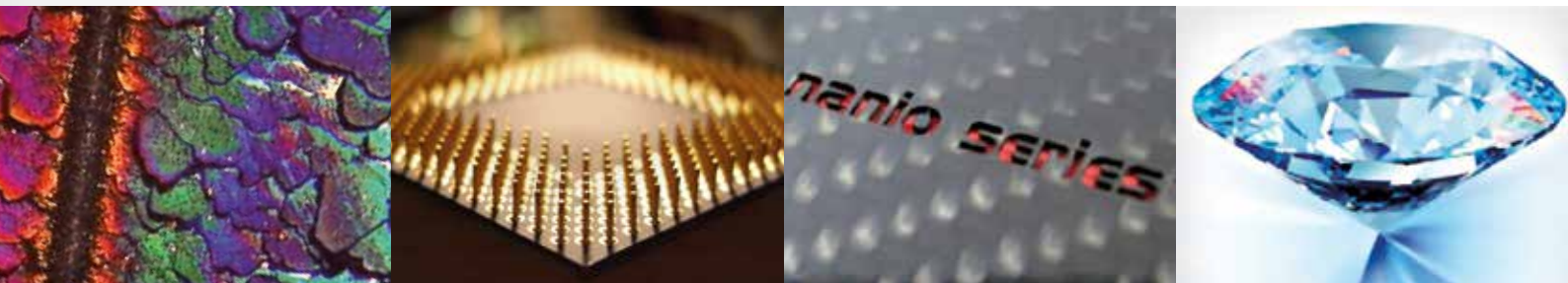


**nanio series\***  
*Industrial DPSS Lasers*

**NANIO 532**

Think of **LASER** as a tool



# nanio series\* Industrial DPSS Lasers

## nanio series

The nanio series of diode-pumped solid-state lasers is designed to perfectly fit today's requirements for industrial laser processing systems. The sealed cavity, modular design, fully detachable umbilicals and industrial grade connectors make this laser a rugged tool with exceptional performance and reliability.

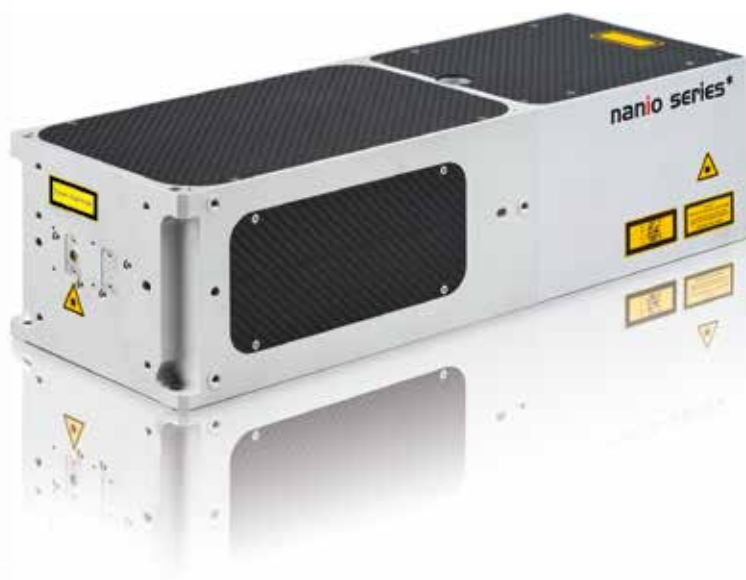
Besides customer needs, reliability was the main driving force during the development of the nanio series. Our clean room production and the use of highest quality components ensures consistent quality and longest laser lifetime.

## Applications

- \* Touch Panel Manufacturing
- \* Ceramic Scribing
- \* CFRP Cutting
- \* Solar Cell Manufacturing
- \* PCB Cutting

## Features

- \* Superior pulse-to-pulse stability
- \* High peak power and short pulse width
- \* Modular industrial design
- \* Easy integration and service
- \* Field proven long life pump diode modules



The modular design of the nanio series lasers simplifies servicing and minimizes downtime. Every field replaceable component can be exchanged within minutes without dismantling the laser head. So the beam path in your machine remains aligned.



