

# Wizard 480+

Industrial CFF/FFF AM System



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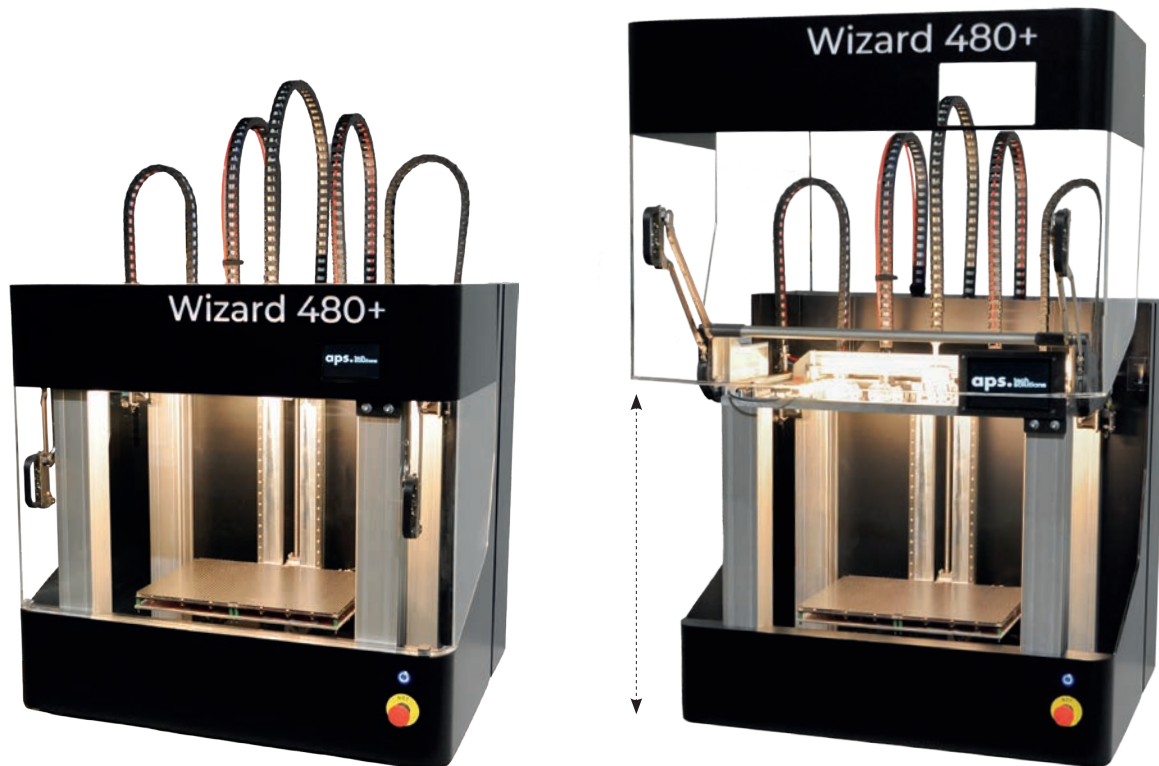
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## **The innovation in industrial 3D printing**

The „WIZARD 480+“ combines several innovations into one complete system.

With our own developed and patent pending print head technology and the dynamic tool change system enabling the production with CFF (Continuous Filament Fabrication) and FFF (Fused Filament Fabrication) and their combination for components in the dimensions of 400 x 300 x 400mm.

A dynamic tool change system enables the combined print with up to four materials in one part. The continuous fiber printing with carbon fibers, aramid, glass fiber or copper wire can be usefully supplemented with other materials in the FFF process, a new type of high-strength and very lightweight components can be engineered and produced. The Wizard 480+ CFF/FFF printing system combines a high-precision and very stable portal construction with a new - patent pending print head technology for continuous fiber printing to an industrial 3D high precision printing system.



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**1 High Tech Made in Austria**

Conceived, engineered and built in Austria with our own precision components and specially tested components to ensure the highest quality.

**2 Continuous Carbonfiber**

Production of high-strength and very lightweight components using our own high-tech filament made of continuous carbon fiber. Further endless fibers like aramid & glass fiber is also possible.

**3 Tool changer**

With currently up to 4 slots it is possible to change between the following tools within a few seconds:

- CFF print head
- FFF print head
- Copper wire Print head
- Laser for engraving, milling spindle, ...

**4 Highest precision**

A high-precision portal construction with powerful drives, combined with our longstanding experience in mechanical engineering and robotics, result in a highly precise printing system for industrial use.

**5 Advanced FFF technology**

Up to a temperature of 500°C our print heads can operate - this enables the processing of High performance plastics, metals, ceramics and other materials.

