Technical data CeraFab 7500

- Lateral resolution: 40 μm (635 dpi)
- Layer thickness: 25 μm
- Building envelope (X,Y,Z): 76 x 43 x 150 mm³
- Building speed: 1 – 3 mm per hour

Available materials

- Oxide ceramics (Al₂O₃, 3Y-ZrO₂, mullite, ...)
- Non-oxide ceramics (Si₃N₄, SiAlON)
- Glass and glass ceramics
- Other and custom materials on request

Please feel free to contact us:

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Fraunhofer-Center HTL
is certified to acc. ISO 9001:2015
Additive Manufacturing

Using modern techniques of Additive Manufacturing, Fraunhofer-Center HTL develops and fabricates customer-specific parts and prototypes. In doing so, the HTL does not only pursue the fast and cost-efficient fabrication of parts, but also the development of novel construction and design principles in the fabrication of ceramic, metal-ceramic and metal components.

In applying techniques of additive manufacturing, it is possible to create filigree and complex components integral with little effort. Hereby, subject to the printing technique, elaborate post-processing steps can be minimized or even eliminated completely. Furthermore, depending on the required space, multiple and also diverse parts can be fabricated simultaneously. Thus high expenses for molds can be saved, and development cycles can be shortened.

For the purpose of additive manufacturing two different and complementary methods are available, which enable the fabrication of technical ceramics as well as of porous ceramic and dense metal-ceramic or metal parts. Optionally, demonstrative parts consisting of polymer can be printed for testing purposes in advance.

Slurry-based fabrication

Technical ceramic components are fabricated with a CeraFab 7500 from Lithoz GmbH. This device produces the parts layenwise via stereolithography. In this process, a ceramic suspension that contains ceramic particles as well as a photo-sensitive binder is fused via radiation in the visible range through an exposure mask. The green parts generated this way are subsequently detached from the building platform, cleaned, debindered and sintered to the final technical ceramic component.

Service offer

Reaching from the consultancy in terms of Additive Manufacturing and the design of CAD-data, over the realization of feasibility, design and metallurgical studies and fabrication of prototypes and small-scale series, up to the characterization and optimization of parts and processes, the HTL provides a customer-oriented complete package.

Services summary

- CAD model design and construction
- Fabrication of complex and filigree prototypes and small-scale series
- Feasibility and metallurgical studies
- Extensive material variety
- Extensive part characterization:
  - Part geometry and contour accuracy
  - Thermal properties and processing
  - Mechanical and thermomechanical properties
  - Micrographs