

CLF Series Low Frequency Power Supplies

**Stable, Reliable, Low Frequency Power for
Industrial Heating and Plasma Processing
Applications**



Performance:

The CLF series generators provide stable process power up to 5 kW. The half-rack supplies operate at any fixed frequency from 20 to 50 kHz. The full-rack models can operate at any fixed frequency from 20 to 450 kHz or auto-tuned up to +/- 15% bandwidth. In many applications, the combination of auto-tune and excess power headroom will allow delivery of power to changing reactive loads without the need for mechanically tuned matching networks.

Applications:

The CLF series is designed to meet the performance demand in RF-driven plasma systems for semiconductor processing. Applications include etch, RIE, parallel plate, ICP, RF sputtering, CVD and PVD, as well as induction and dielectric heating processes in industrial systems.

Features:

- **Output power leveled on delivered power**
- **No preventative maintenance required, maximum generator uptime**
- **Protection circuits safeguard amplifiers from over-voltage, over-current and over-power operating conditions**
- **Fast auto-tune circuitry on full-rack models**
- **CLF 5000 CE Marked and SEMI F47 compliant**

Options:

- **Wide range of input line voltages available**
- **Master/Slave operation available with full-rack models**

Specifications:

- Frequency stability: +/- 1%
- Line regulation: ≤ 1% for +/- 10% line
- Load regulation: ≤ 3% from 10-100% setpoint before foldback
- Power readback vs. actual: ≤ 2%
- Forward/Reflected power monitoring: 0-10 VDC for 0 to full-rated output
- Spurious output: 30 dB below fundamental typical
- Harmonic output: 20 dB below fundamental typical
- Noise, hum ripple: +/- 1% at all power levels typical

Half-Rack Specifications:

	CLF 500 Half Rack	CLF 1000 Half Rack
Output power:	500W	1000W
Frequency:	20 - 50 kHz fixed	20 - 50 kHz fixed
Input line voltage:	100 - 130 VAC (115V) 187 - 239 VAC (208V) single phase; 50/60 Hz	100 - 130 VAC (115V) 187 - 239 VAC (208V) single phase; 50/60 Hz
Line current:	7A max. (115V); 4A max. (208V)	12.5A max. (115V); 7A max. (208V)
Standard output connector:	Type N	Type N
Cooling:	Forced air	Forced air
Size:	7"H x 8"W x 16"D (17.8cm x 20.3cm x 40.6cm)	7"H x 8"W x 16"D (17.8cm x 20.3cm x 40.6cm)
Weight:	20 lbs. (9.1 kg)	20 lbs. (9.1 kg)

Full-Rack Specifications:

	CLF 500 Full Rack	CLF 1000 Full Rack	CLF 5000 Full Rack
Output power:	500W	1000W	5000W
Frequency:	20 - 450 kHz fixed	20 - 450 kHz fixed	20 - 450 kHz fixed
Input line voltage:	115/208/230 VAC; single phase; 50/60 Hz	115/208/230 VAC; single phase; 50/60 Hz	185-230 VAC; three phase; 50/60 Hz
Line current:	8A (115V); 5A (208V)	15A (115V); 9A (208V)	25A typical
Standard output connector:	N or C	N or C	HN
Cooling:	Forced air	Forced air	Water: 2 GPM (7.6 liters)
Size:	5.25"H x 19"W x 16.25"D (13.3cm x 48.3cm x 41.3cm)	5.25"H x 19"W x 16.25"D (13.3cm x 48.3cm x 41.3cm)	10.5"H x 19"W x 24"D (26.7cm x 48.3cm x 61cm)
Weight:	50 lbs. (23 kg)	70 lbs. (32 kg)	200 lbs. (91 kg)