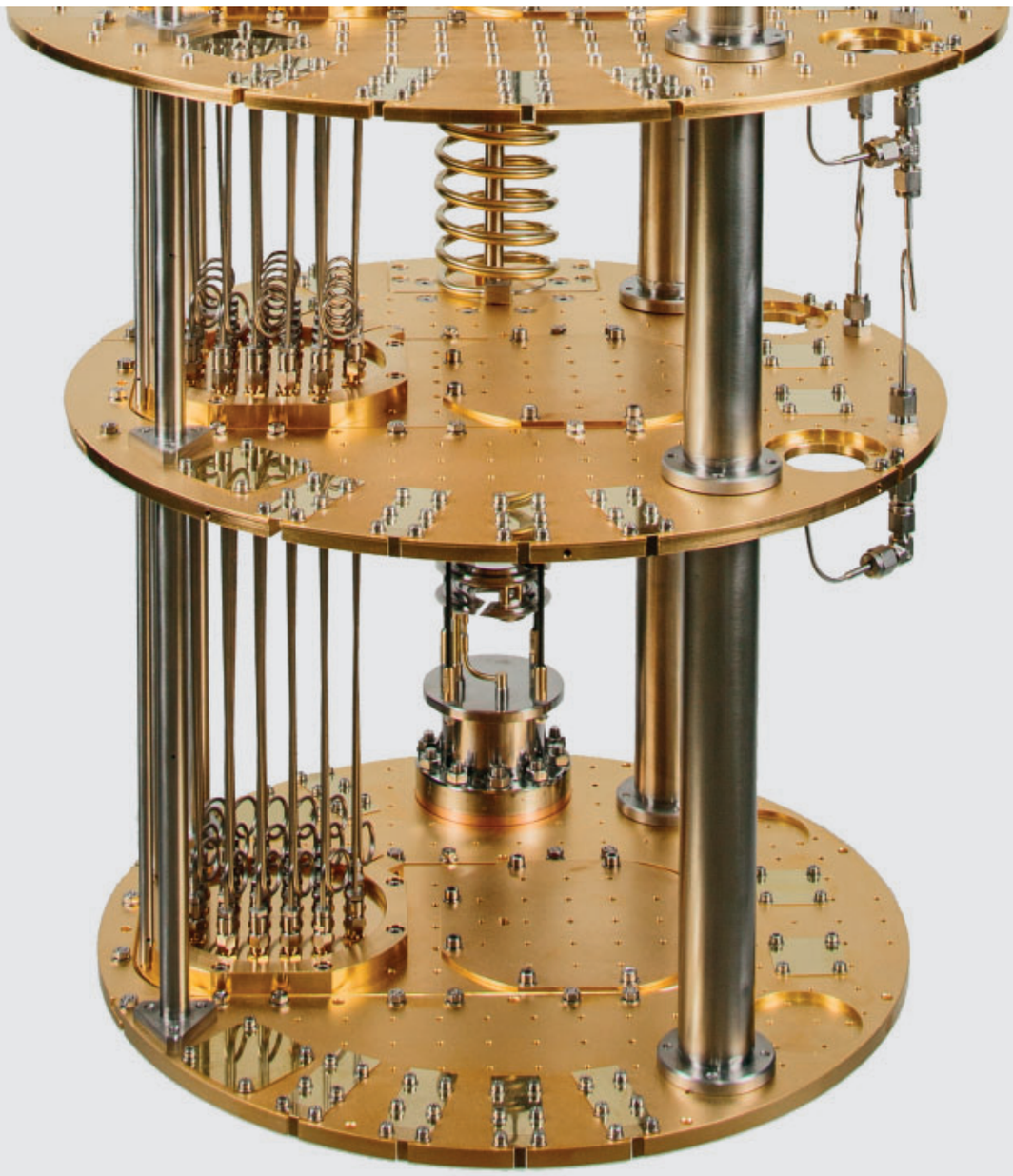
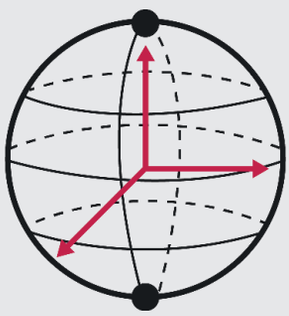
Quantum Design
OXFORD



Proteox™

Next Generation Thinking

The **ProteoxMX Cryofree®** dilution refrigerator for greater experimental capacity and adaptability.



