

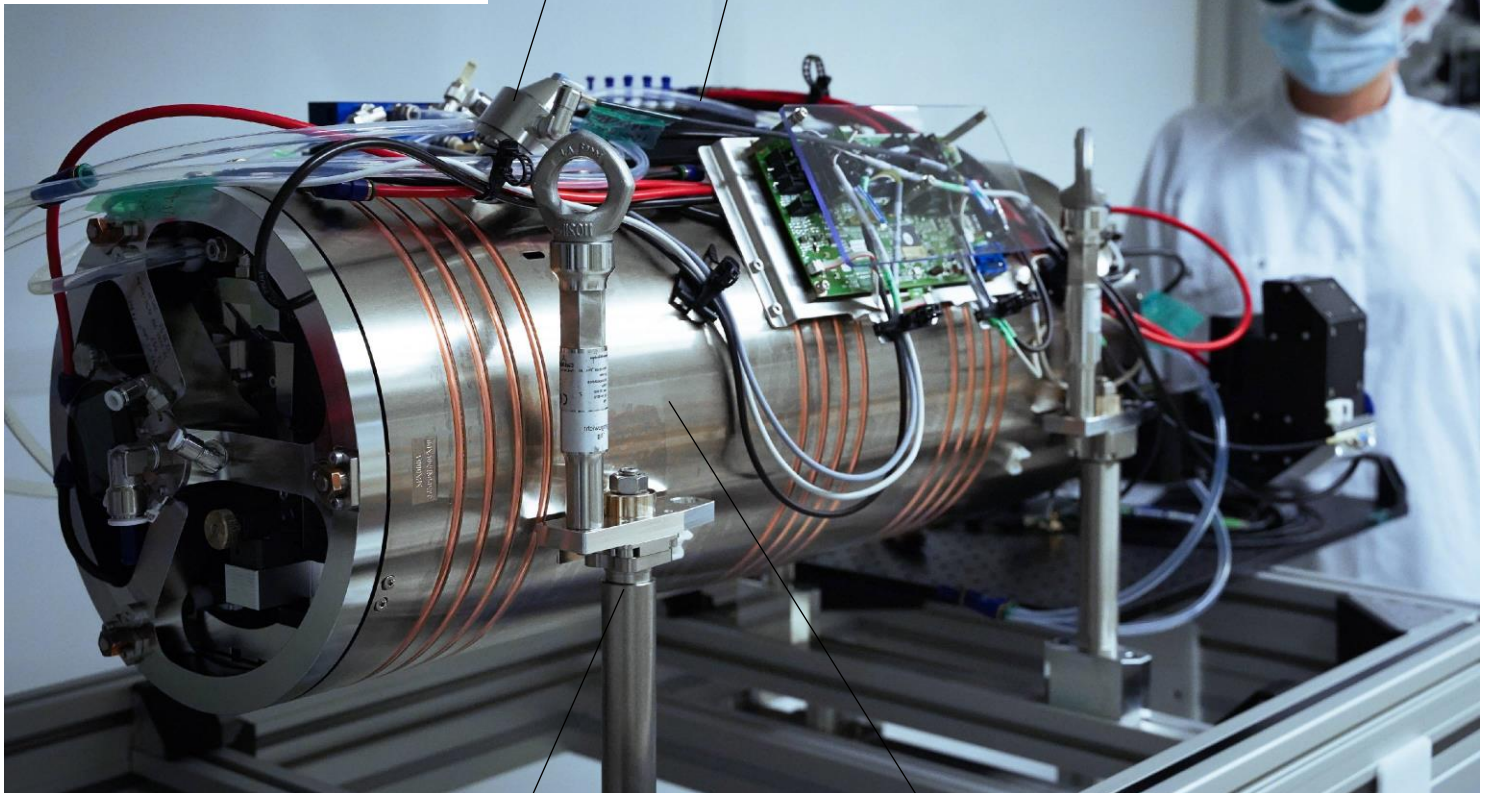
MPZ Series
Thin-Disk
Multipass
Amplifier

High average power

Designed for multi-kW operation

High pulse energy

Supports > 100 mJ with $M^2 < 1.5$



Superior stability

Built for TRUMPF industrial products

High beam quality

Close to diffraction-limited



Maximum flexibility

Customizable for various sources

Supports continuous or pulsed operation

Accommodates different input powers and beam qualities

MPZ Series

Versatile amplifier solution based on TRUMPF thin-disk technology. The perfect add-on for your laser.



- Industrial design
- Flexible configuration
- High amplification factor: from 2 up to > 100
- Average output power > 2 kW
- Pulse energy > 100 mJ with $M^2 < 1.5$
- High beam quality

01

High average power

Multi-kW output powers can be extracted from a single module. Double-pass arrangement is quickly configured to achieve larger amplification of low power input sources. Serial implementation of MPZ is possible.

02

High beam quality

TRUMPF excellent heat management minimizes thermally-induced deformation in the thin-disk. Near fundamental mode can be maintained at kW level amplification. Multi-mode operation leads to even higher powers and pulse energies.

03

Industrial design

Entirely airtight, the multipass amplifier features a monolithic mirror array for superior thermal and mechanical stability. Built-in sensors check for system faults to ensure safe and continuous operation.

04

Maximum flexibility

Due to its limited nonlinear phase-shift, only minimal temporal stretching of the seed is required to reach high amplification in the ultrafast regime.

The multipass amplifier can be deployed in various regimes: continuous, pulsed or burst mode, at any repetition rate.

The MPZ is easily setup behind any Dira system. Also available as a stand-alone solution, it will boost the performance of your existing seed laser.

05

Simplicity of use

The monolithic design guarantees alignment-free operation of the multipass amplifier. Active control of the beam incoupling can be implemented to compensate for thermal drifts of the input with additional piezo mirror actuators.

Initial guidance of the input beam is assisted by a dedicated for visualizing the beam angle and position inside the amplifier.

Technical data

Examples of configurations	MPZ 500 ^[1]	MPZ 1000 ^[2]	MPZ 2000 ^[3]
Wavelength	1030 nm		
Input ► Output average power	20 W ► 500 W	200 W ► 1000 W	550 W ► 2000 W
Output pulse energy	> 100 mJ		
Amplification factor	25	5	4
Beam quality (M^2)	< 1.5		

[1] Seed laser: TruMicro 2000 [2] Seed laser: TruMicro 5000 [3] Seed laser: Dira 500-100