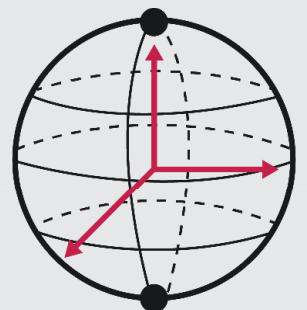


# Proteox<sup>TM</sup>

Next Generation Thinking

**ProteoxLX Cryofree<sup>®</sup>** dilution refrigerator for  
quantum computing scale-up.



# Applications

## Superconducting qubits

Maximise superconducting qubit count with a larger area for customisable superconducting wiring and signal conditioning components.

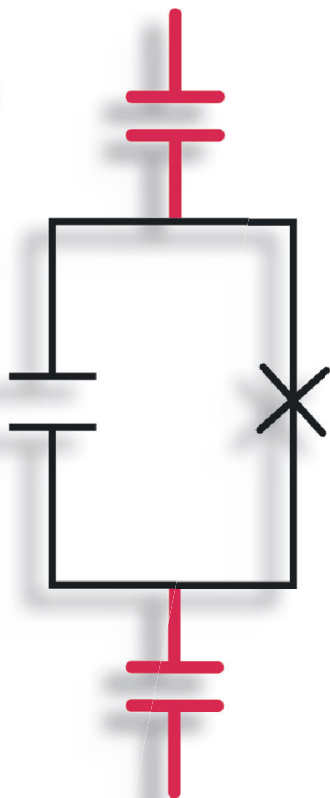
## Spin qubits

Configure your system with high RF line counts, customisable wiring and optional superconducting magnets for experimental applications.

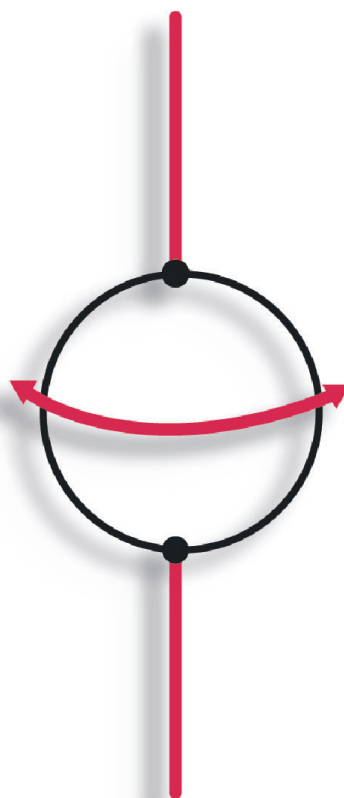
## Optical quantum applications

Integrate multiple optical fibres on numerous non line of site ports and choose to access the sample space via optional windows.

