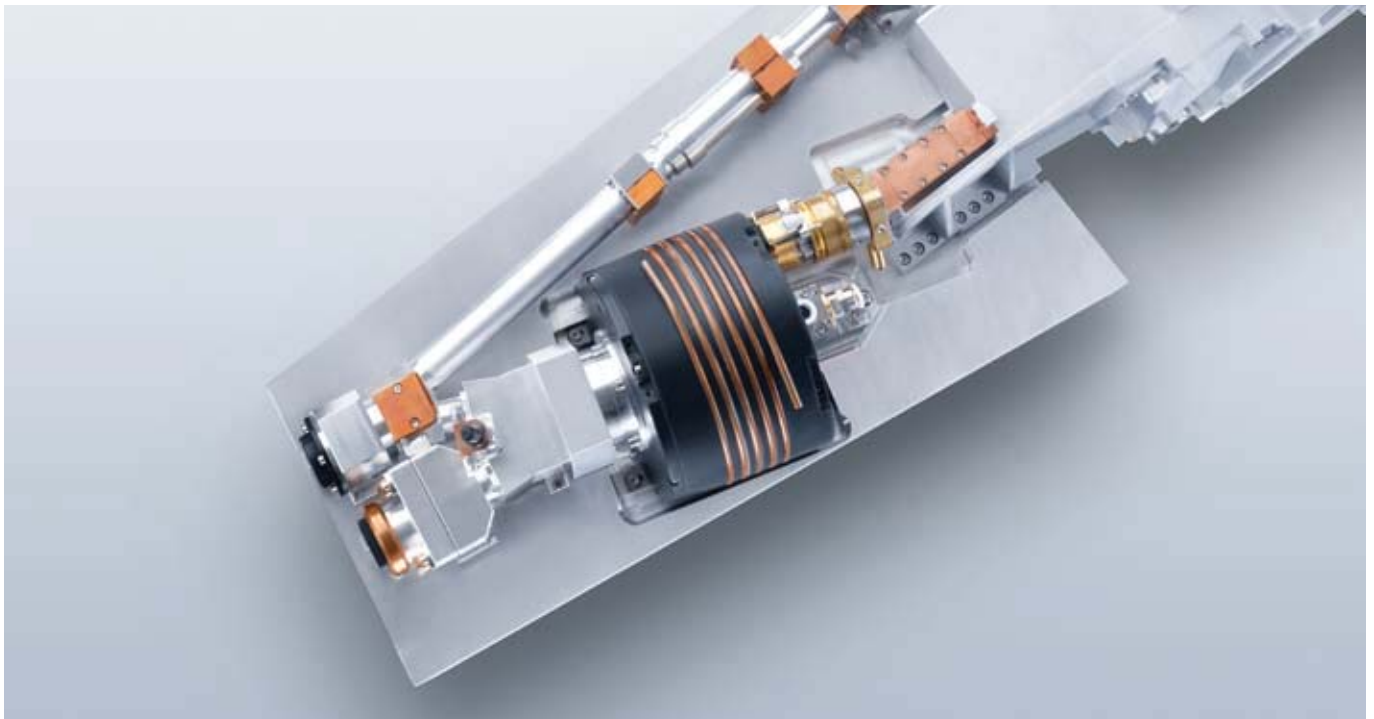


# TruDisk



Optics design in a TruDisk disk laser.

## TruDisk: Benefits at a glance.

- 1 Maximum availability with low operating costs.
- 2 Process stability through consistent, reproducible results.
- 3 Brilliant beam quality.
- 4 Impressive in the laser network.
- 5 Secure and stable.

Highly efficient, attractively priced and compact: TruDisk disk lasers ensure your components are produced economically. They combine the advantages of solid-state and diode lasers. Using a disk as the laser medium guarantees brilliant beam quality, and using a diode laser as the pump source provides the excitation energy and ensures high efficiency. TruDisk disk lasers deliver maximum performance – for welding and brazing and also for high-productivity, thin-sheet cutting. These powerhouses are available with laser power up to 16 kW, or even higher on request. Fields of application range from the automotive and supply industries to aerospace and heavy industry.



### Maximum availability with low operating costs.

The beam generation, beam guidance, power supply, cooling and control units of the TruDisk laser are modular in design and are accommodated in a compact housing. All components are thought through in detail and coordinated with one another. The lasers have maximum availability and are easy to service. Excitation is generated using extremely long-life laser diodes. As a result, you attain a high level of efficiency and low operating costs. In the event the diodes do lose power, the pump diodes act as substitutes for one another. The power to the modules is automatically increased to ensure there is no loss of power at the workpiece.



