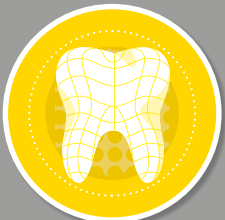


LITHOZ®

Manufacture the future.

LITHOZ
GOES
DENTAL



**3D PRINT YOUR DENTAL
COMPONENTS USING
CERAMICS**

DISCOVER THE ADVANTAGES OF LITHOZ'S LCM TECHNOLOGY FOR YOUR DENTAL APPLICATIONS.

SIMPLE DATA PREPARATION AND USER-FRIENDLY MACHINE CONTROL

The user-friendly and intuitive CeraFab Control software allows for easy handling of the 3D printer and gives open access to all printing parameters.

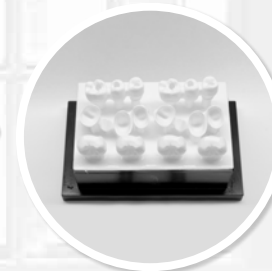
CeraDoc4Med

is included in the CeraFab 7500 Dental and facilitates the easy and automated creation of reports for the technical documentation of medical device fabrication.



COMPLEX GEOMETRIES WITH HIGH-PERFORMANCE CERAMICS

Full ceramic crown (3 mol% yttria stabilized zirconia) with highly pointed fissure geometry and perfectly shaped occlusal surface. Very fine edges down to 100 µm are achievable with the LCM technology.



PARALLEL PRODUCTION OF DIFFERENT DESIGNS

3D printed parts with variations in design can be produced simultaneously and directly from the CAD files without any need for specific tools.

MATERIAL SAVING PRODUCTION METHOD

The low consumption of material using this machine also means that any remaining material can be reused later. Due to the quick-locking system of the machine, a change of material can be completed within 5 minutes.

MACHINE FOOTPRINT

Height: 170 cm
Width: 80 cm
Depth: 120 cm
Weight: ca. 250 kg



Technical properties	CeraFab 7500 Dental
Lateral resolution	40 µm (635 dpi)
Layer thickness	10 – 100 µm
Number of pixels (X,Y)	1920 x 1080
Build volume (X,Y,Z)	76 mm x 43 mm x 170 mm
Data format	.stl (binary)
Light source	LED
Build speed	up to 100 slices per hour

LCM stands for Lithography based Ceramic Manufacturing and is a 3D printing technology. It allows cost effective customized products with high accuracy and strength.

STANDARD MATERIALS

	LithaCon 3Y 210/230	LithaBone TCP 300	LithaBone HA 400
	Zirconia	Tricalcium phosphate	Hydroxy apatite
Theoretical Density [g/cm ³]	6.09	3.07	3.16
Relative density [%]	99.0	98.0	85.0
Color	White	White	Aqua blue
Description	Dental restorations and endosseous implants require high strength materials. LithaCon 3Y 210 and 230 are Lithoz's answer to these requirements, exhibiting a four-point bending strength of over 930 MPa. LithaCon 3Y is a 3 mol% yttria stabilized zirconia. LithaCon 3Y 210 was tailored for the manufacture of delicate and complex parts. Whereas LithaCon 3Y 230 was tailored for the manufacture of bulky parts and also decreased shrinkage during sintering.	The resorbable material tricalcium phosphate is perfectly suited for bone replacement applications due to its proven biocompatibility. The sintered ceramic was tested according to ISO 10993 and showed no adverse effects. The raw powder complies with the specification for Beta-Tricalciumphosphate as implant material (ASTM standard F1088 - 04a).	For applications that demand prolonged resorbability, hydroxyapatite is the obvious choice. As with tricalcium phosphate, Lithoz's hydroxyapatite ceramic was tested according to ISO 10993 and showed also no adverse effects. The raw powder complies with the specification for hydroxyapatite as implant material (ASTM standard F1085 - 03).

EXAMPLES OF DENTAL APPLICATIONS



Minimally Invasive Restoration

Complex geometries such as ultrathin occlusal veneers are printable using our machines, and edges can be manufactured as thin as 100 µm with LCM technology. In addition, LCM technology offers unprecedented imaging accuracy in terms of the fabrication of anatomically shaped fissure surfaces.



Implants

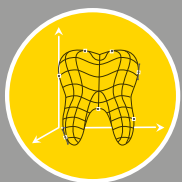
Using LCM technology, it is now possible to manufacture complex shaped implants which were previously impossible to produce using conventional tools, as well as to manufacture existing standard designs either as prototypes or in large numbers. These components exhibit high strength as well as geometric fidelity as a result of our process.



(Jaw) Bone Augmentation

This is an example of a complex tricalcium phosphate structure, which was designed to mimic trabecular bone. This patient specific bone augmentation implant facilitates the ingrowth of bone and blood vessels through interconnected pores with a defined geometry. This material is bioresorbable and therefore can be replaced by native bone.

PROCESS CHAIN



CAD DESIGN



3D PRINT (LCM)



CLEANING, REMOVING
SUPPORT STRUCTURES, SINTERING



FINISHING



FINAL PRODUCTS

LITHOZ

YOUR TECHNOLOGY PROVIDER OF CERAMIC 3D PRINTERS FOR DENTAL APPLICATIONS

Lithoz provides an additive manufacturing technology for the dental market which meets the high standard of accuracy and material quality required. The Lithography-based Ceramic Manufacturing (LCM) technology facilitates the production of high-quality ceramics.

Discover the advantages of our LCM technology for new innovative dental applications.

- Production of parts ranging from complex components to machinery
- Highly pointed fissure geometry at the occlusal surface
- Wall thickness as thin as 100 µm
- Implants with defined porous structure



ADDITIVE MANUFACTURING SYSTEMS FOR DENTAL APPLICATIONS

A complete system, including machinery, software and different ceramic materials to allow for the production of top-quality parts.



CUSTOMIZED DEVELOPMENT

Application: Lithoz supports its customers throughout the entire process, from the design to the production of the ceramic parts.

Material: Lithoz offers feasibility studies to allow our customers to adapt the LCM technology for a specific powder/material.

System: Lithoz provides solutions to meet the specific requirements of industry and research.



CONSULTING & TRAINING

Workshops and consultations with our in-house experts, covering the entire process chain of manufacturing ceramic components.

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