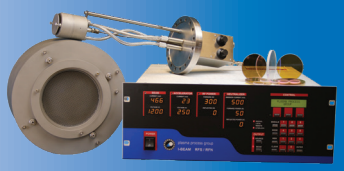
12cm Source

Used primarily for ion assist, the 12cm RF ion beam source also finds great value as a deposition source in smaller systems or an ion beam figuring (IBF) source for large substrates. Providing additional service as a pre-clean source for substrates, the 12cm source is one of the most versatile options available. As with all RF ion sources from Plasma Process Group, the 12cm can run on almost any process gas, including inert species such as argon and xenon, and reactive species like O_2, N_2, CH_3, and many more. Capable of outputs as high as 400mA at 1500eV, this source is also stable at more common assist conditions like 200mA at 250V. The 12cm source provides a 12cm ion beam that is shaped by the choice of grids. Available with molybdenum convergent or divergent grids with several possible focal points, or collimated graphite, the 12cm beam can be optimized for almost any process. Please refer to the grid selection table below.

SPECIFICATIONS

Model	12RF08
Beam Current	50 – 400mA
Beam Voltage	50 – 1500eV
Grid Materials	Molybdenum, Graphite
Water Cooling	Antenna and Shroud
Weight	6.8 kg (15 lbs.)



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 14-inch Conflat. This package includes a high-voltage cover on the atmosphere side of the flange to which the RF Matching Network mounts directly. Also provided: connection points for the cooling water, source gas, & source DC bias.


Flange Mount

NOMINAL PERFORMANCE DATA - USING ARGON @ 10 SCCM

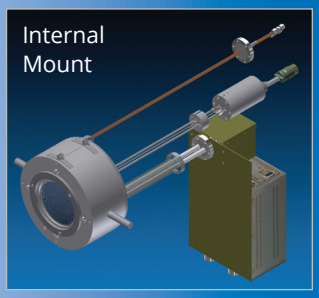
BEAM		ACCELERATOR		RF POWER		NEUTRALIZER
Voltage (V)	**Current (mA)**	**Voltage (V)**	**Current (mA)**	**Forward (W)**	**Reflected (W)**	**Emission (mA)**
250	150	300	3	143	0	225
500	150	300	4	139	0	225
750	200	250	5	163	0	300
1000	400	250	9	280	0	300
1250	400	200	8	270	0	600
1500	400	200	7	260	0	600
250-1500	50 floor	250	~1	~91	0	75

OPTIONS & ACCESSORIES

Ion Source	12RF08	Standard Ion Source	400mA / 1500V Limits
Interface Kits	504904A	Flange Mount	Includes Vacuum Feedthroughs and vacuum-side connections to source for RF Power, DC bias, cooling water, and gas
	504905A	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	505914A	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

130cm FP, Convergent	504149C	Molybdenum	3-grid, 130cm FP, Convergent	Assist
	504391A	Molybdenum	3-grid, 130cm FP, 8cm Hole Pattern (Ion Tech-style)	Assist
	505790A	Titanium	3-grid, 130cm FP, Convergent	Sputter deposit
46cm FP, Divergent	504593A	Molybdenum	3-grid, 46cm FP, Divergent	Assist
46cm FP, Convergent	505992A	Molybdenum	3-grid, 46cm FP, Convergent	Sputter, Etch
25cm FP, Convergent	504660A	Molybdenum	3-grid, 25cm FP, Convergent	Sputter, Etch
Collimated	505274A	Graphite	3-grid, Graphite, Collimated	Sputter, Etch
	505343A	Graphite	3-grid, Graphite, Elliptical Hole Pattern (120cm x 50cm)	Sputter deposit


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 three 2.75 inch Conflat. Other flange combinations are available. The RF Matching Network mounts directly to the RF feedthrough.