

Distance chopper to detector	6.25 m
Distance sample to detector	2 m
Wavelength range	3 Å to 25 Å
Wavelength resolution	fixed $\Delta\lambda$ from 0.1 Å to 1 Å
Angular range	0.1° to 6°
Angular resolution	0.007° to 0.15°
Position of the surface	horizontal
Horizontal beam size at the sample	25 mm
Vertical beam size at the sample	0.5 mm to 10 mm
Detection	^3He
Maximum intensity	1000 count.sec ⁻¹ Å ⁻¹ at 3.5 Å
Background	1 count.hour ⁻¹ Å ⁻¹
Minimum measurable reflectivity	5.10 ⁻⁶
Typical acquisition time :	4 h - 8 h (soft matter)

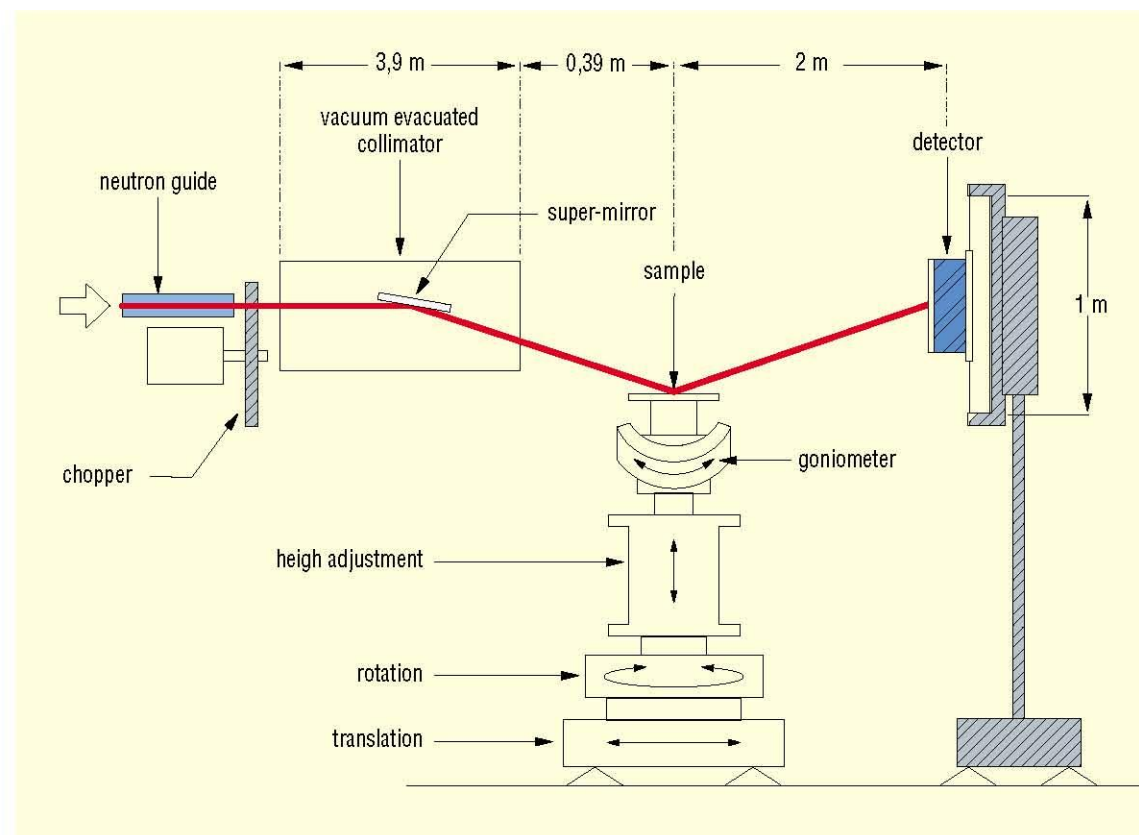
Ancillary equipment

- ★ Multireflections system for samples of 10 cm to 50 cm long
- ★ Furnace (60°C, 200°C)
- ★ Magnets with horizontal or vertical field between 0.001 T and 1 Tesla
- ★ Controlled temperature cells (from -40°C to 60°C) for liquid surface measurements
- ★ Polarizer and flipper for polarized neutron measurements

This reflectometer is dedicated to the study of interfaces by neutron reflection. The reflected intensity at grazing angle of a non polarized white neutron beam is measured as a function of wavelength. The variation of this reflection coefficient (reflectivity) with the wavevector is linked to the concentration profile perpendicular to the interface. If this profile is represented by a succession of different layers, the thickness, composition and roughness of each layer may be determined within the range from 2 to 500 nm for thickness and 1 to 20 nm for roughness. All type of interfaces might be studied, including air/liquid interfaces.

The reflectometer is installed at the end of the neutron guide G6. It is composed first of a chopper that produced the neutron bursts. Then, a 3.9 m evacuated collimator defined a very narrow neutron beam. Inside the collimator, a neutron supermirror enables the deviation of the beam towards liquid surfaces. The samples are installed on a goniometric head for alignment purpose. The reflected intensity is measured at a 2 to 4 m distance by single ^3He counter.

A polarizer and a flipper can be installed in order to perform polarized neutron measurements. A multireflections measurement system providing a better precision on the reflection coefficient when this one is close to one is available.



General layout of the spectrometer G 3 BIS.

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