SLM SOLUTIONS

Robust Selective Laser Melting

Multiple Lasers and Process Stability for Demanding Applications

SLM® 280

Selective Laser Melting Machine

Premium Quality and the Highest Productivity

Industry-leading gas flow
delivers consistent quality

80% build rate increase
with twin laser configuration

Material and operator separation through
closed-loop powder handling

Larger build chamber and multiple lasers increase productivity without sacrificing build quality

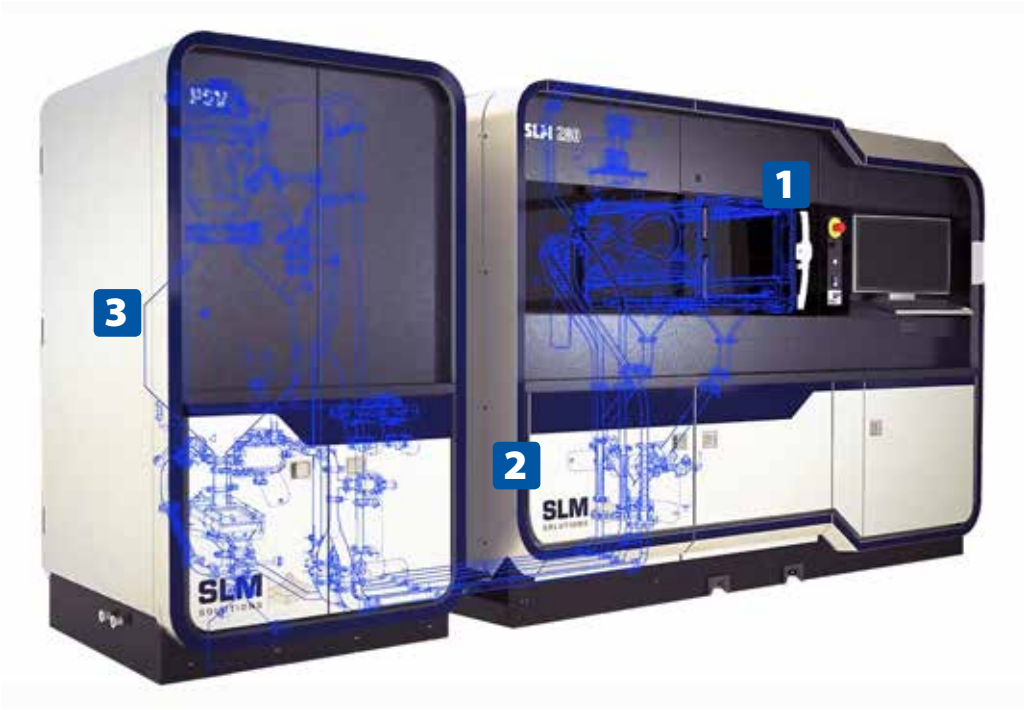
With a build plate 25% larger than standard mid-sized machines to fit more parts per build, high-power and multi-laser machines further promote production-oriented additive manufacturing. The leader in multi-laser systems, SLM Solutions offers a patented multi-laser scan strategy to minimize soot interference, alter layer stitching and deliver results with the same density and mechanical properties as single-laser builds.

Open system architecture puts selective laser melting users in control; your powder, your parameters

All SLM® systems allow the use of materials from any supplier. The integrated SLM® Build Processor and open software architecture offer the freedom to run standard parameters or optimize them to meet specific production needs and gain a competitive advantage. In addition, refined parameters and an identical optical bench allow processes to be directly transferred to other machines, such as scaling up to the SLM®500.

Efficient, Reliable, Repeatable

SLM®280 PRODUCTION SERIES



1 The patented, enhanced gas flow, flowing through a sintered wall, creates a clean process environment to increase build quality, and also reduces gas consumption, an important operating cost.

2 The permanent filter module traps process soot in a sintered plate filter and coats the waste material with an inhibitor for dry disposal. Machine uptime is increased, gas flow is stabilized and consumable costs are reduced, all while increasing safety.

3 The automated Powder Supply Vacuum (PSV) uses independent routes to supply sieved powder directly to the SLM®280, return overflow during a build and allows unpacking through a glove box sending powder back to the PSV at the completion the process for closed-loop powder handling.

Powder transport, sieving and storage is contained within an inert gas atmosphere to maintain material quality.

