



Evap 4

Mini E-beam Evaporator



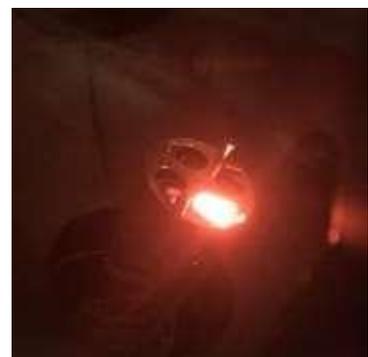
Co-evaporation capability

Compact source

Low thermal heat load

Combined 4-pocket power supply

Fully UHV Compatible



Evap-4 mini e-beam Evaporator

The Evap-4 is a highly efficient, compact 4 pocket mini e-beam evaporator featuring co-evaporation capability. Mini E-beam evaporators allow the deposition of common process metals such as Gold, Silver and Chrome with exceptional control and minimal heat load on substrate and surroundings when compared with a thermal boat source.

This technique uses a beam of electrons to either evaporate a material directly when in rod form or indirectly by heating a biased crucible. The partially collimated beam when evaporating from a crucible provides much more efficient material usage of expensive materials when compared with conventional e-beam hearth evaporators or thermal boat sources.

The actively cooled copper head results in minimal outgassing during operation and the enclosed pockets absorb much of the radiated heat so that there is minimal heat load on the substrate. Ideal for depositing accurate thin film coatings on temperature sensitive substrates. The Evap-4 is equipped with flux plates, which measure the ion flux emitted from the source material and offer an independent measure of the deposition rate.

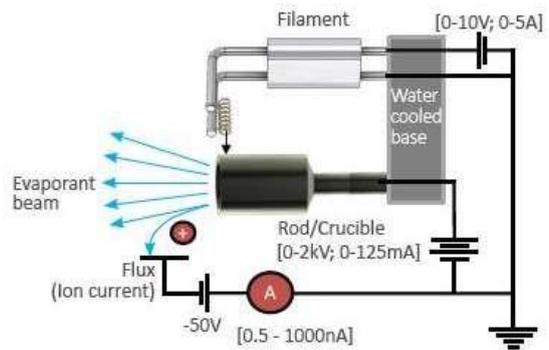


Figure 1 Principle of operation of a mini e-beam evaporator



Figure 3 Evap-4 Power supply with 4 channels

The power supply provides control for up to 4 pockets in one single unit with two control modes.

Filament current control: the user regulates the filament current directly.

Power control: the user sets the power

setpoint and the supply automatically adjusts the filament current to achieve the desired power.

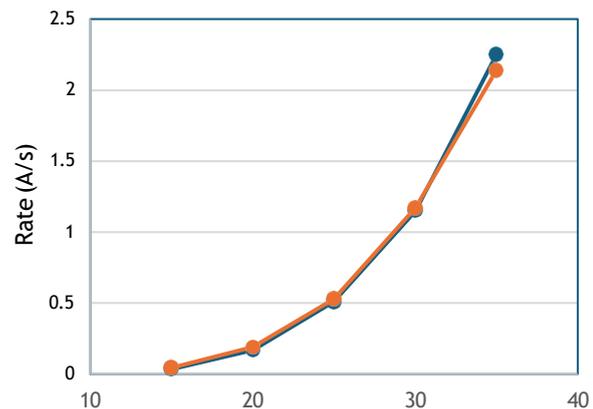
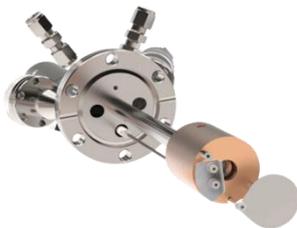


Figure 2 Consecutive silver evaporations at source to substrate distance of 250mm

The Evaporator is available in three versions: Single Pocket Mini E-Beam (EVAP-1), Compact Four Pocket Mini E-Beam (EVAP-4C), and High Capacity Four Pocket Mini E-Beam (EVAP-4).

SINGLE POCKET EVAP-1

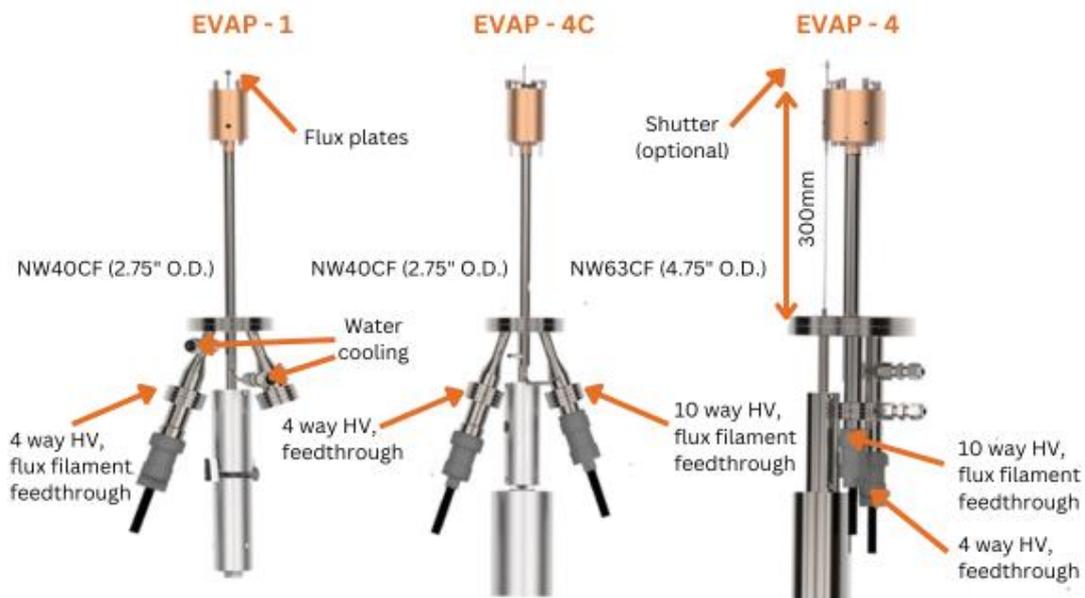


COMPACT 4 POCKET EVAP-4C



HIGH CAPACITY 4 POCKET EVAP-4





Specifications

EVAP Options	EVAP - 1	EVAP - 4C	EVAP - 4
Mounting flange	NW40CF(2.75" O.D.)	NW40CF(2.75" O.D.)	NW63CF(4.5" O.D.)
UHV compatible	Yes, bakeable up to 250°C		
In vacuum length	300mm - special length requirements can be discussed		
In-vacuum diameter	32mm	34mm	57mm
Co-evaporation	No	Yes	Yes
Number of pockets	1	4	4
Available crucibles	210,390,1000mm ³	210,390mm ³	210,390,1000mm ³
Crucible Materials	Mo, Ta, VC, W	Mo, Ta, VC, W	Mo, Ta, VC, W
Crucible Liners	PBN, Al ₂ O ₃ , BeO	PBN, Al ₂ O ₃ , BeO	PBN, Al ₂ O ₃ , BeO
Rod dimensions	Φ 4mm, 28mm long	Φ 2mm, 28mm long	Φ 4mm, 28mm long
Flux monitoring	Yes	Yes	Yes
Maximum power	250W	250W	250W

