

HTS MAGNETS FOR NEUTRON SCATTERING

- Cryogen free operation
- Large optical access
- Compact design
- Fast ramping
- Low fringe field



APPLICATIONS

- Scattering
- Diffraction
- Reflectometry
- Time-of-flight scattering,
- Polarised neutron scattering

PERFORMANCE AND VERSATILITY

- Compactness and low fringe fields
- RT bore and aperture allow flexibility to existing sample cryostats and instrumentation
- Fast ramping and fast cool-down
- Combined vertical and horizontal configuration
- Symmetric mode plus low fringe field for polarized neutrons
- Asymmetric mode possible
- Medium fields (2-10 T @ Top > 10 K)
- Higher fields possible

EASY TO SITE

- Small fringe field
- No ceiling height constraints
- No refilling constraints
- Vibration tolerant
- Remote location of PSU and compressor if required
- Simple to operate, robust performance
- Magnet monitoring electronics ensure long-term reliability

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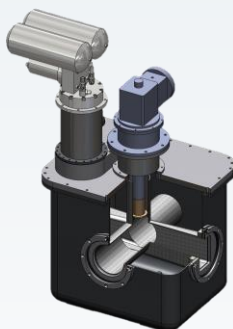
- ✓ Neutron diffraction
- ✓ Polarized neutron reflectometry
 - Horizontal field up to 3.0 T
 - 80 mm pole gap
 - Sample volume: 25 mm DSV
 - Ø80 mm vertical RT bore
 - 4 X Ø60 mm horizontal RT bore
 - 32° horizontal and vertical opening angle
 - Zero-field nodes outside the magnet cryostat
 - Fringe field: < 1 Gauss (at 1 m) in radial direction, <10 Gauss (at 0.5 m) in axial direction



- ✓ Neutron diffraction
- ✓ Neutron reflectometry
- ✓ Time of Flight (TOF) scattering
 - Vertical and Horizontal fields up to 2.5 T
 - 80 mm pole gap
 - 4 X Ø80 mm RT bore
 - 150° horizontal scattering angle
 - ± 20° vertical angle of aperture
 - Operation in any orientation



- ✓ Polarized neutron reflectometry
 - Vertical field up to 3 T
 - 52 mm pole gap
 - Sample (beam) access: 52 X 160 mm
 - Ø52 mm transverse access
 - Cool-down time: 30 hours
 - Fringe field: < 5 Gauss (at 1 m)
 - Optional magnetic field entry/exit correction



- ✓ Small-angle neutron scattering (SANS)
- ✓ Neutron diffraction and reflectometry
 - Horizontal field up to 5 T
 - Free volume at beam centre >115 mm axial, vertical, >44 mm transverse
 - Wide beam accessibility angles (±8-12° in the transverse direction and ±16° in the axial direction)
 - Goniometer mounting possible for tilting up to 15 degrees