**6 Water-cooled**

Water-cooled print heads contribute to process safety, Precision and repeatability accuracy.

**7 Open Material System**

No restrictions on use of materials from third party suppliers. We offer also own high-tech filaments like our endless carbon fiber.

**8 Build space**

- Components in the dimensions of 400 x 300 x 400 mm
- Heating bed temperature up to 200°C
- Live Video Surveillance

**9 Flexible extensions**

Individual adaptation to your application purpose and Extensions:

- Heatable building space
- air filter, etc.

**10 Individual solutions for your success**

Specific requirements need customized solutions to perform any desired function to be able to do that. The development of Individual solutions is our strength.

## The Design

|                             |   |
|-----------------------------|---|
| <b>Size of build volume</b> | 400 x 300 x 400 mm (2 fixed print heads)  |
|                             | 400 x 230 x 370 mm (print head exchange system)   |
| <b>Repeatability</b>        | up to 0,02 mm   |
| <b>Min. layer thickness</b> | 0,01 mm   |
| <b>Heat bed temperature</b> | up to 200 °C  |
| <b>Extruder temperature</b> | up to 500 °C  |
| <b>Optional upgrades:</b>   | <ul style="list-style-type: none"><li>• heatable building space and adjustable up to 100 °C (building space is thermally separated from drive and guide units)</li><li>• Air filter</li><li>• Video Livestream</li><li>• Foundation</li></ul> |

## Tool options

|  |  |
|--|--|
| <b>Automatic tool/ print head change system</b>  | 4 slots (on request up to 7 slots)   |
| <b>Duration of tool change (filament change)</b> | ~5 seconds at a tool distance of 450mm   |
| <b>Printheads</b>                                | <ul style="list-style-type: none"><li>• FFF printhead (single or double nozzle)</li></ul>  |
| <b>(All printheads are water-cooled)</b>         | <ul style="list-style-type: none"><li>• CFF Continuous fiber printhead with integrated inline cutting mechanism</li><li>• Copper wire printhead with integrated inline cutting mechanism</li></ul> |
| <b>Special tools</b>                             | milling spindle, laser for engraving, ..   |

## Hardware

|                        |                 |
|------------------------|-----------------|
| <b>Display / Input</b> | 7" Touchdisplay |
| <b>Interface</b>       | Ethernet, USB   |
| <b>Width</b>           | 900 mm          |
| <b>Depth</b>           | 720 mm          |
| <b>Height closed</b>   | 870mm           |
| <b>Height open</b>     | Approx. 1400 mm |
| <b>Weight</b>          | Approx. 120 kg  |

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## Software

|                             |  |
|-----------------------------|--|
| <b>Recommended Slicer</b>   | <u>Simplify3D (license included)</u>   |
| <b>Continuous filaments</b> | <u>PlugIn für Simplify3D (included when buying a continuous fiber printhead)</u> |

## Materials

### **Continuous Filament Fabrication CFF**

|                          |  |
|--------------------------|--|
| <b>Continuous fiber</b>  | <u>Carbon fiber, glass fiber, aramid</u> |
| <b>Special materials</b> | <u>Copper wire</u>                       |

### **Fused Filament Fabrication FFF**

|                                  |  |
|----------------------------------|--|
| <b>Plastics</b>                  | <u>ABS, CPE, PET, PC, PLA, PVA, TPU, ...</u> |
| <b>High-performance plastics</b> | <u>PEI, PEEK, PEKK, Carbon Fiber PA, ...</u> |

### **FFF for sinter applications**

|                                 |  |
|---------------------------------|--|
| <b>High-alloy chrome steels</b> | <u>316L   1.4404</u><br><u>17-4PH   1.4542</u>               |
| <b>Maraging steel</b>           | <u>1.2709</u>  |
| <b>Superalloys</b>              | <u>IN 718   2.4668</u><br><u>IN 625   2.4856</u>             |
| <b>Light metals</b>             | <u>Ti   Titan (unalloyed)</u><br><u>Ti6Al4V   3.7165</u>     |
| <b>Hard metals</b>              | <u>WCo in different mixing ratios on request</u>             |
| <b>Ceramics</b>                 | <u>ZrO<sub>2</sub></u><br><u>Al<sub>2</sub>O<sub>3</sub></u> |

No restriction on third-party materials - parameterization by user.

We also offer our own developed filaments. Additional materials are available on request.

## Power supply

|                          |                                 |
|--------------------------|---------------------------------|
| <b>Input</b>             | <u>230V (50Hz) 2500W</u>        |
| <b>Electrical Safety</b> | <u>Depending on the country</u> |

## Leadtimes

**6-10 weeks | by arrangement**



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