

PRODUCT
CATALOG

Power Supplies
for Plasma & Industrial Process

DC Power Supplies for Plasma & Industrial Process

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- | DC & PULSE Sputtering
- | Cleaning & Bias
- | Scrubber
- | Arc Ion Plating
- | Ion Beam
- | Atmospheric Pressure Plasma
- | Programmable DC

EN TECHNOLOGIES
Vol.01



With solid and proven product portfolio,
EN Technologies Inc.
offers market-leading
power generation solutions and services
for various applications

We are the preferred provider of power supplies across Asia.
With our accumulated experiences in extensive local applications and engineering
support, we strive to fulfill our customers' needs with robust, reliable, and
specialized products and services

Delivery Record for Mass Production

Atmospheric Plasma Treatment

Power Supplies for Surface Pretreatment

2025	Gas Abatement Power Supplies for Scrubber Systems	SAMSUNG
2023	OLED Heating Power Supplies for Evaporation	SAMSUNG DISPLAY
2018	OLED Heating Power Supplies for Evaporation	LG Display
2015	Bipolar Pulse Power Supplies for PECVD Process	Hanwha QCELLS SAMSUNG
2010	Started supplying mass production or DC & Pulse Power supplies	SAMSUNG DISPLAY LG Display Japan Display Inc. SHARP etc.

Applications

01 TOP GLASS

- AR (Anti-Reflection)
- AF (Anti-Fingerprint)
- Surface Treatment
- DC : EnerStream
- Pulsed DC : EnerPulse
- ETC : Genius, Forte I-302

02 TOUCH PANEL

- ITO & Metal Sputter
- Reactive Sputter
- Pulsed DC : EnerPulse
- DC : EnerStream
- Bipolar Pulsed DC
- : EnerPulse Duo

03 OLED, TFT-LCD, Oxide TFT

- ITO & Metal Sputter
- Organic & Metal Heating
- Pulsed DC : EnerPulse
- DC : EnerStream
- DC for OLED Heating
- : EnerFlex, Neos

04 CASE

- EMI Coating
- Multi Coating for color
- Pulsed DC : EnerPulse
- DC : EnerStream
- Bipolar Pulsed DC
- : EnerPulse Duo



OLED, Flexible Touch Panel, Optical Lens, ITO Glass, Automotive Wheels & Headlamps, DLC Coating Parts, TiN Coating, CIGS Solar Cell

01



Excellent Arc Control System

Arc Energy Less than 0.2mJ/kW To minimize arc effect, EN Technologies' arc suppression technology applies reverse voltage within 200ns and drops current value to 0 within 2.5μs at arcing to enable users to create thin film and yield.

02



High Performance

Apply Stable Topology with Drooping Characteristics Generate stable plasma at ignition. Allow fast detection and stable output control at arcing. Enable users to control constant power, constant current, and constant voltage.

03



Wide Operating Range

Extended Operating Capability Wide range of operating power curve is applied to high voltage and high current.

04



Interface

User-friendly Interface Various interfaces such as Analog/Digital input/output, RS-232/485, Fieldbus, Profibus, EtherNet, and EtherCat allow users to integrate systems easily.

05



Parallel Operation

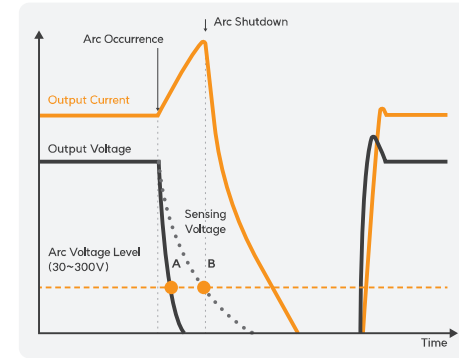
High-capacity
Maximum of 12 units (1 Master+11 Slave) can operate in parallel.

06

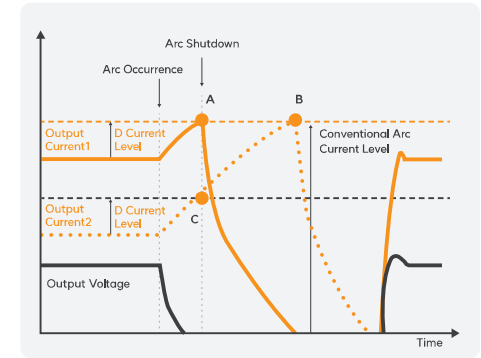


Worldwide Sales & Service Support

24-hour Customer Service
We can immediately assist our customers with optimized solutions
24 hours a day, 7 days a week.



