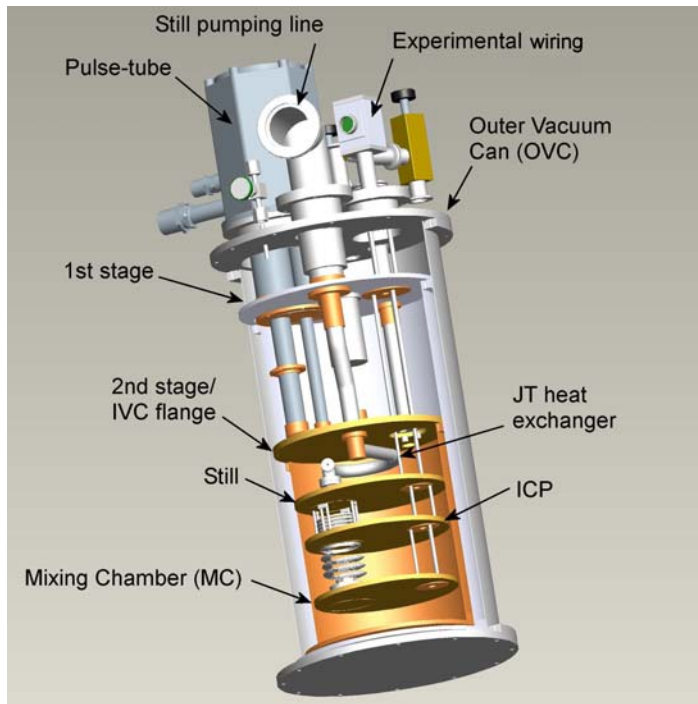


Cryogen-free Dilution Refrigerator



JDry-100

The Janis JDry-100 provides convenient and affordable cooling of samples and devices to temperatures below 20 mK, with cooling power greater than 100 μ W at 100 mK. The system uses a pulse-tube mechanical cryocooler, eliminating the need for liquid cryogenes. Based on the modular Janis JDR-100 technology, the JDry-100 brings a new level of simplicity and reliability to research applications requiring mK temperatures.

Features

- Convenient table-top size with fully integrated vacuum enclosure.
- Pulse-tube precooling to 4 K; no cryogenes required.
- Joule-Thomson mixture condensing stage, including ^3He - ^4He mixture.
- 50 mm diameter clear shot access to mixing chamber.
- RuO_2 thermometers installed on all stages, with wiring to LCSI 370S resistance bridge including demo LabVIEW control program.
- 32 manganin wires in twisted pairs, installed and thermally anchored for connection to experimental applications.
- Manual gas handling system with analog pressure gauges, digital vacuum and flow meters (including RS-232C).
- Pumping station with hermetically sealed mechanical pump, mist filter, interlock, pumping lines, and butterfly style Still isolation valve.
- Metal bellows pump-compressor.
- Optimized ^3He - ^4He mixture.

JANIS

JANIS RESEARCH COMPANY, INC.

2 Jewel Drive, P.O. Box 696
Wilmington, MA 01887-0696 U.S.A.
Tel: +1 978 657-8750
www.janis.com
sales@janis.com

Cryogen-free Dilution Refrigerator

JDry-100

Specifications

- Cooling power: $>100\mu\text{W}$ @ 100 mK
- Base temperature: <20 mK at mixing chamber plate
- Dimensions: $\sim 15''$ diameter by $\sim 36''$ height
- 0.5 W @ 4.2 K pulse tube, with water-cooled compressor and flexlines

Options

- Automated gas handling system: PLC/PAC controlled with miniature solenoid valves, all digital gauges and pump motor starter. Provides full system control from integrated 12" touch-screen panel, or via RS-232C/Ethernet computer interface in LabVIEW environment.
- Larger 1 W @ 4.2 K pulse tube refrigerator, air-cooled compressor, longer flexible gas lines for locating the compressor remotely.
- Alternative mixture circulation systems.
- Low frequency, high frequency wiring (fully wired with twisted pairs, micro-coax or semi-rigid), UHV with CF flange and gate valve (bakeable prior to assembly).
- Self-calibrating thermometry system with CMN paramagnetic thermometer (5 – 1000 mK), superconducting fixed point device (FPD), and LCR meter for readout.
- Additional thermometers including RuO_2 , Matsushita or Speer resistive devices.
- Integrated superconducting solenoid, conductively cooled.
- Optical access.
- External LN_2 cooled trap.
- Still isolation gate valve, longer interconnecting lines.