SLM SOLUTIONS

SLM®125
Selective Laser Melting Machine

Accurate, compact and highly-efficient machine for the R&D sector as well as for the production of smaller metal parts

Selective Laser Melting Machine SLM®125

The Selective Laser Melting Machine SLM®125 offers a build envelope of **125 x 125 x 125 mm³**. The **flexibly applicable machine with high productivity** is equipped with a single fiber laser (1x 400 W) and produces high-quality metal parts.

The **precise and economical** SLM®125 has been designed for quick results in the research and development sector, as well as for the **production of smaller metal parts.**

In addition, the SLM®125 provides a **build volume reduction** of 50 x 50 x 50 mm³ thus decreasing the amount of powder by 80%

Technical Specifications

Build Envelope (L x W x H)	125 x 125 x 125 mm³ reduced by substrate plate thickness
3D Optics Configuration	Single (1x 400 W) IPG fiber laser
Build Rate	up to 25 cm³/h
Variable Layer Thickness	20 µm - 75 µm, 1 µm increments
Min. Feature Size	140 µm
Beam Focus Diameter	70 µm - 100 µm
Max. Scan Speed	10 m/s
Average Inert Gas Consumption in Process	2 l/min (argon)
Average Inert Gas Consumption Purging	70 l/min (argon)
E-Connection / Power Input	400 Volt 3NPE, 32 A, 50/60 Hz, 3 kW
Compressed Air Requirement / Consumption	ISO 8573-1:2010 [1:4:1], 50 l/min @ 6 bar
Dimensions (L x W x H)	1400 mm x 900 mm x 2460 mm
Weight (without / incl. powder)	approx. 700 kg / approx. 750 kg

Machine configuration for all types of metal powders / Technical changes reserved

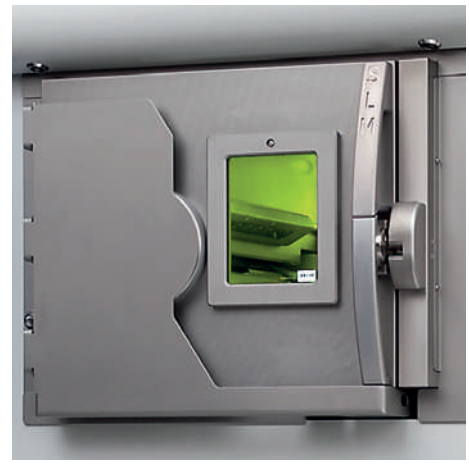
*depending on material and build part geometry

SLM®125

The **highest build rates** in this class are achieved thanks to the **patented bidirectional coating.** The machine concept is impressive thanks to its **patented process gas filtration** and its safety. The adjustable **gas flow** allows optimal process properties with low gas consumption.

The SLM®125 is available with an optional software for reading CAD/STL data or slice data for configuring the process-specific and part specific parameters. The **open operation concept** enables the construction processes to be carried out individually and customized manually. Stainless steel, tool steel, cobalt-chrome, nickel alloy, aluminum or titan can be processed. Thanks to the machine's **compact design**, with few powder-transporting components, materials can be changed quickly and easily. With a variety of options and expansion possibilities, the system can be adapted to **individual customer requirements.**

The **Powder Sieving Machine PSM** is a perfect complement to the SLM®125 machine. During the sieving process the rough particles are sieved out and are seperated in an overflow bottle. The reusable metal powder, which has the defined grain size, is transported to the storage container and can be directly used again.



Quality assurance of the production process

A comprehensive monitoring and quality assurance system enables a **high degree of process control** in the machine.

Melt Pool Monitoring (MPM) is an optionally available on-axis tool for visualizing the melt pool in the SLM® process. Data from MPM can be used as a resource for efficiently developing and evaluating the process parameters. It also provides important insights about **optimizing the process parameters** of individual manufactured parts. In the production of safety-critical parts, the data collected serves as documentation for quality assurance in the production process. The recorded data enables conclusions to be drawn regarding irregularities during fusion, which can lead to anomalies in the manufactured parts.

Laser Power Monitoring (LPM) is an optionally available on-axis monitoring system that continuously measures and documents TARGET and ACTUAL emitted laser output throughout the production process. On the one hand, the module can be used as an early warning system for preventing machine downtime with targeted measures when irregularities occur. On the other hand, it makes an important contribution to quality assurance thanks to its **process documentation**.

About SLM Solutions

The Lübeck-based SLM Solutions Group AG is a leading provider of metal-based additive manufacturing technology. SLM Solutions focuses on the development, assembly and sale of machines and integrated system solutions in the field of selective laser melting.

SLM® technology offers diverse options in the metal-based additive manufacturing of parts, such as a new design and geometric freedom, lightweight construction through the reduction of metal part weight, significant advantages in terms of production speed and the manufacturing of internal undercut parts in low quantities.

Our products are utilized globally by customers from the most varied sectors, particularly in the aerospace, automotive, tooling, energy and healthcare industries, as well as in research and education.

They particularly value the following advantages of our technology partnership:

- Highest **productivity** using patented multi-laser technology
- Highest material density and **part quality** through our innovative gas stream management
- Completely closed **powder management** in an inert gas atmosphere
- Cutting-edge process monitoring using various **quality control modules**
- Multilingual open **software architecture** with customer adaptability
- Ultracompact **modular design**
- Long-term and **confidential customer relationships**
- **A technological leader and pioneer** in metal-based additive manufacturing with decades of market experience

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