

# A flexible HiPIMS pulser for the latest generation of coatings



## HiPSTER 6 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.*

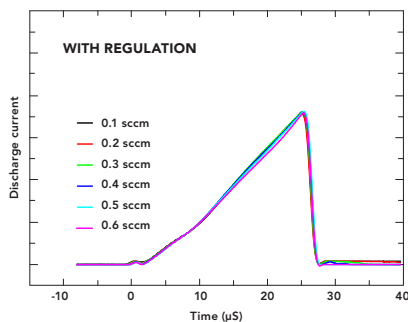
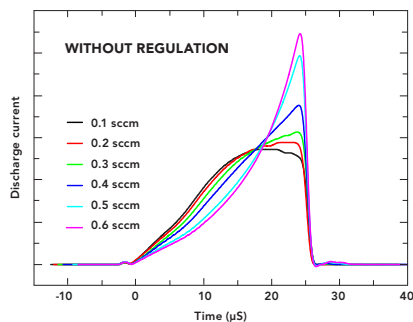
### FEATURES

- 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

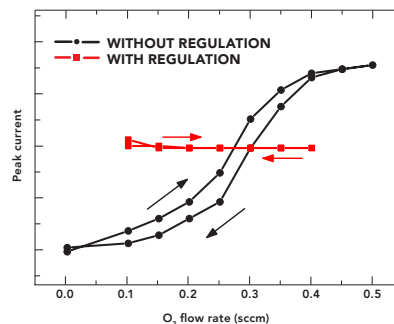
### APPLICATIONS

- **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:	≤ 6000 W
Output Peak Voltage:	≤ 1000 V
Output Peak Current:	≤ 600 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, fully floating +/- kV from ground
Trigger In:	Ground-Referenced 5V CMOS input

## Dimensions

Size:	19" rack (3U) 135 mm (H) x 483 mm (W) x 390 mm (D)
Weight:	16 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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**CONTACT >>>>**

Um pulsador HiPIMS flexível para a mais recente geração de revestimentos

Processo de descarga estável e robusto (tensão constante e sem oscilações indesejadas)

Pode ser acionado externamente (múltiplas fontes)

Nova tecnologia de comutação permitindo frequências de até 10 kHz

Testado com ampla variedade de magnetrons e processos (incluindo HiPIMS reativo)

Informações em tempo real de tensão e corrente do pulso

Compatível com tecnologia de superposição HiPIMS + DC

As unidades HiPSTER foram projetadas por especialistas para garantir processos robustos e reprodutíveis de deposição de filmes finos.

Aplicações:

- Revestimentos duros: maior dureza, menor corrosão e atrito
- Revestimentos ópticos: melhores propriedades ópticas
- Barreiras de difusão: melhor desempenho
- Revestimentos elétricos: maior condutividade
- Revestimentos 3D: cobertura uniforme

Especificações principais (HiPSTER 6):

Potência média: até 6000 W

Tensão de pico: até 1000 V

Corrente de pico: até 600 A

Frequência: 50 a 10.000 Hz

Duração de pulso: 3,5 a 1000  $\mu$ s

Alimentação:

100-240 VAC, 50/60 Hz

Dimensões:

Rack 19", 135 x 483 x 390 mm

Peso: 16 kg

Condições ambientais:

Temperatura: +5°C a +40°C

Umidade: até 85%

Resfriamento a ar