

Beam tube	Cold neutron guide G2
Monochromator	Multilayer monochromator
Type of instrument	Two-axis.
Typical flux at specimen ($Dq = 0.03^\circ$)	3×10^5 n/cm ² /s
Max. beam size at specimen	Width : 1.5 mm
	Height : 15 mm
Incident wavelength	0.43 nm
Angular resolution (horizontal)	0.01° to 06° (typical 0.04°)
Vertical divergence	2°
Angular range	$0 \leq 2\theta \leq 120^\circ$
Minimum step size scan	$\Delta\theta = 0.01^\circ$
Detectors	³ He tube or microstrip PSD
Ancillary equipment	<ul style="list-style-type: none"> ★ Cryomagnet : $2.5 \text{ K} \leq T \leq 300 \text{ K}$ B = 7 T in the sample plane ★ Continuous flow cryostat : $80 \text{ K} \leq T \leq 300 \text{ K}$ B = 1.2 T in the sample plane or Perpendicular to the sample plane ★ Furnace : 800°C in 10 mT

This spectrometer is suited for the study of magnetic thin films and multilayers with polarisation analysis but can also be used for high resolution large angle diffraction.

We use movements with a precision of 0.01°. Slits are made of single crystal Gallium Gadolinium Garnet to reduce small angle neutron scattering.

The incident beam is produced by a multilayer monochromator mounted in the guide G 2. The wavelength is fixed at 0.43 nm. The wavelength spectrum width $d\lambda/\lambda$ is 5%.

The scattering angle 2θ can be varied up to 120°. The sample table can sustain 350 kg and the beam center is at 270 mm from the top goniometer.

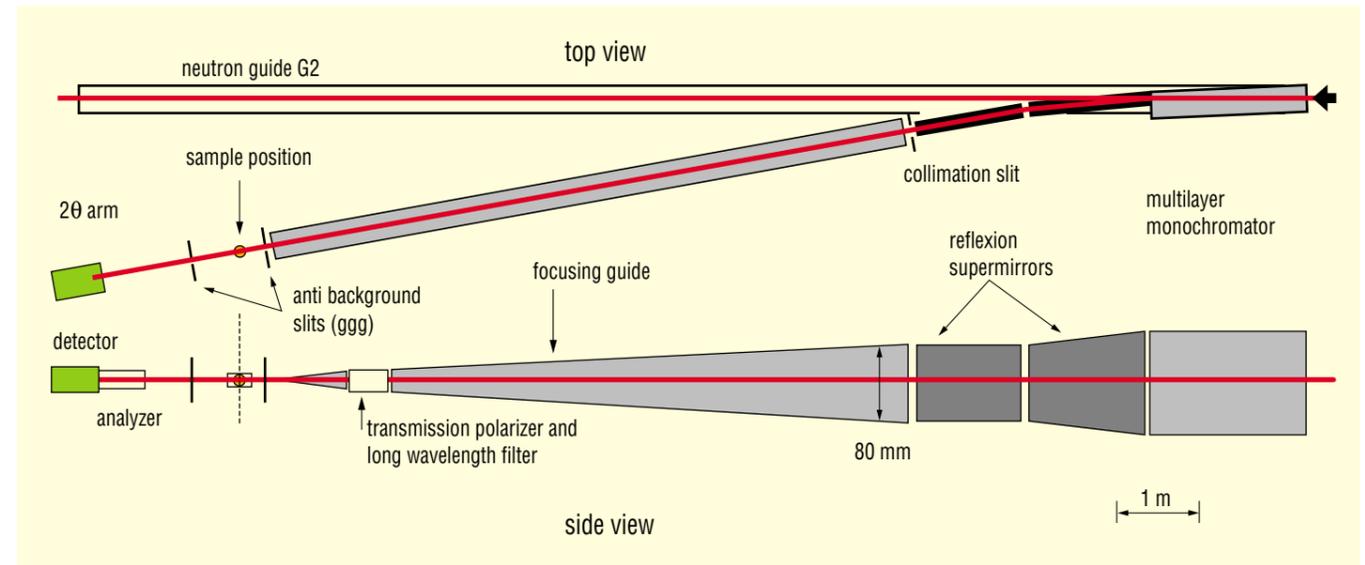
Experiment interface allows complex batching for sweeping field, currents, temperatures, etc... while scanning angles.

The spectrometer can be equipped with a cryomagnet for low temperature measurements or high field measurements (up to 7 T in the sample plane). It can also be equipped with a more flexible nitrogen continuous flow cryostat that can be fitted into a 1.2 T magnet.

In this latter case, the field can be applied in any direction relative to the sample plane.

Neutrons are polarised with transmission FeCo/Si supermirrors. The polarisation is analysed by reflection supermirrors. The flipping ratio is of the order of 35.

In reflectivity, this spectrometer allows to measure reflectivity curves with a dynamic range of $10^5 - 10^6$ on a 1 cm² sample in 12 hours for all spin states (non spin-flip and spin-flip).



General view of the G 2-4 spectrometer.