

# Fragment Analyzer™

Automated CE System



# Increase Lab Productivity

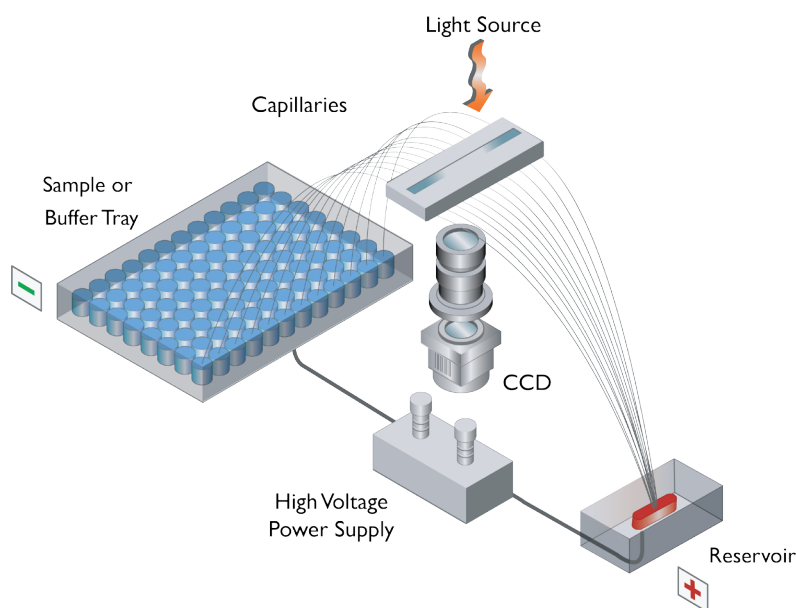
## With Automated QC

Designed to solve laboratory bottlenecks that impede discovery, the **Fragment Analyzer™ Automated CE System** accelerates nucleic acid analysis workflows, helping researchers move confidently onto downstream analysis. With automated gel loading and sample injection, proven separation methods, and high quality data analysis software, researchers get results faster at a lower cost with the **Fragment Analyzer**.

With the ability to qualify and quantify a wide range of DNA and RNA samples such as: plasmids, genomic DNA, total RNA, small RNA, CRISPR edits, large fragment DNA, and so much more, the **Fragment Analyzer** is the right instrument for any lab.



## Parallel Capillary Electrophoresis



The award-winning **Fragment Analyzer** speeds-up qualifying and quantifying nucleic acids, streamlining laboratory workflows. This patented technology is centered on highly sensitive fluorescence-based, parallel capillary electrophoresis, typically requiring only one or two microliters of sample, diluted into sample plates or tube strips. Each prepared sample is voltage injected into discrete capillaries, arranged in a parallel format. The capillaries contain a separation gel matrix infused with a fluorescent intercalating dye, that is automatically primed into the capillaries prior to each run. During electrophoresis, the nucleic acid fragments in the sample migrate and separate based upon their size, picking up dye along the way.

As the separated fragments pass by the detection window, the nucleic acid bound dye is excited by a continuous light source, producing fluorescent emission which is detected by a sensitive CCD detector. The time required to pass through the detection window indicates size and the relative emission signal provides the nucleic acid concentration when compared to a calibrated ladder. Powerful analytical software quickly provides researchers with detailed information on nucleic acid concentration and size distribution.

