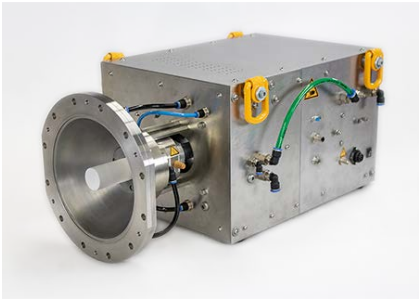
Plasma & Sputtering Sources



Microwave Plasma Source MIRO-200-CI

- Filament free and gridless Plasma Source
- Uniform directional beam profile
- Optional magnetic plasma localization module
- Very low ion energy (for epitaxic film growth)
- Compatible with adjacent processes e.g. sputtering

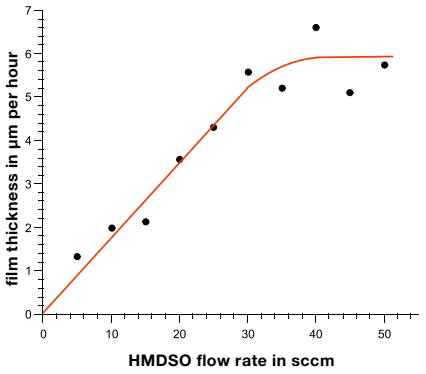
Features

- Microwave power coupling
- Standard mounting flange geometries
- Use multiple sources as array to cover larger substrates
- Complete scope of delivery including generator and power cable
- Applicable in batch and in line systems
- Localization mode option allows adjustable plasma position and concentration of the full power in a small volume close to the substrate
- Integrated gas bar option

Plasma & Sputtering Sources

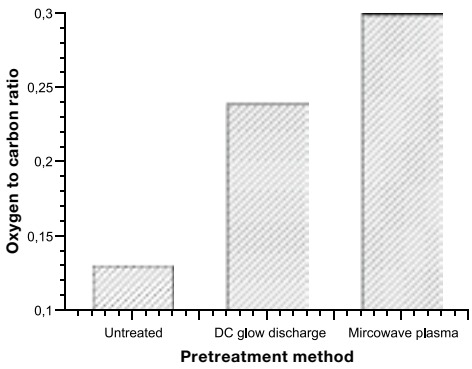
Applications

- High rate Ar ion etching
- Addition of nitrogen, carbon or oxygen ions and radicals into a plasma process
- Plasma nitriding or oxidation
- High rate deposition of a-C:H and ta –C:H
- Development of PVD/PECVD hybrid processes
- High rate deposition of carbon based low friction nanocomposites
- PECVD processes for low stress optical coatings, e.g. SiO_2
- Plasma treatment of substrates



Process Data

- Very low adjustable plasma potential: between 2 eV and 10 eV
- Ion current densities of up to 1 mA/cm²
- Deposition rate a-CH: 36 µm/h
- Operational pressure: 5,4 x 10^{-3} mbar
- Fully compatible with noble and reactive gases Ar, O_2, N_2, C_2H_2, HMDSO
- Power range from 0,3 – 3 kW
- PECVD deposition rates up to 100 nm/min
- Very good pretreatment capability
- Adjustable plasma density in localized plasma near the substrate



1 µm SiO_2 on PC

Plasma & Sputtering Sources

Technical Data / Dimensions

Scope of delivery

- Microwave source
- Microwave generator
- Connecting cable generator to source

Source materials:	Stainless steel / Quartz / Aluminum / BN
Frame material:	Aluminum
Housing material:	Painted steel
Mounting flange:	Compatible with DN ISO-200 ISO-F.
Cooling water:	3 bar inlet, open outlet. Fitting: 8 mm push-to-pull 2 l/min Fitting: 10 mm push-to-pull 3,8 l/min
Compressed air:	4 – 8 bar
Weight:	40 kg for single source

Available Power Supply Options

	Power	Cooling	Input	Control Interface
MIRO-200-CI-VA-12	1,2 kW	Air	1 x 230 V 2 x 24 V	Analog 0-10 V I/O Digital 24 V I/O
MIRO-200-CI-VA-20	2 kW	Air	2 x 230 V 2 x 24 V	Analog 0-10 V I/O Digital 24 V I/O
MIRO-200-CI-VA-30	3 kW	Air	3 x 230 V 2 x 24 V	Analog 0-10 V I/O Digital 24 V I/O
MIRO-200-CI-VA-P20	2 kW	Water 10 mm push-to-pull 3,8 l/min	3 x 400 V 1 x 230 V	CAN Bus
MIRO-200-CI-VA-P30	3 kW	Water 10 mm push-to-pull 3,8 l/min	3 x 400 V 1 x 230 V	CAN Bus

VA: All metal parts exposed to water or vacuum made of stainless steel

PLC Interface (not for CAN Bus Power Supply)

DI: Error, Error Code, Error Heat

DO: Interlock, MW On, Heat On

AI: Actual current/power

AO: Setpoint current/power, Setpoint Heat