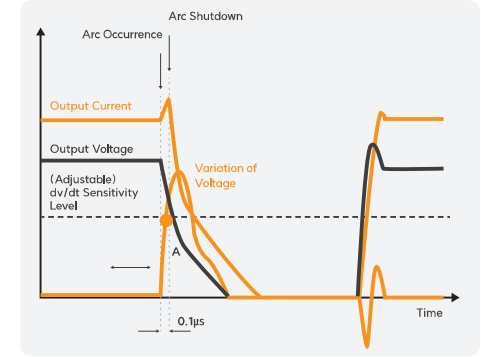
Voltage Arc Suppression



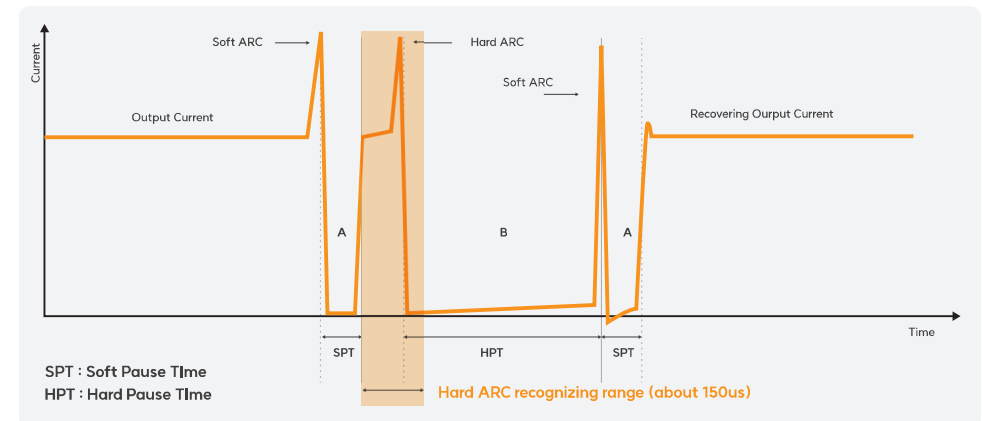
Current Arc Suppression

Less than 0.2mJ/kW arc energy is obtained to minimize the damages caused by arc during sputtering process.

- Adopt topology to minimize the capacitance and inductance of internal energy storage
- Apply reverse voltage within 200ns at arcing
- Current value drops to 0 within 2.5μs
- Stable absorption the inductance energy of output cable



dv/dt Arc Suppression



DC Power Supplies for Magnetron Sputter

EnerStream Series



EnerStream 60

Applications

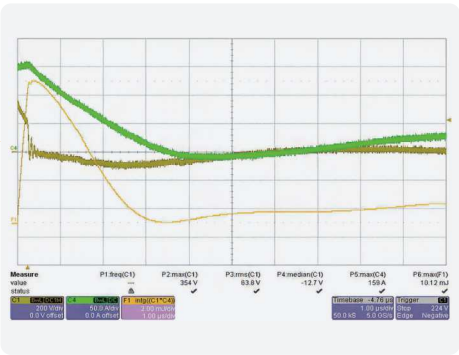
- Semiconductor wafer sputtering
- TFT LCD
- OLED LTPS sputter metal & TCO deposition
- Thin film for solar cells
- Mobile phone cases
- ITO deposition for touch panels
- Automotive wheels and headlamps
- Ion nitriding
- BIPV, data storage, FCCL

Parallel Operation

- Maximum parallel operation of 12EA (Master 1EA + Slave 11EA)
- Maximum output of 480kW (EnerStream 60: maximum parallel operation of 8EA)

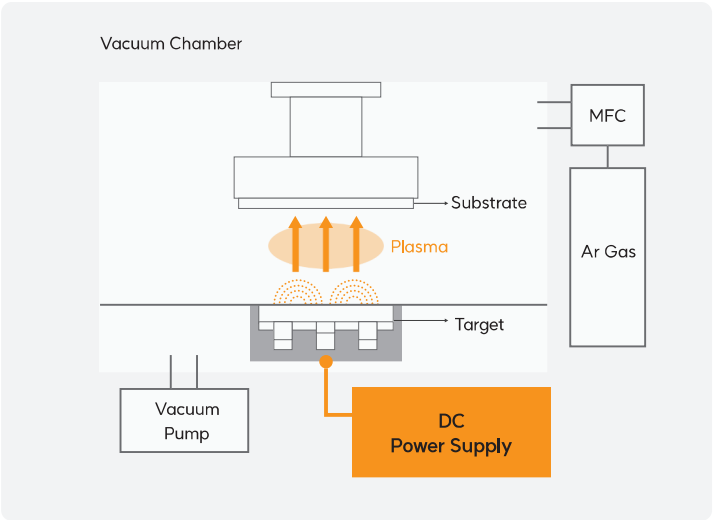


EnerStream 60 generates Arc energy less than 0.2mJ/kW



Arc Energy Measurement under 60 kW Output Conditions : $10.12\text{mJ}/60\text{kW} = 0.17\text{mJ}/\text{kW} < 0.2\text{mJ}/\text{kW}$

