CRYOGENIC

CRYOGENIC LIMITED

ULTRA LOW TEMPERATURE CRYOGEN FREE MAGNET SYSTEMS

Cryogen Free Magnets upto 18 Tesla with Cryogen Free Dilution Refrigerators for Temperatures down to 10 mK

All options are entirely closed-cycle and do not require any cryogenic liquids for operation

www.cryogenic.co.uk

Option 1: Cryogen Free Room Temperature Bore Magnet With Insertable DR

- DR and superconducting magnet cooled by separate pulse tube coolers
- Modular system. Easy to interchange DR with other inserts
- Use with top-loading probe or bottom-loading DR
- Fields up to 16 T
- Suitable for use with our range of cryogen-free magnet systems

Typical dimensions
Room Temperature magnet bore
50 mm sample space in DR
Suitable for use with Leiden DR type CF200, CF450, CF650 or CF1000 DR

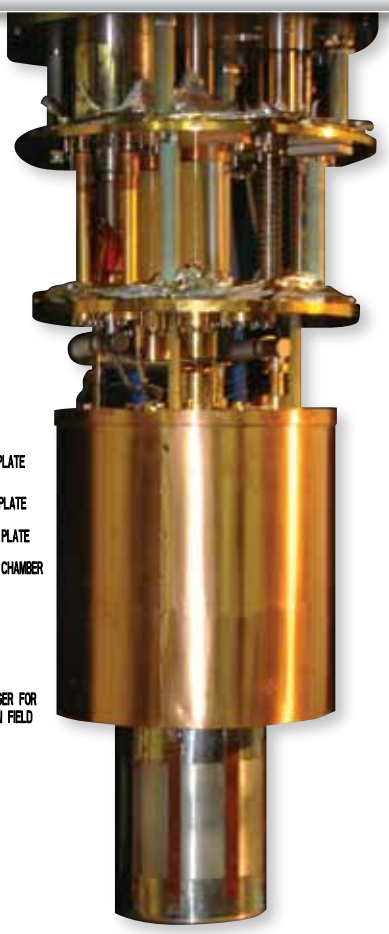
Option 2: Cryogen Free System In Shared Vacuum Space

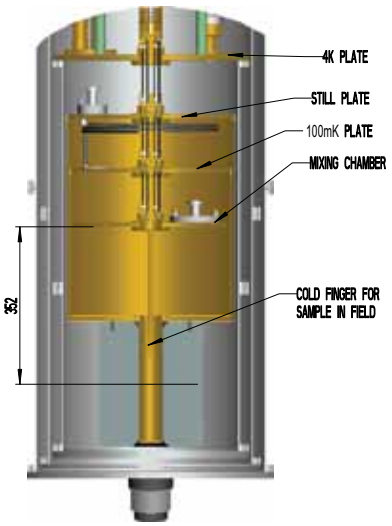
- Dilution Refrigerator (DR) and high field magnet in shared cryostat
- Separate pulse-tube coolers for magnet and DR
- Top loading Leiden DR for temperatures down to 10mK
- Large 3D cryogen free vector magnet (9 T / 5 T / 1 T)
- 4 Tesla rotating magnet
- Use with top-loading probe for easy sample change

Typical dimensions
50 mm 4 K magnet bore, 30 mm sample space in DR
Suitable for use with Leiden DR type CF200, CF450, CF650 or CF1000 DR

Option 3: Cryogen-Free DR With Integrated Magnet

- Magnet thermally linked to cryocooler 2nd stage
- Ideal for smaller magnets up to 17 T or small vector magnets up to 7 T/2 T/2 T
- Single pulse tube cryocooler for cooling both magnet and DR
- Magnet operation at 700 mK or 4 K
- Use with top-loading probe
- Fast Sample Change





Typical dimensions

64 mm magnet bore, 50 mm sample space in DR

Suitable for use with Leiden DR type CF200, CF450, CF650 or CF1000 DR

Option 4: Cryogen Free Magnet & Integrated Variable Temperature Sample Space With DR Insert

