

DAUSINGER+
GIESEN GMBH

VaryDisk PICO

PICO

The VaryDisk PICO is a fully functional laser system for laboratory investigations and/or industrial use. The pulse characteristics of the VaryDisk PICO is mainly determined by the seed laser of this system. Our standard configurations includes a 6 ps seed, however other pulse durations are possible, depending on the need of our customer. The choice of pulse duration, actually determines the maximum available energy with this laser system. Depending on the individual choice of parameters, the VaryDisk laser system qualifies as industrial / scientific or prototype laser system. Compared to our other VaryDisk systems, the VaryDisk PICO is a robust system with minor complexity.



FEATURES

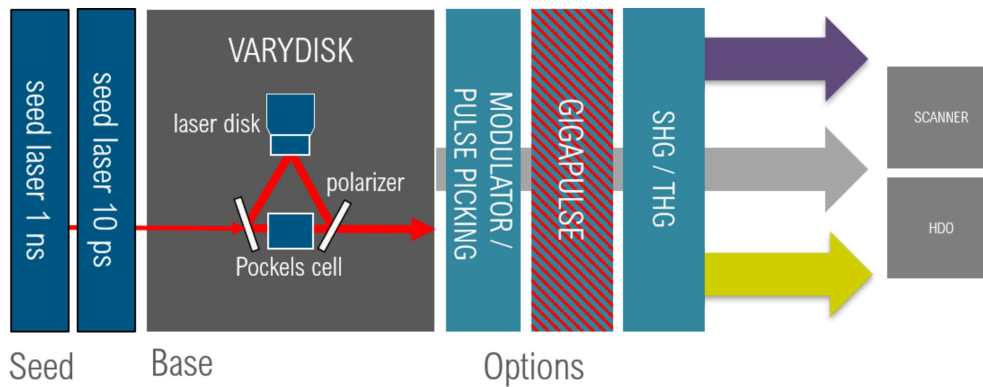
- output power: up to **400 W (more with power upgrade)**
- pulse energy: up to 1 mJ or **4 mJ** with energy upgrade and a 6 ps seed; a longer seed pulse duration will allow larger energies (e.g. 10 mJ with 10 ps seed)
- pulse duration depends on seed laser: e.g. **6 ps, 10 ps**, other seed lasers on request
- repetition rate: **100 kHz** ... 500 kHz in the standard configuration; however even 1 kHz ... 10 kHz is possible. For low repetition rates, the output power efficiency is smaller, requiring a pump upgrade in order to keep the output power constant
- wavelength: **1030 nm**

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- beam quality: $M^2 < 1.3$

SCHEMATIC DESIGN



Schematic setup of the VaryDisk pico laser system

OPTIONS

We offer different options along with the VaryDisk PICO in order to increase the output power and/or to allow additional operating modes along with the generation of different pulse characteristics, e.g. different choices of pulse durations, wavelength, or even the simultaneous generation of pulses with different pulse characteristics in one operation mode. Some of the available options are listed below. Please consult our team for possible combination choices and further information.

APPLICATIONS

Application examples, showing the capabilities of the VaryDisk laser system, were demonstrated in our application lab. Please consult D+G for further information. for further information, please consult our team...

DIMENSIONS / WEIGHT

All data given here are approximate, since nearly every laser is unique with respect to our customers requests (even the specifications given here):

- laser head approx. 200 kg, (80 x 90 x 45) cm³ without seed and optional modules
- rack approx. 200 kg, (100 ... 180 x 80 x 56) cm³
- laser head / rack connection: 4m
- additional chiller might be required with up to 250 kg, (60 x 58 x 155) cm³ (depending on output power and repetition rate)

OPERATING CONDITIONS

- power supply 3 phases 380 V, 50 Hz + N + ground, CEE 32 A plug
- power consumption < 4 kW - 6 kW
- water connection barbed fittings for tubing 13 mm or 16 mm inner diameter
- water flow 15 l/min @ 12 °C - 25 °C

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- water quality filtered 80 μm recommended, low chlorine concentration ($< 200 \text{ mg/l}$)
- 20 - 25°C operating temperature, low humidity

[Brochure of VaryDisk PICO](#)

[Gigapulse Addon](#)

For a further increase of pulse energy and/or output power towards the kW regime, we offer a [Gigapulse linear amplifier](#). Additional information can be found on the corresponding product page. For further information, please consult our team.

[Scanner, Helical Drilling Optic](#)

In order to bring the laser pulses to your workpiece, we offer different kinds of micromachining tools, such as third party scanners, or our own [helical drilling optics](#).

[SHG, THG Option](#)

In order to allow the generation of different wavelengths, the standard wavelength of 1030 nm can be frequency doubled to 515 nm. Even the generation of UV light is possible.

[Femto+ Option](#)

By use of different gain materials, the amplification bandwidth of our VaryDisk system can be increased. This way, even shorter pulse durations are available for the VaryDisk femto, pico, and/or energy.

[Additional Seed Laser\(s\)](#)

The VaryDisk femto, pico, and/or energy system can be operated with additional seed lasers in order to allow an additional flexibility in the choice of pulse durations. Along with the original pulse duration of the base system, pulses with picosecond and/or nanoseconds are additionally available. Even pulse to pulse switching is possible, if requested so by our customer.

[Twin Option](#)

Different base systems of the VaryDisk can be combined in order to increase the flexibility and cost effectiveness of this laser system. One possible combination is the use of the femto and pico system simultaneously by adding another ps-seed to the femto version.

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