

Rocky Mountain Nanotechnology (RMN) probes are uniquely constructed from pure platinum and placed on a standard AFM probe sized ceramic substrate. Solid metal probes offer excellent conductivity and suffer no thin-film adhesion problems that occur with metal-coated silicon probes. These probes are ideal for C-AFM, SCM, KPFM/EFM and SMM* applications. They are available in a range of spring constants. Each probe tip is individually imaged by FE-SEM to verify that the metallic probe tip radius is below 20nm. Probes with tips verified below 10nm are now available!

Choose the probe that is right for your application:

- **25Pt300B** – The most popular RMN probe. Particularly good for C-AFM and KPFM or multi-mode applications.
- **12Pt400B** – The RMN probe with the lowest spring constant (~0.3 N/m). Very useful for SCM and contact AFM applications requiring contact force.
- **25Pt400B** – Similar to the 25Pt300B, but with a lower spring constant.
- **12Pt300B** – Similar to the 12Pt400B, but with a higher spring constant.
- **25Pt200B-H** – The high frequency RMN probe. Best for non-contact and tapping measurements, especially c-AFM and KPFM.

*Note that probes designed specifically for the Keysight (Agilent) Scanning Microwave Microscope (SMM) add-on have the letter A rather than B (ie 12Pt400A).

25Pt300B

The 25Pt300B is RMN's most popular probe. Its higher spring constant is good for conductance measurements (c-AFM) and high resolution KPFM imaging.

Material: Solid platinum probe tip and cantilever supported on standard AFM probe sized ceramic chip, connected to conductive gold bonding pad with conductive epoxy.

Tip shank length: 80 μm ($\pm 25\%$)

Cantilever length: 300 μm ($\pm 15\%$)

Cantilever width: 100 μm ($\pm 15\%$)

Spring constant: 18 N/m ($\pm 40\%$)

Frequency: 20 kHz ($\pm 30\%$)

Tip radius: < 20 nm

< 10 nm tip radius available! (25Pt300B-10)

12Pt400B

The 12Pt400B is RMN's probe with the lowest spring constant. It is most useful for contact AFM measurements with minimum contact force (SCM and SMM).

Material: Solid platinum probe tip and cantilever supported on standard AFM probe sized ceramic chip, connected to conductive gold bonding pad with conductive epoxy.

Tip shank length: 80 μm ($\pm 25\%$)

Cantilever length: 400 μm ($\pm 15\%$)

Cantilever width: 60 μm ($\pm 15\%$)

Spring constant: 0.3 N/m ($\pm 40\%$)

Frequency: 4.5 kHz ($\pm 30\%$)

Tip radius: < 20 nm

< 10 nm tip radius available! (12Pt400B-10)

25Pt400B

The 25Pt400B is similar to the 25Pt300B, but with a lower spring constant. It is often used in when smaller spring constant is needed.

Material: Solid platinum probe tip and cantilever supported on standard AFM probe sized ceramic chip, connected to conductive gold bonding pad with conductive epoxy.

Tip shank length: 80 μm ($\pm 25\%$)

Cantilever length: 400 μm ($\pm 15\%$)

Cantilever width: 100 μm ($\pm 15\%$)

Spring constant: 8 N/m ($\pm 40\%$)

Frequency: 10 kHz ($\pm 30\%$)

Tip radius: < 20 nm

12Pt300B

The 12Pt300B has a higher spring constant than the 12Pt400B. It is typically used for contact AFM imaging, when a higher resonance frequency is desired.

Material: Solid platinum probe tip and cantilever supported on standard AFM probe sized ceramic chip, connected to conductive gold bonding pad with conductive epoxy.

Tip shank length: 80 μm ($\pm 25\%$)

Cantilever length: 300 μm ($\pm 15\%$)

Cantilever width: 60 μm ($\pm 15\%$)

Spring constant: 0.8 N/m ($\pm 40\%$)

Frequency: 9 kHz ($\pm 30\%$)

Tip radius: < 20 nm

25Pt200B-H

The 25Pt200B-H has a high frequency for use in non-contact and tapping mode AFM measurements, especially c-AFM and KPFM.

Material: Solid platinum probe tip and cantilever supported on standard AFM probe sized ceramic chip, connected to conductive gold bonding pad with conductive epoxy.

Tip shank length: 80 μm ($\pm 25\%$)

Cantilever length: 200 μm ($\pm 15\%$)

Cantilever width: 50 μm ($\pm 15\%$)

Spring constant: 250 N/m ($\pm 40\%$)

Frequency: 100 kHz ($\pm 30\%$)

Tip radius: < 20 nm

< 10 nm tip radius available! (25Pt200B-H10)