



# HelioxVL™

A <sup>3</sup>He sample-in-vacuum dipstick insert system compatible with wet cryostats.

## 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 **Mercury**iTC 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.

## 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 3He 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  $\mu$ 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 3He 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 4.2 K)</li></ul>

## Key Specifications

Base temperature	$\leq 245$ mK for $\geq 90$ hrs with no applied heat load
Cooling power	40 $\mu$ 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

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