pro beam

ADDITIVE MANUFACTURING

Fast and precise production in a powder bed

PB EBM 30S

pro beam

The PB EBM 30S manufactures small, highly detailed metal components in a powder bed using an electron beam melting (EBM) process specially developed by pro-beam. Thanks to the good resolution and high speed of the electron beam, this process ensures the fast, high-quality production of metal components. In addition, the unique **spot strategy (RainTec)** enables a controlled and customized heat distribution. Thereby, component size and geometry play a minor role.

The EBM system offers the highest possible chamber utilization without significant non-productive times and thus maximized productivity. This is made possible by the parallelization of processes thanks to the **BuildUnit**.

In addition the machine operates with an open system, that allows the access to all parameters and their individual coordination. This transparency guarantees flexibility and makes it possible to develop own manufacturing processes that can be executed reproducibly.

With its integrated, company-owned ELO (Electron Optical Monitoring) system, the PB EBM 30S provides an in-situ monitoring. It regularly generates high-contrast rich images during the construction process, which can be used for quality control. It is also possible to create a so-called digital twin of the workpiece. The ELO data can also provide valuable information in the development of a construction process.

EBM advantages at a glance

- Maximum productivity
- Higher process stability and better quality
- ELO quality control by pro-beam
- Open system for full transparency
- Large variety of metals, incl. reactive metals
- Reproducibility
- Inert environment due to vacuum
- Digital controlled process

Technical data

PROCESS SPECIFICATIONS	
Manufacturing method	EBM (Electron Beam Melting)
Electron beam output / Max. beam power	Up to 150 kV / 15 kW
Max. build sizes	160 x 160 x 400 mm 300 x 300 x 400 mm
Process pressure	$< 10^{-4}$ mbar
Evacuating time	None
Process gas (for charging prevention)	Not required

QUALITY	
Beam quality	Automatic Beam Alignment
In-situ quality control	ELO system
MACHINE	
Dimensions	6.4 x 3.5 x 3.3 m
BuildUnit (mobile)	Available for different build sizes
Control system	Based on CNC (Siemens Sinumerik One)
Optional: software interface	E.g. Materialise Magics
MATERIAL	
Metals	Inconel, copper, steel, refractory metals etc; Ti6Al4V and titanium aluminide proven

E-BEAM COMPETENCE SINCE 1974 pro beam MADE IN GERMANY

More information at pro-beam.com

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