

JDry-250

Cryogen-free Dilution Refrigerator

Overview

FormFactor's JDry cryogen-free dilution refrigerators enable easy and cost-effective cooling to temperatures below 10 mK. The JDry models have been optimized for quantum computing applications and can accommodate up to 54 semirigid cables. General-purpose configurations and astronomy/detector cooling are also provided.

The JDry cryogen-free dilution refrigerator series includes multiple standard models. All are available with easy push-button cooling using the robust and fully-automated NI LabVIEW™-based "JACoB" gas-handling system (GHS).

The JDry-250 model is fitted with a cold-plate of 305 mm (12") diameter, and provides a cooling power of more than 250 μ W at 100 mK.



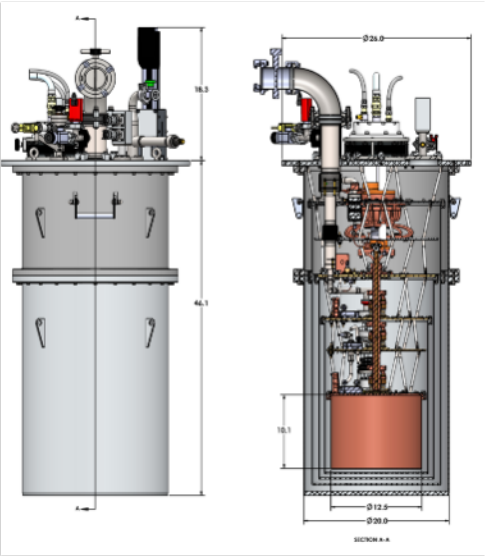
JDry-250 Cryogen-Free Dilution Refrigerator Under Test

Features / Benefits

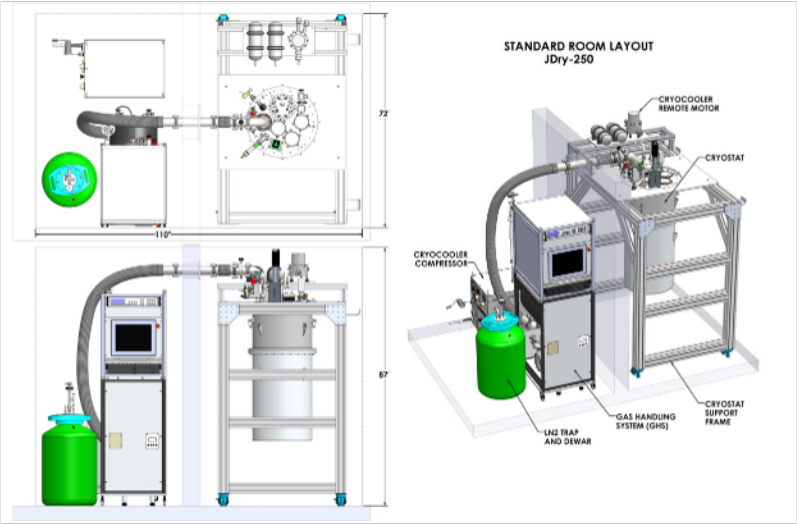
Proven technology	<ul style="list-style-type: none">• Special light-tight design features
Low running costs, less vibration, less noise, reduced maintenance	<ul style="list-style-type: none">• 10 K plate to thermalize experimental services• Single Pulse Tube Cryocooler• Mechanical heat-switch for precooling• Quiet, low vibration condensation with no external booster/compressor required
Large convenient experimental access	<ul style="list-style-type: none">• Up to 2 line-of-sight ISO100 ports located on perimeter of plates• CMN calibrated thermometry on MC plate
Operation via touch panel controller	<ul style="list-style-type: none">• Remote operation via ethernet interface• API programming for 3rd party access to key functions• Option for automatic operation via preconfigured scripts

➤ Design Specifications

Base Temperature	Guaranteed: 12 mK Expected: 9 mK
Cooling Power	Guaranteed: 200 μ W @ 100 mK; 6 μ W @ 20 mK Expected: 250 μ W @ 100 mK; 8 μ W @ 20 mK
Mixing Chamber Plate Diameter	304.8 mm (12 inches)
Cooldown Time (Room Temp to 20 mK)	With LN2 precooling: \leq 24 hours; Without LN2 precooling: \leq 46 hours
Top Flange NW-100 to Experimental Wiring	2 * 100 mm diameter (NW ports)
User Control Interface	Touch Panel Operation; Fully- or Semi-automatic; Secured Remote Access



Drawing of Model JDry-250 Dilution Refrigerator



Standard Room Layout for Model JDry-250 Dilution Refrigerator

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JDRY-250-DS-0522

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