



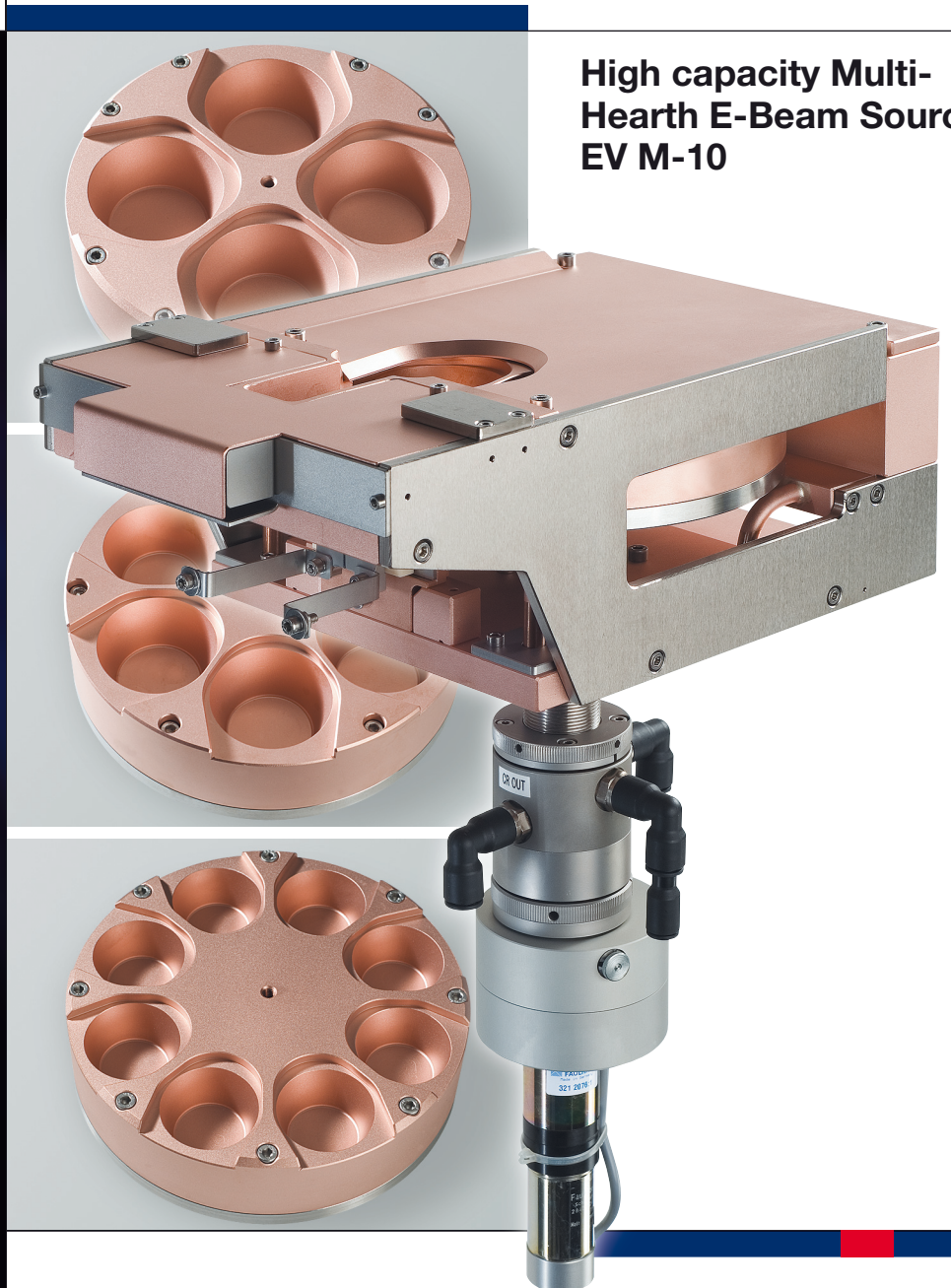
### High Capacity

The EV M-10 is the new high capacity Electron Beam source, designed by FerroTec Germany. It has been designed for applications requiring the deposition large amounts of material as well as large volume vacuum coating chambers. This source incorporates well proven e-beam technology including water cooling, rotary drive and magnetic components. Moreover its newly designed source body, crucibles and the filament block result in a more efficient and effective operation.

### Designed to be versatile

EV M-10 is used for optical, electronic and high rate deposition processes. Several standard crucible sizes are offered. If our standard crucibles do not fit your application requirements, FerroTec can design customized crucibles for you. This universal evaporator can be attached to most control systems and power supplies.

