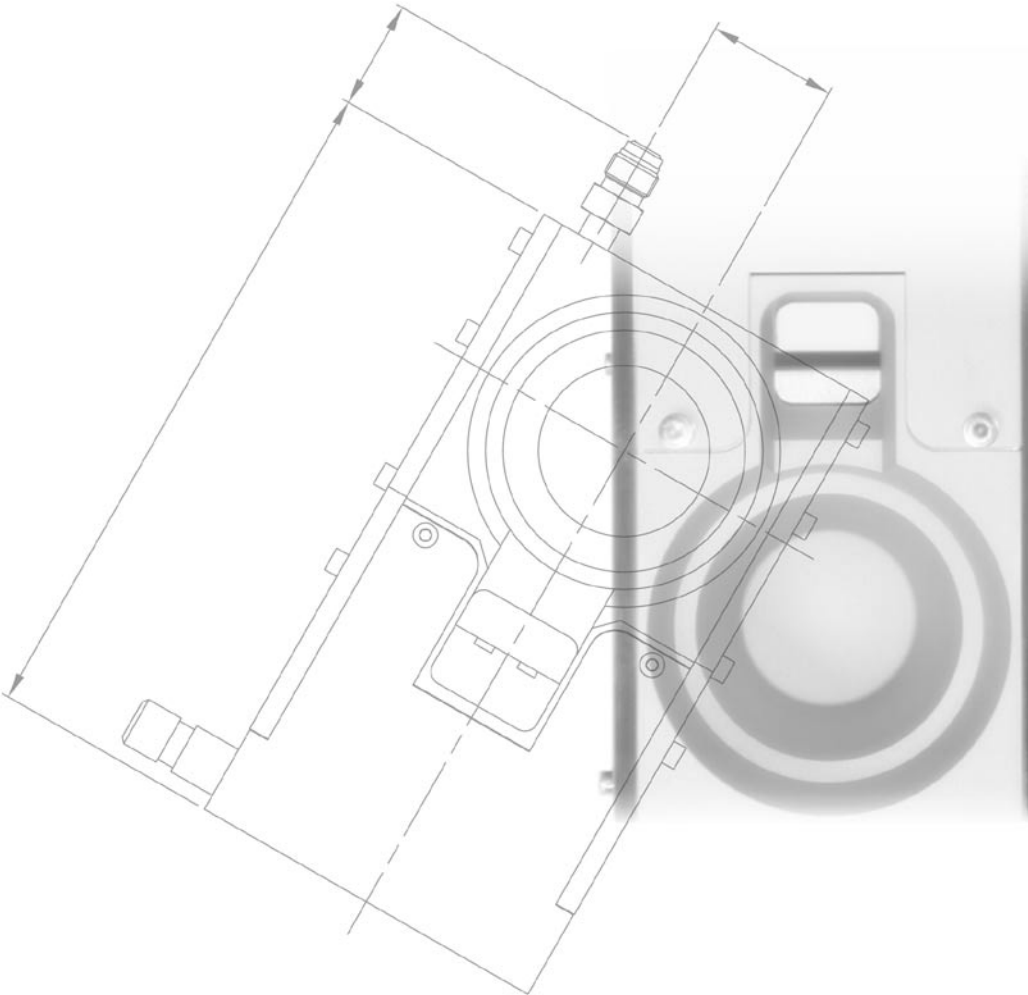


**Single Hearth Electron  
Beam Evaporators**





Ferrotec's Single Hearth Electron Beam Evaporators are designed for high rate evaporation and ultra clean process requirements. All sources are available in UHV versions to support bakeout temperatures of more than 250°C. Typical applications are production coatings or laboratory-scale evaporations as well as high purity Molecular Beam Epitaxy (MBE).

### Single Hearth Electron Beam Evaporators

EV 1-8	EV 1-8 UHV
EV 1-40	EV 1-40 UHV
EV 1-100	EV 1-100 UHV

Standard pocket volumes are 8 cm<sup>3</sup> and 40 /100 cm<sup>3</sup>. Other volumes and geometries are available on request.

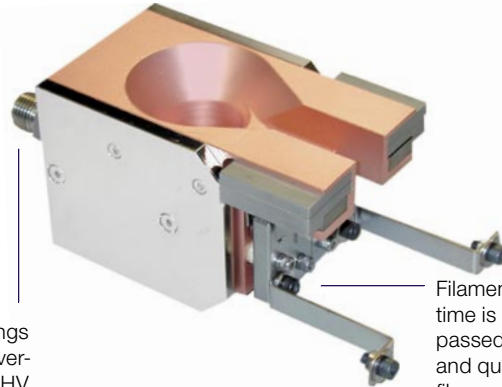
#### Features

- Small beam spot regardless of position in pocket
- Low inductance x- and y-coils with dynamic defocusing capability
- Long filament lifetime
- Reproducible & quick filament fixture
- Plug-in connector for magnet leads

#### Benefits

- Homogeneous material depletion
- Stable beam sweep at high beam deflection frequencies
- Reduced maintenance and down-time
- Enhanced run-to-run repeatability
- Non-interchangeable connections