Magnetron Sputter



Product Series : EnerStream

Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
EnerStream 5	1500V	208V, 220V, 380V, 3Ph 50/60Hz	5kW, 400V@12.5A, 800V@6.25A	0.5mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air
EnerStream 10	1500V	208V, 220V, 380V, 3Ph 50/60Hz	10kW, 400V@25A, 800V@12.5A	0.5mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air
EnerStream 12	1500V	208V, 3Ph 50/60Hz	12kW, 400V@30A, 800V@15A	0.5mJ/kW	177H(4U), 483W, 503D	24.5	Forced Air
EnerStream 20	1500V	220V, 380V, 3Ph 50/60Hz	20kW, 400V@50A, 800V@25A	0.5mJ/kW	133H(3U), 483W, 605D	30.5	Forced Air
EnerStream 30	1500V	380V, 440V, 3Ph 50/60Hz	30kW, 400V@75A, 800V@37.5A	0.5mJ/kW	177H(4U), 483W, 655D	38.8	Forced Air
EnerStream 30B	1500V	380V, 3Ph 50/60Hz	30kW, 500V@60A, 1000V@30A	0.5mJ/kW	177H(4U), 483W, 655D	38.8	Forced Air
EnerStream 30H	1500V	440V, 3Ph 50/60Hz	30kW, 545V@55A, 1200V@25A	0.5mJ/kW	177H(4U), 483W, 655D	38.8	Forced Air
EnerStream 60	1500V	440V, 3Ph 50/60Hz	60kW, 400V@150A, 900V@66.6A	0.2mJ/kW	309H(7U), 483W, 783D	80	Forced Air

Pulsed DC Power Supplies for Single Magnetron Sputtering

> EnerPulse Series

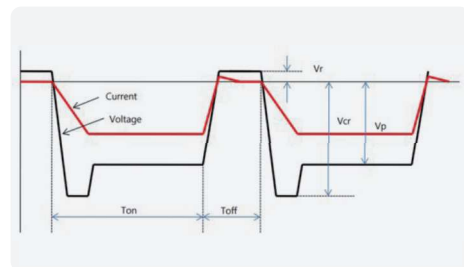


Applications

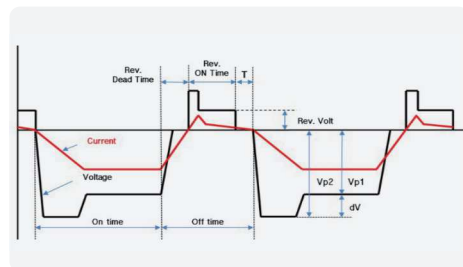
- Semiconductor wafer sputtering
- Oxide TFT LCD & Color filter
- OLED LTPS sputter metal & TCO deposition
- Thin film for solar cells
- Mobile phone cases
- ITO deposition for touch panels
- Automotive wheels and headlamps
- Ion nitriding
- BIPV, data storage, FCCL

EnerPulse N Additional Features

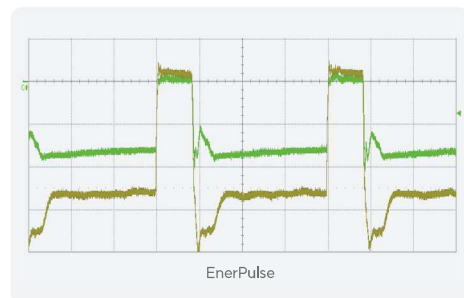
- Parallel Operation (up to 8 units)
- Adjustable Reverse Voltage Function (Reverse Voltage Level and Duration)



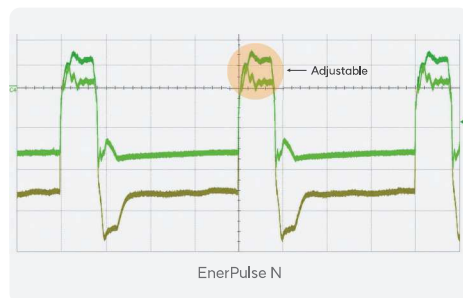
EnerPulse waveform



EnerPulse N waveform

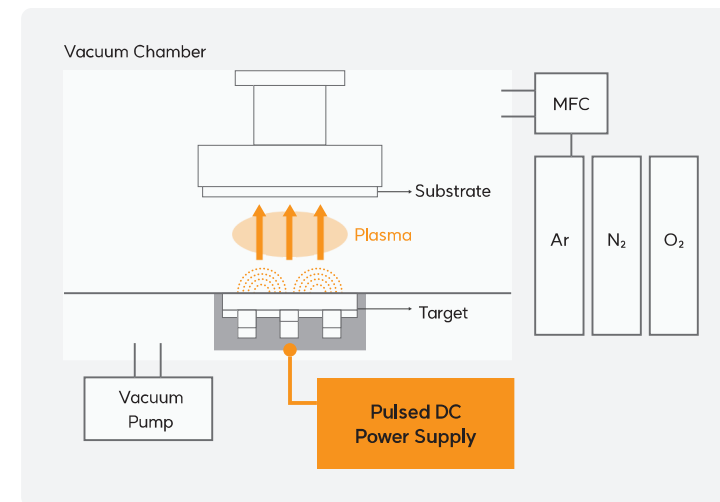


50kHz / Off_Time= 4us / Clamp_Voltage= 150V



50kHz / Off_Time= 4us / Clamp_Volt= 150V
Rev_Volt=100V / Rev_De_T= 0.5us / Rev_On_T= 3us