# NANIO 532

## Specifications

	532-20-V	532-20-V-100
Laser Medium	Nd:YVO <sub>4</sub>	Nd:YVO <sub>4</sub>
Wavelength	532 nm	532 nm
Nominal Power	20 W @ 40 kHz	20 W @ 100 kHz
Repetition Rate	Single Shot to 500 kHz	Single Shot to 500 kHz
Pulse Width	< 20 ns @ 40 kHz	< 40 ns @ 100 kHz
Pulse Energy	500 µJ @ 40 kHz	200 µJ @ 100 kHz
Peak Power	> 25 kW @ 40 kHz	> 5 kW @ 100 kHz
Pulse-to-Pulse Stability	< 1 % @ 40 kHz	< 1 % @ 100 kHz
Power Stability (rms, 8h)	< 2 %	< 2 %
Spatial Mode	M <sup>2</sup> < 1.3, TEM <sub>00</sub>	M <sup>2</sup> < 1.4, TEM <sub>00</sub>
Nominal Beam Diameter (at waist)	0.4 mm	0.4 mm
Nominal Waist Location (from output)	-324 mm	-292 mm
Beam Divergence (full angle)	2.2 mrad	2.3 mrad
Nominal Beam Diameter (at output)	0.8 mm	0.8 mm
Polarization	Horizontal, > 100:1	Horizontal, > 100:1
Circularity	> 90 %	> 85 %
Warm-up Time	< 15 min	< 15 min
Operating Voltage	115-230 VAC ± 10 %, 50-60 Hz, single phase	115-230 VAC ± 10 %, 50-60 Hz, single phase
Laser Power Consumption	< 500 W	< 500 W
Cooling	Water-to-Water or Water-to-Air	Water-to-Water or Water-to-Air
Ambient Temperature	15-40 °C (59-104 °F), non-condensing	15-40 °C (59-104 °F), non-condensing
External Control	RS232, USB, TTL and Analog Q-Switch Control	RS232, USB, TTL and Analog Q-Switch Control
Dimensions Laser Head (L x W x H)	590 x 180 x 135 mm (23.23 x 7.09 x 5.31 in.)	590 x 180 x 135 mm (23.23 x 7.09 x 5.31 in.)
Dimensions Power Supply (L x W x H)	500 x 447 x 88.1 mm (19.69 x 17.6 x 3.47 in.) 19" system, 2 RU high	500 x 447 x 88.1 mm (19.69 x 17.6 x 3.47 in.) 19" system, 2 RU high
Weight Laser Head	19 kg (41.9 lbs.)	19 kg (41.9 lbs.)
Weight Power Supply	12 kg (26.5 lbs.)	12 kg (26.5 lbs.)

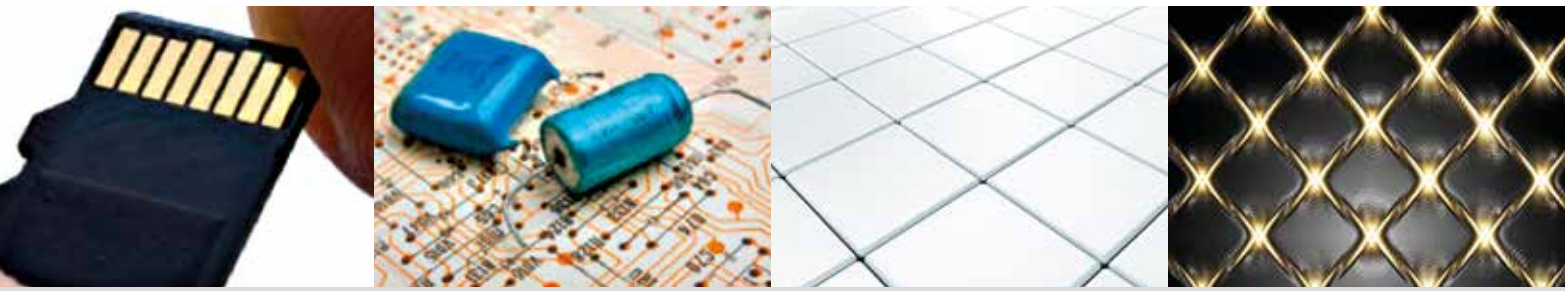
### Available Options

Umbilical length between laser head and power supply 1-20 m. Standard is 3 m. External beam expander box, beam expanders and scan head adapter flanges. Customized power supply front design. Variable attenuator.



