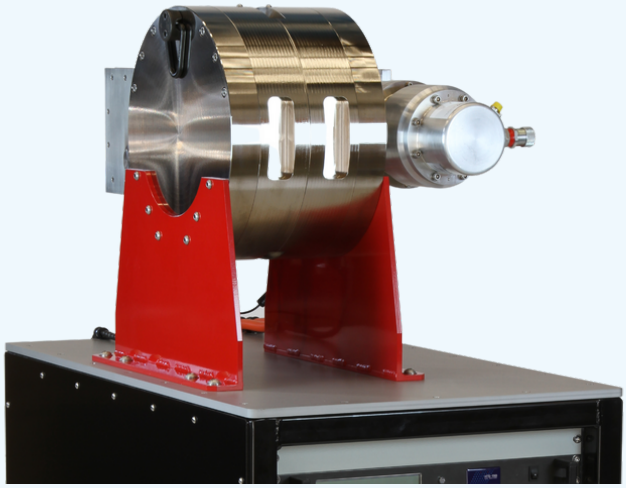
3 T METROLOGY MAGNET



- **Variable field + 3 T**
- **High uniformity over the whole excitation range**
- **Large 25mm pole gap**
- **Compact**
- **Low fringe magnetic field**
- **Cyrogen free**

Applications

- Magnetic field probe calibration
- Hall-effect studies
- NMR
- ESR
- FMR
- Transport studies

Performance

- 3 T variable field
- Better than 50 ppm field uniformity (10 mm DSV) across the excitation range
- Suitable for NMR tesla meter
- Large fixed pole gap (25 mm)
- Large sample access slot: 25 x 150 mm
- Optional high stability unipolar power supply

Easy to use

- Cryogen-free operation: no handling of liquid helium or nitrogen
- Magnet safety monitoring electronics included
- Reliable mechanical cooling (~4 kW input power)
- Low water cooling requirements, optional chiller

Easy to site

- Compact size
- Very low fringe field, may be reduced further with optional enclosure
- Compressor can be sited remotely (up to 10 metres)
- Vertical or horizontal access slot orientation

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System Specifications

- 3 T full field at 165 A
- Better than 50 ppm uniformity (10 mm DSV) across the excitation range
- System cool down (room temperature to operating temperature): <24h (60 Hz)
- Sample access: 25 x 150 mm
- Fringe field: 5 gauss line at < 1.6 m (axial) and 1.3 m (radial) from magnet centre
- Magnet mass: 200 kg
- System mass with bipolar power supply, cryocooler and compressor: 450 kg

Standard System Includes

- Magnet sub-system with integrated cold-head
- 19” rack-mounted compressor and power supply
- Active magnet protection electronics linked to integrated temperature sensors and voltage taps
- Magnet energy dump system
- Bipolar power supply or optional high stability (0.3 ppm/h) unipolar supply
- 1 year warranty

Application Example

Variable Field Relaxometry (NMRD Nuclear Magnetic Relaxation Dispersion)

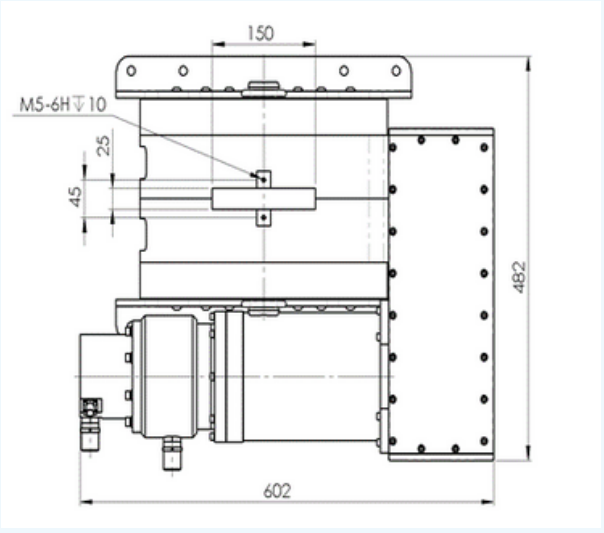
- Developed in association with Stelar (Italy)
- Used for example in characterisation of new MRI contrast agents optimised for new higher-field MRI systems

System Options

- Field control system
- Low maintenance vacuum pump
- Magnet enclosure for reduced fringe field
- Water chiller
- Extended warranty

Site Requirements

- <5 litres water per minute for compressor
- 50/60 Hz, ~4 kW
- Scheduled maintenance on cold-head every 13,000 h, compressor 30,000 h
- Vacuum pump for initial installation and maintenance; turbomolecular pump recommended with minimum pumping speed 30 l/s and ultimate pressure <1E – 7 mbar



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