Magnetron Sputter



Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
EnerPulse 5	1500V	208V, 220V, 380V, 3Ph 50/60Hz	5kW, 400V@12.5A, 800V@6.25A, 20~150kHz, 1.0~10us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 10	1500V	208V, 220V, 380V, 3Ph 50/60Hz	10kW, 400V@12.5A, 800V@12.5A, 20~150kHz, 1.0~10us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 10LV	1500V	380V, 3Ph 50/60Hz	10kW, 300V@33.3A, 650V@15.4A, 20~150kHz, 1.0~10us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 20	1200V	220V, 3Ph 50/60Hz, 380V, 440V	20kW, 400V@50A, 650V@30A, 40~100kHz, 2.0~5us	1mJ/kW	177H(4U), 483W, 700D	40	Forced Air
EnerPulse 15N	1200V	208V, 3Ph 50/60Hz	15kW, 400V@37.5A, 1000V@15A, 20~150kHz, 50~300V(Rev V), 1.0~8us (Rev. On 0.0~7us)	0.5mJ/kW	223H(5U), 483W, 703D	48	Forced Air
EnerPulse 20N	1200V	220V, 3Ph 50/60Hz	20kW, 400V@50A, 1000V@20A, 20~150kHz, 50~300V(Rev V), 1.0~8us (Rev. On 0.0~7us)	0.5mJ/kW	223H(5U), 483W, 703D	48	Forced Air
EnerPulse 30N	1200V	208V, 3Ph 50/60Hz, 440V	30kW, 400V@75A, 900V@33A, 20~150kHz, 50~300V(Rev V), 1.0~8us (Rev. On 0.0~7us)	0.5mJ/kW	309H(7U), 483W, 752D	83	Forced Air
EnerPulse 5HV	1400V	220V, 380V, 3Ph 50/60Hz	5kW, 770V@6.5A, 1400V@3.57A, 30~80kHz, 1.5~7us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 10HV	1400V	220V, 380V, 3Ph 50/60Hz	10kW, 700V@13A, 1400V@7.14A, 30~80kHz, 1.5~7us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air

**Bipolar Pulsed DC Power Supplies
for Dual Magnetron Sputtering & PECVD**

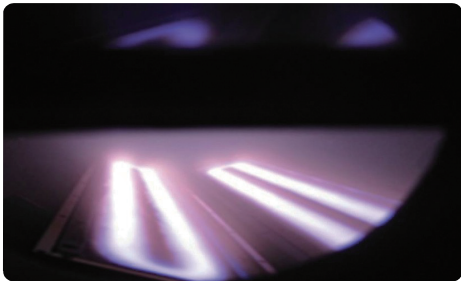
EnerPulse Duo Series



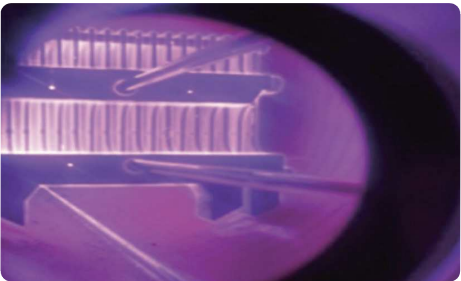
EnerPulse 30 Duo

Applications

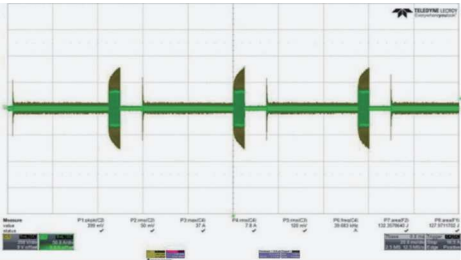
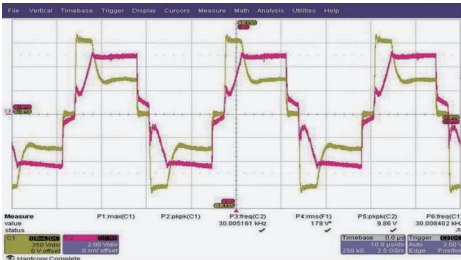
- Semiconductor wafer sputtering
- Oxide TFT LCD & Color filter
- OLED LTPS sputter metal & TCO deposition
- Thin film for solar cells
- Mobile phone cases
- ITO deposition for touch panels
- Automotive wheels and headlamps
- Ion nitriding
- BIPV, data storage, FCCL



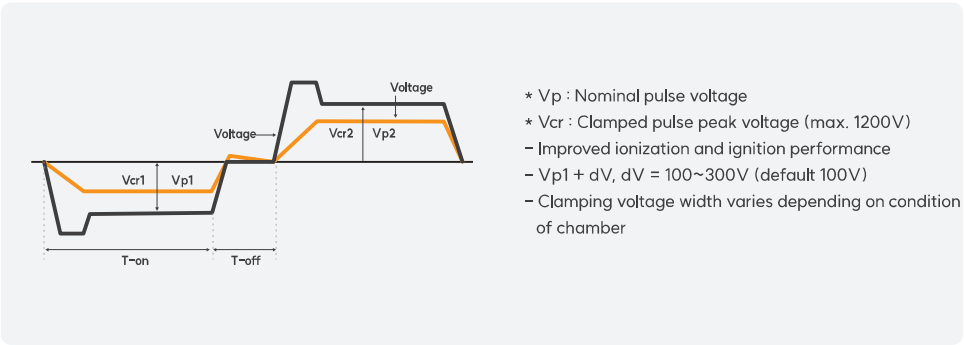
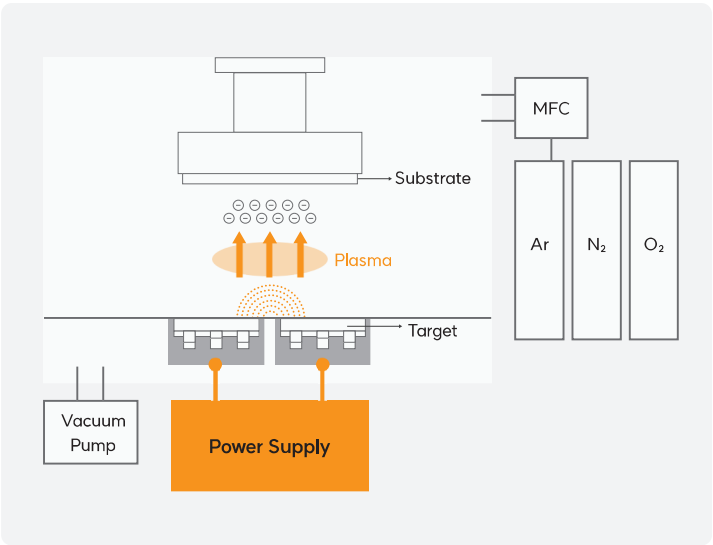
Dual Magnetron Sputter