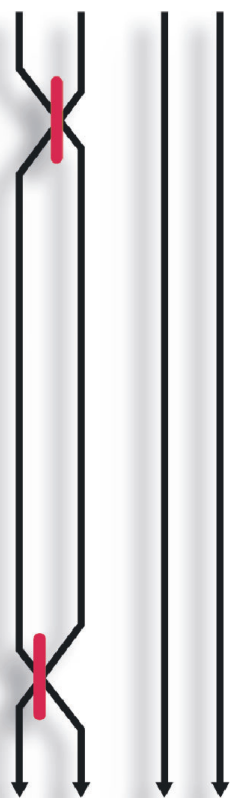
Superconducting qubits



Spin qubits



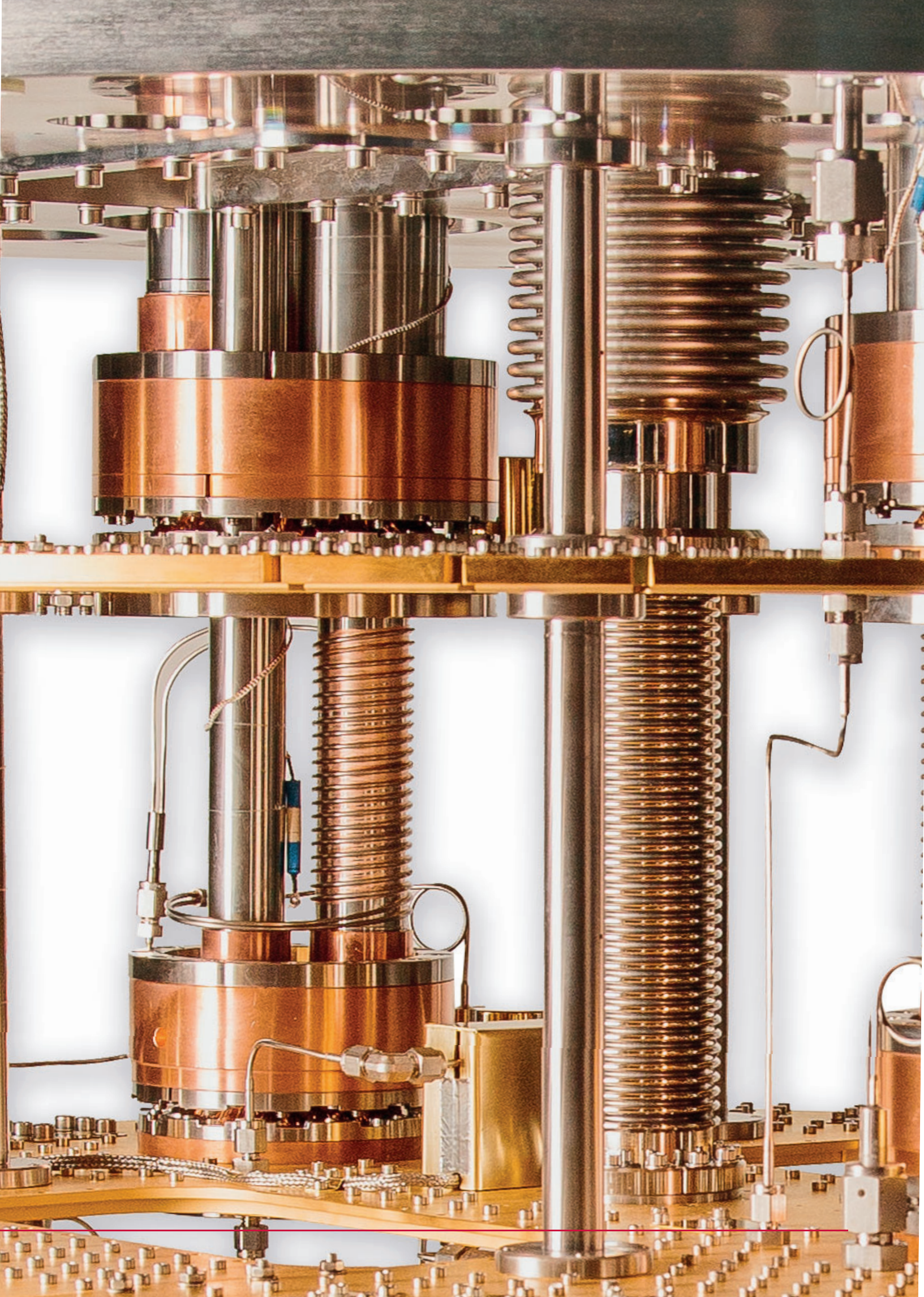
Optical quantum applications



## Key Specifications

Base temperature	< 7 mK
Cooling power at 20mK	> 25 $\mu$ W
Cooling power at 100mK	> 850 $\mu$ W
Sample space diameter	530 mm plate
Line of sight access	2 off Secondary Insert (117 mm $\times$ 252 mm) 4 $\times$ KF25
PTR options	2 off 1.35 W, 1.50 W or 1.80 W
Temperature control range	7 mK to 30 K with magnet at full field









