



# VaryDisk Series

performance meets versatility...

Flexible tool for process development

industrial applications, and OPCPA pumping.

The following **standard systems** are available:

## NANO

high pulse energy nanosecond system with lowest complexity

## PICO

picosecond laser system with high average output power and low complexity

## FEMTO

pulse durations in the femtosecond regime of up to 350 fs

## ENERGY

CPA based system with up to 150 mJ pulse energy

## FEATURES

- ▶ **customizable** output parameters
- ▶ robust design
- ▶ > **100 W** average power
- ▶ pulse durations from **350 fs** to 40 ns
- ▶ pulse energy from 200  $\mu$ J up to **150 mJ**
- ▶ repetition rates from 1 kHz to 1 MHz
- ▶ high beam quality ( $M^2 < 1.3$ )
- ▶ **1030 nm**, 515 nm, and 343 nm
- ▶ energy stability < 3% RMS
- ▶ power stability < **1% RMS**
- ▶ automatically adjustable pulse duration
- ▶ switchable pulse length from pulse to pulse
- ▶ two different pulses at the same time
- ▶ customizable network interface

## ADDITIONAL OPTIONS

- ▶ pulse picker
- ▶ helical drilling optics
- ▶ OPCPA system
- ▶ scanner



VaryDisk <sup>1)</sup>		NANO	PICO	FEMTO	ENERGY
max. average power <sup>2)</sup>	standard	150 W	150 W	100 W	15 W
	power upgrade	1000 W	400 W	240 W	150 W
max. pulse energy	standard	15 mJ	0.5 mJ	500 µJ	15 mJ
	energy upgrade	150 mJ	4 mJ		150 mJ
min. pulse duration		≈ 20 ns	6 ps <sup>5)</sup>	< 500 fs	2 .. 3 ps
min. rep. rate <sup>3,4)</sup>		10 kHz	100 kHz	100 kHz	1 kHz
max. rep. rate		20 kHz	800 kHz	800 kHz	20 kHz
M <sup>2</sup>		t.b.d.	< 1.3	< 1.4	< 1.3

1) the VaryDisk Series is highly customizable; parameters may change and are subject to detailed discussion with customer at the time of purchase; parameters given here are typical realizations for the specific setup; depending on the choice of parameters, the laser system qualifies as industrial, scientific or prototype system;

2) average output power may decrease at high repetition rates (solution: power upgrade);

3) the output power efficiency is reduced at repetition rates < 20 kHz (solution: power upgrade + energy upgrade);

4) for repetition rates < 200 kHz, the maximum output power depends on the max. allowed pulse energy;

5) other pulse durations available; max. pulse energy scales with the pulse duration;

The VaryDisk is a fully functional laser system designed for laboratory investigations and/or industrial use.

The base versions (NANO, PICO, FEMTO, ENERGY) of the VaryDisk Series can be combined with various options, making this system unique in terms of variability, and therefore ideal for scientific investigations or the development of production processes.

## APPLICATIONS

- ▶ material processing (e.g. drilling, micromachining, glass cutting, etc.)
- ▶ pump laser for OPCPA systems, etc.

## OPTIONS

- ▶ additional seed lasers (**ps, ns**)
- ▶ seed laser provided by customer
- ▶ power upgrade
- ▶ **515 nm** or 258 nm output
- ▶ **automatically adjustable** pulse duration from < 500 fs to > 2 ps
- ▶ cavity dumped operation for **ns** pulses
- ▶ Q-switched operation for **µs** pulses
- ▶ pulse to pulse **switchable** pulse durations
- ▶ two different pulses at the same time
- ▶ **customizable** network interface
- ▶ pulse picker
- ▶ helical drilling optics
- ▶ OPCPA system
- ▶ scanner



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