



## PERLA® series – Versatile thin-disk laser platform for industrial and scientific applications.

PERLA® series lasers are compact laser systems based on a thin-disk regenerative amplifier operating at 1030 nm wavelength delivering picosecond pulses with pulse energy of up to 20 mJ\* and repetitions rates from 1 to 200 kHz. The product portfolio incorporates wavelength conversion modules with harmonics generation (2nd, 3rd, 4th) and optical parametric amplifier stages (OPA, OPG) that cover the wide range of wavelengths from UV to Mid-IR. Our lasers incorporate an original front-end powered by the GOPico® oscillator seeding the amplifier, a fast pulse picker, advanced stabilization systems, a laser power attenuator, a safety shutter, and a fast, sophisticated industrial automation-based PLC control system allowing precise control and monitoring of the laser. The robust design and thermally stabilized housing guarantee excellent stability and maintenance-free operation.

### Strengths

- Unique combination of energy per pulse and beam quality
- Suitable for multi-beam micromachining and surface structuring
- Extra fast process speed and high efficiency using 1000s of beams at once
- Harmonics module available (SHG, THG, FHG)
- Optical parametric amplification module (OPA, OPG) upon request
- Laser source can be customised to fit your application

- ✓ Stable and reliable laser source
- ✓ Flexible modifications of output parameters
- ✓ Customised solutions available upon request

### Technical Specifications

Specification	PERLA®100	PERLA®500**
Centre wavelength	1030 nm	1030 nm
Average power	Max 100 W	Max 500 W
Power stability	< 0.5 % RMS	< 0.5 % RMS
Pulse energy	max. 20 mJ*	max. 10 mJ*
Pulse energy stability	< 1 % RMS	< 1 % RMS
Pulse length	1 ps	< 2 ps
Repetition rate	1 -200 kHz	50-200 kHz
Beam quality (M2)	< 1.15	< 1.4
Output polarisation	Linear, > 100:1	Linear, > 100:1
Output beam diameter	~ 3 mm	~ 3 mm
Dimensions	1,3 m x 0,8 m x 0,3 m	1,3 m x 0,8 m x 0,3 m

#### Operating requirements

Operating voltage	5P/32A/400V
Operating temperature	23 ± 1 °C
Relative humidity	20 – 40 % (non-condensing)

\* Higher values can be reached upon request.  
 \*\*Custom-built system: specific technical parameters are individually agreed with a customer.

### Areas of Application



HARMONICS GENERATION



OPTICAL PARAMETRIC AMPLIFICATION



LASER INDUCED DAMAGE THRESHOLD



EFFICIENT MICROMACHINING

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