

SLM® 500^{HL} Sieving station PSX

The Selective Laser Melting System SLM®500^{HL} is delivered as standard with the PSX sieving station. This is a fully automatic powder sieving system that is designed for sieving and for transporting large amounts of metal powder. This makes this system ideal for use in the production environment.

All processes inside the PSX sieving station take place under an inert gas atmosphere. The sieving process starts when the excess metal powder is transported from the overflows of the SLM®500^{HL} to the vibration sieve of the PSX. Subsequently, the rough particles are sieved out of the fine powder and separated. The so-called good and bad powder are differentiated from each other during this process. The bad powder, which exceeds or falls below a defined μ -value, is discharged into an overflow bottle. The good powder, which has the defined grain size, is transported into the 90l storage container and can be directly used again.

The PSX sieving station automatically and continually supplies the Selective Laser Melting System SLM®500^{HL} with sieved powder from the storage container.



SLM® 500^{HL} Unpacking station PRS



The PRS unpacking station is also a basic feature of the SLM®500^{HL}. This useful component of the system is optimally suited for batch production, and serves for removing the manufactured components properly from the construction cylinder under an inert gas atmosphere.

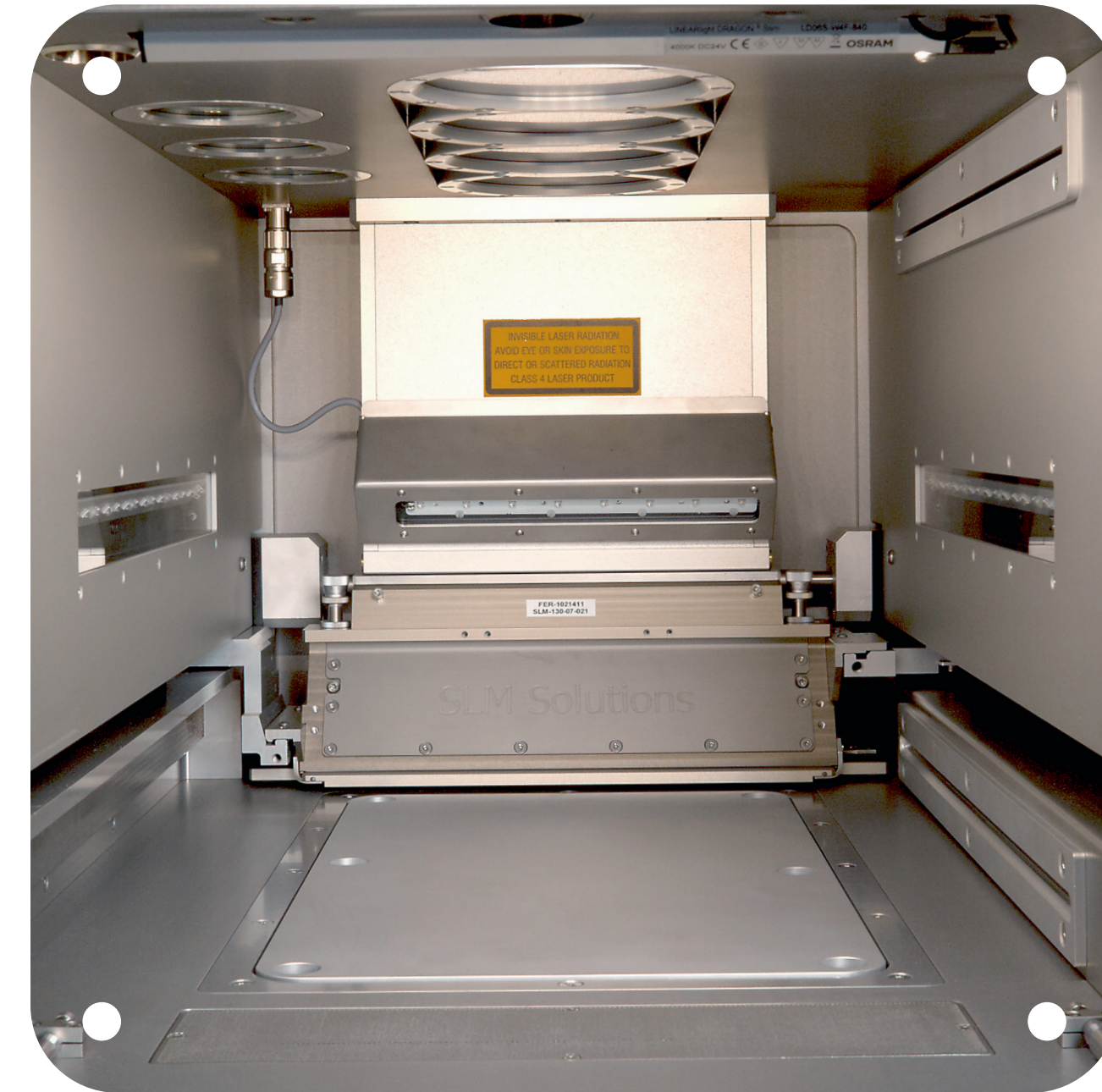
Based on the unloading position, the construction cylinder is removed with the handling device, which is also a basic feature, from the SLM®500^{HL} and transferred to the PRS unpacking station.

