | $\pm$ 3 mK below 1.2K ; $\pm$ 0.1 K above 1.2 K    |
| HelioxVT Sample space | 43 mm diameter                                     |

Visit [nanoscience.oxinst.com/products/helioxvt](https://nanoscience.oxinst.com/products/helioxvt) or email [nanoscience@oxinst.com](mailto:nanoscience@oxinst.com)

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