Nikon SLM SOLUTIONS

SLM® 125

SELECTIVE LASER MELTING

HIGH POWER LASER IN A COMPACT FOOTPRINT

1x 400W

125MM X-AXIS | **125MM** Y-AXIS | **125MM** Z-AXIS

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ADAPTABLE AND ROBUST **FOR A WIDE RANGE OF USERS**

THE HIGHEST, SAFEST PERFORMANCE AVAILABLE IN ITS CLASS AT A LOW INVESTMENT

Offering a larger build plate and higher-powered laser than other similar-sized machines, the SLM®125 is a flexible manufacturing system to fit users' specific needs: Develop from prototypes to small series and qualified production components. All selective laser melting powders, including reactive materials, can be processed on the SLM®125.

OPEN SYSTEM ARCHITECTURE PUTS SELECTIVE LASER MELTING USERS IN CONTROL

All machines allow the use of materials from any supplier. This gives users the freedom to source qualified metal powder from powder division or from their own supplier, as well as the flexibility to develop new alloys. The integrated SLM®125 Build Processor and open software architecture offer the choice of running standard parameters or to customize and optimize parameters to meet their production needs and gain a competitive advantage.

MATERIAL DEVELOPMENT MODULE TO EDIT OVER **200 PROCESS PARAMETERS**

HIGHEST POWER IN ITS CLASS WITH A **400 WATT LASER**

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SMALL MACHINE
BIG RESULT

TECHNICAL SPECIFICATIONS

BUILD ENVELOPE (L x W x H)	125 x 125 x 125 mm³, reduced by substrate plate thickness
BUILD VOLUME REDUCTION (L x W x H)	50 x 50 x 50 mm³, reduced by substrate plate thickness
3D OPTICS CONFIGURATION	Single (1x 400 W)
THEORETICAL BUILD RATE	up to 33* cm³/h
VARIABLE LAYER THICKNESS	20 - 75 µm, more available on request
E-CONNECTION / POWER INPUT	400 Volt 3NPE, 32 A, 50/60 Hz, 3 kW
COMPRESSED AIR REQUIREMENT	ISO 8573-1:2010 [1:4:1] 7 bar
MACHINE DIMENSIONS (L x W x H)	1400 x 900 x 2460 mm³
MINIMUM FEATURE SIZE	140 µm
BEAM FOCUS DIAMETER	80 - 100 µm
MAXIMUM SCAN SPEED	10 m/s
AVERAGE INERT GAS CONSUMPTION IN PROCESS	0.6 L/min (Argon)
AVERAGE INERT GAS CONSUMPTION IN PURGING	70 L/min (Argon)

*Theoretical system build rate = layer thickness x scan speed x hatch distance x number of lasers. The value represents a com-parable indicator but remains a theoretical value after all. It does expressively not reflect true build rates, which are influenced by part geometry, ratio between hatch and contour areas, area of exposure, recoating times, and more.

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SLM®125

1 COMPACT, POWERFUL MACHINE FOR METAL PART PRODUCTION

The SLM®125 build envelope is up to 160% larger than other machines in its class and is designed for cost-efficient process development and small to medium manufacturing of high-quality, fully dense metal parts. The smallest machine in the lineupe SLM®125 includes many of the top-quality features of our larger platforms in a compact footprint. The substrate plate can pre-heat to up to 200°C to replicate production settings with up to 80% less metal powder than other systems. The machine utilizes an optimized gas filtration process with an adjustable gas flow that allows for optimal process properties and minimized gas consumption.

2 EFFICIENT, METHODICAL PARAMETER DEVELOPMENT SOFTWARE

The material development module is an easy, intuitive software tool for a systematic analysis of parameter variation. Users gain the power of developing in-house material know-how and utilizing custom process settings. Automated parameter alignment through rule definition and the replication and positioning of parts on the build plate create time savings in alloy development and parameter optimization.

