Synexus

with *Pixel HD technology*

Technical Specifications

Synexus™ combines label-free MEA, HD-MEA, and Electrical Imaging for the ultimate multimodal live-cell platform. Integrated environmental control supports stable benchtop experiments across neural, cardiac, and advanced 3D cell models.



System Specifications	
Modes	Standard: MEA, Impedance Pixel HD: HD-MEA, Electrical Imaging
Throughput (well format)	MEA: 6, 12*, 24, 48*, 96* Imp: 96, 384* Pixel HD: 24, 96* (future 384*)
Automation API	Available
Environmental chamber	0–10% CO_2 (±0.1%); ambient +7°C to 46°C (±0.1°C)
Experiment management	Automatic barcode-based plate tracking
Acquisition	All wells recorded simultaneously
Data resolution	12 bit
Sampling rate	12.5 kHz
System bandwidth	0.01 Hz–5 kHz
Stimulation	Electrical, unlimited electrodes Optical (Lumos)
System dimensions	280 × 452 × 225 mm (W × D × H)
Weight	30.6 lb
Power	100–240 VAC; 8–4 A; 50–60 Hz
Networking	Ethernet, 1 Gb/s
Device storage	1 TB

**Synexus Pro required*

Capabilities

- **Multiwell MEA**
  Neural and cardiac network activity across 6- to 96-well formats
- **High definition & throughput**
  HD-MEA in up to 96-well format
- **Designed for 3D**
  Flexible 3DMap MEAs optimized for organoids
- **Impedance + Electrical Imaging**
  Automated, label-free impedance measurements across all wells

Learn more about Synexus

Synexus Plate Specifications

Scalable formats for multiwell network electrophysiology, 3D organoids, and high-density measurement.

	Pixel HD™ Plates	3DMap™ MEA Plates	CytoView™ MEA Plates
Description	CMOS electrode architecture for dense spatial sampling.	Flexible electrodes designed to conform to 3D organoid surfaces.	Transparent microelectrode array plates for cell visualization and assay multiplexing.
Well formats	24, 96*	1, 12, 24*	6, 12*, 24, 48*, 96*
Multimodal electrodes per well	138,240	32-64	8-64
Simultaneous ephys electrodes per well	Configurable 144 - 576	32-64	8-64
Electrode material	PEDOT	PEDOT	PEDOT
Electrode diameter	5 µm	50 µm	50 µm
Electrode pitch	12.5 µm	350 µm**	300 - 350 µm
Active sensing area	21.6 mm^2	5.9 - 8.4 mm^2	1.2 - 4.4 mm^2

**Synexus Pro required*
***Pitch will change as electrodes flex*

Synexus Software Modules

Neural

Measure neural activity, synchrony, and oscillation to characterize network function.

Cardiac

Measure action potentials, field potentials, propagation, and contractility in real time.

Impedance

Track cell proliferation, morphology, and viability with label-free, real-time measurements.

Pixel HD

Explore HD-MEA and electrical imaging to connect cellular activity with spatial detail.

MEA Viability

Measure cell viability and coverage on MEA plates alongside functional activity.

MEA Automation

Connect neural and cardiac MEA assays with liquid handling platforms.

GxP Impedance

Support regulated impedance workflows with software designed for GMP/GLP laboratories.

Impedance Automation

Connect impedance assays with liquid handling platforms through an API.