

The AXELIOS 1 next-generation sequencing platform

Powered by SBX technology

Utilizing a novel combination of SBX chemistry, ultra-fast and accurate single-molecule sequencing, and accelerated analysis, the AXELIOS 1 platform has the potential to redefine the next-generation sequencing space.



The platform is designed to be:



Accurate:

High accuracy without sacrificing speed.



Cost-effective:

Economical instrument and run costs for a breadth of applications.



Flexible:

Longer^c read lengths to accommodate diverse use cases and explore beyond the boundaries of short reads.



Scalable:

Groundbreaking scalability for single cell and bulk RNA applications, enabling larger studies than ever before.



Fast:

Rapid sequencing and near real-time data processing accelerate access to data – from days to hours.

Find your space to innovate with the AXELIOS 1 platform

Current performance illustrations^a

Parameter	Demonstrated Capability	Potential Research Applications
SBX-Duplex Output (High-accuracy)	1.8 – 2.7 Tb in 4 hours of sequencing ^b ~16 genomes at ≥30X de-duplicated concordant duplex coverage in 4 hours of sequencing ^b	• WGS/WES • Oncology research • ctDNA detection for MRD research • Methylation • Rapid WGS • FFPET
SBX-Simplex Output (Ultra-high throughput)	Short (representative example for ~175bp average read length): >40B total reads in 4 hours of sequencing ^b Longer (representative example for ~500bp average read length): >10B total reads in 4 hours of sequencing ^c	• WTS • Proteomics • Fragment-omics • Spatial • Panels • scRNA • DNA structural variants • Phasing • RNA isoforms
Maximum Run Time	• AXELIOS 1 Synthesis Instrument: 4 hours • AXELIOS 1 Sequencing Instrument: • 1-run: up to 5 hours^d • 4-runs (queued-run): up to 20 hours^d	
Average Base Accuracy	• Duplex: ≥Q38^e • Simplex: >Q20^f	

AXELIOS 1 platform dimensions

	AXELIOS 1 Synthesis Instrument	AXELIOS 1 Sequencing Instrument
Width	800 mm (31.5 in)	Sequencing Module: 904 mm (35.6 in) Analysis Module: 1,220 mm (48.0 in)
Height	820 mm (32.3 in) – hood closed 1,250 mm (49.2 in) – hood open	Sequencing Module: • 1,530 mm (60.2 in) – hood closed • 2,005 mm (78.3 in) – hood open Analysis Module: 720 mm (28.3 in)
Depth	680 mm (26.8 in)	Sequencing Module: 675 mm (24.8 in) Analysis Module: 780 mm (30.7 in)
Weight	108 kg (238.1 lb)	Sequencing Module: 95 kg (209.4 lb) Analysis Module: 237 kg (522.5 lb)

^a The AXELIOS 1 sequencing platform and sequencing by expansion (SBX) technology are in development and not commercially available. The content of this material reflects current research study results and/or design goals. The AXELIOS 1 sequencing platform based on SBX technology will be launched for Research Use Only. Not for use in diagnostic procedures. AXELIOS is a trademark of Roche.

^b SBX-duplex and SBX-simplex output from data presented at the Feb 23-26, 2026 Advances in Genome Biology and Technology (AGBT). Utilized defined parameters generated on a prototype platform. Data on file.

^c The technology is capable of generating longer reads of up to ~1500bp (with a distribution from ~200bp to ~1500 bp) under appropriate sample and library prep conditions.

^d Includes run setup and sequencing time. Up to 4 runs can be queued on the sequencing instrument.

^e Using only concordant duplex bases, GIAB v4.2.1 high confidence regions. Based on internal data.

^f Read accuracy taken from ESHG (2025) presentation data.