### Brilliant beam quality.

As a result of the disk geometry, your TruDisk provides excellent beam quality into the high multikilowatt range. This means you can achieve optimum results in such diverse processes as remote and hybrid welding and high-speed thin-sheet cutting. The constant divergence angle for all operating modes and powers guarantees a standardized beam quality, allowing you to use all of the TRUMPF focusing optics.

**Top:** Compact construction: the TruDisk 6002.

**Bottom:** Reliable pump modules.

# TruDisk



Maximum power: the TruDisk laser with 16 kW.



User interface of the TruDisk laser.

## Consistent, reproducible results.

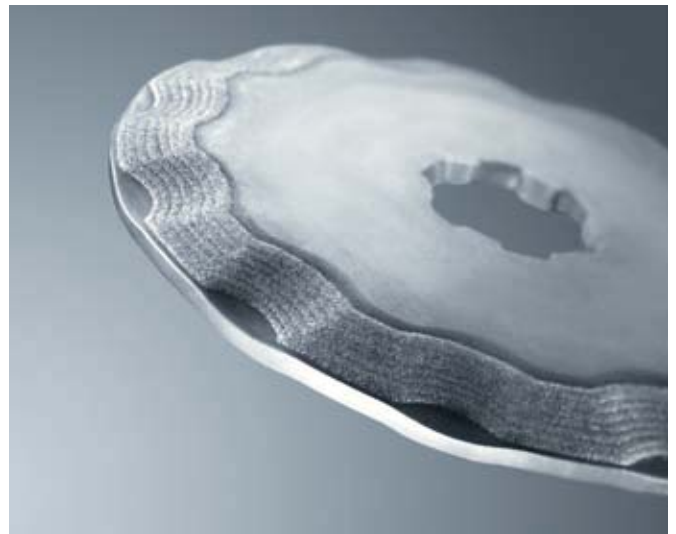
The power of your laser can be controlled in real time. The laser power required at the workpiece remains constant at all times, meaning that you achieve perfectly reproducible results for years, starting from the very first second. Operation is not affected by back reflections.

## Impressive in the laser network.

The TRUMPF LaserNetwork is flexible, reliable and available around the clock. It has been used for years with great success in the automotive industry. In the laser network, one or more TruDisk lasers can be networked with various processing stations and enabling the laser power to be intelligently distributed. One TruDisk can supply up to six workstations if required, either simultaneously or alternatively. That means you can even combine different applications, for instance welding and cutting, which allows you to utilize your lasers to full capacity and increase system availability. Upgrading laser power or increasing the number of outputs in the field is no problem.



Laser welded seat structure.



Application of a powder coating to a die-forged tool.

## Safe processes, safe operation.

When scaling the laser power, the internal power density of the TruDisk lasers always remains in the safe range. Its patented resonator design means that the TruDisk is not sensitive to back reflections and is extremely stable during production. Even highly reflective materials can be processed without limitation. TruDisk lasers also have a noncritical power density for all optical components.



The TruDisk cuts a very wide range of different materials and sheet thicknesses.



TRUMPF LASER  
TruDisk 4001

#### Technical data

Wavelength

Laser power<sup>1)</sup>

Beam quality

Minimum  $\varnothing$  laser light cable

Wavelength

Laser power<sup>1)</sup>

Beam quality

Minimum  $\varnothing$  laser light cable

<b>TruDisk 1000</b>	<b>TruDisk 2000/2002/2004</b>	<b>TruDisk 3001/3002/3006</b>	<b>TruDisk 4001/4002/4006</b>	<b>TruDisk 5001/5003/5006</b>	<b>TruDisk 5302</b>
1030 nm	1030 nm	1030 nm	1030 nm	1030 nm	1030 nm
1000 W	2000 W	3000 W	4000 W	5000 W	5300 W
2 mm · mrad	2/4/16 mm · mrad	4/8/25 mm · mrad	4/8/25 mm · mrad	4/12/25 mm · mrad	8 mm · mrad
50 µm	50/100/400 µm	100/200/600 µm	100/200/600 µm	100/300/600 µm	200 µm

<b>TruDisk 6001/6003/6006</b>	<b>TruDisk 6602</b>	<b>TruDisk 8002</b>	<b>TruDisk 10002/10003</b>	<b>TruDisk 12002/12003</b>	<b>TruDisk 16002/16003</b>
1030 nm	1030 nm	1030 nm	1030 nm	1030 nm	1030 nm
6000 W	6600 W	8000 W	10000 W	12000 W	16000 W
4/12/25 mm · mrad	8 mm · mrad	8 mm · mrad	8/12 mm · mrad	8/12 mm · mrad	8/12 mm · mrad
100/300/600 µm	200 µm	200 µm	200/300 µm	200/300 µm	200/300 µm

<sup>[1]</sup> At the workpiece regardless of the ambient temperature.  
Higher laser powers on request.