PECVD



**Dual Magnetron
Sputter**



Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
EnerPulse 5 DUO	1500V	380V, 3Ph 50/60Hz	5kW, 400V@12.5A, 800V@6.25A, 20~50kHz, 0.5~10us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 10 DUO	1500V	380V, 3Ph 50/60Hz	10kW, 400V@25A, 800V@12.5A, 20~50kHz, 0.5~10us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 20 DUO	1000V	440V, 3Ph 50/60Hz	20kW, 400V@50A, 600V@33.3A, 20~40kHz, 0.5~2us	1mJ/kW	177H(4U), 483W, 700D	40	Forced Air
EnerPulse 30 DUO	1000V	440V, 3Ph 50/60Hz	30kW, 400V@75A, 1000V@30A, 20~40kHz, 0.5~2us	0.5mJ/kW	309H(7U), 483W, 850D	73	Forced Air

■ Pulsed DC Modulators for DC Power Upgrade

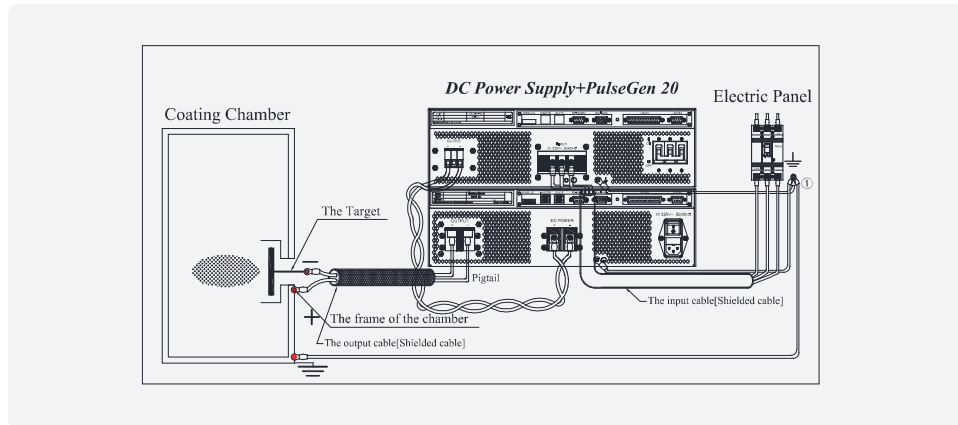
> PulseGen Series



PulseGen Series is a pulse modulator that converts the output of an external DC power supply into a controlled pulsed output through high-speed switching.

PulseGen Series is not a standalone DC power supply and requires an external DC source for operation. It is an effective upgrade solution for customers who want to implement pulsed processes or add pulse operation capability while utilizing their existing DC power systems.

- External DC Power Source Required



Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
PulseGen 20	1500V	220V(Plug type), 1Ph 50/60Hz	20kW, 400V@50A, 800V@25A, 40~100kHz, 1.0~5us	1mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air
PulseGen 30	1500V	220V(Plug type), 1Ph 50/60Hz	30kW, 400V@75A, 800V@37.5A, 40~100kHz, 1.0~5us	1mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air
PulseGen 40	1500V	220V(Plug type), 1Ph 50/60Hz	40kW, 400V@100A, 800V@50A, 40~80kHz, 1.0~5us	1mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air