## Proteox Platform

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

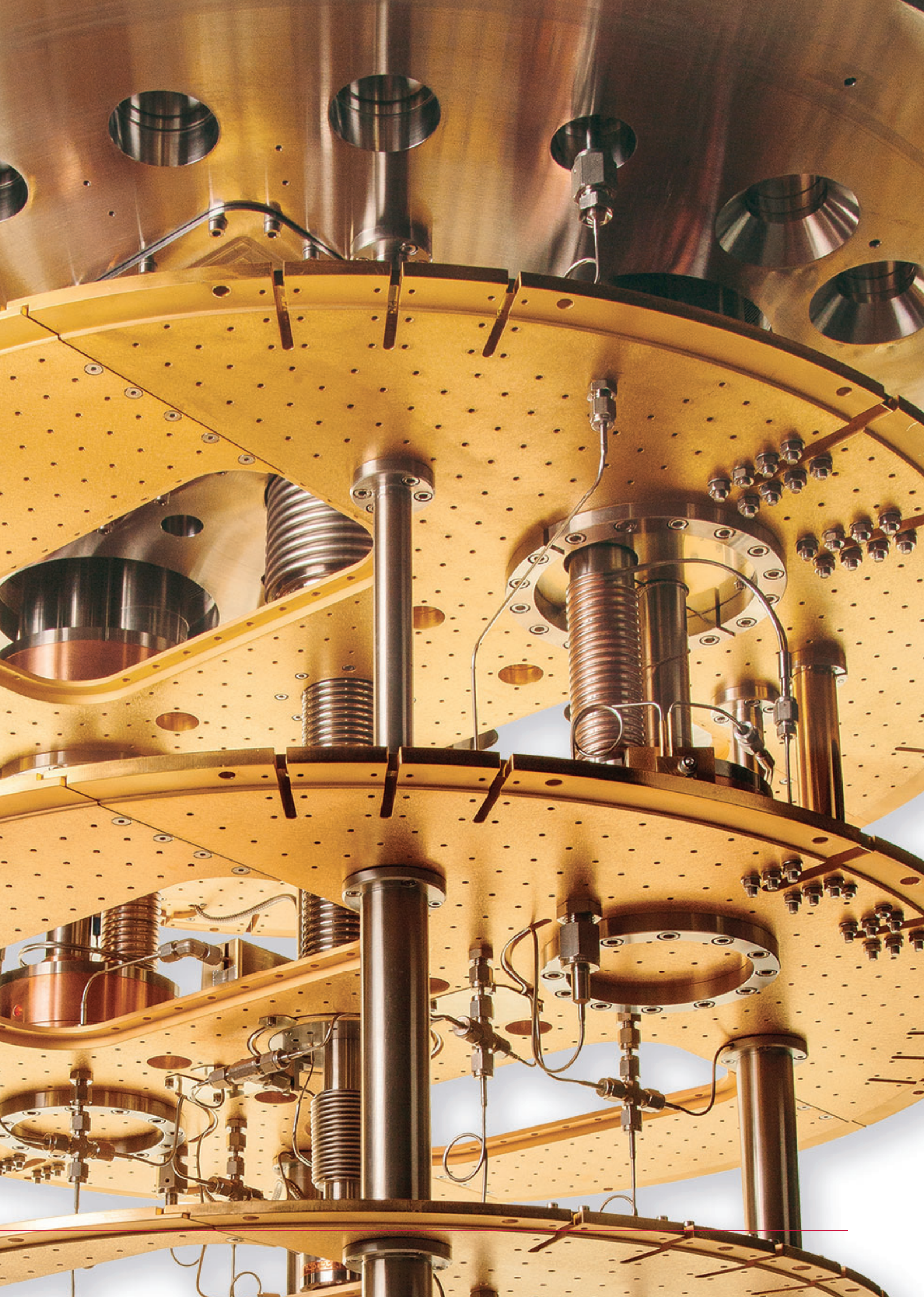
### Software

- 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  $> 25 \mu\text{W}$  cooling power available at 20 mK, low base temperature at  $< 7 \text{ mK}$ , and twin Pulse Tube Refrigerators (PTR) allows for several watts of dissipation at the 4K plate (exceptional PTR damping)
- High capacity for coaxial wiring with large, fully customisable line of site 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

- ProteoxMX for high input/output applications
- Proteox5mK, the world's coldest continuous, cryo-free dilution refrigerator, providing ultra-low base temperature of  $< 5 \text{ mK}$  and high cooling power of  $> 25 \mu\text{W}$  at 20 mK
- Secondary Insert – a fully customisable, self-supporting module for fast installation and exchange of full experimental set-ups.

# Service Support Options

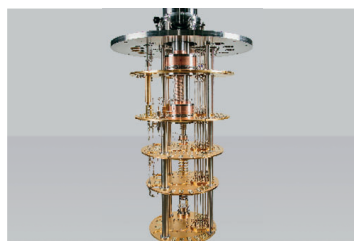
## Live Assist

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.



### Nanonis Tramea

Fully integrated measurement ready solution for quantum transport.



### Cryogenic Filters

Reduce noise with low-pass filters for improved signal quality.



### Sample Protect

Protect sensitive samples from electrostatic discharge.

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

[www.qd-oxford.com](http://www.qd-oxford.com)  
[info@qd-oxford.com](mailto:info@qd-oxford.com)

+44 1865 393200