## High capacity Multi-Hearth E-Beam Source EV M-10



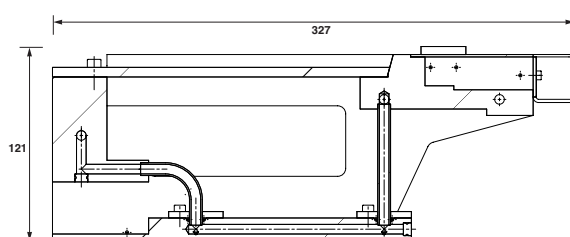
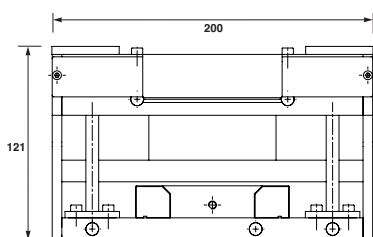
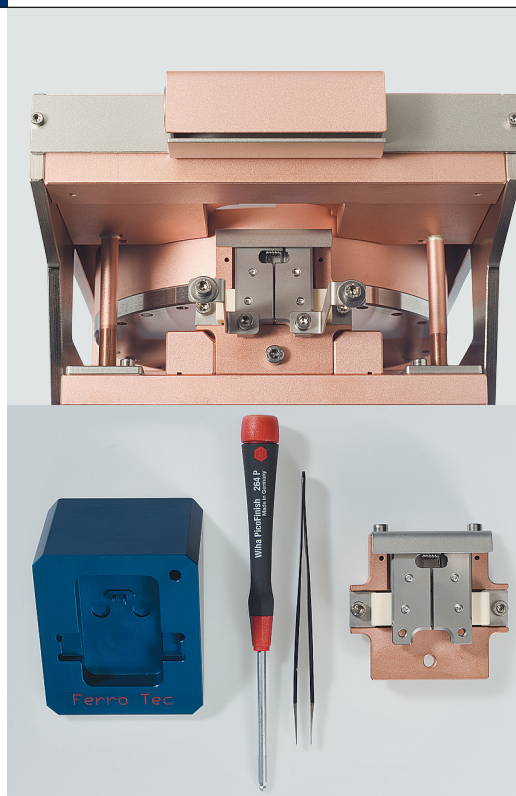
### Advantages/Benefits

- Directly cooled crucibles with large capacity
- Customer specified crucibles can be manufactured
- High efficiency emitter assembly
- Standard beam deflection system with optimized magnetic field by High Accuracy Magnetic Field Modelling

# High capacity Multi-Hearth E-Beam Source EV M-10

## Technical Data

<b>Max Power</b>	10 kW
<b>Acceleration Voltage</b>	4–10 kV
<b>Max. Filament Current</b>	50 A
<b>Primary Beam Deflection</b> by permanent magnet	270 °
<b>Bake Out Temperature</b>	150 °C
<b>X-Deflection</b>	± 3 A (100 Hz)
<b>Y-Deflection</b>	± 3 A (100 Hz)
<b>Spot Size Diameter</b> < 3 mm with no or minimal variation between front- and back side of pocket	
<b>Max. Evaporation rate</b> Ag > 15.000 Å/min @ 8 kW Ti > 42.000 Å/min @ 6 kW Al > 12.000 Å/min @ 10 kW (250 mm source – substrate distance)	
<b>Min. Base Pressure</b>	10 <sup>-8</sup> mbar
<b>Cooling Water Requirements</b>	10 l/min
<b>Mounting Requirements</b> base plate hole	32 mm
<b>Weight</b>	30 kg (66 lb)
<b>Part-No.</b>	1-616600



Dimensions in mm

## Applications

Especially designed for optical and electronic applications the EV M-10 will be installed in large Systems to produce high quality filters and metal layers. Evaporation rates up to 70 nm/sec are possible (e.g. Titanium @ 6 KW has an evaporation rate of 70 nm/sec in a distance of 250 mm source to quartz). Using a crucible with four / six / eight hearths the quantity is 60cc / 40cc / 20cc per hearth.

## Simple to maintain

The EV M-10 has been designed for easy maintenance and service. Our newly designed crucible cover can be removed with only two screws allowing the crucible to be exchanged for cleaning or replacement in just a couple of minutes. Likewise, the cathode assembly is removed in seconds by removing only one screw. The filament may be exchanged in a few minutes outside the chamber. The new filament assembly tool allows precise alignment of the filament to the filament block. One Beam Emitter Assembly Set includes a retainer, screwdriver and tweezers.

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