

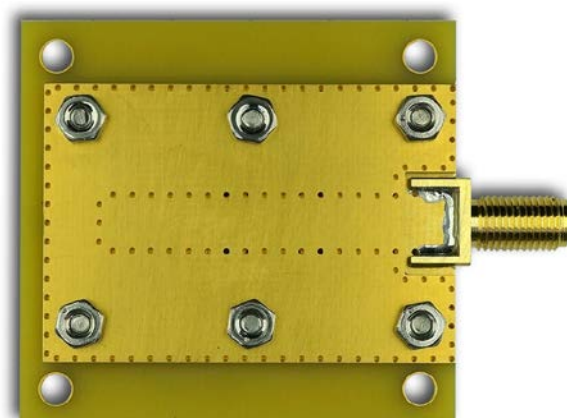
B6 Thermal-Neutron Diamond Detector

The **Thermal-Neutron Diamond Detector** has been developed for efficient thermal-neutron flux monitoring. To enable the $n \rightarrow \alpha$ reaction, this detector contains a ${}^6\text{LiF}$ converter. This ensures the best possible energy resolution and high neutron detection rates up to 1 MHz in combination with the Cx Spectroscopic Shaping Amplifier. For the calibration of the detector with alpha particles, an aperture is foreseen on the rear side of the detector.

The Thermal-Neutron Diamond Detector is optimized for the use in nuclear safety as well as personnel and reactor safety.

Parameters:

Sensor material:	sCVD diamond
Sensor size:	4.5 mm x 4.5 mm
Sensor thickness:	140 μm
Thermal-neutron converter:	${}^6\text{LiF}$ (95% enrichment)
Active area:	3 mm in diameter
Calibration aperture:	1 mm in diameter
Nominal bias voltage:	120 V



Housing:

Size:	44 mm x 47 mm x 5 mm
Material:	FR4, gold metallized, completely RF shielded
Connector:	SMA female