Applications

Superconducting Qubits

Integrate microwave lines and signal conditioning hardware on the Secondary Insert for superconducting qubit development.

Spin Qubits

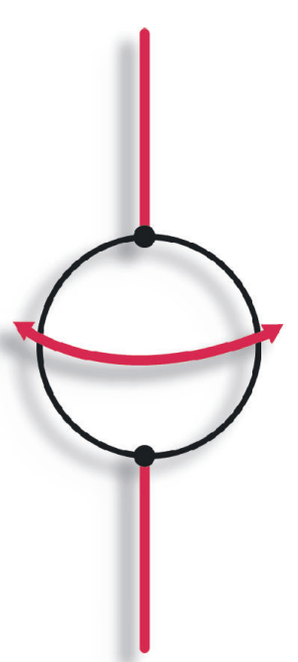
Integrate microwave wiring, cold electronics and superconducting magnets for spin qubit development.

Quantum Transport Measurements

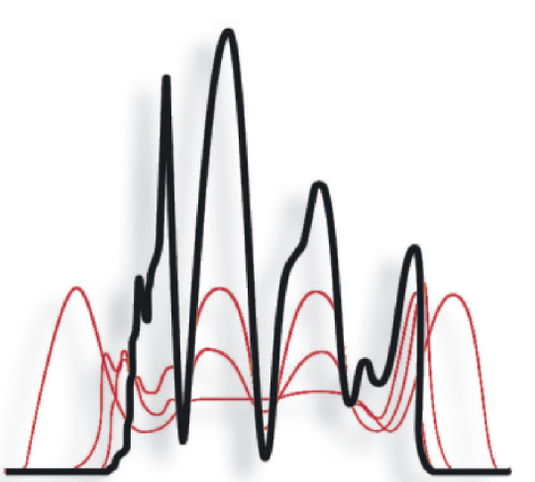
Superconducting magnets and ultra-low temperatures enable hall effect and quantum hall effect transport measurements.