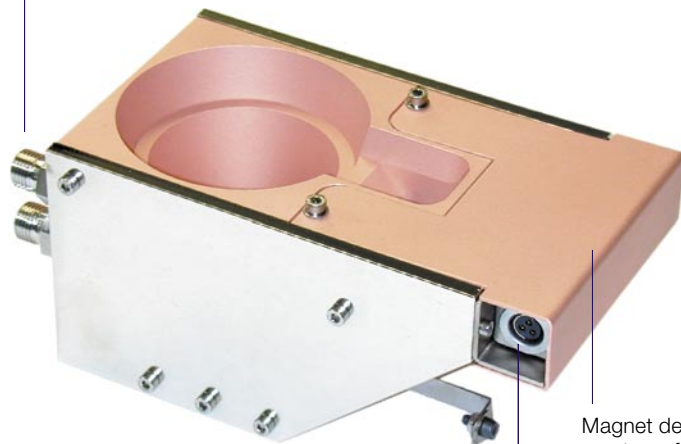
### EV 1-8



Water cooling via VCO fittings for standard high vacuum versions and VCR fittings in UHV versions

Filament replacement down-time is reduced by unsurpassed filament lifetime and quick and reproducible filament block installation

### EV 1-40 / 100



Plug-in magnet current connector

Magnet deflection assembly creates a focused beam with minimized distortion regardless of its position in the pocket. The high frequency sweep ensures homogeneous material depletion for advanced evaporation processes

Ferrotec offers various CF evaporator systems mounted to CF flanges, including customized shutter and Meissner trap configurations. The magnet coils utilize either UHV-compatible polyimide wire (EV 1-40/100 UHV) or are completely encapsulated in a stainless steel housing (EV 1-8 UHV). Please contact your nearest Ferrotec representative for individual solutions.

## UHV Configurations



EV 1-8 UHV horizontally mounted on CF100 without cover

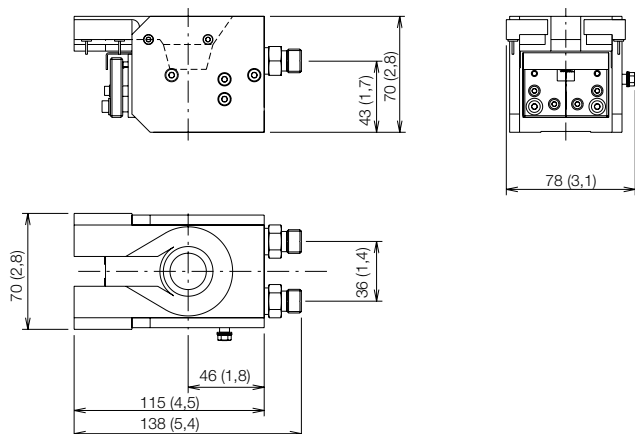


EV 1-8 UHV vertically mounted on CF150 with pneumatically operated shutter and Meissner trap

Models	EV 1-8	EV 1-8 UHV	EV 1-40/100	EV 1-40/100 UHV
Hearth volume	8 cm <sup>3</sup>		40/100 cm <sup>3</sup>	
Max. Power	5 kW		10 kW	
Acceleration voltage			4 - 10 kV	
Max. filament current			50 A @ 10 VAC	
Primary beam deflection			270° by permanent magnet	
Magnet system (bakeout temperature)	metal-ceramic enc. (250 °C)		UHV compatible polyimide (250°C)	
x-deflection	± 3 A		± 3 A (150 Hz)	
y- deflection	± 3 A		± 3 A (150 Hz)	
Spot size diameter	5 mm (1/4")		3 mm (1/8")	
Max. evaporation rate <sup>1</sup>	7 000 Å/min		12 000 Å/min	
Min. base pressure	10 <sup>-8</sup> mbar (torr)	10 <sup>-10</sup> mbar (torr)	10 <sup>-8</sup> mbar (torr)	10 <sup>-10</sup> mbar (torr)
Cooling water requirements	6 l/min; 3 bar (2 gpm; 45 psi)		8 l/min; 3 bar (2 gpm; 45 psi)	
Fittings	2 x VCO	2 x VCR	2 x VCO	2 x VCR
Weight	5 kg (11 lb)		10 kg (22 lb)	
Part No.	1-65 40 00	1-65 30 00	1-68 40 00 / 1-68 30 00	1-68 10 00 / 1-68 00 00

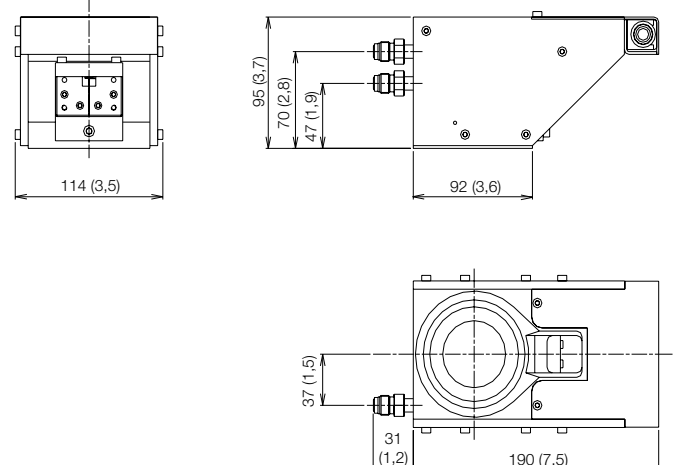
<sup>1</sup> For aluminum with source-to-substrate distance of 250 mm (10") at rated power

### EV 1-8



All dimensions in mm (inch)

### EV 1-40 / EV 1-100



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