# Improve Workflow

## Flexibility

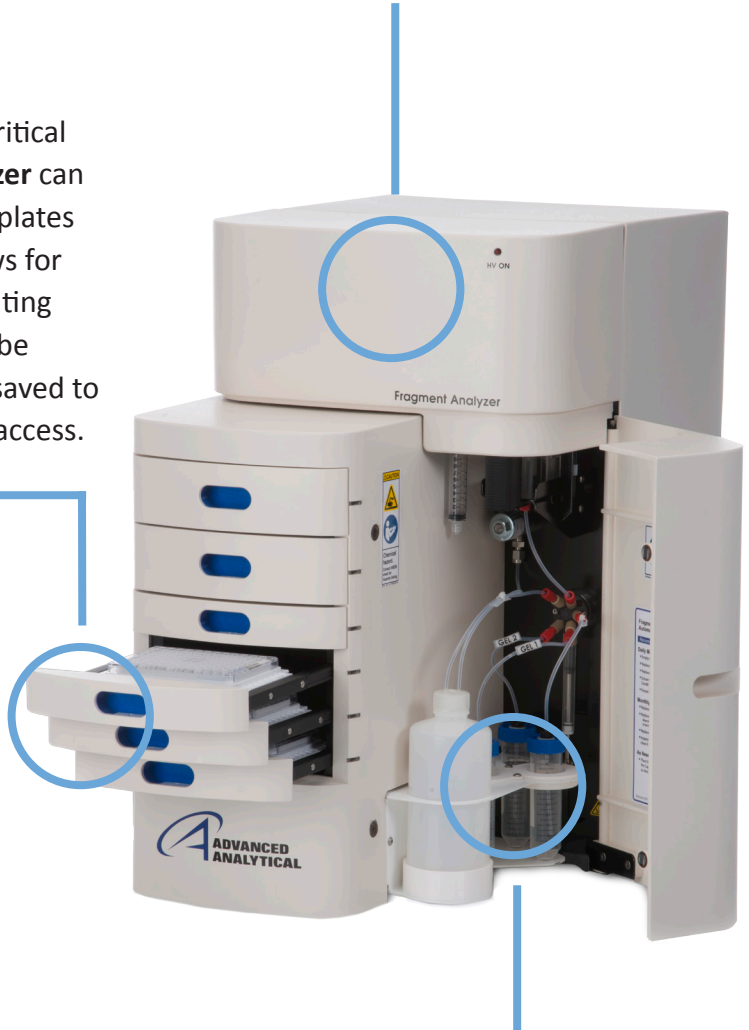
The **Fragment Analyzer** has interchangeable arrays with 12, 48, or 96 capillaries, allowing the **Fragment Analyzer** to adjust throughput to fit your labs needs.

## Accessibility

In busy laboratories, instrument accessibility is critical to reducing time to results. The **Fragment Analyzer** can hold up to three, 96-well plates and process the plates in any order. This unprecedented capability allows for samples to be held on the instrument while awaiting separation. If needed, high-priority samples can be moved to the front of the line. Data files can be saved to a networked computer for easy post-separation access.

Benefits of the unique multi-tray feature on the **Fragment Analyzer** include:

- Continuous sample runs
- Load additional sample trays and set separation methods while the instrument is running



## Versatility

With the unique ability to house two different gel matrices, the **Fragment Analyzer** can run not only more samples, but also different types of samples, unattended. The operational software automates the gel switching and filling between different applications, eliminating unnecessary wait times.

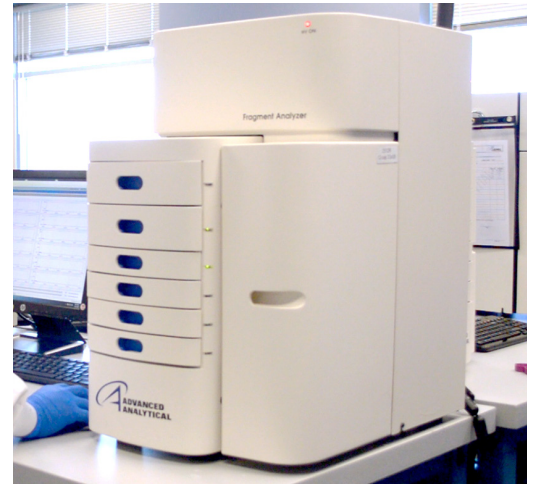
More than 20 Gel Kits are available for:

- NGS libraries
- CRISPR/Cas9 gene editing events
- Genomic DNA through 60,000 bp
- Large DNA fragments through 48,500 bp
- Total RNA, messenger RNA, and microRNA
- Reverse genetics analysis (TILLiNG)
- PCR fragment analysis

# Features and Benefits

## Eliminate Bottlenecks

- **Fast Run Times** - Analyze samples in as little as 15 minutes with the Ultra-Short array.
- **Real-Time Viewing of Data** - View separations as they are generated and change electrophoresis times during a run if desired.
- **Variable Throughput** - Direct parallel injection and separation of 12, 48, or 96 samples at once allows the **Fragment Analyzer** to adjust throughput to fit your lab's needs.
- **Low Maintenance** - The capillary array is stored in the instrument eliminating daily handling.



