6cm Source

Our smallest ion beam source, the 6cm RF can provide all the benefits of radio frequency ion source technology in a smaller, more compact, and less expensive form. With a maximum beam current of 200mA at 1500V, the 6cm source is ideal for research and smaller production systems.

This source also finds a home in etch and ion beam figuring (IBF) systems with its highly divergent or highly convergent grid options. The body of this source is not water-cooled, thus requiring only two feedthroughs — RF power and DC Bias/Gas. Designed around the flexibility of internal mounting, the 6cm source is also capable of being mounted directly to a flange for process flexibility. As with all RF sources, the 6cm source can be run with both inert and reactive gases, making the 6cm ideal for any ion beam process.

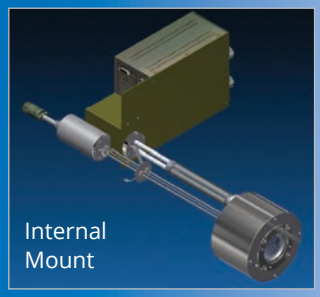
SPECIFICATIONS

Model	06RF
Beam Current	50 – 200mA
Beam Voltage	50 – 1500eV
Grid Materials	Molybdenum, Graphite
Water Cooling	Antenna Only
Weight	3.6 kg (8 lbs.)


Flange Mount

FLANGE MOUNT

The Flange Mount configuration for this ion source places the body of the ion source directly against the vacuum flange. This option uses the smallest amount of space in the vacuum chamber and offers fixed positioning for highly-repeatable operation. The minimum flange size for this configuration is a 10-inch Conflat. This package includes a high-voltage cover on the atmosphere side of the flange to which the RF Matching Network mounts directly. Connection points for the RF antenna cooling water, source gas, and source DC bias are also provided.


Internal Mount

INTERNAL MOUNT

Using an Internal Mount configuration places the ion source loosely inside the vacuum chamber, allowing angular (pointing) adjustment to suit process needs. The maximum distance from the RF vacuum feedthrough for this configuration is 18-inches. This option allows some freedom of location of the ion source and the ability to use multiple smaller feedthroughs instead of one large feedthrough. The standard flanges for this configuration are two 2.75 inch Conflat. Other flange combinations are available. The RF Matching Network mounts directly to the RF feedthrough.

NOMINAL PERFORMANCE DATA - USING ARGON @ 8 SCCM

BEAM		ACCELERATOR		RF POWER		NEUTRALIZER
Voltage (V)	**Current (mA)**	**Voltage (V)**	**Current (mA)**	**Forward (W)**	**Reflected (W)**	**Emission (mA)**
100	100	500	14	258	1	150
250	100	350	14	256	0	150
500	150	300	12	373	1	225
1000	200	250	2	446	2	300
1250	200	150	2	412	2	300
1500	200	150	2	391	2	300
100-1500	50 floor	100	~1	~80	1	75

OPTIONS & ACCESSORIES

Ion Source	06RF	Standard Ion Source	200mA / 1500V Limits
Interface Kits	505865A	Flange Mount	Includes Vacuum Feedthroughs and vacuum-side connections to source for RF Power, DC bias, and gas
	505864A	Internal Mount	
Neutralizer	504424B	RFN	Radio frequency - requires a mounting flange
Common Neutralizer Flanges	504854A	2¾" CF RFN Flange	Each flange has a RFN matching network.
	504891A	4.5" CF RFN Flange	
	504855A	6" CF RFN Flange	
Power Supply	IBEAM 703-1 series		RF Power, DC Bias, Control, and RFN Operation
RF Matching	505914Ax	Source RF	Includes Matching Network & Controller for source
Cable Kit	505752A	I-Beam 703 Cable Kit with beam, RFN and RF cables	
Adapter Box	IBOX-104		Adapts connections to an Ion-Tech style configuration

GRID OPTIONS

25cm FP, Convergent	505837A	Molybdenum	3-grid, 25cm FP, Convergent	Sputter deposit
25cm FP, Divergent	505834A	Molybdenum	3-grid, 25cm FP, Divergent	Assist
Collimated	507186A	Graphite	2-grid, Graphite Collimated	Etch