

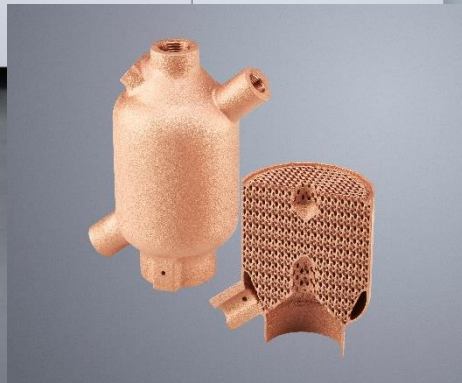
TruPrint 5000
Green Edition

3D printing of copper
and copper alloys

.World Premiere

01

Unique combination of
green laser and additive
manufacturing system



02

Outstanding thermal
properties and
electrical conductivity

03

Highest quality and
productivity of printed pure
copper and copper alloys

TruPrint 5000 Green Edition: 3D printing of copper and copper alloys

As a technology leader, TRUMPF combines the expertise in additive manufacturing with our industrial beam sources to create this special edition system: TruPrint 5000 Green. The combination of the two products, TruPrint 5000 and TruDisk 1020, enables stable and highly productive processing of pure copper and copper alloys.

Your benefits:



Lower cost per part due to higher productivity and high machine availability

- **High machine availability due to industrial thermal system stability**
No laser degradation, industrial green laser combined with a robust high temperature machine platform
- **>100 %IACS conductivity**
Reproducible results throughout the build job and a series of build jobs
- **High LPBF process robustness and large process window**
High laser absorptivity results in an efficient process and energy input
- **Superior surface quality and detail**
Due to lower heat input compared to IR laser
- **Less supports required than with IR laser**
Reduced rework of application parts
- **Standard pure copper powders**
Vs. expensive oxidized or nanocoated powders required by IR and no powder aging during LPBF process
- **No part heat treatment necessary**
Other technologies often require additional heat treatments to achieve high conductivity



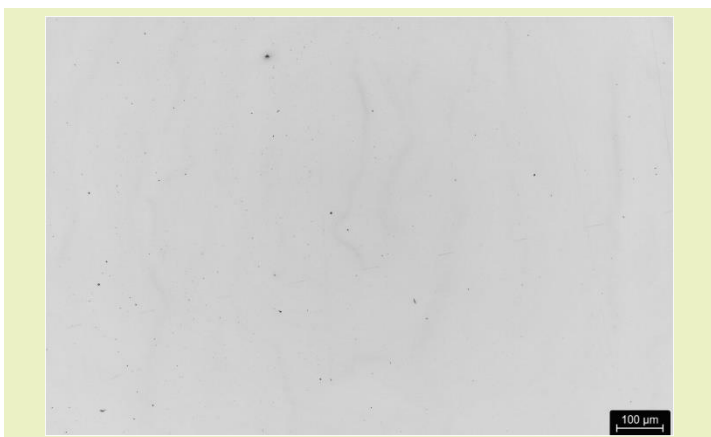
Now also 3D printing of large parts are possible like the pure-copper accelerator component produced using AM as part of the EU-funded I.FAST project coordinated by CERN*.

TruPrint 5000 Green Edition

Build volume (cylinder)	mm x mm	Ø 300 x H 400
Processable materials ^[1]		Weldable metals in powder form, such as: copper, copper alloys, aluminum alloys ^[1]
Build rate ^[2]	cm ³ /h	8 – 100
Layer thickness	µm	30 - 150
Max. laser power at the workpiece (TRUMPF laser: TruDisk 1020)	W nm	800 515
Beam diameter	µm	210
Preheating	°C	Up to 200
Shielding gas		Nitrogen, argon
Automation		Automatic process start
Power supply	V / A / Hz	400 / 32 / 50
Dimensions (incl. filter, electrical cabinet)	mm	4616 x 2038 x 4234
TruPrint 5000 Weight (incl. filter, electrical cabinet, powder)	kg	7007
TruDisk 1020 Weight	kg	530
Filter unit		Self-cleaning, long-term, multi-material filter unit

^[1] Current material and parameter availability upon request

^[2] Actual build rate consists of exposure and recoating. Dependent on system configuration, process parameters, material and degree of filling
Subject to modifications. Please ask your local TRUMPF contact to check local product availability.



Microsection copper ETP, 100x magnification

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