DATASHEET

# nProber IV System

## High productivity, 5 nm-capable nanoprobing system

Our most advanced SEM-based nano-probing system is the first to use a SEM column designed to meet key, high-end nanoprobing requirements for more successful TEM results on high-density, transistors, interconnects, and complex 3D architectures.

The Thermo Scientific™ nProber IV System is a high-performance SEM-based platform for the localization of transistor and metallization faults. It is the most advanced nanoprobing system in the world and the first to use the high-resolution LEEN2™ SEM Column specifically designed to increase speed, accuracy, and output at a critical path in FA workflow, where productivity is paramount.

The nProber IV System provides the greatest nanoprobing flexibility with the capability of placing probes anywhere between far apart (mm's) to very close (nm's) addressing issues on a wide range of semiconductor parts. This capacity enables not only the characterization of high-density, close-proximity logic transistors but also long distance wordline-to-wordline shorts commonly encountered in memory.

The nProber IV includes test-and-automation software and hardware to reduce the amount of skill and training required to operate at high efficiency. Our EBIRCH is the industry standard for finding challenging low-impedance shorts and our new EBIRCH2 extends the system functionality to include even harder to localize defects. On top of that, the LEEN2 SEM Column has the lowest landing energies of any nanoprober, enabling accurate measurements on the most sensitive technologies in the world.

Using the nProber IV System directly increases TEM success rates. It has proven to be both accurate and repeatable on the most challenging process nodes. But the automation and guided workflows offer more than just lab productivity value; the nProber IV allows your organization to measure and identify the hard-to-solve yield detractors that speed up time-to-profitability for the entire organization.

### Key benefits

**Provides platform stability** with fast, repeatable probe motion control and low drift rates for stable electrical measurements on advanced design node devices

**Improves efficiency** using guided workflows and integrated software control of measurements, probes, and SEM setup for efficient operation

**Preserves more samples** as the first nanoprobing system to use the Thermo Fisher LEEN2 SEM Column with high resolution at low landing energies with large FOV

**Recognizes more features** using SteadFast nano-manipulators and advanced control software to allow for precise, repeatable, and stable probe placement on critical-level features

### Applications

- DC Measurement
- Pulsed I-V Measurements
- C-V Characterization
- E-Beam Characterization
- EBIRCH2 Low Impedance
- Thermal Characterization Package
- easyProbe Automation
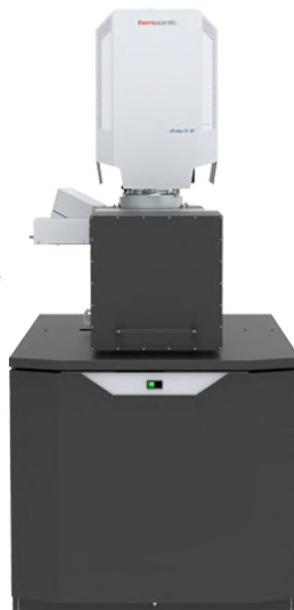


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