GE Additive

Big things come
in small packages

Concept Laser
Mlab R & Mlab 200R

Mlab family

Concept Laser Mlab family

The Concept Laser Mlab family of DMLM systems offers versatile solutions for ease of use and safe handling for a broad range of materials and applications - with minimum footprint. The modular machine offers different build envelopes in one machine and allows for quick and easy change between different materials. High process stability enables production of complex parts quickly and efficiently, while providing the high part quality and resolution. The modern machine design with the patented pull-out drawer system offers a high degree of safety and user friendliness. It enables to do a rapid change of material without the risk of any contamination of powder material. Additionally, all process steps take place under inert gas, shielded from external influences to further promote safety.

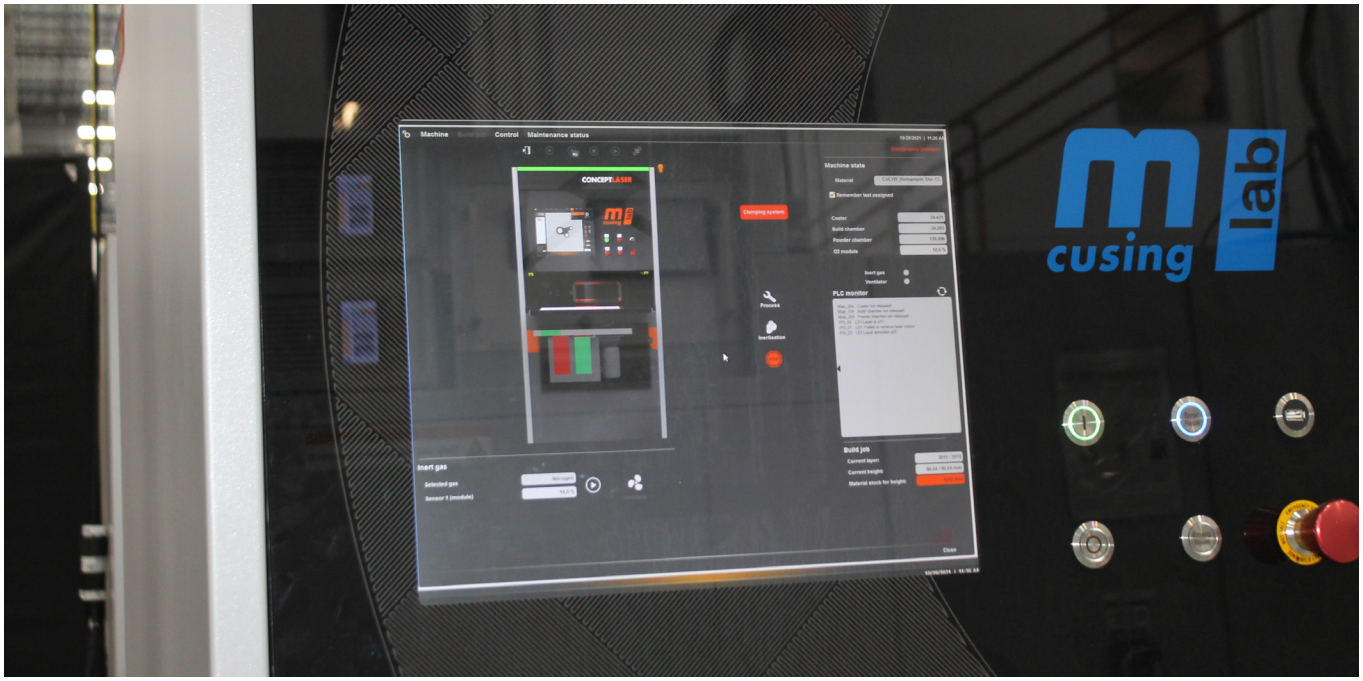
Concept Laser Mlab R

For manufacturing metal components with elaborate structures and parts made from reactive materials like titanium

The Mlab R is capable of building in both reactive and non-reactive materials and produces fully dense parts with a surface finish that is unmatched in laser systems. The physical separation of the process chamber and handling station offers the possibility of using the handling station for multiple machines. The Mlab R now expands the previous range of materials to include titanium and titanium alloys.

FEATURES

- Ideal for both reactive and non-reactive materials
- Two modules available for different build sizes
- Makes quality parts quickly and efficiently
- Perfect for parts with delicate structures



