GE Additive

Arcam EBM Spectra L

The largest EBM build
volume available

Arcam EBM
Spectra L

Spectra L

The key to
high productivity

We've opened the door for a new level of productivity in additive manufacturing, with the new Arcam EBM Spectra L. Our latest innovation offers increased productivity and reduces cost per part by 10%. Due to an increased beam power to 4.5kW and enhancements in the beam control, the build speed is increased by 20%, compared to previous Arcam EBM machines.

The Spectra L allows for mass production of parts by providing the feature to tightly stack parts without compromising on quality. Electron Beam Melting (EBM) technology provides you with freedom in design and allows you to build free floating parts in sintered powder. The supports are primarily used for heat equalization and are easily removed when the build is finished.

The improved melt process results in consistent material properties for thin and bulky geometries. This provides the freedom to design parts without limiting your imagination. In addition, the Spectra L offers the largest build volume of our Arcam EBM machines, allowing enhanced capacity to produce high-integrity parts larger, and faster, than ever before.

Spectra L features

- Reduced cost per part thanks to increased build speed, the largest EBM build volume and the ability to tightly stack parts

- Excellent part quality, with improved surface finish and improved material properties for thin wall geometries.

- Integrated system architecture, with standardized IoT interface, data analytics for machine health monitoring and our new Powder Recovery Station, PRS 30.
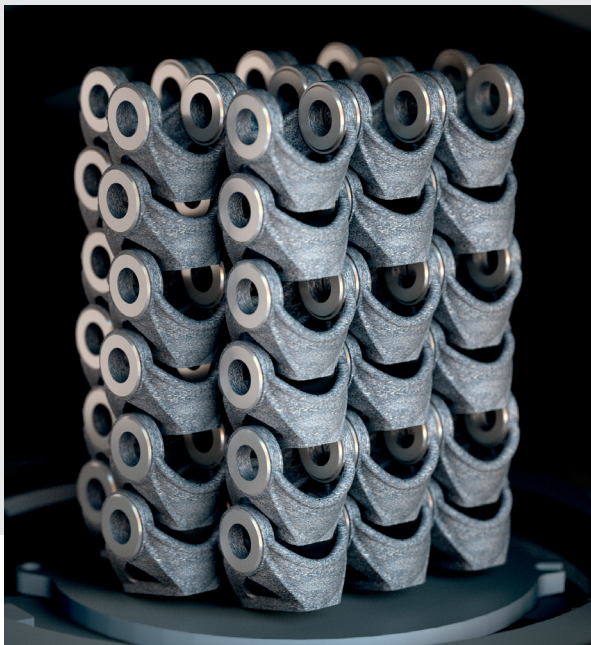
INTEGRATED APPROACH FOR BEST RESULTS

The Spectra L features a powerful, integrated hardware and software system for efficient operation of your EBM machine and better build analysis.

• The Spectra L includes Arcam EBM xQam™ technology for high-precision beam autocalibration, a powerful software platform, and electronics for efficient and accurate beam control.

• Arcam EBM LayerQam™, a camera-based monitoring system, provides for inline part quality verification and comprehensive defect diagnosis. Detailed reports are generated from the data collected by the software after the build is completed. The user is then informed of any defect present and location within the build.

CLOSED-LOOP POWDER-HANDLING SYSTEM MAINTAINS POWDER INTEGRITY

The Spectra L machine is supported by a closed powder handling system that maintains the powder batch integrity. The system is automated and includes a Powder Recovery Station (PRS), an auto dosing sieve and a hopper filler station.

When a built part is cleaned in the PRS, excess powder is recovered and smaller particles are removed in a cyclone separator. Powder also passes through a magnetic sieve to remove any metallic satellites picked up in the cleaning process. The recovered powder is then returned to

the hoppers via the hopper filler station. And because Spectra L operates within a closed-loop system that creates a dust-tight environment, powders are completely contained and never cross-contaminated or exposed to external elements.

Powder handling equipment

A complete powder handling system to support the additive process, both pre- and post-build:

Powder Recovery Station (PRS)	Vacuum cleaners	Sieving station	Hopper filling station	Trolleys
Recovers unused powder in a closed environment	Clean the finished build	Filters unused powder to rid of oversized particles	Loads sieved powder from barrels into machine hopper	Transport build tank, powder hoppers, and barrels

Arcam EBM Spectra L

Technical data

Max. build size	350 x 430 mm (Ø x H)
Max. beam power	4.5kW
Cathode type	Single crystalline
Vacuum base pressure	5 x 10-4mbar
Typical build atmosphere	4 x 10-3mbar (partial pressure of He)
Power supply	3 x 400 V, 32A, 13kVA
He consumption, build process	5 liter/h
He consumption, ventilation	150-200l/build
Typical process temperature	700°C
Size	1,328 x 2,344 x 2,858mm (D x W x H)
Weight	2,915kg
CAD interface	Standard STL
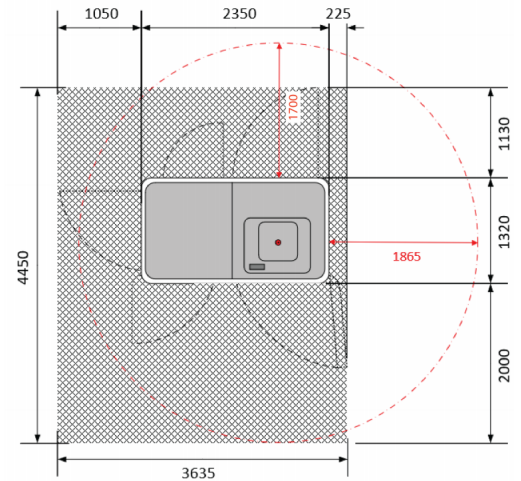
Materials available

• Arcam EBM Ti6Al4V Grade 5, P-Mtrl
• Arcam EBM Ti6Al4V Grade 23, P-Mtrl

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ge.com/additive/SpectraL