

^{Pulser} **HiPSTER 1**

A flexible HiPIMS pulser for the latest generation of coatings



HiPSTER 1 HiPIMS Pulser

Our HiPSTER HiPIMS units are designed by experts in the field with an excellent track record of plasma process development and thin film deposition in order to generate robust and repeatable HiPIMS processes.

With the new ultra-fast switching technology and extended HiPIMS pulse control the HiPSTER is a perfect tool when developing and running state-of-the-art HiPIMS processes. Also, upgrading your existing magnetron system to HiPIMS has never been easier. The HiPSTER can be directly connected either to an existing DC supply or to one of our tailor-made HiPSTER DC units.

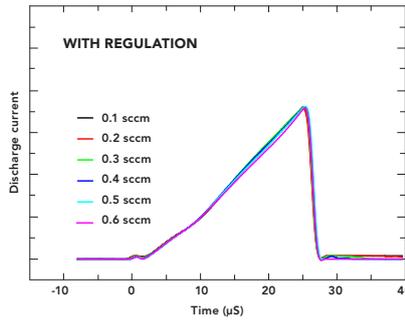
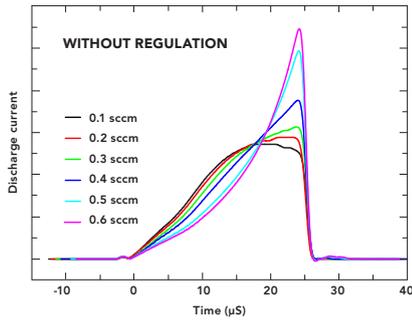
FEATURES

- Stable and robust discharge process (constant voltage and no unwanted oscillations)
- Can be triggered externally (multiple power supplies)
- New switching technology allowing HiPIMS pulsing frequencies up to 10 kHz
- Tested using a wide range of magnetrons and processes (incl. reactive HiPIMS)
- Real-time information on the discharge pulse voltage and current
- Add Ionautics' superposition technology for HiPIMS + DC

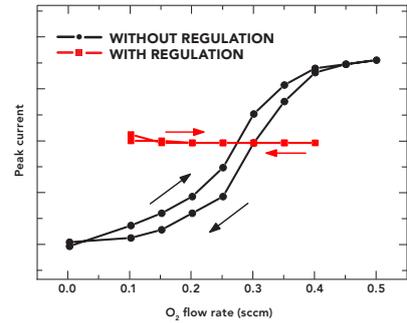
APPLICATIONS

- **Hard coatings:** Smoother and denser elemental as well as reactively deposited compound coatings, which result in increased hardness, reduced corrosion, and less friction
- **Optical coatings:** Increased optical properties through smoother interfaces and denser structures
- **Diffusion barriers:** Better performance through increased coating density
- **Electrical coatings:** Improved conductivity enabling reduced coating thickness and reduced heat load. Also increased isolation in the case of insulators can be obtained
- **3-D coatings:** Uniform film coverage on complex shaped substrates

HiPIMS pulse current vs reactive gas
▼ flow rate ▼



HiPIMS peak current vs reactive gas
flow rate ▼



Output Specifications

Output Average Power:	≤ 1000 W
Output Peak Voltage:	≤ 1000 V
Output Peak Current:	≤ 100 A
Regulation Modes:	Voltage, Current, Power, Pulse current
Pulse Frequency:	50 to 10 000 Hz*
Pulse Duration:	3.5 µs to 1000 µs
Arc control - reaction time:	< 2 µs

Input Specifications

Input Voltage AC:	1 phase + N, 100–240 VAC, 50/60 Hz
Input Current at 230 V:	0.3 A
DC Charging Input:	1000 V max, positive grounded
Trigger In:	Ground-Referenced 5V CMOS input

Dimensions

Size:	19" rack (3U) 135 mm (H) x 483 mm (W) x 390 mm (D)
Weight:	8,5 kg

* External triggering has an extended range;
contact Ionautics for more details.



Environmental Specifications

Operating Temperature:	+5°C to +40°C
Storage Temperature:	-25°C to +55°C
Relative Humidity:	max 85% non-condensing
Air Pressure:	80 kPa to 106 kPa
Cooling:	Air Cooling
Pollution degree:	2 (or better). Cooling air must normally be free of corrosive vapors and conductive particles.
Norms:	CE marked



DANIEL LUNDIN
Professor

Expert in the field of HiPIMS processes and magnetron sputtering with focus on deposition processes and process characterization.



ULF HELMERSSON
Professor

Expert in the field of physical vapor deposition, such as magnetron sputtering and HiPIMS processes with focus on material science.



RAFAEL SANCHEZ
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In charge of sales and marketing worldwide. 10 years of experience in thin film deposition using magnetron sputtering.

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