Superconducting Qubits

Spin Qubits

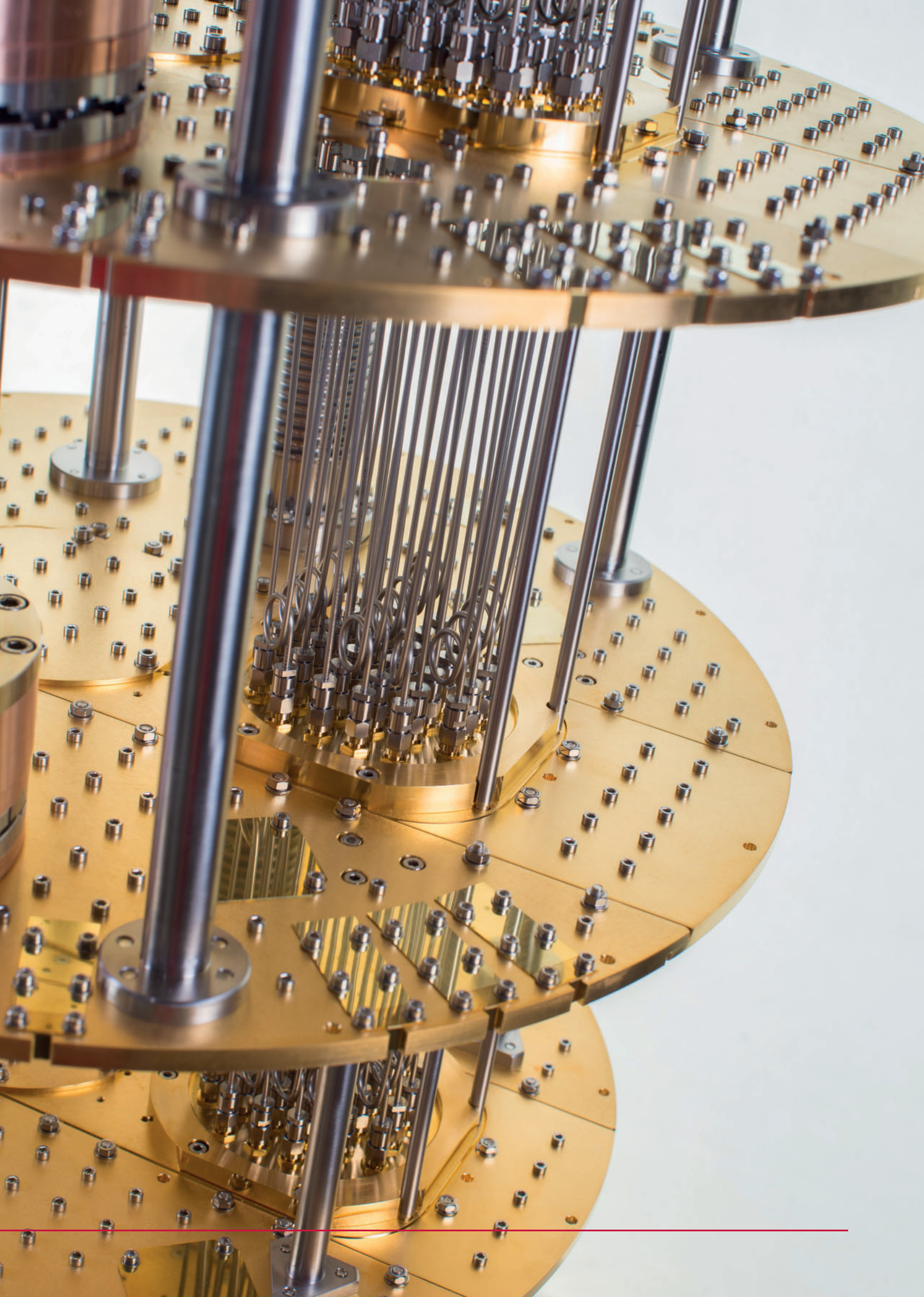


Quantum Transport Measurements



Key Specifications

Base temperature	< 10 mK
Cooling power at 20 mK	> 12 µW
Cooling power at 100 mK	> 450 µW
Sample space diameter	360 mm plate
Line of sight access	1 x Secondary Insert (117 mm x 252 mm), 2 x KF40, 2 x KF25
PTR options	1.35 W, 1.50 W or 1.80 W
Temperature control range	10 mK to 30 K with magnet at full field
Magnet options	Solenoid: up to 14 T Vector rotate: up to 9,1,1 T Field cancellation: < 10 mT



