



SPECIFICATIONS

Model	16RF08
Beam Current	100 – 1000mA
Beam Voltage	100 – 1500eV
Grid Materials	Molybdenum, Graphite, Titanium
Water Cooling	Antenna and Shroud
Weight	7.7 kg (17 lbs.)



Flange Mount



Extension Mount



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.

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16cm Source

Our 16cm RF ion beam source is an industry workhorse, serving as the dominant deposition source in ion beam deposition (IBD) systems around the world. With an output capacity of 600mA, 800mA, or even 1000mA this dynamic and versatile source can satisfy a huge array of needs in deposition and large-scale Ion assist processes. Available with standard molybdenum, collimated graphite, or titanium grids, this source can be used in almost any type of contamination-sensitive ion beam process. This 16cm source can even be equipped with modulators allowing it to be used in metal deposition and etch processes, an operational regime normally challenging for RF ion beam. The source provides a 16cm ion beam which is then shaped by the choice of grids. Convergent, divergent, collimated, and even multi-focal point grids are available with this source. Please refer to the grid selection table below.

FLANGE/EXTENSION MOUNT

The Flange and Extension Mount options for this ion source offer fixed positioning for maximum process repeatability. The Flange Mount places the source directly against the flange using the smallest amount of space, while the Extension Mount stands off the flange with fixed posts. The minimum flange size for these options is a 16.5-inch Conflat. These packages include a high-voltage cover on the atmosphere side of the flange to which the RF Matching Network mounts directly. Also provided are connection points for cooling water, source gas, and DC bias.

NOMINAL PERFORMANCE DATA - USING ARGON @ 18 SCCM

BEAM		ACCELERATOR		RF POWER		NEUTRALIZER
Voltage (V)	Current (mA)	Voltage (V)	Current (mA)	Forward (W)	Reflected (W)	Emission (mA)
250	300	550	11	199	0	450
500	300	400	8	193	0	450
750	450	300	17	266	0	675
1000	600	350	18	347	1	900
1250	600	250	15	352	2	900
1250	800	400	24	485	4	1200
1500	800	250	20	475	3	1200
250-1500	100 floor	200	~3	~94	1	150

OPTIONS & ACCESSORIES

Ion Source	16RF08	Standard Ion Source	Used for 600mA Configuration
	16RF HC	Advanced Ion Source	Required for 800mA and 1000mA configuration
Interface Kits	504901A	Flange Mount	Includes Vacuum Feedthroughs and vacuum-side connections to source for RF Power, DC bias, cooling water, and gas
	504902A	Extension Mount	
	504903A	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 Supplies	IBEAM 703-1 series		RF Power, DC Bias, Control, and RFN Operation
	IBEAM 701-4	1000mA / 1500V Beam configuration, requires separate RF Generator	
RF Matching	505914Cx	Source RF	Includes Matching Network & Controller for source
RF Generator	505311A	1000W RF Generator	Used only with I-Beam 701 power supplies
Cable Kits	505752A	I-Beam 703 Cable Kit with beam, RFN and RF cables	
	507128A	I-Beam 701/703 Cable Kit for use with 1kW RF Generator	
Adapter Box	IBOX-104		Adapts connections to an Ion-Tech style configuration

GRID OPTIONS

3 Focal Point	504296B	Molybdenum	3 grid, 104/72/40cm FPs, 0.065" spacing, .020" thick	Sputter
	504296J	Molybdenum	3 grid, 104/72/40cm FPs, 0.065" spacing, .015" thick	Sputter
	507103A	Titanium	3 grid, 104/72/40cm FPs, 0.065" spacing	Sputter
2 Focal Point	504137A	Molybdenum	3 grid, 104/72cm FPs, 0.065" spacing, .020" thick	Sputter
66cm FP, Div.	504373B	Molybdenum	3 grid, 66cm FP, Divergent	Assist
66cm FP, Convergent	504599A	Molybdenum	3 grid, 66cm FP, Convergent	Sputter
	504851A	Titanium	3 grid, 66cm FP, Convergent	Sputter
33cm FP, Div.	504455A	Molybdenum	Moly, 3 grid, 33cm FP, Divergent	Assist
Collimated	504822A	Graphite	3 grid, Graphite, flat	Etch