Lighting the Future

2025

# HiPulse

## 110M - SERIES



Distributor


APEL
lighting the future

UK Distributor
Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro

Lighting the Future

# PRODUCT LINE DEVELOPMENT TIMELINE


## 2025

### Final Production Line: HiPulse 110M Series

Completion of the HiPulse Series — a fully developed, high-performance HiPiMS power generator ready for real-world research and industrial applications.
This milestone marks our transition from concept to a commercial-grade solution for advanced magnetron sputtering systems.

## 2023

### First Demo Release: HiPStar S & HiPStar M

Launched our first prototype systems for laboratory evaluation. The HiPStar series demonstrated exceptional arc stability and precise pulse control, setting the foundation for next-generation HiPiMS power delivery technology.

## 2021

### Product Development & Research

Initiated the HiPiMS pulse generator concept through intensive R&D in high-voltage fast discharge systems.
Our engineering team focused on designing a reliable and flexible platform to meet the demanding requirements of advanced thin-film deposition research.

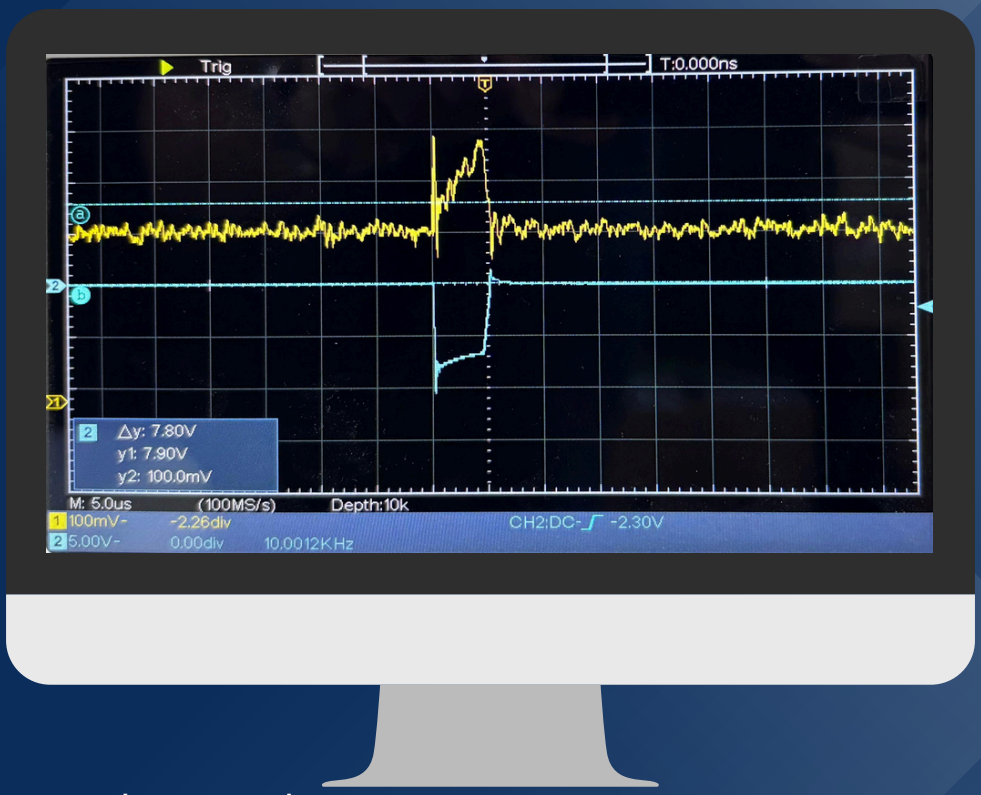
APEL
lighting the future

UK Distributor
Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro

Lighting the Future

# PULSE WAVEFORMS




Blue: Voltage
Yellow: Current (50 mV / 1 A)

Typical HiPiMS voltage and current waveforms generated by the HiPulse 110M system. Adjustable pulse duration from 2 µs up to DC operation enables precise plasma control.

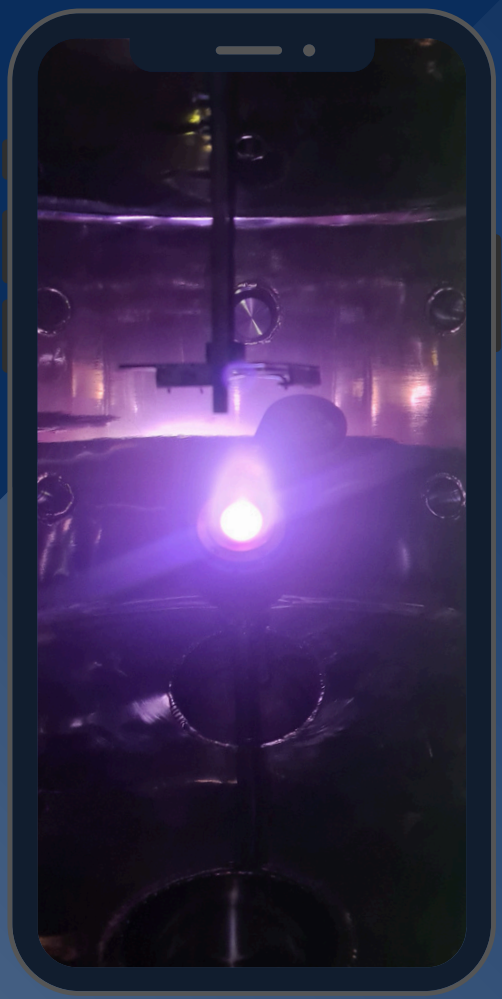
The HiPulse 110M generator delivers stable, repeatable, and fully adjustable pulse waveforms. The system allows independent control of voltage, current, and pulse duration, ensuring accurate modulation of plasma dynamics during magnetron sputtering.