3 HIGH-QUALITY METAL POWDERS AND RELIABLE POWDER MANAGEMENT PROCESS

Stainless steel, cobalt-chrome, nickel alloys, aluminum and titanium, to name a few, can all be processed in top quality on all selective laser melting systems. Both reactive and non-reactive metals can be processed. Thanks to the machine's compact design with a reduced number of powder-transporting components, materials can be changed quickly and easily. The Powder Sieving Machine (PSM) is a perfect complement to the SLM®125. During the sieving process, rough or oversized particles are sorted out and separated from the process ready materials under inert atmosphere conditions. The reusable metal powder, defined by grain size, is transported to a storage container for direct loading into the gravity powder feed on the machine.

4 CUSTOMER-ORIENTED SYSTEM FOR ADDITIVE MANUFACTURING SUCCESS

The SLM®125 can be adapted to customers' requirements and allows the user to scale their selective laser melting strategy. A variety of components and options make the SLM®125 an optimal system for all users, from research institutes working on new materials and process development to first-time users looking to gain best-in-class metal AM experience, as well as prototype manufacturers or, of course, those running qualified series production processes.

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INNOVATION BECOMES STANDARD

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. This level of process control results in consistent, high quality builds.

LAYER CONTROL SYSTEM

Layer Control System (LCS), standard with any SLM®125, is a testing and documentation system that examines the performance of each powder layer by monitoring the powder bed and detecting possible coating irregularities.

INNOVATION COMES STANDARD

Nikon SLM Solutions is known as the innovation leader in selective laser melting, being the first to introduce both twin- and quad-laser production systems. 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.

QUALIFIED MATERIAL SOLUTIONS

Nikon 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.

CONSULTATIVE DEVELOPMENT AND EXPERT KNOWLEDGE-SHARING

Nikon 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 factory layout and full serial production ramp-up.

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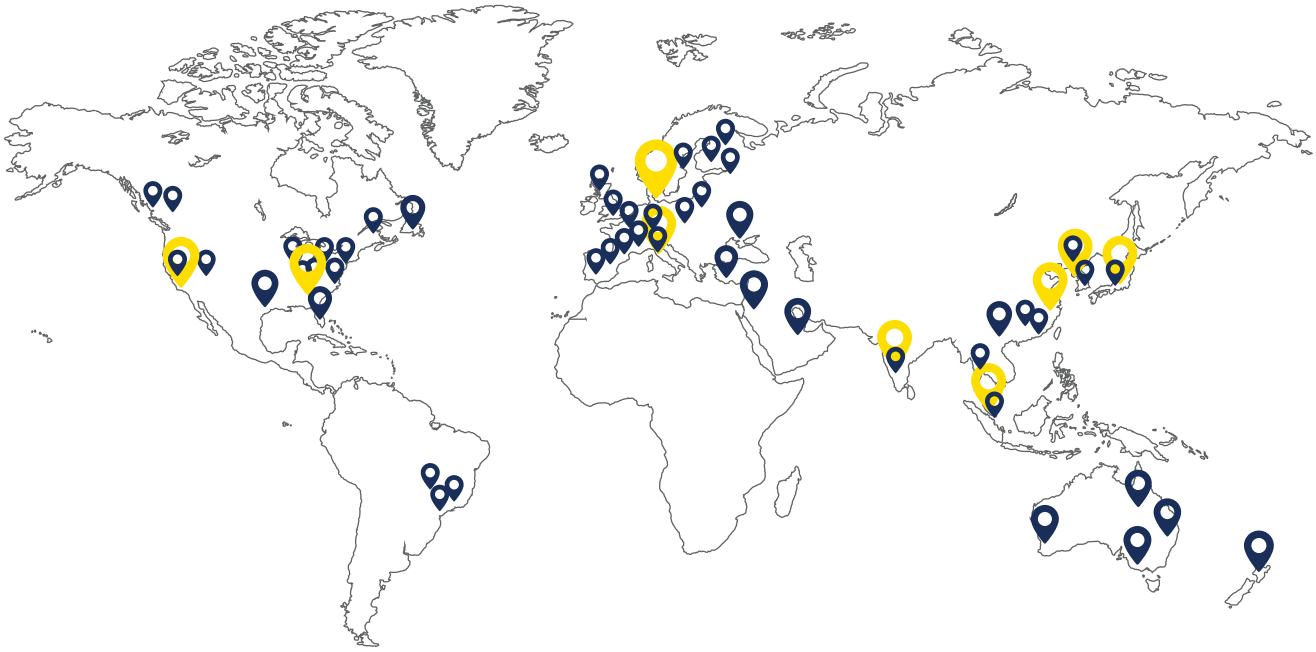
TECHNOLOGY PIONEERS **INNOVATION LEADERS**



