



NOVA® Series 2 MHz  
2,500 and 5,000 Watts  
Mid-frequency  
RF Plasma Generators

Power Solutions

WWW.MKSINST.COM

# NOVA® Series

## RF PLASMA GENERATORS

The NOVA-25 and NOVA-50 RF power generators deliver rated output powers of 2,500 Watts and 5,000 Watts respectively at a frequency of 2 MHz. The NOVA Series generators offer advanced RF plasma generation and control for low cost and high yield in the most demanding thin film processing applications.

The NOVA RF Plasma Generators are ideally suited for Plasma Enhanced Chemical Vapor Deposition (PECVD), High Density Plasma CVD (HDPCVD), etching and other thin film applications during the manufacture of integrated circuits, flat panel displays, and data storage devices.

### Features & Benefits

#### Superior RF Stability

- Frequency stability equals 2 MHz  $\pm 0.005\%$
- Regulation tolerance of  $<2.0\%$  of set point within power range
- Automatic frequency tuning

#### Excellent Reliability

- Microprocessor-based
- Automatic load mismatch protection
- Unlimited load impedance range

#### Mismatched Power Output

Worst phase forward power referenced to rating

VSWR	NOVA-25	NOVA-50
1.5:1	2,500 W	5,000 W
2.0:1	2,250 W	4,500 W
3.0:1	1,750 W	3,500 W



## Specifications and Ordering Information

Model	NOVA-25	NOVA-50
Rated Power Output (into 50 ohm load)	2,500W	5,000W
Frequency/Stability	2.00MHz $\pm$ 0.005%	2.00MHz $\pm$ 0.005%
Dynamic Power Range	10- 2,500W	10- 5,000W
Load Impedance Range	Unlimited	Unlimited
RF Stability/Spurious Output	Unconditionally stable for any load within operational limits < -50dBc	Unconditionally stable for any load within operational limits < -50dBc
Harmonic Output & Distortion	< -40dBc	< -40dBc
Load Mismatch Protection	Automatic; forward power limits typically 0.25ms after reverse power reaches a pre-programmed level $\leq$ 20% of rated power.	Automatic; forward power limits typically 0.25ms after reverse power reaches a pre-programmed level $\leq$ 20% of rated power.
Regulation Tolerance	> 250 W: $\pm$ 1.0% SP < 250 W: $\pm$ 2.5 W	> 500 W: $\pm$ 1.0% SP < 500 W: $\pm$ 5.0 W
Primary AC Power Source	200/208 VAC, 3/PE~ (3W+G) 16A/PHASE	200/208 VAC, 3/PE~ (3W+G) 32A/PHASE
Cooling System	Water flow at 2.0 Gal./Min. (7.6 LPM) minimum at +5°C to +35°C. Connections provided to accept 3/8" male (NPT) pipe thread.	Water flow at 2.0 Gal./Min. (7.6 LPM) minimum at +5°C to +35°C. Connections provided to accept 3/8" male (NPT) pipe thread.
Power Readout	Digital readout displays frequency and forward, reflected and load power.	Digital readout displays frequency and forward, reflected and load power.
Compliance	CE, UL 61010-1, CAN/CSA-C22.2 No. 61010-1	CE, UL 61010-1, CAN/CSA-C22.2 No. 61010-1
Weight	55 lbs (24.9 kg)	91 lbs (41.3 kg)
Dimensions (H x W x D) (excluding handles & connectors)	5.25" x 19" rack mount x 20.5" (133 x 483 x 521 mm.)	8.72" x 19" rack mount x 22.1" (221 x 483 x 560 mm.)
Remote Interface Connectors	Standard: RS-232 Subminiature, Type-D 9-pin digital; optional custom interface cards available.	Standard: RS-232 Subminiature, Type-D 9-pin digital; optional custom interface cards available.
RF Output Connector	Type N	Type HN
Rack Mounting	19-inch adapters supplied	19-inch adapters supplied

## Ordering Options

- **Leveling Types**
  - Forward Power
  - Load Power
- **Automatic Frequency Tuning**  
(1.8 – 2.17 MHz)

Contact your local account representative for pricing, availability, and applications guidance.



### MKS Instruments, Inc. Global Headquarters

2 Tech Drive, Suite 201  
Andover, MA 01810  
Tel: 978.645.5500  
Tel: 800.227.8766 (in USA)  
Web: www.mksinst.com

### MKS Instruments, Inc. Power Solutions

100 Highpower Road  
Rochester, NY 14623  
Tel: 585.427.8300