Gemini X2 Twin Wave Electroporator

The Gemini X2 and X2 HT Twin Wave Electroporators represent highly versatile systems that seamlessly integrate both square wave and exponential decay wave electroporation capabilities within a single unit. Notably, prokaryotic cells exhibit optimal responsiveness to exponential decay wave pulses, whereas eukaryotic cells demonstrate enhanced transfection efficiency with square wave pulses. The unique feature of combining these two distinct waveforms empowers researchers with unparalleled flexibility, enabling them to tailor their approach to achieve maximum efficiency for diverse applications.

Square Wave Pulse switching is also available via an optional plug-in accessory. This allows users to create and run protocols containing groups of square wave pulses with different polarity, pulse number, pulse length, and pulse interval characteristics.

Gemini X2 and Gemini X2 HT

The Gemini X2 system offers unparalleled experimental flexibility, providing a singular and straightforward setup for transfections in cuvettes, high-throughput plates, or the capability to utilize a wide variety of BTX specialty electrodes for specific applications. In addition, Gemini's electrical output specifications are wide-ranging, making it the most versatile electroporation system available today.

Key Features

- Square wave and exponential decay wave electroporation in a one unit
- Large, easy-to-use touch screen interface
- Universal electroporation – transfects cells *in vitro*, *in vivo* and *in ovo*
- Preset protocols for the most common eukaryotic and prokaryotic cell types and the ability to add and modify protocols
- Safety – displays resistance measurements for each pulse with three layers of arc protection

Applications

- Transfection of eukaryotic cells and transformation of prokaryotic cells
- CRISPR/Cas9 transfections
- Suspension cells and adherent cells
- *In vivo*, *in ovo*, and *in utero* gene and drug delivery
- Tissue explants

Specifications

	Gemini X2
Voltage Range	LV Mode: 5 to 500 V in 1 V steps HV Mode: 505 to 3000 in 5 V steps
Capacitance (Exponential Decay Wave)	LV Mode: 25 to 3275 µF in 25 µF steps HV Mode: 10, 25, 35, 50, 60, 75, 85 µF
Resistance (Exponential Decay Wave)	All Modes: 50 to 1000 Ω in 50 Ω steps
Time Constant Range	LV Mode: 1 ms to 5.158 s HV Mode: 0.5 ms to 133.875 ms
Pulse Length Range (Square Wave)	LV Mode: 10 µs to 999 µs in 1 µs steps LV Mode: 1 ms to 999 ms in 1 ms steps HV Mode: 10 µs to 600 µs in 1 µs steps
Operational Status	Internal self-test upon start-up
Interface	7 in. color touchscreen
Input	100 to 240 VAC
Charge Time	LV mode <7 s, HV mode <4 s
Programmability	Store over 1000 protocols
Safety	Pre-pulse sample resistance check, pulse over current protection, instrument arc control
Dimensions (H x W x D)	12.75 x 11.25 x 8.5 in.
Weight	~16 lb

Ordering Info

Item No.	Description	Included Items
45-2040	Gemini X2 Electroporation Generator System	Gemini X2 Generator, Safety Dome, Cuvettes 1 mm, 2 mm, 4 mm, pkg. 30 (10 each), and Cuvette Rack 660
45-2041	Gemini X2 Electroporation Generator Only	Gemini X2 Electroporation Generator Only
45-2044	Gemini X2 High Throughput System, 96-well with HT-200	Gemini X2 Generator, Safety Dome, Cuvettes 1 mm, 2 mm, 4 mm, pkg. of 30 (10 each), and Cuvette Rack 660, HT-200 Plate Handler, 2 mm gap HT plate, and 4 mm gap HT plate
45-2062	Gemini X2 Pulse Switcher System	Gemini X2 Electroporation Generator Only
45-0671	Gemini X2 IQ/OQ Document and Kit	
45-0672	Gemini X2 OQ Document and Kit	

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