

**ZAG™**  
DNA Analyzer



# Zero Agarose Gels

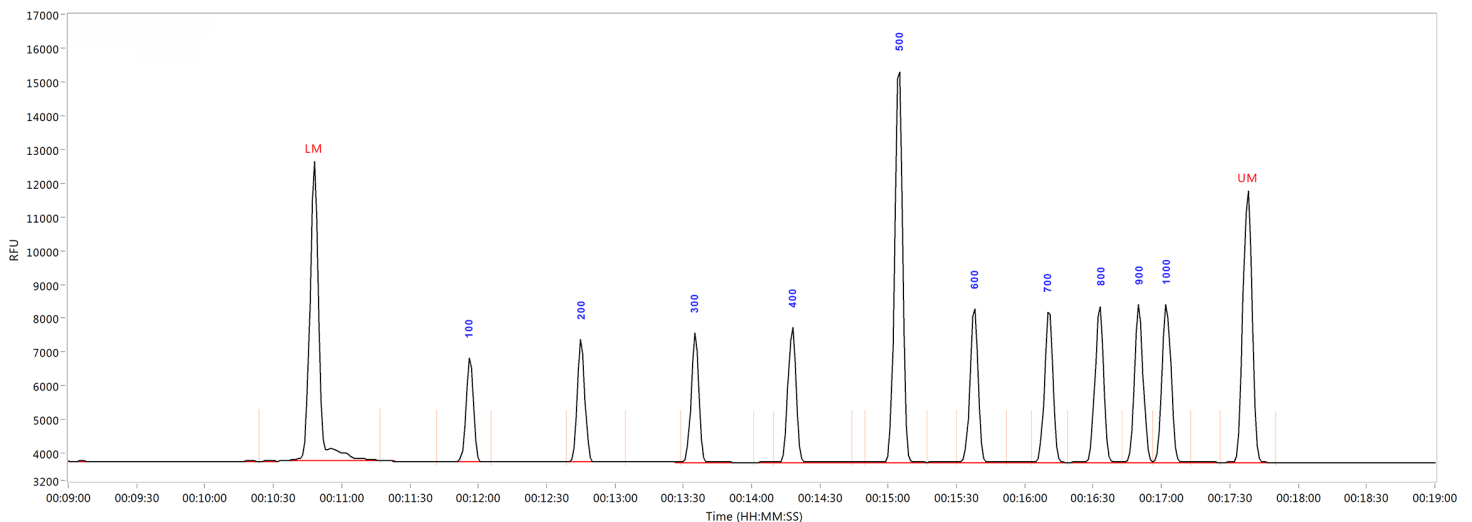
Modern life science facilities are increasingly shifting to high-throughput solutions for crucial analyses, generating large data sets suited to addressing subtle and complex research topics.

DNA fragment analysis is a critical, though time-consuming, process in molecular biology workspaces. These issues are magnified in high-throughput laboratories that process hundreds to thousands of samples per day. Traditional methods of DNA fragment analysis, notably agarose gel electrophoresis, lack the ability to scale to meet the demands of high throughput laboratories.



The **ZAG™ DNA Analyzer** provides a high-throughput DNA fragment analysis solution to molecular biology facilities. Automated sample handling, parallel capillary electrophoresis, and data analysis simplifies and accelerates DNA fragment analysis workflows without compromising quality. Employing parallel capillary electrophoresis, the **ZAG** provides superior fragment resolution, distinguishing as low as 3 bp differences in fragments under 300 bp.

The fast sample turnaround time offered by the **ZAG** provides researchers with the results they need, when they need them. Capable of holding nine sample trays at a time, the **ZAG** can separate up to 48 trays – or 4,608 DNA samples – in 24 hours under standard operating conditions. The analytical software developed by Advanced Analytical, *PROSize®* Data Analysis Software, manages the large volume of data generated by the **ZAG** through automation, saving researchers precious time.



