Quantum Design

OptiCool Sample Positioner and Thermal Link

X130 - Integrated Nanopositioners
(Includes X132 Thermal Link)

The OptiCool cryostat can be configured with a piezo-based nanopositioning stack to move your sample in-situ over the full range of temperature and magnetic field. This can be important for optical applications requiring focusing, positioning relative to an optical path, or examination of multiple areas of interest on a sample. The ability to scan is also required for 2D imaging of sample properties. The X130 Integrated Nanopositioner option with position-feedback provides full X, Y, and Z motion control and knowledge of your sample position. The option can be mounted on either the standard or large volume pods depending on experimental needs.

The nanopositioner stack, comprised of two attocube ANPx311 stages and one ANPz102 stage, provides a travel range of 6 mm in the X and Y directions and 4.8 mm in the Z direction for focusing. The resistive position-feedback has a resolution of 200 nm and a repeatability of 1 to 2 μm. This allows you to consistently go back and find features of interest on your sample. The stages can also be run in fine positioning mode with a range of 0.8 μm (X and Y) at 4K with sub-nm resolution.

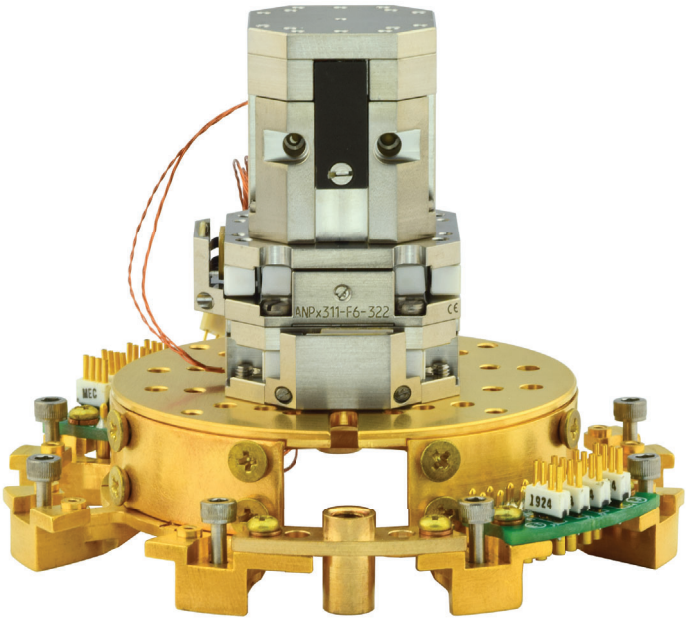

Image shows the X130 Integrated Nanopositioners mounted on a standard OptiCool pod.

X132 - Thermal Link

Quantum Design has created a custom Thermal Link for use with Integrated Nanopositioners. The Thermal Link effectively cools your sample while providing full mobility for linear positioner motion in X, Y, and Z. The high-A/L design is optimized for cooling at high magnetic fields where magnetoresistance reduces the effectiveness of other high-RRR thermal links. The Thermal Link comes with a built-in thermometer to give you an accurate temperature reading close to your sample without impacting clearance. The X132 Thermal Link is included with the X130 Integrated Nanopositioners or it can be purchased separately for use with other positioner stacks.

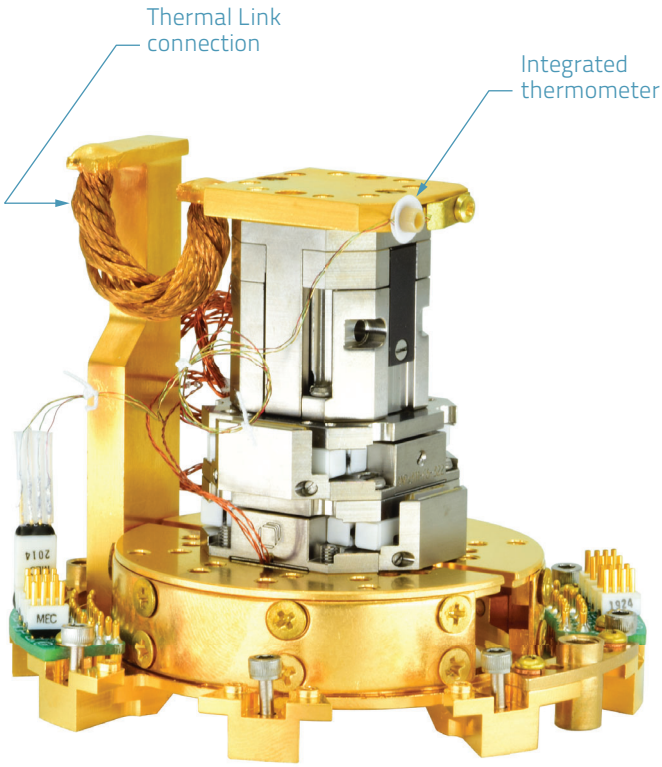

Image shows the X130 Integrated Nanopositioners with the X132 Thermal Link option and integrated thermometer.