

# Model HE-3-TLSUHV-STM

## Wet Helium-3 Cryostat

### ➤ Overview

The Model HE-3-TLSUHV-STM is a top-loading Helium-3 cryostat with sample in ultra-high vacuum (UHV) space for scanning tunneling microscopy (STM) with atomic resolutions. The sample can be loaded through the 1.0" diameter central access when the cryostat is cold. With its standardized unique design, this He-3 cryostat generates next to zero acoustic noise and mechanical vibration. The Model HE-3-TLSUHV-STM He-3 insert is designed to be compatible to all kinds of superconducting magnets, such as solenoid, vector magnets, and more.

This He-3 insert includes the following components:

- Central access with gate valve on top
- Charcoal sorption pump with heater and thermometer
- 1 K pot with heater and thermometer
- He-3 pot with heater and thermometer
- Permanently stored He-3 gas
- UHV compatible IVC can
- Mechanical heat switches
- Operation test

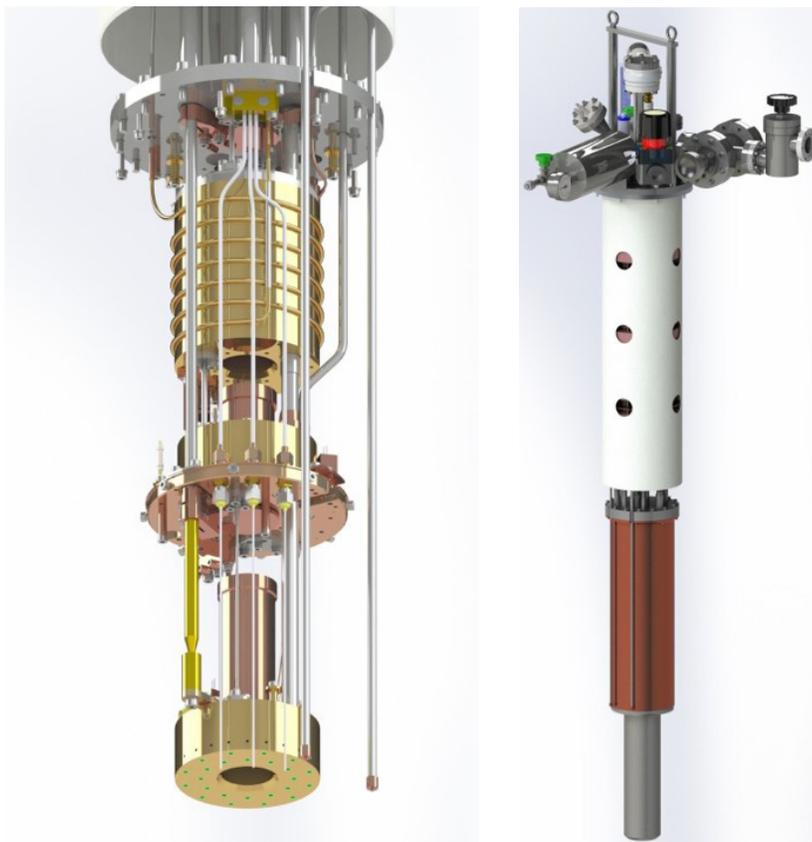


### ➤ Features / Benefits

<b>Long holding time</b>	<ul style="list-style-type: none"><li>• 80 hours with 10 STP liter He-3 gas</li></ul>
<b>Fast sample loading</b>	<ul style="list-style-type: none"><li>• The sample can be loaded through the 1.0" diameter central access when the cryostat is cold</li></ul>
<b>Stable He-3 pot temperature</b>	<ul style="list-style-type: none"><li>• Separate sippers for 1K pot and the charcoal sorb cooling line</li></ul>
<b>Low noise</b>	<ul style="list-style-type: none"><li>• 1K pot noise reducer installed</li></ul>
<b>Low vibration</b>	<ul style="list-style-type: none"><li>• Rigid design</li></ul>
<b>Multiple operation modes</b>	<ul style="list-style-type: none"><li>• This He-3 cryostat can be operated without pumping the 1K pot</li><li>• With 10 STP liter He-3 gas the 4K operation mode maintains base temperatures near 320 mK for approximately 50 hours with zero noise</li></ul>
<b>Magnetic field (option)</b>	<ul style="list-style-type: none"><li>• Solenoid or vector magnet</li></ul>

## Design Specifications

Base Temperature	290 mK (pumping the 1 K pot) 320 mK (stop pumping the 1K pot after the base temperature is reached)
Hold Time at Base Temperature	80 hours (pumping the 1K pot)
Operating Temperature Range in full Magnetic Field	0.3 K - 80 K (300 K optional)
Sample Space	1.0" - 1.5"



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