Arcam Q10 Technical Data

Arcam Q10

Process type	Hot powder bed/high vacuum
	(temperature material dependent)
Max. build size	200x200x180 mm (W x D x H)
Max. Beam power	3000 W
Cathode type	Single crystalline
Min. Beam diameter	100 µm
EBM MultiBeam™ technology	Multiple melt pool process
Max. EB translation speed	8000 m/s
Active cooling	Water-cooled heat sink
Vacuum base pressure	$1x10^{-5}$ mbar
Build atmosphere	$1x10^{-3}$ mbar partial pressure of He
He consumption, build process	1 liter / hour
He consumption, build cool down	50-75 liters / build
Process control	Layer verification camera system
Power supply	3 x 400 V, 32 A, 7kW
Size	1850 x 900 x 2200 mm (W x D x H)
Weight	1420 kg
Process computer	PC
CAD interface	Standard: STL
Network	Ethernet 10/100/1000
Certification	CE

CAD TO METAL®
Arcam AB®

Arcam provides a cost-efficient Additive Manufacturing solution for production of metal components. Arcam's EBM® technology offers freedom in design combined with excellent material properties and high productivity. Arcam is an innovative partner for manufacturing in the orthopedic implant and aerospace industries, where we deliver customer value through our competence and solution orientation.

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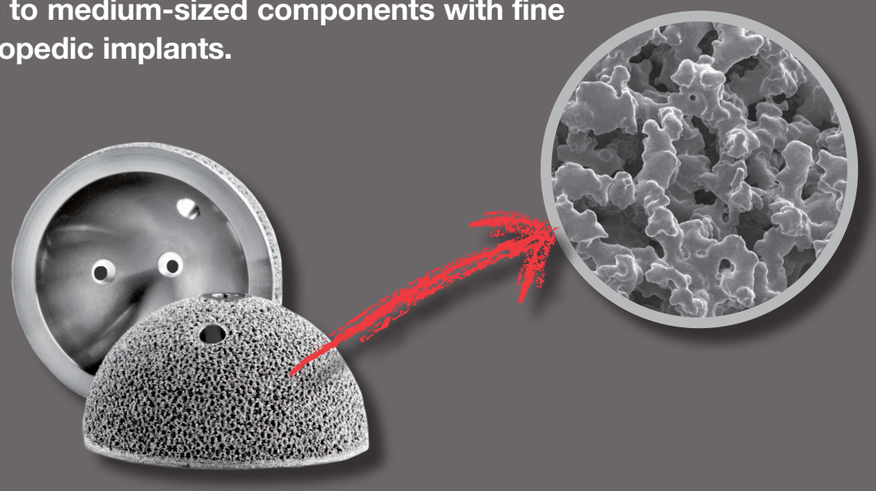
Changing the Scene for Implant Manufacturing

The Arcam Q10 represents the 3rd generation EBM technology. It is a manufacturing equipment specifically designed for production of small to medium-sized components with fine detail, such as orthopedic implants.



The Arcam Q10

The Arcam Q10 is the 3rd generation EBM machines and is developed specifically for cost-efficient manufacturing of standard as well as custom implants. High productivity, improved resolution, process control tools and operator friendliness have been targeted in the development work.

Features include:
- Latest generation EB gun
- Improved build platform insulation
- Fast cooling
- Closed powder handling
- Arcam LayerQam™ for build verification
- Software adapted to volume production

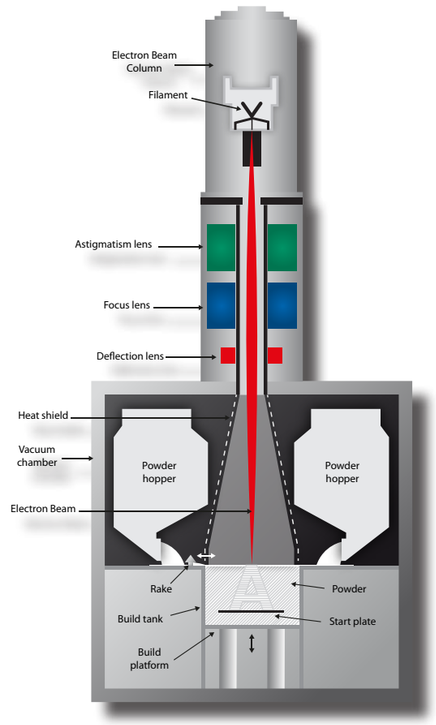
The Arcam EBM® Technology

In the Arcam EBM process implants are built up, layer-by-layer of metal powder, melted by a powerful electron beam. Each layer is melted to the exact geometry as defined by a 3D CAD model.

The Arcam EBM machines are equipped with a high power electron beam gun that generates the energy and precision needed for high melting capacity and high productivity. The electron beam is controlled by electromagnetic coils which allow for an extremely fast and accurate beam control.

The Arcam Q10 is capable of delivering a beam power of 3000 W and a scan speed that allows several melt pools to be maintained simultaneously - Arcam MultiBeam™.

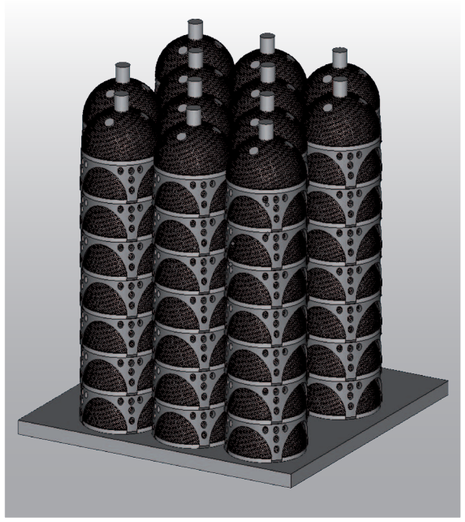
The Arcam EBM process takes place in vacuum and at elevated temperatures resulting in stress-relieved implants with material properties better than cast and comparable to wrought material.



Implant manufacturing

The Arcam Q10 is designed specifically for implant manufacturing. The size of the build area is chosen to allow for optimal stacking of the most common implant types, and the build chamber interior is developed for easy powder handling and fast turn-around times.

Arcam Q10 Build Chamber



STL. file, tower stacking of acetabular cups for maximum productivity