## Quality Data

- **High Sensitivity** - Detection limits as low as 5 pg/μL for DNA fragments and smears as low as 50 pg/μL. Directly inject amplicon or restriction enzyme digestion product.
- **High Resolution Separation** - Resolve a wide range of DNA and RNA fragments. Achieve as low as 3 bp resolution with high sizing accuracy.
- **Flexible Operations** - Change injection and run-conditions to fit your needs.
- **Wide Dynamic Range** - Most Gel Kits cover approximately 2 orders of magnitude. High and standard sensitivity kits are available for most applications, extending the overall range of detection.

## Easy To Use

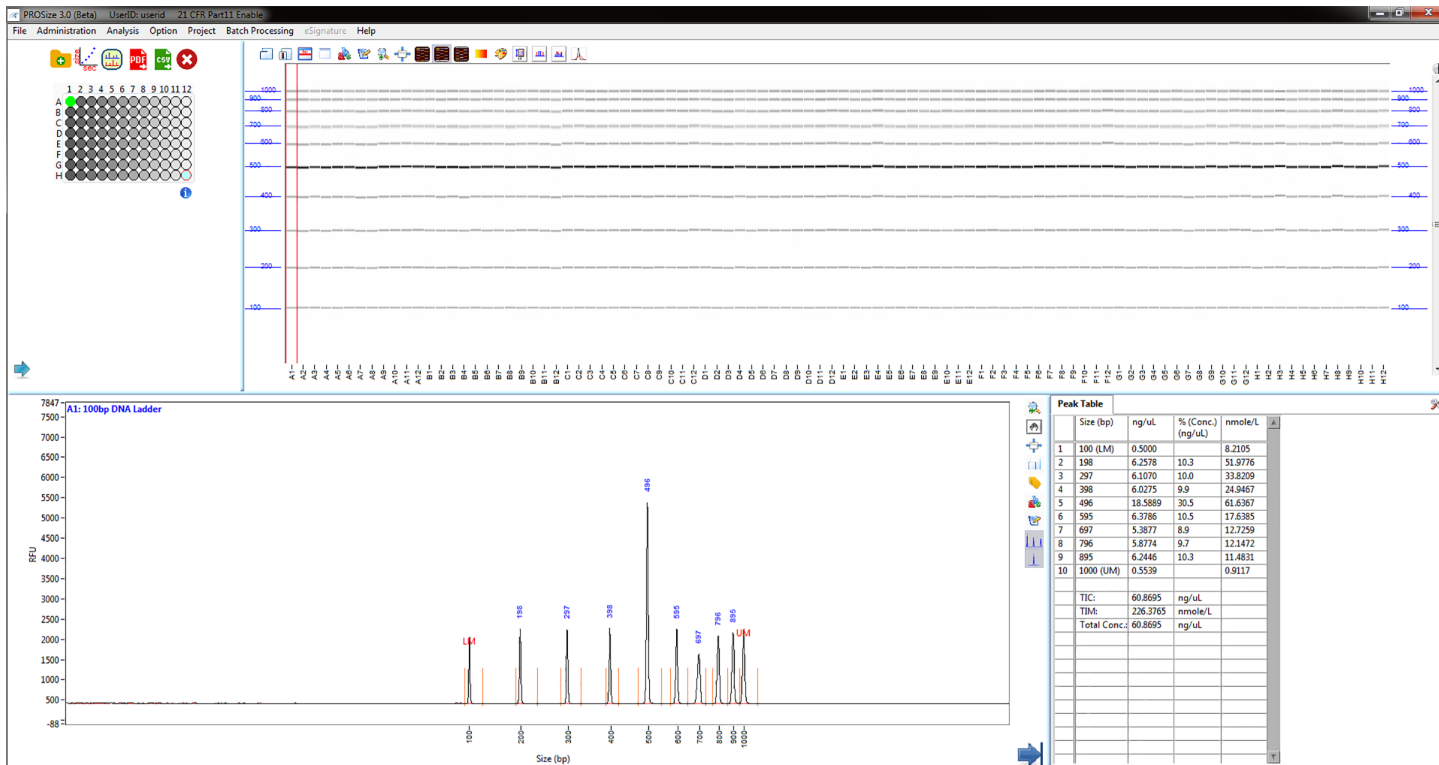
- **Unattended Operation** - Load and run up to three plates, or up to 288 samples, without human intervention.
- **Decreased Platform Preparation Time** - With room temperature stable reagents and no daily array handling, minimal work is needed to set up runs.
- **Reduced Sample Handling** - Requires only a single dilution step into the sample plate or tube strips. Sample dilution with the aid of a multichannel pipettor or robotics can decrease time to results even more.
- **Low Cost per Sample** - Choose Qualitative or Quantitative Gel Kits that best suit your analysis needs. Realize lower operational costs than other analytical instruments.