Platform Solutions

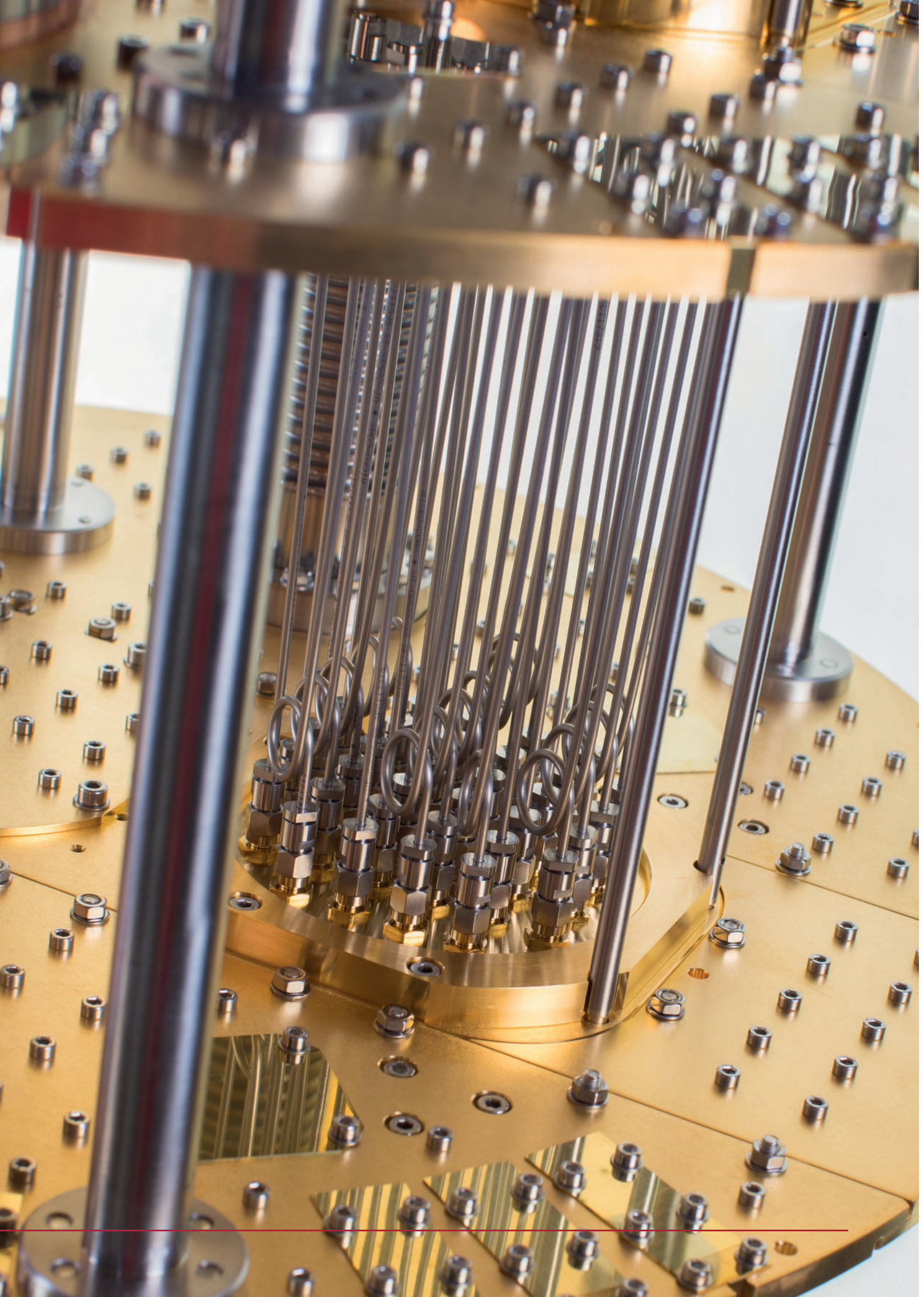
Optimised to provide long term reliability, stability and ease of use.

