

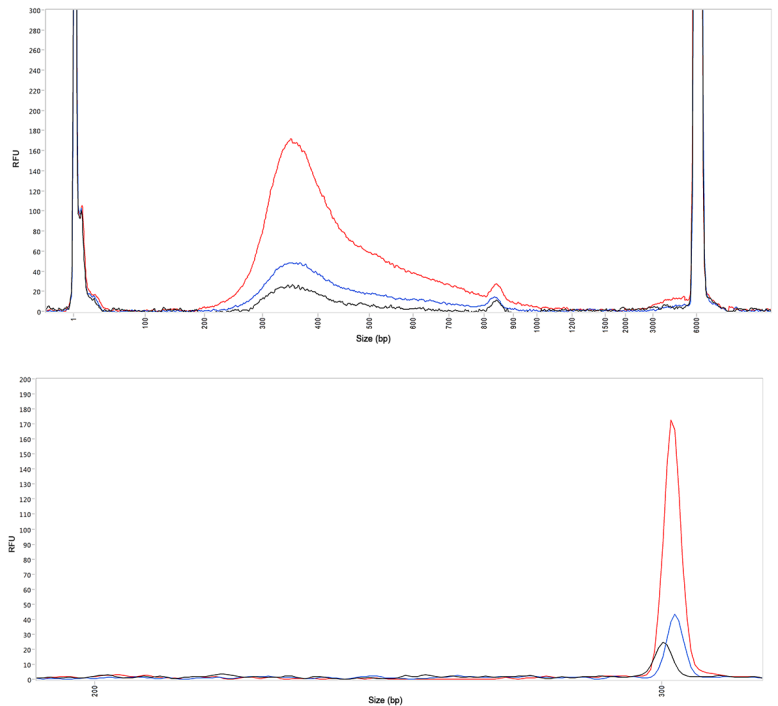
# Ultra-Sensitivity NGS Analysis Kit

FEMTO *Pulse*<sup>™</sup> Automated Pulsed-Field CE Instrument

## Size and quantify DNA fragments and NGS smears into the femtogram range

Researchers are now able to reliably quantify and qualify low quantity DNA smears and fragments with the **FP-1101 Ultra-Sensitivity NGS Analysis Kit** on the transformative **FEMTO *Pulse*<sup>™</sup> Automated Pulsed-Field CE Instrument**. A simple to follow protocol allows researchers to automate the separation of up to 288 samples with fragment detection down to 5 fg/ $\mu$ L (final in-well concentration), enabling the conservation of precious sample and the generation of new applications. Common genomics applications include PCR-free NGS library construction and single-cell analysis among other uses including: reduce PCR bias, cfDNA, and eliminate performance-based qualitative tests.