# Data Analysis Software

## User-Friendly Software

*PROSize*® Data Analysis Software is a robust, validated software package that simplifies nucleic acid fragment and smear identification and analysis. Designed with researchers in mind, *PROSize* automatically calculates fragment size and concentration displaying the data in multiple formats. Users can create, save, and load customized reports and scoring parameters and apply to some or all samples for flagging and Smear Analysis.



Refined through years of testing and customer interaction, this intuitive software package offers the following unique features:

- Sample flagging for rapid scoring
- Smear Analysis providing concentration, molarity, size range, average size, and %CV
- Ability to apply criteria to specific samples or all samples simultaneously
- Annotation features and customizable screen projection
- Sample overlay with the ability to combine data from as many as 24 different runs
- Quality scoring for RNA, DNA, and FFPE extracted nucleic acids
- Flexible sample ID naming with importing either pre- or post-electrophoresis
- Customizable reports exportable in PDF or CSV formats
- Quick views of raw data information or electrophoresis conditions
- Copy/paste buttons to capture gels, individual samples, or tables
- Fully compliant with 21 CFR regulations

# Nucleic Acids

## Detected By Fragment Analyzer

- PCR Amplicons
- CRISPR/Cas9
- Genomic DNA
- cfDNA
- High Molecular Weight DNA
- Total RNA
- microRNA
- Small RNA
- Messenger RNA (mRNA)
- Restriction Enzyme Digests
- Plasmids (Supercoiled & Linear)
- TILLING
- SSR/Microsatellite Fragments
- NGS Library Preparations for All Platforms

## Specifications

**Maximum Sample Throughput:** Array dependent, either 12, 48, or 96 samples

**Maximum Unattended Sample Capacity:** Up to 288 samples

**Minimum Sample Volume:** 20 µL of liquid for injection; as little as 1 µL of actual sample required

**Resolution:** Gel dependent; to as low as 3 bp

**Sizing Accuracy:** Typically 5% or better

**Detection Sensitivity:** As low as 5 pg/µL for fragments and 50 pg/µL for a smear

**Light Source:** 700 mA, 10 W LED, 470 nm excitation wavelength

**Detector:** High sensitivity CCD; 500-600 nm emission wavelength

**Software:** Fragment Analyzer Instrument Control, *PROSize*® Data Analysis Software

**Data Export Format:** CSV, PDF, flexible numerical or binary output options

**Environmental Conditions:** Indoor use, normal laboratory environment 20-23°C

**Relative Humidity Range:** < 80% (non-condensing)

**Electrical:** 100-200 VAC; 50-60 Hz; 15 A (alternate configurations available)

**Instrument Dimensions:** Fully configured 61 cm H x 38 cm W x 51 cm D (24 x 14 x 20 in)

**Instrument Weight:** 38.5 Kg (85 lbs)



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