# About Trek: A Successful Company with Acknowledged Leadership Qualities

## Founded on Technology

TREK, INC. was established in 1968 to serve the needs of the electrophotography industry for highly accurate, stable, cost-effective measurement instrumentation and devices.

Novel probe design technology provided the foundation for the company's first electrostatic voltmeter, which quickly became the industry standard. Trek's design ensures highly accurate measurements under extreme conditions.

## Growth through Innovation

In the decades that followed, Trek established itself as a designer and manufacturer of high quality instrumentation.

Innovative designs and unique solutions have fueled product development over the years. Trek developed the world's first all-solid-state, high voltage, high-speed, DC-stable amplifier, which is now the product of choice for medium-current ion implantation systems in semiconductor fabrication facilities around the world. As a result of Trek's close working relationship with its customers, new designs are constantly being created to answer the needs of industry and R&D.


## Established Technical Expertise and Application Knowledge

Our scientifically based measurement expertise, coupled with our application knowledge, has enabled us to establish an enviable position in the markets we serve.

We are the experts when it comes to highly accurate measurement instruments and high voltage amplifiers, and the technology that drives them. Customers can depend on Trek to understand both the technical and practical aspects of an application. In many cases Trek is viewed as a virtual member of the customer's product development team.

## Expanded R&D Capabilities

In response to the needs of the marketplace, Trek recently established a separate R&D Center to expand and enhance its capabilities for research and development. In addition, a close working relationship with the nearby State University of New York at Buffalo assures that Trek has access to an extensive array of testing equipment and expertise to complement Trek's internal capabilities.

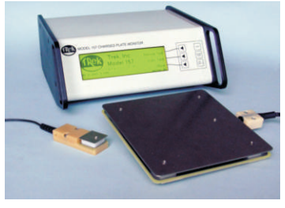
Whether it is understanding electrostatic discharge (ESD) in a manufacturing facility, or discussing an application with corporate or university R&D professionals, Trek has the expertise that will make a difference.

## Dedicated to Excellence

Trek has a well-respected reputation for excellence. We are the premier resource for electrostatic measurement and high-voltage solutions due to our product leadership and engineering excellence.

## Committed to the Global Marketplace

Long before globalization was popular, TREK, INC. established Trek Japan KK in Tokyo, Japan for the purpose of providing sales, application engineering support and service to customers in Japan and elsewhere in the Pacific Rim region. A global sales and service network now exists enabling Trek to serve the needs of customers throughout the world.





**TREK - Experts in Electrostatic Measurement and High Voltage Power Amplifiers**

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# TREK, INC.

## Precision Measurement of Electrostatic Voltage Enabled by Trek Electrostatic Voltmeter Instruments

### Novel Probe Design

Trek is an expert in utilizing technology to enable the precise measurement of electrostatic voltage and was the pioneer in noncontacting measurement methods for the electrophotography industry. A novel approach to probe design provided the foundation for the company's first electrostatic voltmeter, which quickly became the industry standard. Trek voltmeters, both then and now, utilize a design that ensures highly accurate measurements under extreme conditions, differentiating them from other products in the marketplace.

*Model 6000B-7C Probe*


*Model 341B Electrostatic Voltmeter*

### Performance in Diverse Applications

Trek noncontacting electrostatic voltmeter instruments are high performance devices that provide outstanding measurement speed and accuracy along with high surface resolution and no arc over. The voltmeter probes are designed to be less sensitive to dust particulates, enabling usage in diverse applications. Probe options include high temperature, high sensitivity, high resolution, transparent, miniature, and vacuum-friendly designs. Options also exist for probe aperture size, end/side view detection and body shape.

### Capability Beyond Industry Norm

Trek's standard capabilities go well beyond the norm for others in this industry. What others call special, we call standard. Trek electrostatic voltmeters provide measurement ranges up to ±20 kV, accuracies to the millivolt level, and speed of response to 50 microseconds for a 1 kV step. And Trek can go beyond what we call standard, to address application-specific requirements on a custom basis.


*Model 370 Electrostatic Voltmeter*


*Model 821HH Infinitron® Hand Held*

### Ideal for Critical Operations

Trek's electrostatic voltmeters are ideally suited for use in critical operations associated with electrophotography, semiconductor, LCD and other processes where voltages need to be precisely measured and controlled for process optimization, or where charge accumulation (and electrostatic discharge events) pose a threat to production yields or product quality. By placing Trek's instruments on-line within a process, real time feedback and control is possible.

### Product Innovations for the Future

Trek continues to expand its technologies and product offerings, enabling use in a broad range of applications and industries. As an example, the recently introduced Model 821HH Infinitron Ò voltmeter provides contacting measurements without loading the measurement source. We offer a wide variety of electrostatic voltmeters and technologies to assist you. Please contact us to discuss your applications and our solutions.

