Teslatron™PT

Cryofree® superconducting magnet systems with low temperature inserts

OXFORD INSTRUMENTS

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CRYOFREE

Specifications

The **Teslatron**PT is a cryogen-free superconducting split magnet system, providing top loading access to a sample in a variable magnetic field / low temperature environment.

Key features and benefits:

- Standard magnetic fields up to 14 T in a compact geometry
- 18 T option available on request
- Other magnet geometries available including split pairs, vector rotate magnets etc.
- Uses the highest specification superconducting wire available on the market supplied by our sister company Oxford Superconducting Technology
- Low temperature insert providing sample temperatures from 1.5 K to 300 K
- 30 mm and 50 mm diameter inserts available
- Low temperature inserts to 300 mK or 25 mK options available
- No gas flow over sensitive samples: the system uses a static exchange gas around the sample, preventing flow induced movement of delicate samples or measurements probes
- Quick sample change via top-loading probe. The sample can be changed while the system is cold. No need for complicated load-lock mechanism and reloading into the gas
- No contamination or blockages: using a sealed circulation loop separate to the sample exchange gas. This also increases the continuous running period of this system
- All electronics circulation pumps and gas ballast etc. included
- No cryogens needed, just electricity supply

Control system

All standard electronic items are provided with LabVIEW® drivers to allow control through the Oxford Instruments LabView System Control Software. The software allows LabView users to control the sample temperature and magnetic field. In addition it is possible to integrate with other virtual instruments to provide full experimental control.

Applications:

- Nanotechnology and nano-structures
- Superconductivity
- Magnetism and magnetic materials
- Semiconductors
- Surface science

Magnet

Field	9, 12 or 14 tesla
Field direction	Vertical
Homogeneity (over a 10 mm diameter sphere)	0.1%
Stability in persistent mode	< 1 x 10^{-4} hr
Sweep rate (with IPS120-10)	Approx 0.5 T/min
Magnet cool down time (to base)	30 hours (9 T) to 60 hours (14 T)

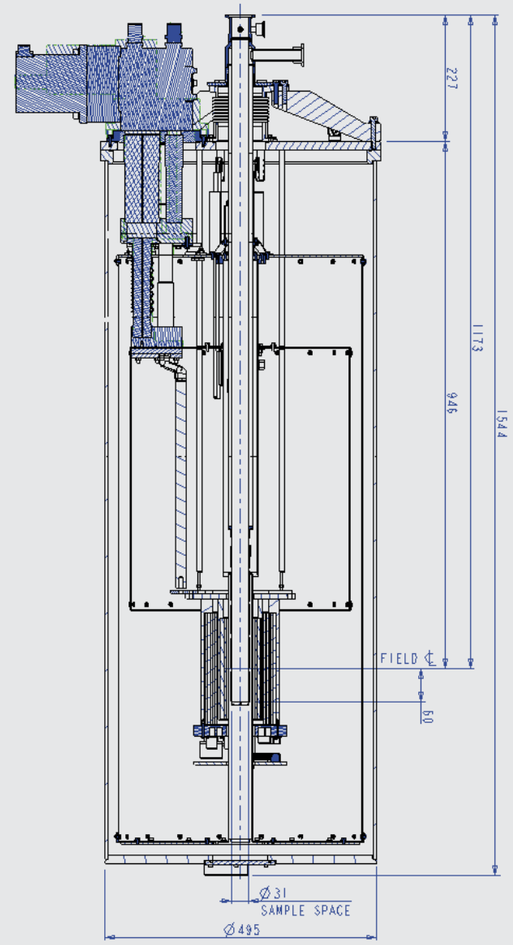
Variable temperature insert

Temperature range	1.5 to 300 K
Temperature stability (over 10 min period)	± 10 mK below 20 K ± 100 mK above 100 K
Sample space diameter	30 mm
Probe cool down time	1.5 h from RT to < 2 K

System components

TeslatronPT	• Cryostat with vertical field solenoid magnet • Variable temperature insert • Sample rod with three 10-pin fischer connectors, one wired down to sample position • Accessories and spares kit
Electronics console	• Oxford Instruments magnet power supply • Oxford Instruments temperature controllers
Spares kit (optional):	
Basic	Spares kit for **Teslatron**PT including 'O'rings, screws, etc…
Extended	Extended spares kit for **Teslatron**PT including: tool box; gloves; silicon vacuum grease; allen keys; NW vacuum fittings for cryostat top plate; rubber bladder; spare'O'rings for windows; metric screws; lens cleaner and cloth
Pumping system (optional):	
H4-602	Large turbo pumping kit 90-127 volts
H4-603	Large turbo pumping kit 190-260 volts

**All sample rods are wired with a Cernox sensor and a heater.*



9 T with 30 mm sample space TeslatronPT

Worldwide service and support

Maintenance and service contracts from **Oi**Service

By choosing Oxford Instruments as the supplier of your next Cryofree superconducting magnet system not only are you getting a reliable product but also access to a service support team.

This includes:

- Our team of 13 expert engineers have more than 100 years of experience based on the successful installation of hundreds of magnet and low temperature systems
- Five people dedicated to helpdesk
- Bespoke Cryospares service

All of our products are supported by a 12-month warranty including parts, labour, on-site visits and third party items like pumps or electronics. Extended warranty are available on request.

Service*Wise* service contracts:

The **Teslatron**PT uses a pulse tube refrigerator, a compressor and a circulation pump which require regular maintenance to ensure optimum performance. Oxford Instruments offers support packages which can take care of this for you for complete peace of mind.

www.oxford-instruments.com/TeslatronPT for more information

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