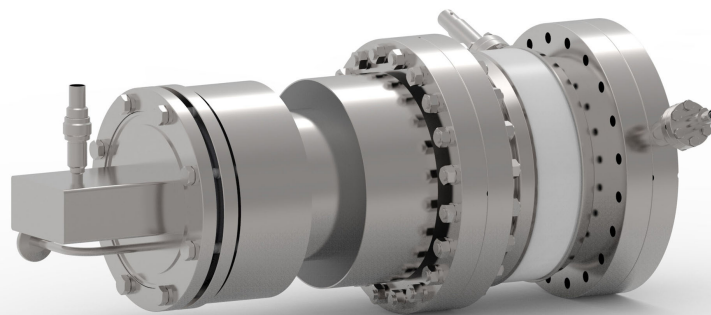


# DRESDEN ECRIS-2.45M

- A FULL PERMANENT MAGNET ECR ION SOURCE -



DRESDEN ECRIS-2.45M

The Dresden ECRIS-2.45M is an electron cyclotron resonance ion source designed to produce low charged single particle and molecular ion beams in the range of several 100  $\mu\text{A}$ . Because of its compact design and few infrastructural requirements the Dresden ECRIS-2.45M can easily be integrated into existing beamlines or mounted on a high voltage terminal of electrostatic accelerators.

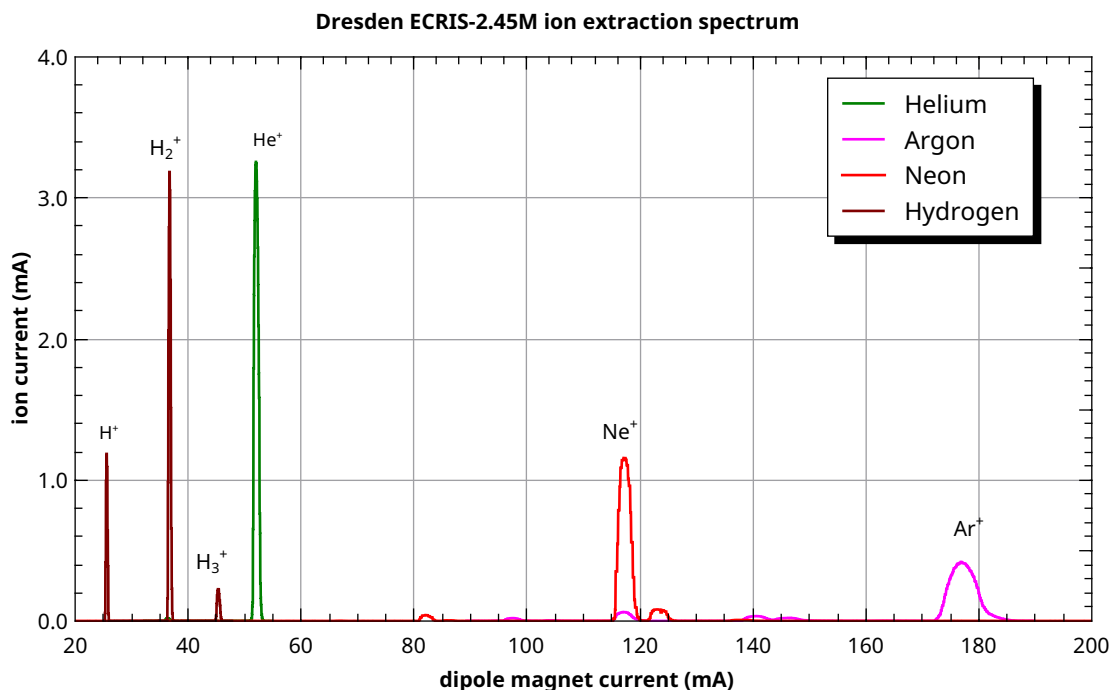
A set of permanent magnet rings is used to generate the magnetic field for plasma confinement. The plasma is heated by a tunable  $2.45 \pm 0.15$  GHz solid state microwave generator with a power of up to 200 W. The working gas is provided by a highly reproduceable and stable mass-flow controller.

The source features an advanced ion extraction system including an electrostatic einzel lens which also electrically insulates the source from the beamline. Using the standard setup, a maximum ion extraction voltage of 30 kV can be applied. Larger extraction potentials can be realized on request. The Dresden ECRIS-2.45M is delivered including all power supplies and with a control system including computer and software.

## EXTRACTED ION CURRENTS

Various extracted atomic and molecular ion beam intensities are given in the following table. The specified currents are examples and depend on the applied ion source parameters.

ION SPECIES	ION BEAM CURRENT ( $\mu\text{A}$ )
$\text{H}^+$	1200
$\text{H}_2^+$	3200
$\text{H}_3^+$	250
$\text{He}^+$	3200
$\text{Ne}^+$	1200
$\text{Ar}^+$	450



Ion extraction spectra derived from the Dresden ECRIS-2.45M are shown above. The measurements were performed with an Ion Irradiation Facility-M developed and build by DREEBIT GmbH, an applied extraction voltage of 20 kV and a microwave power of 150 W-200 W.

## TECHNICAL PARAMETERS

### DRESDEN ECRIS-2.45M PARAMETERS

microwave power	200 W
source potential	30 kV, 10 mA
extraction potential	−6 kV, 50 mA
lens potential	−30 kV, 10 mA
length	460 mm
diameter	340 mm
weight	35 kg (77 lbs)
beamline flange	DN 160 CF
power consumption	2 kW
cooling	air cooled, no cooling water required
vacuum conditions	$5 \cdot 10^{-8}$ mbar ( $1 \cdot 10^{-5}$ mbar with working gas)

## CONTACT

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