APEL
lighting the future

UK Distributor
Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro

Lighting the Future



# PLASMA DISCHARGES WITH COPPER AND TITANIUM

Top: Copper target
Bottom: Titanium target

Distinct plasma color and emission intensity profiles illustrate the material-dependent ionization efficiency. The HiPulse modulation system ensures stable discharge conditions, minimizing arcing and improving film uniformity.

HiPIMS discharge – Cu target (Ø 1″)

HiPIMS discharge – Ti target (Ø 1″)

Lighting the Future


# GENERAL FEATURES

## HiPulse Series

### Available only with compatible DC power supply

The HiPulse generator operates in conjunction with a stable DC source, providing full modulation control for HiPiMS processes.

### Adjustable voltage (⩽ 1200 V)

Allows precise tuning of discharge parameters for different materials and target configurations.

### Customizable pulse duration (2 µs - DC)

Flexible pulse width control enables research across a wide range of deposition regimes, from short pulses to continuous operation.

### Active arc control

Integrated arc suppression ensures stable operation even at high peak currents and challenging plasma conditions.

### Touchscreen user interface

An intuitive control panel provides real-time monitoring of voltage, current, and frequency parameters.

APEL
lighting the future

UK Distributor
Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro

Lighting the Future

# TECHNICAL SPECIFICATIONS

## HiPulse 110M

| Electrical Input | |
|---|---|
| **Parameter** | **Value** |
| Power supply | 230 V ±10%, 50 Hz |
| Input power (DC) | 1 W – 600 W |
| Input voltage (DC) | 50 V – 1200 V |
| Input current (DC) | 1 mA – 1000 mA (max.) |

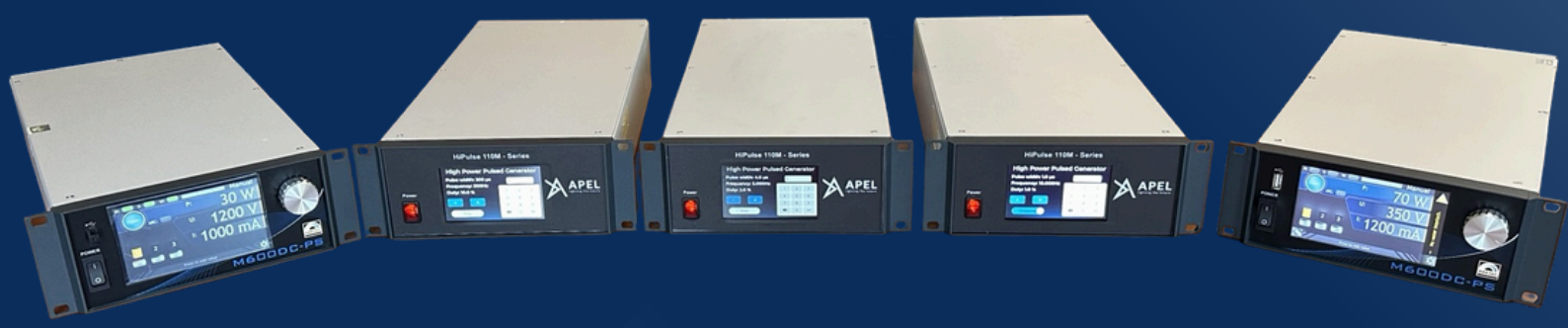
| Pulse Output | |
|---|---|
| **Parameter** | **Value** |
| Peak output power | 14 kW |
| Output voltage (pulse) | Adjustable –50 V to –1200 V |
| Output current (pulse) | 12 A (max.) |
| Pulse duration | ≥ 2 µs |
| Operating frequency | 100 Hz – 10 kHz |

APEL lighting the future

UK Distributor

Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro



## Interface & Monitoring

| Parameter | Value |
|---|---|
| User interface | Touchscreen |
| Voltage monitor output | BNC |
| Current monitor output | BNC |

## Physical Characteristics

| Parameter | Value |
|---|---|
| Weight | < 9 kg |
| Cooling | Air-cooled |

## Electrical Input

| Parameter | Value |
|---|---|
| Operating temperature | +5 °C to +40 °C |
| Storage temperature | –25 °C to +55 °C |
| Relative humidity | Max. 85%, non-condensing |
| Compliance | CE Marking |

APEL
lighting the future

UK Distributor
Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro

Lighting the Future

# REPRESENTATIVE IMAGES



APEL
lighting the future

UK Distributor
Mounted LEDs Ltd
www.mountedleds.com
enquiry@mountedleds.com

+ 40 213 17 09 10
www.apellaser.ro
office@apellaser.ro