**High-Voltage Power Amplifiers/Piezo Drivers**
**Electrostatic Measurement Instruments**

# Electrostatic Voltmeter Selection Table

| ESVM Model | Output Voltage Range (V DC or peak AC) | Speed of Response (10-90%) (less than) | Voltage Monitor Output Accuracy (better than) | Probes | Special Features | Applications |
|---|---|---|---|---|---|---|
| **325** | 0 to ±40 V | 3 ms for a 10 V step | ±0.05% of full scale | PD1216P | Low Voltage, High Sensitivity, Noise/Speed Adjustments | Materials Evaluation, Electret Studies, Contact Potential Measurement |
| **320C** | 0 to ±100 V | 300 ms for a 100 V step | ±0.05% of full scale | 3250 | High Sensitivity, Noise/Speed Adjustments | Materials Evaluation, Electret Studies, Contact Potential Measurement |
| **323** | 0 to ±100 V | 300 ms for 100 V step | ±0.05% of full scale | 6000B Series<br>555P Miniature<br>6300 High-Temperature | Response Speed Control (Noise/Speed Adjustment Capability) | Semiconductor Wafer Surface Voltage Measurement<br>Contact Potential Measurement<br>Disk Drive Charge Accumulation Measurements |
| **368A** | 0 to ±2 kV | 200 µs for a 1 kV step | ±0. 1% of full scale | 3800 Series,<br>3870 High-Temperature | Multichannel Enclosure | Research & Development Applications, Electrostatic Potential Measurement on Film, Polymers and Paper; Electrophotographic Research & Development |
| **344** | 0 to ±2 kV | 3 ms for a 1 kV step | ±0.05% of full scale | 6000B Series<br>555P Miniature<br>6300 High-Temperature | Wide Variety of Probe Options | Electrophotographic Research & Development, Charge Accumulation Monitoring in Semiconductor Production, Electrostatic Potential Measurement on Film, Polymers and Paper |
| **347** | 0 to ±3 kV | 3 ms for a 1 kV step | ±0.05% of full scale | 6000B Series<br>555P Miniature<br>6300 High-Temperature | Wide Variety of Probe Options | Photoconductor/Dielectric Surface Volt Measurement; Charge Accumulation Monitoring in Semiconductor Production; Electrostatic Potential Measurement on Film, Polymers and Paper |
| **370** | 0 to ±3 kV | 50 µs for a 1 kV step | ±0.05% of full scale | 3800 Series,<br>3870 High-Temperature | Optional Data Acquisition Module | Electrophotographic Research & Development, Research & Development of Photoreceptors, Charge Accumulation Monitoring in Semiconductor Production, Measuring Electrostatic Potential on Moving Objects or Surfaces, Radiation Effect Studies |
| **370TR** | 0 to ±3 kV | 200 µs for a 1 kV step | ±0.05% of full scale | 3629A Transparent<br>3627 Standard | Transparent Probe Option | Photosensitive Surface Studies<br>Research & Development |
| **P0865** | 0 to ±10 kV | 200 µs for a 1 kV step | ±0. 1% of full scale | 3450<br>3453/3455<br>High-Temperature,<br>High-Vacuum | High-Voltage,<br>High Speed | Electrostatic Research & Development, Charge Accumulation Monitoring of LCD Production Processes, Monitoring Surface Potentials in Electrostatic Painting Processes, Electrostatic Potential Measurement on Polymers, Rubber, Fabrics and Paper |
| **341B** | 0 to ±20 kV | | | | | |
| *The voltmeters listed above use Trek's noncontacting technology. Trek's new technology permits electrostatic measurements with an ultra-high impedance contacting probe.* | | | | | | |
| **800** | 0 to ±100 V | 3.5 ms for 100 V step | ±0.1% of full scale | 800P Contacting/<br>Noncontacting Probe | Infinitron® Ultra-High Impedance Voltmeter ($10^{16}$ Ω and $10^{-15}$ F) | Measurement of ESD sensitive components and circuitry |
| **820** | 0 to ±2 kV | Less than 500 µs for 1 kV input step | ±0.1% of full scale | 820P Contacting/<br>Noncontacting Probe | Infinitron® Ultra-High Impedance Voltmeter (greater than $1x10^{15}$ Ω typical and less than $5x10^{-15}$ F) | Measurement of ESD sensitive components and circuitry |
| New **821HH** | 0 to ±2 kV | 500 µs for 100 V step | ±1% of full scale | 821P Probe | Highly accurate with no ESD events | Measurement of ESD sensitive components and circuitry |


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