*Separation of the 100 bp Ladder (FS-SLR910) using a ZAG DNA Analyzer equipped with a Short Capillary Array (33-55).*

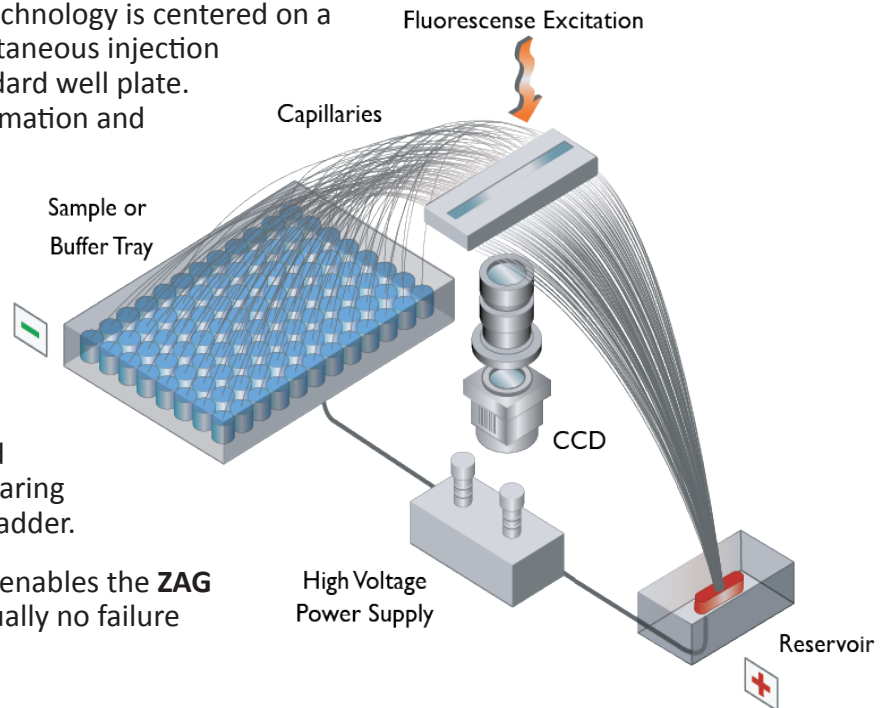
# Superior Capillary Electrophoresis

An integral component of the **ZAG™ DNA Analyzer** is the award winning 96-capillary array. The patented technology is centered on a parallel capillary set up which allows simultaneous injection of up to 96 individual samples from a standard well plate.

The capillaries are arranged into a tight formation and illuminated with a single, high powered LED light source. This allows the CCD camera to detect the DNA fragments, bound with intercalating dye and emitting a fluorescent signal, as they move through the capillaries.

Fragment size is determined by the time required to pass through the detection window. The relative nucleic acid concentration is then determined by comparing the sample signal strength to a calibrated ladder.

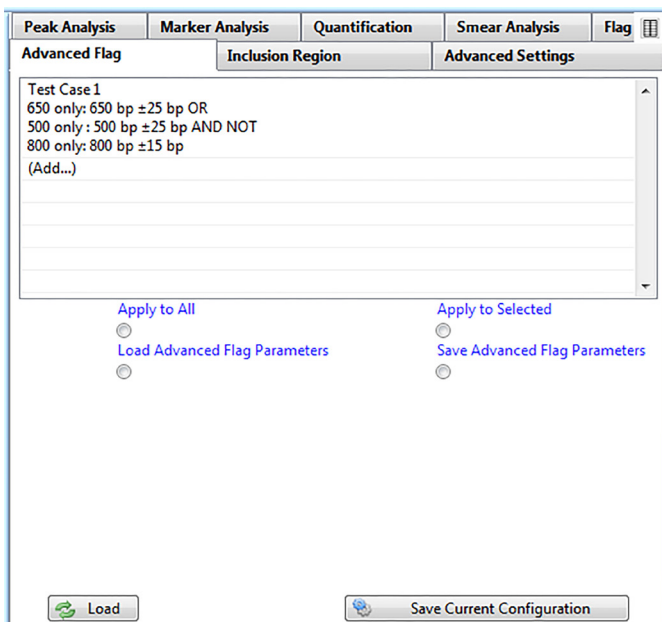
The advanced design of the capillary array enables the **ZAG** to offer high-throughput analysis with virtually no failure rate.



