beamtec

Beams & Plasmas

Linear Ion Beam Sources

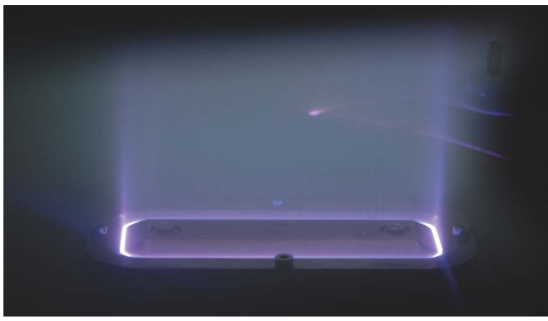
Features

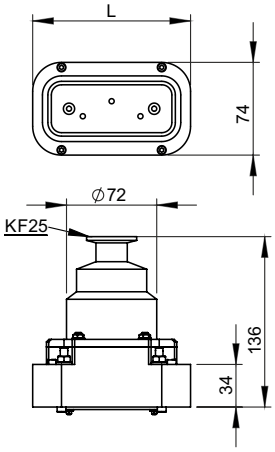
- **Compact linear design**
- **Internal and flange mount versions**
- **Long electrode life time**
- **Self-neutralized ion beam**
- **High ion density**
- **Compatible with a wide range of gases**
- **Wide pressure range up to 1E-1 mBar**

Linear ion sources generate wide ion beams with high uniformity along its length. These anode layer type ion beam sources are very reliable and robust devices that can be operated with a wide range of gases and mixtures. They don't need an extra neutralizer for charge compensation and thus are able to continuously operate using chemically active gases (oxygen, air, halogens, etc.). The source electrodes have almost unlimited lifetime when working with oxygen. For many applications air can be used instead of oxygen.

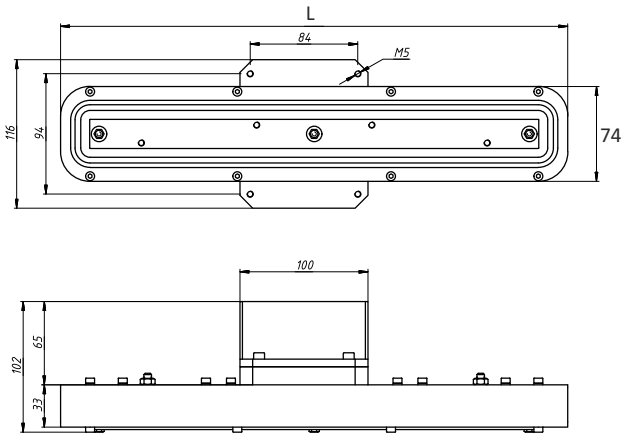
Applications:

- Ion cleaning, ion etching
- Ion beam sputtering (IBS)
- Ion beam assisted deposition (IBAD)
- PECVD & DLC deposition
- Surface modification





Dimensions for L125 / L145



Dimensions for L400, L600, L800

L145 flange mount on ISO160K

Mounting configurations

All linear ion sources are available for internal and external mount configurations. Internally mount sources include a single KF25 utility port. A tilting head option with variable penetration depth e.g. for ion assist in confocal sputtering applications can be ordered for the smaller L125 and L145 sources.

Power supply package

Along with the inverted magnetron ion sources we provide dedicated voltage or current controlled power supplies. When utilizing its integrated gas control feature both ion beam current and anode voltage can be kept constant.

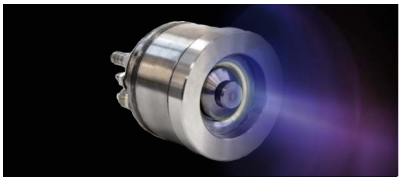
Power supply IM300

	D52	L125	L145	L400	L600	L800
Supply voltage, V	500 .. 5000					
Mean ion energy	Approx. 1/2 of supply voltage					
Maximum beam current, mA*	150	300	350	1000	1500	2000
Gas efficiency, mA/sscm	8	10				
Beam shape	Tubular	Hollow rectangular				
Beam size, mm	D22	100x42	120x42	375x42	575x42	775x42
Internal source length L, mm	D52	126	146	396	600	800
External flange, L x W, mm	ISO63K	ISO160K	ISO160K	480 x 186	684 x 186	884 x 186
Beam divergence angle	2°					
Operating pressure, mBar	1E-5 to 1E-1					
Work gas	Ar, H_2, He, Xe, O_2, N_2, C_xH_y, CO_2, C_xF_y					

* Parameters measured under the following conditions: Argon, voltage 3kV, pressure 1E-3 mBar

Circular ion source D52

Apart from the linear sources the circular ion source D52 provides a tubular beam profile with 22 mm in diameter and small divergence. Thus it is ideal for ion beam sputtering or etching applications onto small targets or substrates while offering high ion energies with up to 150 mA ion beam current.



Circular ion source D52

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