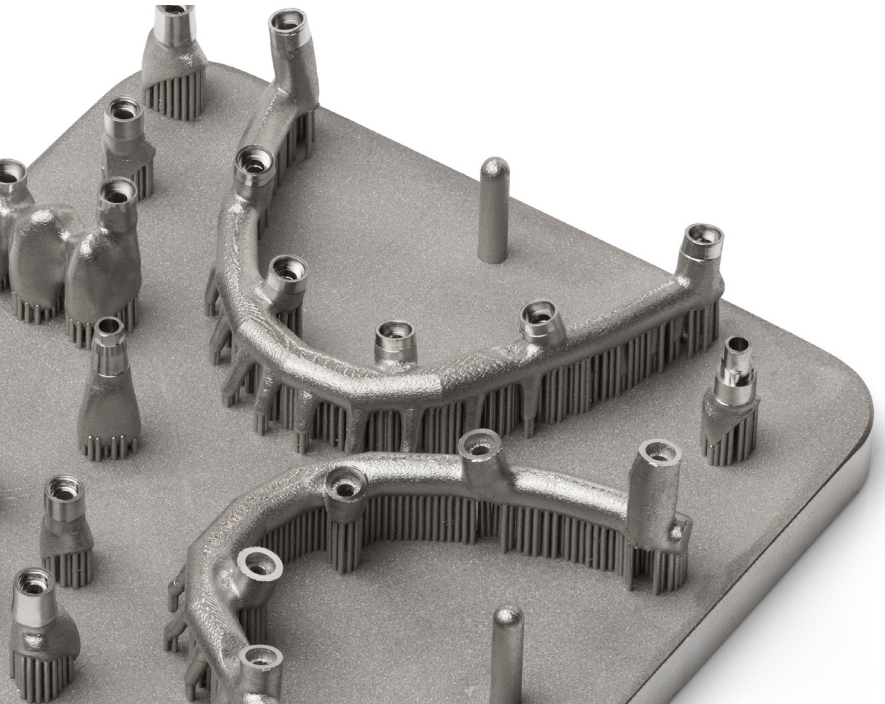
Concept Laser Mlab 200R

Laser metal 3D printing efficiency for high surface quality parts
The Mlab 200R is perfectly suited for high surface quality and creating the finest part structures. In addition, this machine allows you to manufacture larger parts than other machine versions with much greater productivity—without the machine losing any of its familiar compactness.

The Mlab 200R boasts a user-oriented design, with a larger build envelope, a higher laser power of 200 watts and a space-efficient footprint. In addition, the machine includes a larger filter, resulting in longer filter lifespans, and a clamping system that enables more accurate component positioning.

Special features are the water-floodable filter and the modular structure of the machine. The process chamber and handling station are physically separate and enable safe and easy component handling. All process steps take place under inert gas, shielded from external influences. The whole process can therefore be implemented reliably and with the maximum quality level.

The versatile machine solution
- Modular structure, build modules interchangeable
- Patented pull-out drawer system for a high degree of safety and user friendliness
- Rapid change of material without the risk of any contamination of powder material
- Physical separation of process chamber and handling station
- All process steps take place under inert gas, shielded from external influences
- Possibility of arranging multiple machines directly side by side
- Possibility of using the handling station for multiple machines



HIGHLIGHTS

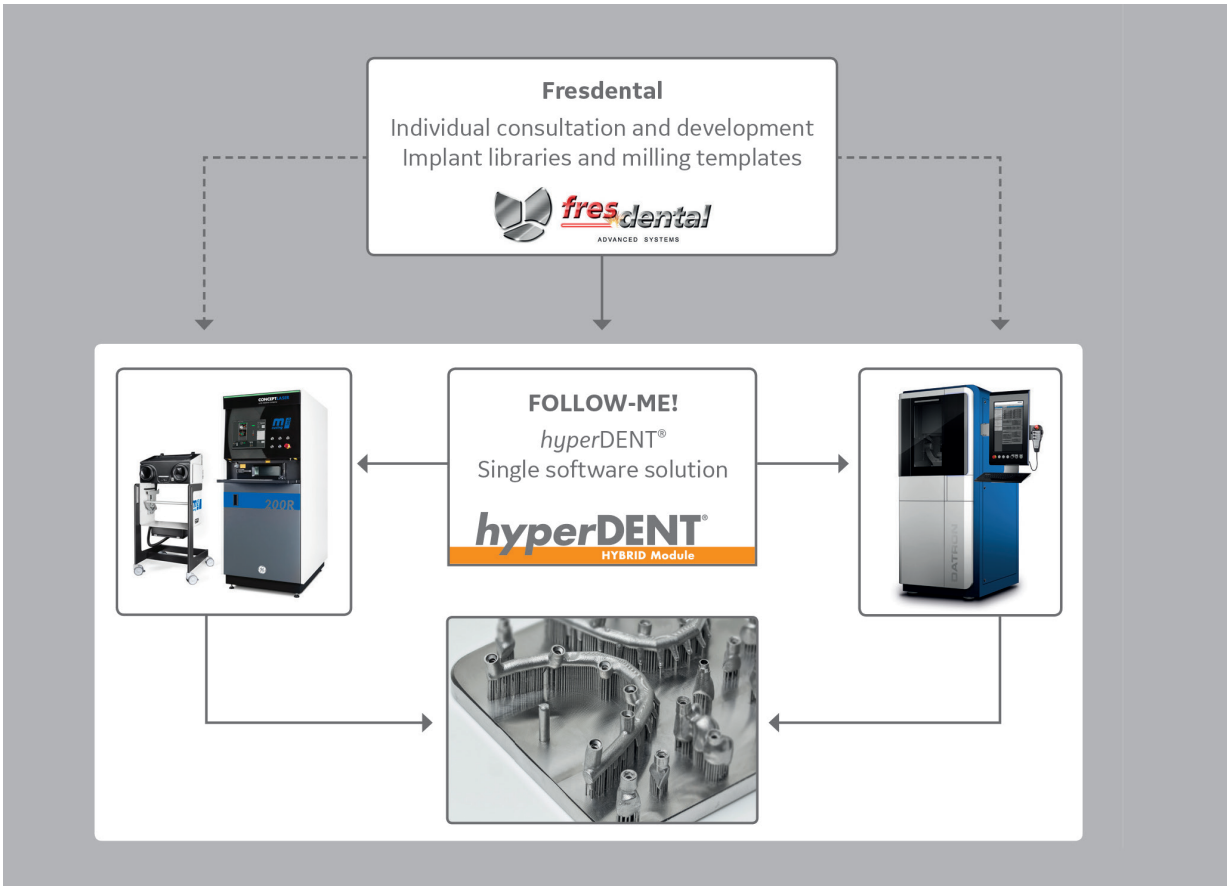
- High part quality and resolution
- Modular machine allows quick change between different materials
- Broad material spectrum with minimum footprint
- Different build envelopes in one machine
- High processes stability enables production of complex parts quickly and efficiently
- Modern machine design offers high degree of safety and user friendliness