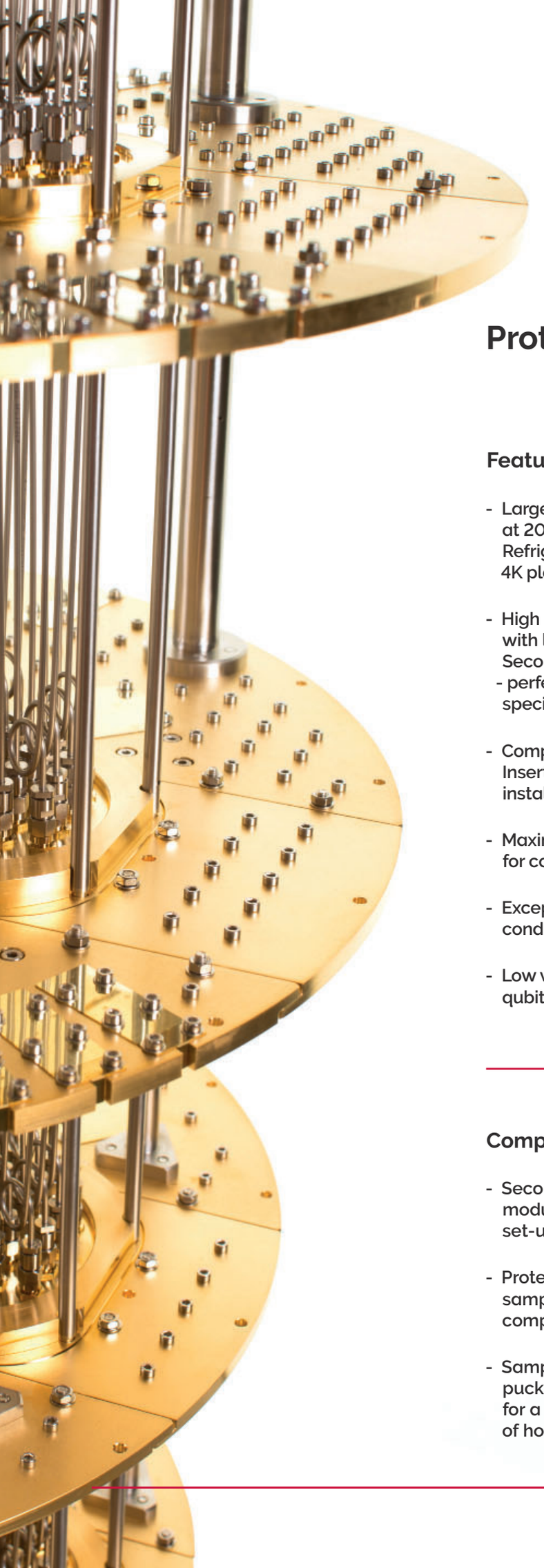
Control Software

- Remote access through a web-based, platform-independent control software in addition to local system control
- Automation routines for one button operation
- Full manual control and programmable API interface for custom routines
- Powerful data interrogation and visualisation package with live plotting

System

- Fully redeveloped gas handling system to ensure the minimum number of connections and o-ring seals
- Cross-braced stiffened frame that minimises vibration transmission, eliminating the need for active damping
- Modular, upgradable platform with cross-compatible magnet systems





Proteox Platform

Features / Benefits:

- Large cooling power with > 12 µW cooling power available at 20 mK, low base temperature at < 10 mK, and Pulse Tube Refrigerator (PTR) allows for several watts of dissipation at the 4K plate (exceptional PTR damping)

- High capacity (up to 128 SMA connectors) for coaxial wiring with large, fully customisable line-of-sight (LOS) access from Secondary Insert - 117 mm by 252 mm usable space per insert - perfect for scaling up systems and integrating customer-specified wiring and cold electronics

- Compatible with the Proteox dilution refrigerator Secondary Insert, a fully customisable, self-supporting module for fast installation and exchange of full experimental set-up

- Maximise qubit counts with large sample space and capacity for coaxial lines

- Exceptional capacity for input and output lines and signal conditioning components

- Low vibration features for reduced noise and support of long qubit coherence times.

Compatible products

- Secondary Insert – a fully customisable, self-supporting module for fast installation and exchange of full experimental set-ups.

- ProteoxLX – providing maximum qubit counts with large sample space and ample coaxial capacity for quantum computing scale-up.

- Sample Loading Pucks - variety of sizes of sample loading pucks for use with patented sample loading mechanism. Ideal for a multi-user facility, the pucks will cool to base in a matter of hours.

Service Support Options

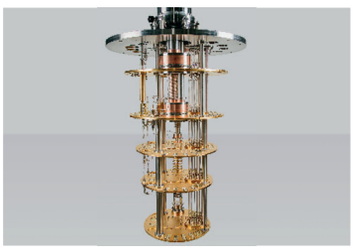
Live Assist

Live assist remote support empowers your technical staff to resolve issues fast and effectively. Our team of service and engineering professionals use the latest virtual reality tools to support you remotely.

Proactive Support Plan

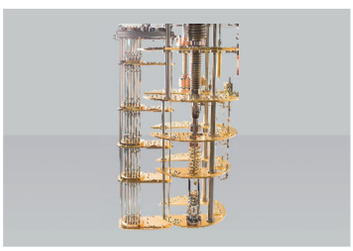
Offering unlimited access to a dedicated Proactive helpdesk and annual service that includes maintenance, training, parts, shipping and travel. The Proactive Support Plan package is for those who require a higher level of guaranteed support.

Related Products



Proteox

Modular platform for qubit scale-up and cold electronics integrations utilising a customisable secondary insert.



Secondary Inserts

Ideal for multi-user or multi-experiment settings, standard and fully customisable Secondary Inserts can be used across the Proteox family.

Cryogenic Filters

Reduce nose with low-pass filters for improved signal quality

Sample Protect

Protect sensitive samples from electrostatic discharge.

Quantum Design
OXFORD

Quantum Design Oxford
Tubney Woods, Abingdon
Oxfordshire, OX13 5QX
United Kingdom

www.qd-oxford.com
info@qd-oxford.com

+44 1865 393200