- Seamless Compatibility with EnerStream Series

■ Dual Pulsed DC Modulators for DC Power Upgrade

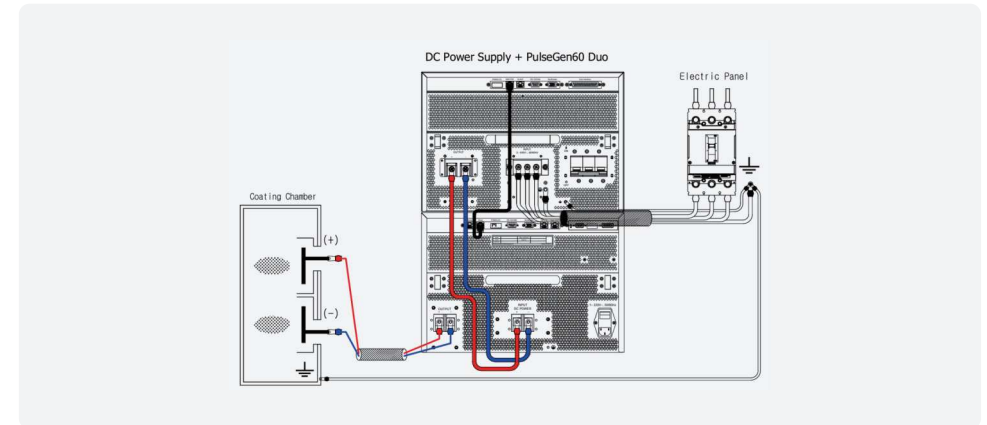
> PulseGen Duo Series



PulseGen Duo Series is a dual pulse modulator that converts the output of an external DC power supply into a precisely controlled bipolar pulsed output for dual-magnetron operation through high-speed switching.

PulseGen Duo Series is not a standalone power supply and requires an external DC source for operation. It provides an effective power upgrade solution when converting an existing single-magnetron system into a dual-magnetron system, allowing customers to utilize their existing DC power supply while implementing Dual Pulsed DC operation.

- External DC Power Source Required



Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
PulseGen 20 DUO	1200V	220V(Plug type), 1Ph 50/60Hz	20kW, 400V@50A, 800V@25A, 20~40kHz, 0.5~3us	3mJ/kW	177H(4U), 483W, 605D	32	Forced Air
PulseGen 30 DUO	1200V	220V(Plug type), 1Ph 50/60Hz	30kW, 400V@75A, 800V@37.5A, 20~40kHz, 0.5~3us	3mJ/kW	177H(4U), 483W, 605D	32	Forced Air
PulseGen 60 DUO	1450V	220V(Plug type), 1Ph 50/60Hz	60kW, 500V@120A, 1000V@60A, 20~100kHz, 0.5~3us	0.5mJ/kW	309H(7U), 483W, 751D	80	Forced Air

- Compatibility with third-party DC power supplies may be limited depending on the model and specifications: prior verification is required.

■ DC Power Supply for Arc Ion Plating

> ArcWorks 200

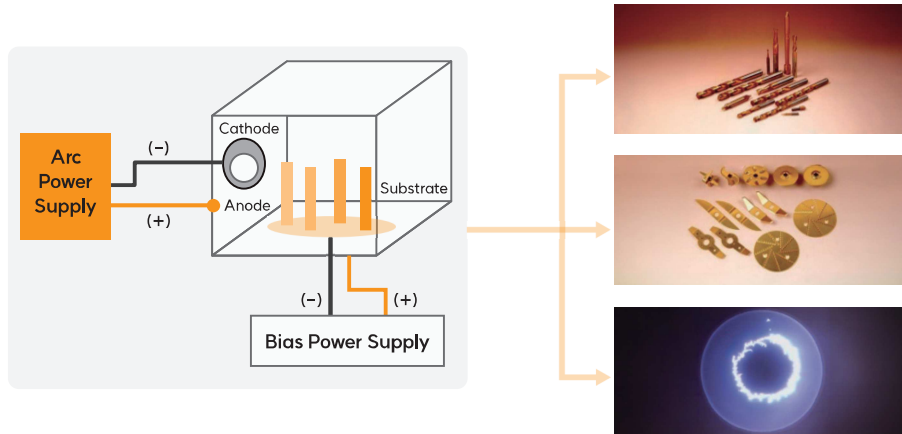


Applications

- Coating for tools and molds
- DLC coating
- Automotive and decorative parts
- Metal mobile phone cases

Advantages

- High speed control of current using DSP Technology
- Built-in auto trigger circuit
- Protect target by preventing abnormal discharge with low voltage detection circuit
- Enhance durability by preventing the accumulation of dust / particles
- Easy to install with compact design and high power density
- Reduced noise with built-in EMI filter
- Self-diagnosis (protection, limit)



Model	Trigger V	Input	Output	Size(mm)	Weight (kg)	Cooling
ArcWorks 200	130V	220V, 380V, 3Ph 50/60Hz	10kW, 50V@200A, 1~50Hz (Duty: 1~90%)	177H(4U), 260W, 610D	17	Forced Air