DENTAL HYBRID MANUFACTURING SOLUTION

Discover new growth potential with our dental hybrid manufacturing solution

Additive manufacturing (AM) allows you to manufacture complex, customized, precise frameworks and tension-free dental prostheses for improved fit in the mouth. 3D metal printing decreases the loss of material compared to just milling—milling alone wastes up to 85% of material used in the manufacturing process. AM also allows significant time savings—up to 50% faster than casting, with 99.6% density of the final product. In addition, AM demonstrates better metallurgical properties than with a cast part made from the same material. And when you combine AM with substractive manufacturing you can take advantage of both technologies.

Additive manufacturing and milling: hybrid process combines the best of both worlds.



HOW IT WORKS: A single software solution controls both the AM process and the milling process. It is an open, highly automated and flexible system with automatic nesting, automatic generation of ID tags for the identification of parts and automatic generation of the machining allowance for milling. A special 0-point transformation solution ensures the highest accuracy during the milling process of the 3D printed part. Therefore, pins are printed on the build plate and measured directly in the milling machine.

The benefits include:

- Up to 40% reduced costs by using the dental hybrid solution instead of just milling alone
- The ability to create complex geometries and the thinnest wall structures for dental applications, which are not possible to produce by milling
- Implant connections require the highest accuracy for a perfect fit, which is ensured by the milling process
- To avoid a complex work around, just one software is required to manage both 3D printer and milling machine

Concept Laser Mlab Family

Technical Data

	Concept Laser Mlab R	Concept Laser Mlab 200R
Build envelope	50 x 50 x 80 mm (x,y,z) 90 x 90 x 80 mm (x,y,z)	50 x 50 x 80 mm (x,y,z) 90 x 90 x 80 mm (x,y,z) 100 x 100 x 100 mm (x,y,z)
Layer thickness	15 – 30 µm	15 – 30 µm
Production speed	1 – 5 cm^3/h (depending on material)	1 – 9 cm^3/h (depending on material)
Laser system	Fibre laser 100 W (cw)	Fibre laser 200 W (cw)
Max. scanning speed	7 m/s	7 m/s
Focus diameter	approx. 50 µm	approx. 75 µm
Connected loads	Power consumption max. 1.5 kW Power supply 1/N/PE AC 230 V, 16 A	Power consumption max. 1.5 kW Power supply 1/N/PE AC 230 V, 16 A
Inert gas supply	1 gas connection provided / Nitrogen or Argon	1 gas connection provided / Nitrogen or Argon
Inert gas consumption	approx. 0.6 – 0.8 l/min*	approx. 0.6 – 0.8 l/min*
Machine dim:	705 x 1848 x 1220 mm (W x H x D)	820 x 1839 x 1410 mm (W x H x D)
Handling station dims:	729 x 1391 x 628 mm (W x H x D)	729 x 1391 x 628 mm (W x H x D)
Machine weight	approx. 600 kg	approx. 700 kg
Handling station weight	approx. 100 kg	approx. 100 kg
Operating conditions	15 – 30°C	15 – 30°C
Materials available	Stainless Steel 316L Stainless Steel 17-4PH Aluminum AlSi10Mg Titanium Ti6Al4V ELI Grade 23 Titanium CPTi Grade 2 Bronze CuSn remanium star® CL (CoCrW) rematitan® CL (Ti6Al4V ELI) Silver 930 Gold, Yellow Gold, Rose Platinum	Stainless Steel 316L Stainless Steel 17-4PH Maraging Steel M300 Aluminum AlSi10Mg Nickel 718 Titanium Ti6Al4V ELI Grade 23 Titanium CPTi Grade 2 Bronze CuSn remanium star CL (CoCrW) rematitan CL (Ti6Al4V ELI)