- Adapted MCK model DR inserted into 50 mm 1.6 K 300 K VTI
- VTI cooling power used for condensing stage of DR
- Versatile solution as the magnet system can also be used with other inserts and measurement probes including He3, heated probes, rotator, VSM etc.
- Bottom loading DR with options of sample in liquid or sample in vacuum
- Suitable for use with systems up to 18 T and neutron-scattering split-pair systems

Typical dimensions

50 mm 4 K magnet bore, 30 mm sample space in DR

Suitable for use with Leiden DR type CF200, CF450, CF650 or CF1000 DR

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The World s First:

Cryogen Free 3D Vector Magnet 9T/5T/1T with Top Loading Dilution Refrigerator for temperatures down to 10mK.

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LEIDEN CRYOGENICS BV
dilution refrigerators and
ultra low temperature equipment

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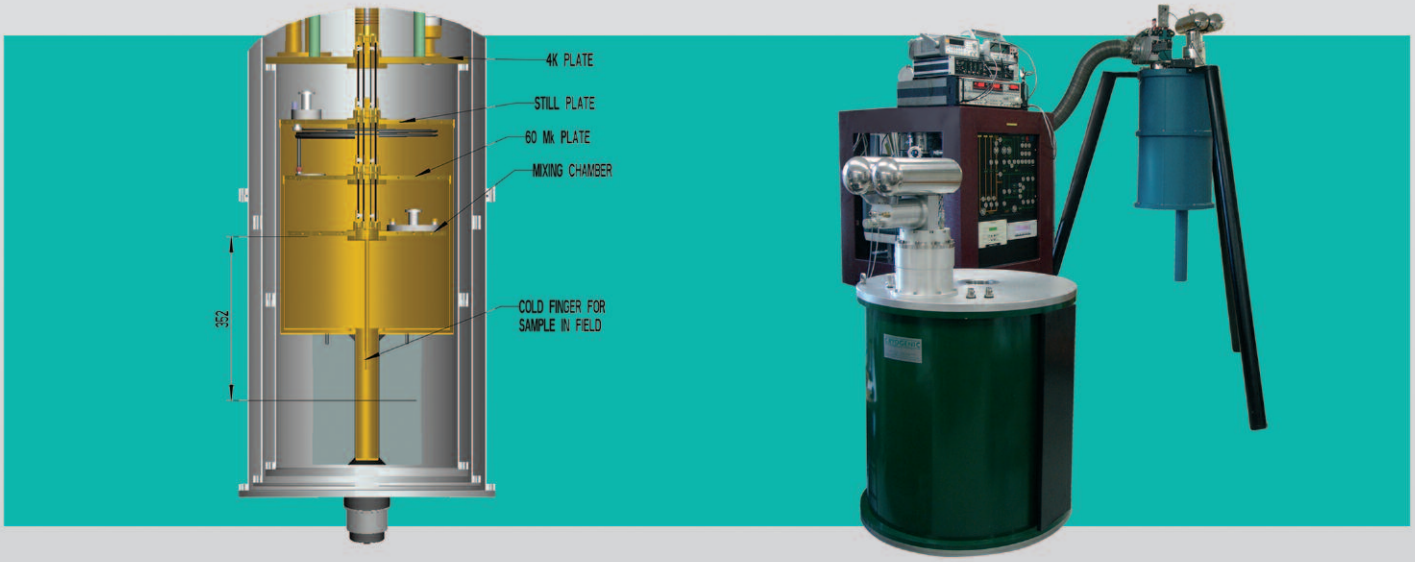
ULTRA LOW TEMPERATURE CRYOGEN FREE MAGNET SYSTEMS

9T/5T/7T Cryogen free Vector Magnet in shared vacuum space with a Cryogen Free Dilution Refrigerator for temperatures down to 10 mK

16 Tesla Cryogen Free Magnet with Integrated Variable Temperature Sample Space and Dilution Refrigerator Insert (Leiden MCK50-400) for temperatures down to 30 mK



9 Tesla Cryogen Free Magnet attached to Dilution Refrigerator Still Shield using a single Pulse Tube Cryocooler

14 Tesla Cryogen Free RT bore magnet with RT Tail Dilution Refrigerator

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