■ DC & Pulse Power Supplies for Ion Cleaning & Bias

> Hercules / EnerPulse BHV

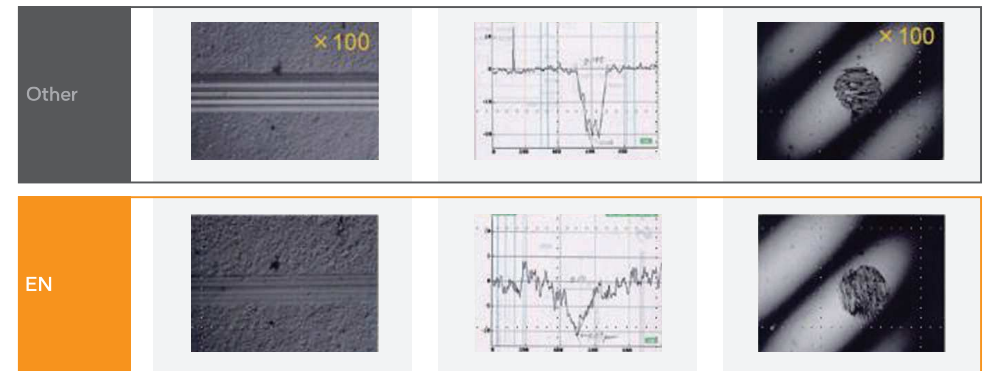


Applications

- Cleaning & Biasing
- Surface treatment

Enhanced Process Control

- Wide operating range
- Enhanced low voltage arc control



Product Series : Hercules

Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
Hercules 10	-	208V, 380V, 3Ph 50/60Hz	10kW, 300V@33.3A, 1200V@8.3A	0.5mJ/kW	133H(3U), 483W, 605D	23.5	Forced Air
Hercules 20	-	208V, 220V, 380V, 3Ph 50/60Hz	20kW, 250V@80A, 1200V@16.7A	0.5mJ/kW	133H(3U), 483W, 605D	30.5	Forced Air
Hercules 20S	-	208V, 380V, 3Ph 50/60Hz	20kW, 400V@50A, 800V@25A	0.5mJ/kW	133H(3U), 483W, 605D	30.5	Forced Air

Product Series : EnerPulse BHV

Model	Ignition V	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
EnerPulse 5BHV	1500V	208V, 220V, 380V, 3Ph 50/60Hz	5kW, 770V@6.5A, 1400V@3.57A, 20~120kHz, 1.5~40us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air
EnerPulse 10BHV	1500V	208V, 220V, 380V, 3Ph 50/60Hz	10kW, 770V@13A, 1400V@7.14A, 20~120kHz, 1.5~40us	1mJ/kW	133H(3U), 483W, 605D	29.5	Forced Air

DC Power Supply for Ion Beam

> Forte I-302



Applications

- Surface treatment with closed drift ion source
- Ion Beam Assisted Deposition
- Direct Deposition (DLC, etc.)



Model	Input	Output	Arc Energy	Size(mm)	Weight (kg)	Cooling
Forte I-302(-)	220V, 380V, 3Ph 50/60Hz	5kW, 400V@12.5A, 800V@6.25A	0.5mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air
Forte I-302(+)	220V, 380V, 3Ph 50/60Hz	5kW, 400V@12.5A, 800V@6.25A	0.5mJ/kW	133H(3U), 483W, 605D	24.5	Forced Air

DC Power Supply for Plasma Scrubber

> ECOWorks 20



No-Load Ignition Voltage Waveform

Applications

- Dry Scrubber for Semiconductor and Display Manufacturing Processes
- Foreline Plasma Abatement System
- Exhaust Plasma Cleaner

Advantages

- High Efficiency (> 90%)
- Compact and Lightweight Design
- Power Vaccine Function (Voltage Sag Protection)
- High No-Load Voltage for Stable Discharge Maintenance

Model	Ignition V	Input	Output	Size(mm)	Weight (kg)	Cooling
ECOWorks 20	13kV	220V, 3Ph 50/60Hz	20kW, 333V/60A	223H(5U1/2), 219W, 680D	22	Forced Air

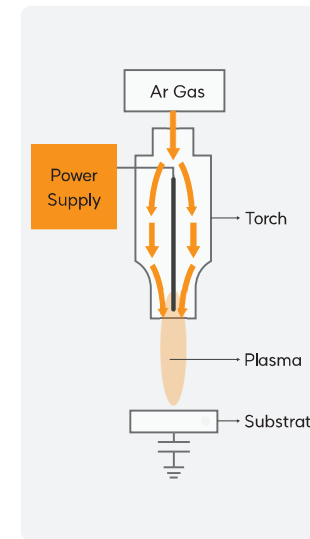
Quasi Pulse Power Supplies for Atmospheric Pressure Plasma

> Genius Series

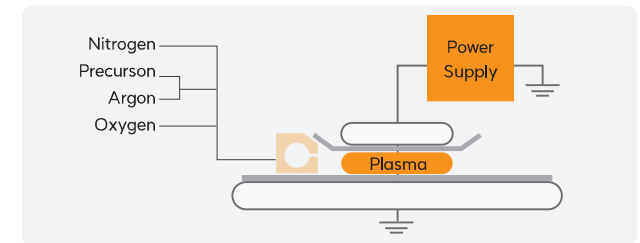


Applications

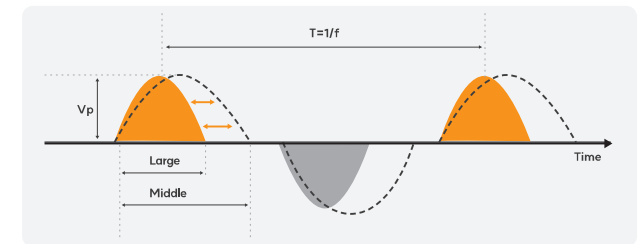
- Surface treatment



Torch Type



DBD Type



Controllable Power Density Waveform

Applications	Model	Input	Output	Size(mm)	Weight (kg)	Cooling
Torch	Genius J-1000	220V(Plug type), 1Ph 50/60Hz	1kW, 3~10kVp, 2.5A, 40~60kHz	133H(3U), 260W, 503D	8.5	Forced Air
DBD	Genius 2	220V, 3Ph 50/60Hz	2kW, 5~10kV, 7.6A, 20~60kHz	133H(3U), 483W, 605D	28	Forced Air
DBD	Genius 6	220V, 3Ph 50/60Hz	6kW, 5~10kV, 9.8A, 20~60kHz	177H(4U), 483W, 605D	37.5	Forced Air
DBD	Genius 10	220V, 3Ph 50/60Hz	10kW, 5~10kV, 13.6A, 20~60kHz	177H(4U), 483W, 605D	37.5	Forced Air

