

STA-LFNT

STA-LFNT Low-Frequency Noise Test System

Measure low-frequency and ultra-low-frequency noise, $1/f$ spectra and random-telegraph noise in photodetectors, sensors and emerging semiconductor devices. STA-LFNT combines a compact optical platform, low-noise current amplifier, spectrum analyser and microscope.

Measurement method

Bias the device and acquire its electrical response in the selected low- or ultra-low-frequency mode. Compare repeated traces, average spectra and investigate defect- and trap-related current fluctuations.

Features

- Shielded fA-level current testing
- Repeated trace overlays
- BMP images and XLS data export
- DC/AC switching
- RMS, vector and peak processing; up to 500 averages
- Time-domain selection and 3 dB bandwidth fitting
- Online bad-point removal

Applications

- $1/f$ and RTN characterisation
- Photodetectors and two-dimensional material devices
- Sensors, photovoltaic devices and semiconductor research

Current system specifications

Parameter	Specification
Model	STA-LFNT
Bias voltage	± 10 V
Current resolution	< 10 fA
Data sampling rate	2 MS/s
High-speed current gain	10^3 - 10^{11}
Low-speed current gain	10^5 - 10^{14}
Low-frequency baseline noise	$2 \times 10^{-29} \text{ A}^2/\text{Hz}$
Ultra-low-frequency baseline noise	$1 \times 10^{-31} \text{ A}^2/\text{Hz}$
Low-frequency noise band	1 Hz - 100 kHz
Ultra-low-frequency noise band	0.01-10 Hz

Conditions and configuration notes

Use the figures for the current STA-LFNT configuration. Noise floor and resolution depend on gain, frequency band, shielding and measurement conditions.

Specify your measurement

- Device current level and contact arrangement
- Required noise band and gain
- Bias conditions, shielding, optical excitation and averaging

Prepared by Precisometer. Technical review: 24 October 2026. Confirm the supplied configuration, measurement conditions, accessories and warranty with the quotation.

Precisometer | info@precisometer.com | Product details and enquiry