## PROSize® Data Analysis Software

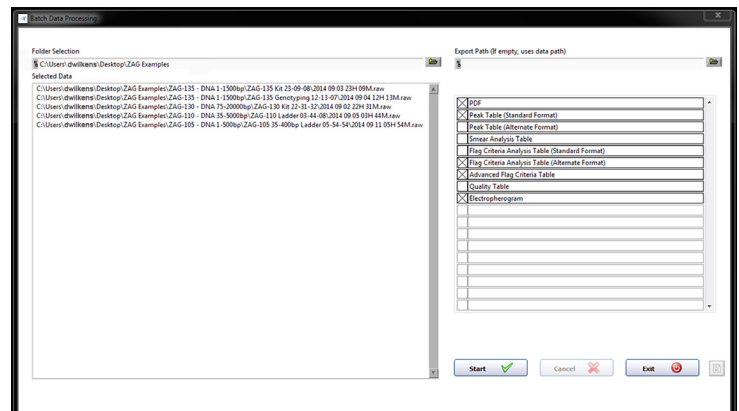
### Advanced Sample Flagging

Individual flag criteria can be established for each capillary separately or criteria can be set to an entire plate. A plate map with specific flagging criteria designated per capillary can be saved and loaded for reapplication to future runs. Data can be output in either CSV or PDF.



### Batch Processing of Sample Plates

Over 100 sample plates can be processed at the same time using the Batch Processing mode. Specific flagging criteria can be applied to each run for report generation. Users are notified about samples that do not meet batch specifications.



# Available Kits

## ZAG 105 dsDNA Reagent Kit, 1 bp - 500 bp, ZAG-105-5000

- Sizing Range: 35 bp - 500 bp
- Input Concentration: 0.5 ng/μL – 50 ng/μL (can be adjusted by dilution of sample)
- Best for high resolution of SSR, microsatellites, and small amplicons

## ZAG 110 dsDNA Reagent Kit, 35 bp - 5,000 bp, ZAG-110-5000

- Sizing Range: 35 bp - 5,000 bp
- Input Concentration: 0.5 ng/μL – 50 ng/μL (can be adjusted by dilution of sample)
- Best for wide DNA fragment range

## ZAG 130 dsDNA Reagent Kit, 75 bp - 20,000 bp, ZAG-130-5000

- Sizing Range: 75 bp - 20,000 bp
- Input Concentration: 0.5 ng/μL – 50 ng/μL (can be adjusted by dilution of sample)
- For medium to large DNA fragment analysis and digests

## ZAG 135 dsDNA Reagent Kit, 1 bp - 1,500 bp, ZAG-135-5000

- Sizing Range: 100 bp - 1,500 bp
- Input Concentration: 0.5 ng/μL – 50 ng/μL (can be adjusted by dilution of sample)
- For fast analysis of small DNA fragments with separation times under 20 minutes

# Specifications

<b>Maximum Sample Throughput:</b>	Approximately 48, 96-well plates per day (ZAG-135 Kit)
<b>Maximum Unattended Sample Capacity:</b>	Up to 864 samples
<b>Minimum Sample Volume:</b>	20 μL of liquid for injection; direct injection of PCR samples possible
<b>Gel Sizing Ranges (Qualitative Kits):</b>	35 bp - 20,000 bp depending on kit
<b>Resolution:</b>	Gel dependent; to as low as 3 bp
<b>Sizing Accuracy:</b>	Typically 5% or better
<b>Detection Sensitivity:</b>	As low as 5 pg/μL for fragments
<b>Light Source:</b>	700 mA, 10 W LED, 470 nm excitation wavelength
<b>Detector:</b>	High sensitivity CCD; 500-600 nm emission wavelength
<b>Software:</b>	ZAG™ Instrument Control, <i>PROSize</i> ® Data Analysis Software
<b>Data Export Format:</b>	CSV, PDF, flexible numerical or binary output options
<b>Environmental Conditions:</b>	Indoor use, normal laboratory environment 20-23°C
<b>Relative Humidity Range:</b>	< 80% (non-condensing)
<b>Electrical:</b>	100-200 VAC; 50-60 Hz; 15 A (alternate configurations available)
<b>Instrument Dimensions:</b>	82 cm H x 63 cm W x 59 cm D (33 x 25 x 23 in)
<b>Instrument Weight:</b>	68 Kg (150 lbs)



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