



# HelioxVL™

## Why choose HelioxVL?

The **HelioxVL** range of single shot <sup>3</sup>He systems allows users to access temperatures below 300 mK for extended periods.

A fully configured **MercuryiTC** provides total control of the **HelioxVL**, 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 <sup>3</sup>He systems designed to meet your needs.

## Precise control of magnetic field and temperature

The **HelioxVL** is designed to give ultra-low temperatures, while still operating safely in integrated cryo-magnet systems – allowing access to the lowest temperatures and the highest fields.

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## Features

- Superior thermal performance thanks to patented vapour cooled sorption pump
- Requires only 2.7L of liquid to cool from room temperature
- Compact and easy to use with the  $^3\text{He}$  gas tank integrated on top of the insert
- Grease cone seal for quick and easy sample exchange
- Automatically pumped IVC using a sorb
- Two spare line-of-sight ports for installation of experimental services
- Compatible with Integra and IntegraAC magnet systems
- Base temperature  $< 245$  mK for  $> 90$  hours
- $40 \mu\text{W}$  of cooling power available at  $290$  mK for  $> 10$  hours
- Compact insert design enables rapid thermal cycling – ideal solution for fast sample characterisation
- Large temperature range from  $245$  mK to  $300$  K ( $100$  K when used with superconducting magnet)
- Self-contained  $^3\text{He}$  sorption pump minimises footprint
- Low maintenance system – single room temperature pump reduces cost of ownership.

## Magnetic Field Configuration

Magnetic field requirement	Configuration	Benefits
Up to $21$ T	HelioxVL Integra liquid helium cryostat	<ul style="list-style-type: none"><li>- Higher magnetic fields than a Cryofree system</li><li>- IntegraAC cryostat offers almost zero liquid helium consumption (at <math>4.2</math> K)</li></ul>

## Key Specifications

Base temperature	$\leq 245$ mK for $\geq 90$ hrs with no applied heat load
Cooling power	$40 \mu\text{W}$ at $\leq 290$ mK with a hold time $> 10$ hrs
Temperature range	Base temperature to $300$ K
Temperature stability	$\pm 3$ mK to $T \leq 1.2$ K and $\pm 0.1$ K for $T > 1.2$ K
HelioxVL Sample space	$41$ mm diameter