X-Pulse
Benchtop NMR Spectrometer

Technical Data Sheet

X-Pulse is a high-resolution benchtop NMR spectrometer. Using a high stability 60MHz (1.4T) permanent magnet **X-Pulse** enables users to collect NMR data without the need for liquid cryogens or specialist facilities. **X-Pulse** has been optimised with unique shimming technology to provide resolution of better than 0.35Hz. For convenience, **X-Pulse** uses standard 5mm NMR tubes requiring only 300µL of sample.

X-Pulse is the first benchtop NMR system to have a broadband X-Nuclei channel allowing users to select nuclei from ^{29}Si to ^{31}P.

Operating Frequency Magnetic field strength	60 (± 0.35) MHz 1.4 (± 0.007) T
Resolution (50%)	< 0.35Hz
Resolution (0.55%)	< 10Hz
Proton Sensitivity HF (1% ethyl benzene, 1 scan)	> 180:1*
Proton Sensitivity HFX (1% ethyl benzene, 1 scan)	> 120:1 (when tuned to ^{13}C)*
Available Nuclei: as standard ^{13}C **X-Pod** ^{31}P **X-Pod** Broadband **X-Pod**	1H, 19F ^{13}C ^{31}P ^{29}Si, ^{23}Na, ^{13}C, ^{11}B, ^{7}Li, ^{31}P
Sample temperature range (VT Probe)	20°C – 70°C
Sample tubes	5mm diameter 7" minimum length
Dimensions: **Magnet** **Electronics Unit**	38.5cm x 54.0cm x 42.5cm 29.6cm x 60.5cm x 42.0cm
Weight: **Magnet** **Electronics Unit**	150Kg 22Kg

**calculated using standard script in Mnova 14 – more details are available on request*

All **X-Pulse** instruments are supplied with a Windows 10 PC that runs **SpinFlow** 3.0 NMR acquisition software and Mestrelab Mnova 14 NMR data processing software.

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Pre-programmed Experiments

X-Pulse offers a wide range of experiments and pulse sequences pre-programmed. These include but are not limited to:

- 1D NMR for all nuclei
- T1 and T2 measurement
- 2D homonuclear, gs-COSY, gs-TOCSY, 2D J-resolved
- 2D heteronuclear, gs-HSQC-ME, gs-HMBC, HETCOR

Pulse sequences are written in the popular Python scripting language. Users can write their own custom pulse sequences, which can be run in **Spinflow**.

SpinFlow Software

All **X-Pulse** instruments are supplied with **SpinFlow** 3.0 NMR acquisition software. **SpinFlow** facilitates the collection of all NMR data from the **X-Pulse** and can be operated in three modes to ensure flexibility for all users:

- **Quick Experiments:** pre-programmed single click experiments getting you to your data, fast.
- **User-defined:** optimised or advanced experiments with saved parameters that can be run with a single click to facilitate high throughput in repeated processes.
- **Advanced:** open and flexible with the ability to change all experimental parameters or import user-written pulse sequences.

X-Pulse Environmental Specification

These requirements are necessary for the correct installation and operation of the system and are the responsibility of the purchaser:

- Operating temperature: 18°C-26°C
- Power 100 – 240V, 50/60Hz
- Source of compressed air/nitrogen required for instruments with the variable temperature probe option.

visit **nmr.oxinst.com/x–pulse** for more information or email **magres@oxinst.com**

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