With the use of the PRS, the created components can be ergonomically released from excess powder without any skin contact. The construction cylinder is extremely comfortable to reach, thanks to the integrated, gas-tight gloves, and the operator is not exposed to the metal powder. All SLM® components are manufactured on a substrate plate located on the system's platform. This is raised in the station, and the excess powder collects easily in the powder storage containers on the sides. Finally, the powder is automatically transported from the storage containers to the PSX sieving station where it is prepared for use again.



Metal powder
Please ask for our metal powder brochure

SLM® 500^{HL} Selective Laser Melting System



Create complex and large components efficiently
A step towards production technology in additive manufacturing



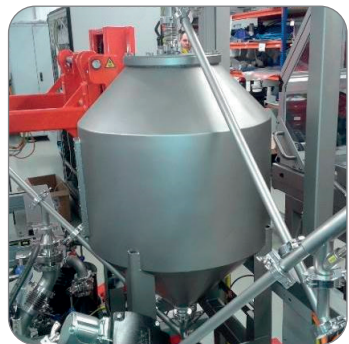


The Selective Laser Melting System SLM®500^{HL} provides a build envelope of 500 x 280 x 365 mm³ and the patented multi-beam technology. In the high-performance SLM®500^{HL} machine, four quad fiber lasers (4x 400 W) are in action simultaneously, increasing the build-up rate by up to 90% compared with the twin configuration (2x 400 W).

SLM®500^{HL}



SLM®500^{HL}



The universally usable SLM®500^{HL} Selective Laser Melting System is a high-performance winner, thanks to its large build envelope and quad laser technology. An extremely comprehensive basic configuration and the large choice of options enable application-oriented system configuration. The system's patented multi-beam technology is a central component of the SLM®500^{HL}. With the twin (2x 400 W) and optional quad (4x 400 W) optical configuration, this system is specifically designed for use in the production environment.

The system has fully automated powder management located between the SLM®-system and the sieving station (PSX). The metal powder is continually sieved and fed to the construction process. This eliminates time-consuming manual filling of the system. Tasks like cleaning the cylinder and removal of the components are efficiently performed in the separate unpacking unit (PRS). The subsequent construction process can be started in parallel with a second construction cylinder.

The components are prepared with the software Magics RP and the module support generator SG+, as well as the SLM® Build Processor. The data formats used in the industrial environment can be loaded and processed. As well as this, a comprehensive monitoring and quality assurance system enables a high degree of process control in the system.

Technical Specifications

Build Envelope (L x W x H)	500 x 280 x 365 mm ³ reduced by substrate plate thickness
3D Optics Configuration	Twin (2x 400 W), Quad (4x 400 W) Twin (2x 700 W), Quad (4x 700 W) IPG fiber laser
Build Rate	up to 105 cm ³ /h
Variable Layer Thickness	20 µm - 75 µm
Min. Feature Size	150 µm
Beam Focus Diameter	80 - 115 µm
Max. Scan Speed	10 m/s
Average Inert Gas Consumption in Process	5 - 7 l/min (argon)
Average Inert Gas Consumption Purging	70 l/min (argon)
E-Connection / Power Input	400 Volt 3NPE, 64 A, 50/60 Hz, 8 - 10 kW
Compressed Air Requirement / Consumption	ISO 8573-1:2010 [1:4:1], 50 l/min @ 6 bar
Dimensions (L x W x H)	5200 mm x 2800 mm x 2700 mm (inkl. PSX, PRS)
Weight (incl. / without powder, PRS, PSX)	approx. 3100 kg / 2400 kg

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