Technical Specifications	SLM®280 Production Series	SLM®280 2.0
Build Envelope (L x W x H)	280 x 280 x 365 mm reduced by substrate plate thickness	280 x 280 x 365 mm reduced by substrate plate thickness
3D Optics Configuration	Single (1x 400W or 1x 700W), Twin (2x 400 W or 2x 700W) Dual (1x 400W and 1x 700W) IPG fiber laser	Single (1x 400W or 1x 700W), Twin (2x 400 W or 2x 700W) Dual (1x 400W and 1x 700W) IPG fiber laser
Real Build Rate	up to 113 cm^3/h*	up to 113 cm^3/h*
Variable Layer Thickness	20 µm - 90 µm, , more available on request	20 µm - 90 µm, , more available on request
Minimum Feature Size	150 µm	150 µm
Beam Focus Diameter	80 - 115 µm	80 - 115 µm
Maximum Scan Speed	10 m/s	10 m/s
Average Inert Gas Consumption in Process	13 l/min (Argon)	5 l/min (Argon)
Average Inert Gas Consumption in Purging	160 l/min (Argon)	110 l/min (Argon)
E-Connection / Power Input	400 Volt 3NPE, 63 A, 50/60 Hz, 3.5-5.5 kW	400 Volt 3NPE, 63 A, 50/60 Hz, 3.5-5.5 kW
Compressed Air Requirement	ISO 8573-1:2010 [1:4:1] 7 bar	ISO 8573-1:2010 [1:4:1] 7 bar
Machine Dimensions (L x W x H)	4150 mm x 1200 mm x 2525 mm (includes PSV)	2600 mm x 1200 mm x 2700 mm

*depending on material and build part geometry

SLM®280 2.0

1 Multi-laser technology was pioneered by SLM Solutions, who remain the market-leaders in multi-laser installations. The SLM®280 can be equipped with up to two 700W fiber lasers to accelerate the printing process of many metal additive powders.

2 Patented bi-directional powder recoating helps reduce manufacturing time by depositing a new layer of powder in both directions without having to return to a "home" position.

3 Paired with a Powder Sieving Machine (PSM), the SLM®280 offers material flexibility. Manual sieves allow efficient material changeover for adaptable production while maintaining safety and quality.

Overflow powder is collected into a sealed bottle, transferred to the PSM for sieving and returned to the build process while maintaining an inert environment and offering traceability.

Build Chamber Sizes

Closed-loop powder handling separates operators from powder exposure

Innovation Comes Standard

SLM Solutions is known as the innovation leader in selective laser melting. Features such as bi-directional powder recoating to reduce manufacturing time, open powder architecture allowing use material from any supplier and full process parameter access for custom development come standard on every selective laser melting machine.

Powder Handling Options

SLM Solutions' closed-loop systems utilize a holistic powder-handling approach with the complete separation of operator and exposed powder. Door-integrated glove boxes on all machines eliminate direct contact of powder by operators and the minimization of powder handling outside an inert atmosphere maintains powder quality.

The second generation SLM®280 system offers the same high-quality process technology as the third generation, but with a manual powder sieve for flexibility with material changeover.

The SLM®280 Production Series targets serial production processes with fully automatic powder management for a dedicated material. Powder is automatically transferred back and forth between the sieve and the process chamber, both during the process without interruption of the build and after completion for streamlined and safe powder unpacking.

Qualified Material Solutions

SLM Solutions offers expert know-how that drives unique specifications to assure mechanical properties through the combination of machine, parameters and powder audited for composition, quality and flowability. Our material experts are always collaborating with customers to develop and source new alloys optimized for selective laser melting.

Quality Assurance of the Selective Laser Melting Process

Comprehensive monitoring and quality assurance enable a high degree of process documentation and verification. Chamber temperature, oxygen, gas flow and other variables are constantly monitored and logged to ensure consistent, high quality builds. Layer Control System (LCS), Melt Pool Monitoring (MPM) and Laser Power Monitoring (LPM) monitor various systems to detect possible irregularities.

Consultative Development and Expert Knowledge-Sharing

SLM Solutions' consulting, applications, training and service teams put customer success first to ensure their return on investment is maximized. Our experts works with customers every step of their additive journey, from application identification and development to full serial production ramp-up.

SLM Solutions - Technology Pioneers, Innovation Leaders

SLM Solutions helped invent the laser powder bed fusion process, was the first to offer multi-laser systems and all selective laser melting machines offer patented quality, safety and productivity features. Taking a vested interest in customers' long-term success in metal additive manufacturing, SLM Solutions' experts work with customers at each stage of the process to provide support and knowledge-sharing that elevate use of the technology and ensure customers' return on investment is maximized. Optimal paired with SLM Solutions' software, powder and quality assurance products, the SLM® technology opens new geometric freedoms that can enable lightweight construction, integrate internal cooling channels or decrease time to market.

A publicly traded company, SLM Solutions Group AG focuses exclusively on metal additive manufacturing and is headquartered in Germany with offices in China, France, India, Italy, Russia, Singapore and the United States and a network of global sales partners.





SLM Solutions Group AG | Estlandring 4 | 23560 Lübeck | Germany
+49 451 4060 - 3000 | info@slm-solutions.com | slm-solutions.com