SLM 50

for manufacturing Dental Components

REALIZER SLM

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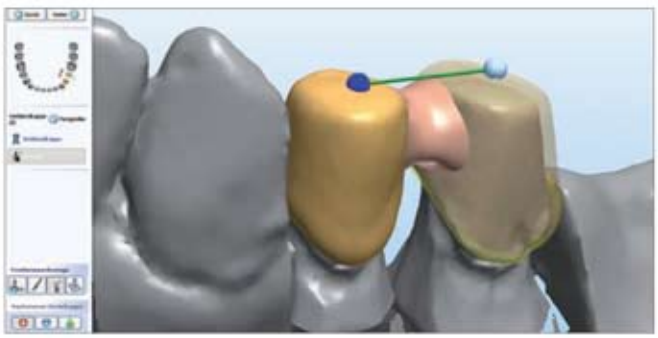
With the SLM 50, Realizer delivers the globally first SLM™ desktop machine for manufacturing components made of metal. The desktop device has been designed for the manufacturing of components with a diameter of up to 70 mm and a height of up to 40 mm.

Realizer, in its function as technology leader, can fall back on many years of experience with this process in the development of SLM™ machines. As the developers of Selective Laser Melting, in 1999 they launched the world-wide first SLM™ machine for the manufacturing of components made from metallic materials.

Selective Laser Melting

For Selective Laser Melting (SLM™), the work piece is directly created in layers, based on 3D data. To effect this, metal powder (e.g. stainless steel, tool steel, cobalt chrome, or gold) is applied in thin layers and melted on at the predetermined locations using a powerful fibre laser. Following each melting process, the work platform is lowered so that the next layer can be applied. This way, precise and complex functional components are created which not only feature the same material properties as conventionally produced components but can also be processed the same way.

3D-Sanning	CAD-Design
	

SLM machines for the manufacturing of dental components

Traditionally, crown and bridge frameworks are made from precious metal and non-precious metal alloys by a dental technician, modelled from wax and then cast. With the introduction of zirconium oxide dental prostheses about 4-5 years ago, scanners and CAD/CAM system have found their way into dental laboratories and milling centres. Plaster models are scanned, the frameworks are virtually modelled with special CAD programs and then milled from zirconium oxide blanks.

Based on similarly generated 3D data, SLM machines manufacture frameworks from precious metal and non-precious metal alloys. Today, these SLM machines are located at milling and manufacturing centres that function as manufacturing service providers for dental laboratories.

The SLM 50 was developed in 2008, also for use in dental laboratories. For the first time, this machine made it possible for dental laboratories to bring the whole CAD/CAM manufacturing of metal frameworks back in-house. With a capacity of 70-80 units per day, the SLM 50 is suitable even for large dental laboratories. At the current price level (as of March 2011) for SLM-manufactured metal frameworks from milling and manufacturing centres, the investment for dental labs pays off starting at quantities of approx. 200 units per month.

SLM Production	Build Platform	Further Processing
		

Specifications	
Construction volume	Platform diameter 70 mm, max. construction height 40 mm
Thickness of layers	20-50 µm
Laser type	Fibre laser 20 to 120 W
Power supply	16A, 230V
Power consumption	1.0 KW
Argon consumption	approx. 30 Liter/h
Dimensions	W800 x D700 x H500 mm
Weight	approx. 80 kg
Software	ReaLizer Control Software
Materials	Cobalt Chrome, Stainless Steel, gold alloys, titanium others on request

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