2000+ LASERS INSTALLED GLOBALLY

9 CENTERS

Country	City	Type
Germany	Lübeck	Management, Engineering, Production, Application
USA	Long Beach, CA	Application
USA	Greenville, SC	Production
Japan	Tokyo	Application, Sales
China	Shanghai	Sales
Singapore	Singapore	Sales
India	Bangalore	Sales
South Korea	Seoul	Sales
Italy	Bologna	Engineering

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The laser powder bed fusion process was the first to offer multi-laser systems, and all its selective laser melting machines offer patented quality, safety and productivity features. Taking a vested interest in customers' long-term success in metal additive manufacturing, Nikon 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. Optimally paired with Nikon 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.

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

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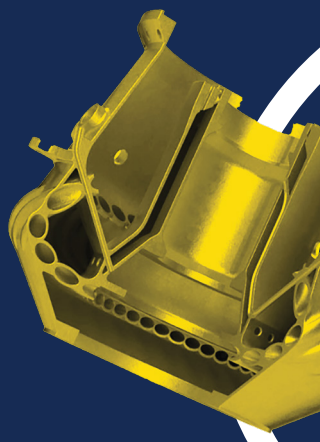
SOLUTIONS

GO **FASTER.**
GO **MULTI-LASER.**
GO **END-TO-END.**
GO **SUPPORT-FREE.**
GO **INDUSTRIAL SCALE.**
GO **BOLDER.**
GO **FOR GOLD.**
GO **NIKON SLM SOLUTIONS.**



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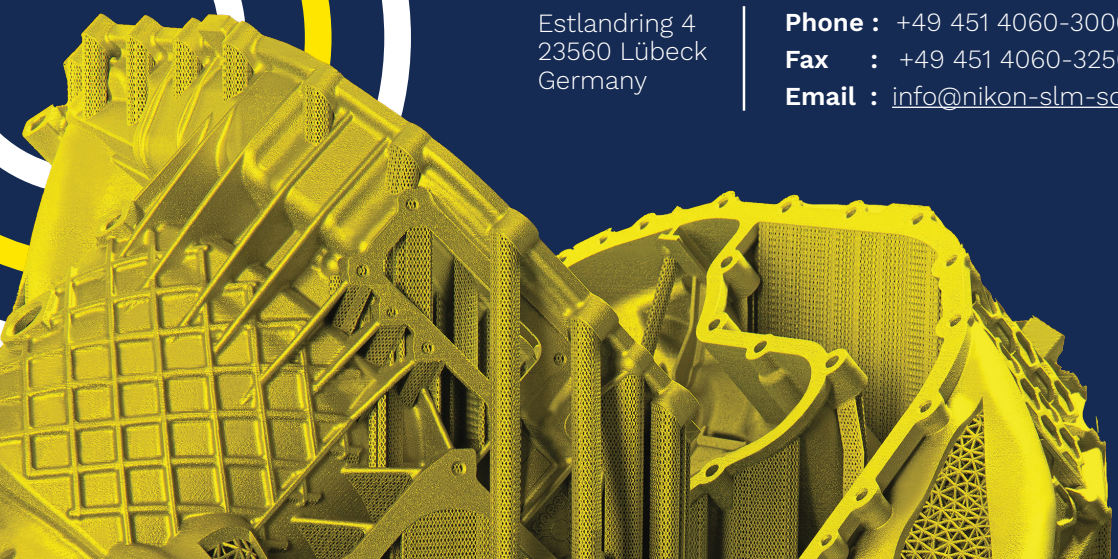

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