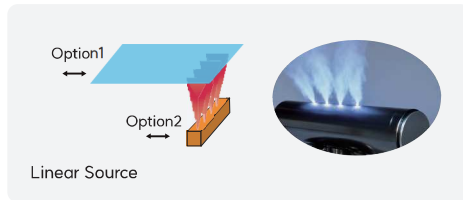
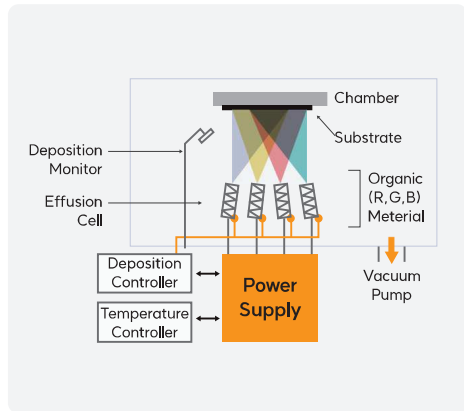
DC Power Supply for Evaporation

> EnerFlex Series



Applications

- OLED Organic/Inorganic Evaporation
- Burn-in Testing
- Reliability Testing
- Research & Development (R&D)
- Laboratory Applications



Model	Input	Output	Channel	Size(mm)	Weight (kg)	Cooling
EnerFlex 3D	220V, 3Ph 50/60Hz	3kW 300V/10A/2CH	Dual	133H(3U), 483W, 617D	24	Forced Air
EnerFlex 3.3D	440V, 3Ph 50/60Hz	3.3kW, 300V/11A/2CH	Dual	133H(3U), 483W, 617D	24	Forced Air
EnerFlex 10D	440V, 3Ph 50/60Hz	10kW, 1) 150V/66A/2CH, 2) 500V/20A/2CH	Dual	177H(4U), 483W, 667D	39.5	Forced Air
EnerFlex 15D	440V, 3Ph 50/60Hz	15kW, 150V/100A/2CH	Dual	177H(4U), 483W, 667D	39.5	Forced Air

DC Power Supplies for Industrial Process

> NEOS Series



Applications

- LED Performance Testing
- OLED Organic/Inorganic Evaporation
- Semiconductor Device Testing
- Burn-in Testing
- Reliability Testing
- Research & Development (R&D)
- Laboratory Applications



Model	Input	Output	Size(mm)	Weight (kg)	Cooling
NEOS-200	85~265V (Plug type), 1Ph 50/60Hz	200W, 1) 20V/10A, 2) 36V/6A	125H(3U1/6), 350D, 70D	3.2	Forced Air
NEOS-400	85~265V (Plug type), 1Ph 50/60Hz	400W, 1) 20V/20A, 2) 36V/12A	125H(3U1/6), 350D, 70D	3.2	Forced Air
NEOS-750	90~265V, 1Ph 50/60Hz	750W, 1) 40V/19A, 2) 60V/12.5A, 3) 80V/9.5A, 4) 150V/5A	44H(1U), 430W, 540D	8	Forced Air
NEOS-1500	90~265V, 1Ph 50/60Hz	1.5kW, 1) 40V/38A, 2) 60V/25A, 3) 80V/19A, 4) 150V/10A	44H(1U), 430W, 540D	8	Forced Air
NEOS-2000	198~242V 3Ph, 50/60Hz	2kW, 1) 50V/40A, 2) 60V/35A, 3) 80V/30A, 4) 100V/20A, 5) 200V/10A	88H(2U), 430W, 485D	14	Forced Air
NEOS-3000	198~242V, 3Ph, 50/60Hz	3kW, 1) 60V/55A, 2) 80V/40A, 3) 100V/30A, 4) 150V/20A, 5) 200V/15A, 6) 300V/10A	132H(3U), 430W, 485D	14	Forced Air
NEOS-5000	208V, 220V, 380V, 3Ph 50/60Hz	5kW, 1) 50V/100A, 2) 60V/85A, 3) 100V/50A, 4) 150V/34A, 5) 200V/25A, 6) 300V/16A	133H(3U), 430W, 600D	32	Forced Air
NEOS-10K	208V, 220V, 380V, 3Ph 50/60Hz	10kW, 1) 100V/100A, 2) 150V/70A, 3) 200V/50A, 4) 300V/34A, 5) 500V/20A, 6) 600V/17A	133H(3U), 430W, 600D	37	Forced Air
NEOS-15K	220V 3Ph, 50/60Hz	15kW, 150V/100A	133H(3U), 430W, 600D	37	Forced Air