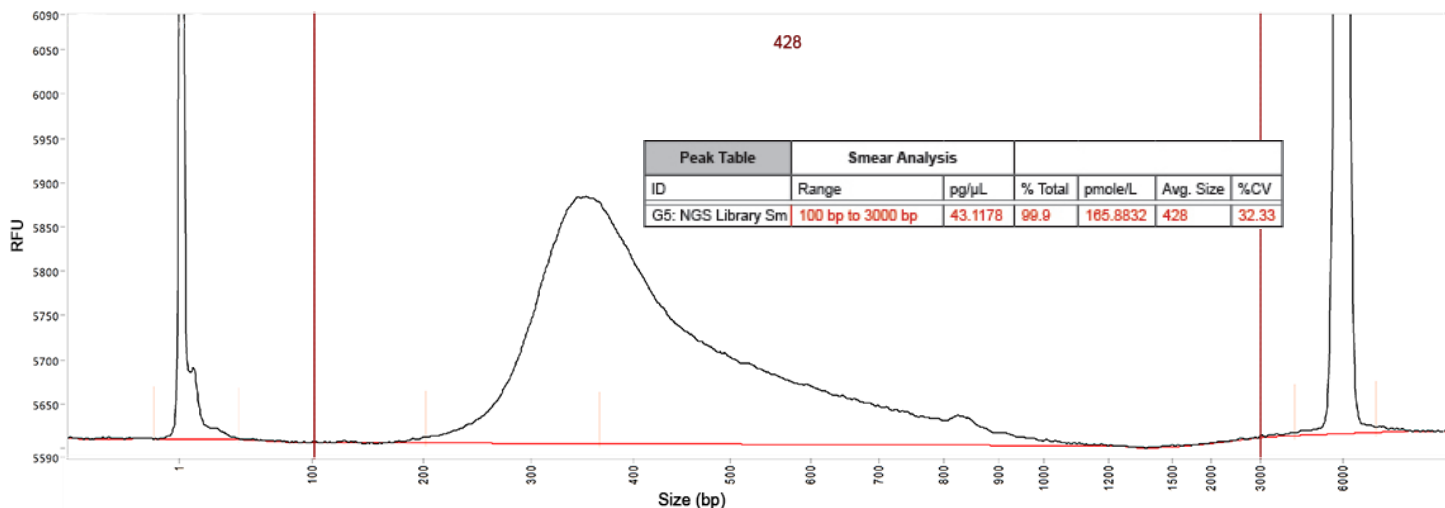
Efficient and accurate quantification of DNA fragments and smears at low quantity is important for a variety of applications, from reducing PCR amplification bias to QC during NGS library construction. The FP-1101 Ultra-Sensitivity NGS Analysis Kit meets these requirements with the reliable quantification of DNA smears and fragments across a dynamic range with detection down to 5 pg/ $\mu$ L (input concentration) for smears, and 50 fg/ $\mu$ L (input concentration) for fragments.



The figures above depicts the overlay of a commercially prepared NGS library at three concentrations (top) and the overlay of a 300 bp DNA fragment at three concentrations (bottom). Capillary electrophoresis was performed on the FEMTO *Pulse*<sup>™</sup> Automated Pulsed-Field CE Instrument with the FP-1101 Ultra-Sensitivity NGS Analysis Kit under standard conditions. All samples used in this figure were at extremely low concentrations. The input concentrations for the NGS smear are: 5 pg/ $\mu$ L (black trace), 10 pg/ $\mu$ L (blue trace), and 25 pg/ $\mu$ L (red trace). Input concentrations for the 300 bp fragment are: 50 fg/ $\mu$ L (black trace), 130 fg/ $\mu$ L (blue trace), and 500 fg/ $\mu$ L (red trace).

Analysis of results post-electrophoresis is simplified by the *PROSize*<sup>®</sup> Data Analysis Software, which automatically calculates size and concentration while allowing researchers to directly view results in an easy to use interface. Calculating the smear range of a library is important.

*PROSize* provides users with the Smear Analysis function to enhance the analysis of DNA smears. The Smear Analysis range is defined by the user to include the entire smear, illustrated on the electropherogram by red lines.



The figure above depicts a commercial NGS library preparation (diluted to 50 pg/μL) analyzed with the Smear Analysis function. The analysis range is indicated by the red lines and the average size is reported in red numbers centered at the top of the electropherogram. The inset table shows the smear analysis range, concentration, % of the total, molarity, the average size, and precision. Capillary electrophoresis was performed using the *FEMTO Pulse*<sup>™</sup> Automated Pulsed-Field CE Instrument with the FP-1101 Ultra-Sensitivity NGS Analysis Kit under standard conditions.

Features and Benefits	
<p><b>Enhanced Sensitivity</b> Conserve precious sample with unparalleled detection sensitivity.</p>	<p><b>Improved Resolution</b> Separate and size challenging DNA fragments and smears</p>
<p><b>Automated Operation</b> The <i>FEMTO Pulse</i> can run up to three 96 well plates without intervention</p>	<p><b>Fast Separation Time</b> Separate up to 12 samples in less than 1 hour</p>

Specifications	Descriptions
DNA Sizing Range	100 bp – 6,000 bp
DNA Fragment Detection Range	50 fg/μL – 5 pg/μL
DNA Smear Detection Range	5 pg/μL – 250 pg/μL
DNA Fragment Quantification Range	100 fg/μL – 5 pg/μL
DNA Smear Quantification Range	25 pg/μL – 250 pg/μL

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