

SONIDEL SP100 Summary of technical specifications:

	<h2>SONIDEL SP100</h2> <p>Sonoporation Platform</p>
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Applications: **In Vitro and In Vivo**

- Optimised for applications relating to transient and reversible cell membrane ‘poration’
- Custom-manufactured for applications such as non-invasive ultrasound-mediated gene or nucleic acid (oligonucleotide) transfer into target cells/tissues



Features:

- **Output Frequency**
Output frequency is fixed at precisely 1 MHz for optimised and reproducible penetration of ultrasound through tissue culture vessels and tissue-based targets.
- **Ultrasound Power/Density Options**
Ultrasound power density/intensity options between 0 and 5 W/cm² with adjustments of 0.1 W/cm².
- **Duty Cycle Range**
A wide range of duty cycles ranging from 5 – 100% in 5% increments and emitting at a pulse frequency of 100 Hz.
- **Automated Treatment Control Time**
Automated control of treatment time that may be adjusted in seconds up to a treatment time of 90 seconds and thereafter in minutes up to a treatment time of 60 minutes.
- **Water-sealed Ultrasound head**
The ultrasound head is water-sealed and compatible with operational immersion in liquid.

- **Pre-programmed Treatment Parameters**
Supplied with 10 Operating Programs, 5 of which are pre-programmed to the appropriate treatment parameters to achieve optimal ultrasound-mediated transfection with the SONIDEL STK[®] 10 Positive Control Transfection Kit. The other 5 programs may be adjusted to the specific conditions chosen by the operator.
- **Ultrasound Dosage Feedback Control**
The ultrasound head is equipped with a feedback control that automatically switches off the timer if contact with the target and transmission of ultrasound to the target is compromised. In this case the timer countdown mechanism will cease at the precise time contact was compromised and an audible alarm will sound.
- **Custom Features Available**
Custom features may be supplied on demand.

Specifications:

Frequency:	Continuous and pulsed ultrasound at an optimally pre-set precise frequency of 1 MHz.
Display:	Intensity in W/cm ² (SATP*)
Contact control threshold:	65 %

Treatment time display and control buttons:	0 – 90 seconds and then switches to minutes (2-60), coupled to contact control. For enhanced operator control and feedback, the time display will stop counting down if adequate acoustic ultrasound contact with the target is compromised. This allows the operator to identify the precise time to which the target was exposed to ultrasound in the event of a failure in contact between the ultrasound head and the target
Ultrasound, continuous: Pulse frequency / duty cycle Power density/intensity (Output)	100 Hz / 100 % 0 - 5 W/cm ² , adjustable in 0.1 Wcm ² increments
Ultrasound, pulsed: Pulse frequency / duty cycle Power density/intensity (Output)	100 Hz / 5-100 % in 5% increments 0 - 5 W/cm ² , adjustable in 0.1 Wcm ² increments
Treatment head: 1 MHz, Standard	Geometric surface 2 cm ² , ERA** 1.5 cm ² , BNR*** max. 6 type collimating, side panel radiation max. 10 mW/cm ²
Mains adapter: Model number Mains voltage Frequency Max, Power consumption	ENB-1530 100 - 240 Volt 50/60 Hz 40 VA
Safety class:	*II according to IEC 60601-1
Dimensions:	220 x 200 x 195 mm
Weight:	1.7 kg
CE marking:	****
Safety standards:	IEC 60601-1 and IEC 60601-2-5
Environment conditions for Transport and Storage: Environment temperature Relative humidity Atmospheric pressure	-10° till +50° C 10 till 100 % 500 till 1060 hPa
Environment conditions normal use: Environment temperature Relative humidity Atmospheric pressure	10° till 40° C 10 till 90 % (non condensing) 500 till 1060 hPa
* ** *** *II ****	SATP = Spatial Average Temporal Peak (average pulse power) ERA = Effective Radiating Area, this is the effective radiating area of the treatment head BNR = Beam Nonuniformity Ratio, indicates the ratio between the peaks and the average value of the intensity in the sound beam. A low BNR excludes high, unwanted energy concentrations Safety class II (double insulated) According to European requirement 93/42 EEC