



TruFiber S – the fiber laser  
powerhouse that runs 24/7

Make your vision  
come true



---

## High stability and reliability

For the highest quality standards

---

The TruFiber S withstands interfering influences and external stresses due to its particularly robust concept. The **integrated laser power control** measures and regulates the laser power in real time to  $\pm 1\%$  accuracy. The power is consistently regulated, independent of the ambient conditions. A dehumidification unit is optionally available as a **protective mechanism** for use in tropical regions. Other mechanisms protect the laser from back-reflections.

---

## Complete range of solutions

For stable processes

---

Laser, control, beam guidance and processing optics are optimally coordinated at TRUMPF. The TruFiber S offers you perfect solution packages, for example, in conjunction with the PFO scanner optics and other modules. Process sensor systems such as VisionLine and CalibrationLine optimize your production process.

---

## Top laser safety

Already included in the basic scope

---

Machine and system constructors are responsible for operational safety for the laser systems. The TruFiber S impresses with the highest safety level, Performance Level e.

---

## High versatility

Optimal utilization of system concepts

---

The TruFiber S can be equipped with up to two laser outputs. Beam guidance is integrated into the compact laser housing. The use of several laser outputs optimizes the utilization of the laser. The beam guidance of the TruFiber S enables a flexible selection of the laser light cable diameter from 50  $\mu\text{m}$  to 600  $\mu\text{m}$ . Plug-in laser light cables (LLK) offer you the flexibility to use the laser with different fiber diameters in different applications. In addition, the fiber can be replaced quickly and cost-effectively if damaged.

---

## High-quality process results

Perfect welding quality with BrightLine Weld

---

BrightLine Weld enables low-spatter laser welding. The result is high quality weld seams which show neither seam collapse nor end craters and meet high strength requirements. With BrightLine Weld, significantly higher feed rates increase productivity – with consistent seam quality. The reduced spatter formation also reduces contamination on components, clamping fixtures and optics. The components require less post-processing. Benefit from fewer rejects, low machine downtimes and durable protective glass.

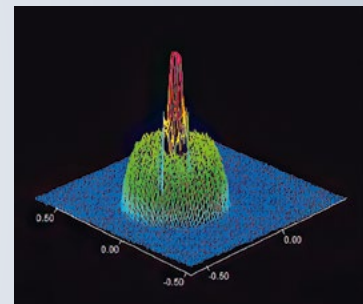
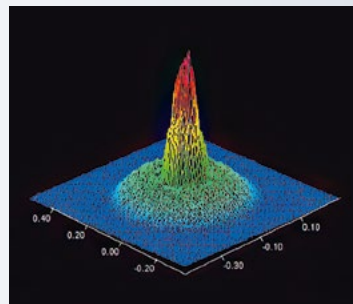
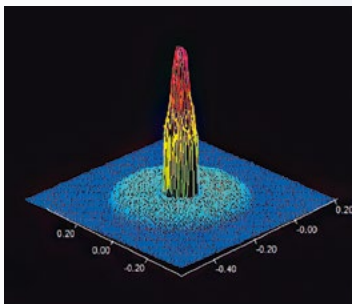
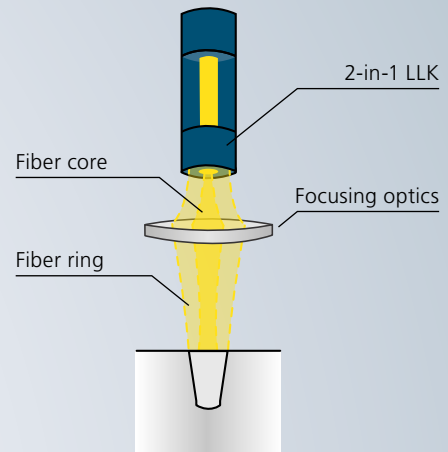
With the TRUMPF technology BrightLine Weld, materials such as mild steel, stainless steel or even copper and aluminum can be welded with minimized spatters.

## Patented TRUMPF 2-in-1 LLK

Special features of BrightLine Weld:

- Flexible adaptation of power distribution to application-specific optimum
- Maximum productivity through utilization of the full available power independent of the power distribution
- Available with pluggable LLK and multiple laser outputs at the highest beam quality and power

Highest quality and productivity



BrightLine Weld intensity distribution in the spotlight: Increase in laser power in the fiber ring (from left to right).

## Minimized spatter and top weld seam quality

### Welding busbars



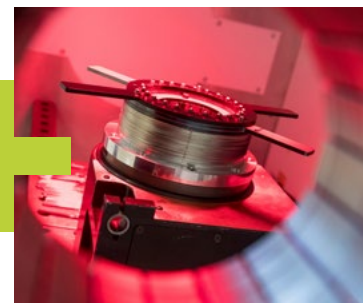
Single parts or packs are connected by busbar welding (busbar = live rail) using the TruFiber S.

### Welding can-caps



The TruFiber S with BrightLine Weld technology seals the prismatic battery housing fitted with the electrode pack – with virtually no pores, cracks or seam buckling.

### Welding hairpins



The TruFiber S is used for highly integrated and scalable copper welding processes and plays a decisive role in the quality of the contacts in electric motors.



Technical data		TruFiber 3000 S	TruFiber 4000 S	TruFiber 5000 S	TruFiber 6000 S
Laser power	W	3000	4000	5000	6000
Long-term power stability	%	± 1 with active laser power control			
Adjustable power range	%	2 to 100			
Beam quality at the input coupling in the LLK (typical values)	mm-mrad	2			
Numerical aperture on the output coupling after LLK	NA	0.1			
Wavelength	nm	1075			
Maximum number of outputs		2			
Min. Ø LLK	µm	50			
Installation area	m²	0.59			
Weight	kg	375	375	400	400
Cooling water temperature ranges	°C	25 ± 2 or 29 ± 2 (configurable)			
Ambient temperature during operation	°C	5 to 45			
Electrical connection		380 V (-10%) to 460 V (+10%), 50 Hz (-3 Hz) to 60 Hz (+3 Hz)			
Options		BrightLine Weld, active laser power control and live power display, remote services, Quality Data Store, cooling of the processing optics via the laser, TRUMPF LaserNetwork, CutAssist			

Subject to modifications. The information in our offer, our customer documentation and order confirmation is definitive.