<b>532-10-V</b>	<b>532-10-V-20</b>	<b>532-18-Y</b>
Nd:YVO <sub>4</sub>	Nd:YVO <sub>4</sub>	Nd:YAG
532 nm	532 nm	532 nm
10 W @ 40 kHz	10 W @ 20 kHz	18 W @ 10 kHz
Single Shot to 300 kHz	Single Shot to 300 kHz	Single Shot to 50 kHz
< 30 ns @ 40 kHz	< 10 ns @ 20 kHz	< 40 ns @ 10 kHz
250 µJ @ 40 kHz	500 µJ @ 20 kHz	1800 µJ @ 10 kHz
> 8.3 kW @ 40 kHz	> 50 kW @ 20 kHz	> 45 kW @ 10 kHz
< 1 % @ 40 kHz	< 1 % @ 20 kHz	< 1.5 % @ 10 kHz
< 2 %	< 2 %	< 2 %
M <sup>2</sup> < 1.2, TEM <sub>00</sub>	M <sup>2</sup> < 1.2, TEM <sub>00</sub>	M <sup>2</sup> < 1.3, TEM <sub>00</sub>
0.5 mm	0.3 mm	0.5 mm
-324 mm	-324 mm	-324 mm
1.6 mrad	2.7 mrad	1.7 mrad
0.7 mm	0.9 mm	0.8 mm
Horizontal, > 100:1	Horizontal, > 100:1	Horizontal, > 100:1
> 90 %	> 90 %	> 85 %
< 15 min	< 15 min	< 15 min
115-230 VAC ± 10 %, 50-60 Hz, single phase	115-230 VAC ± 10 %, 50-60 Hz, single phase	115-230 VAC ± 10 %, 50-60 Hz, single phase
< 500 W	< 500 W	< 500 W
Water-to-Water or Water-to-Air	Water-to-Water or Water-to-Air	Water-to-Water or Water-to-Air
15-40 °C (59-104 °F), non-condensing	15-40 °C (59-104 °F), non-condensing	15-40 °C (59-104 °F), non-condensing
RS232, USB, TTL and Analog Q-Switch Control	RS232, USB, TTL and Analog Q-Switch Control	RS232, USB, TTL and Analog Q-Switch Control
590 x 180 x 135 mm (23.23 x 7.09 x 5.31 in.)	590 x 180 x 135 mm (23.23 x 7.09 x 5.31 in.)	590 x 180 x 135 mm (23.23 x 7.09 x 5.31 in.)
500 x 447 x 88.1 mm (19.69 x 17.6 x 3.47 in.)	500 x 447 x 88.1 mm (19.69 x 17.6 x 3.47 in.)	500 x 447 x 88.1 mm (19.69 x 17.6 x 3.47 in.)
19" system, 2 RU high	19" system, 2 RU high	19" system, 2 RU high
19 kg (41.9 lbs.)	19 kg (41.9 lbs.)	19 kg (41.9 lbs.)
12 kg (26.5 lbs.)	12 kg (26.5 lbs.)	12 kg (26.5 lbs.)

InnoLas follows a policy of continuous product improvement. All specifications are subject to change without notice. Rev. 2.1, 04/2014.  
 InnoLas Laser GmbH is DIN EN ISO 9001 certified.



## Services

### Applications Lab

Our in-house applications lab offers a wide variety of lasers, scanning and measurement equipment to find the ideal solution for your application tasks. Supported by our application experts, our open house policy allows for fast results and short lead times for your sample processing requests.

### Customer Service

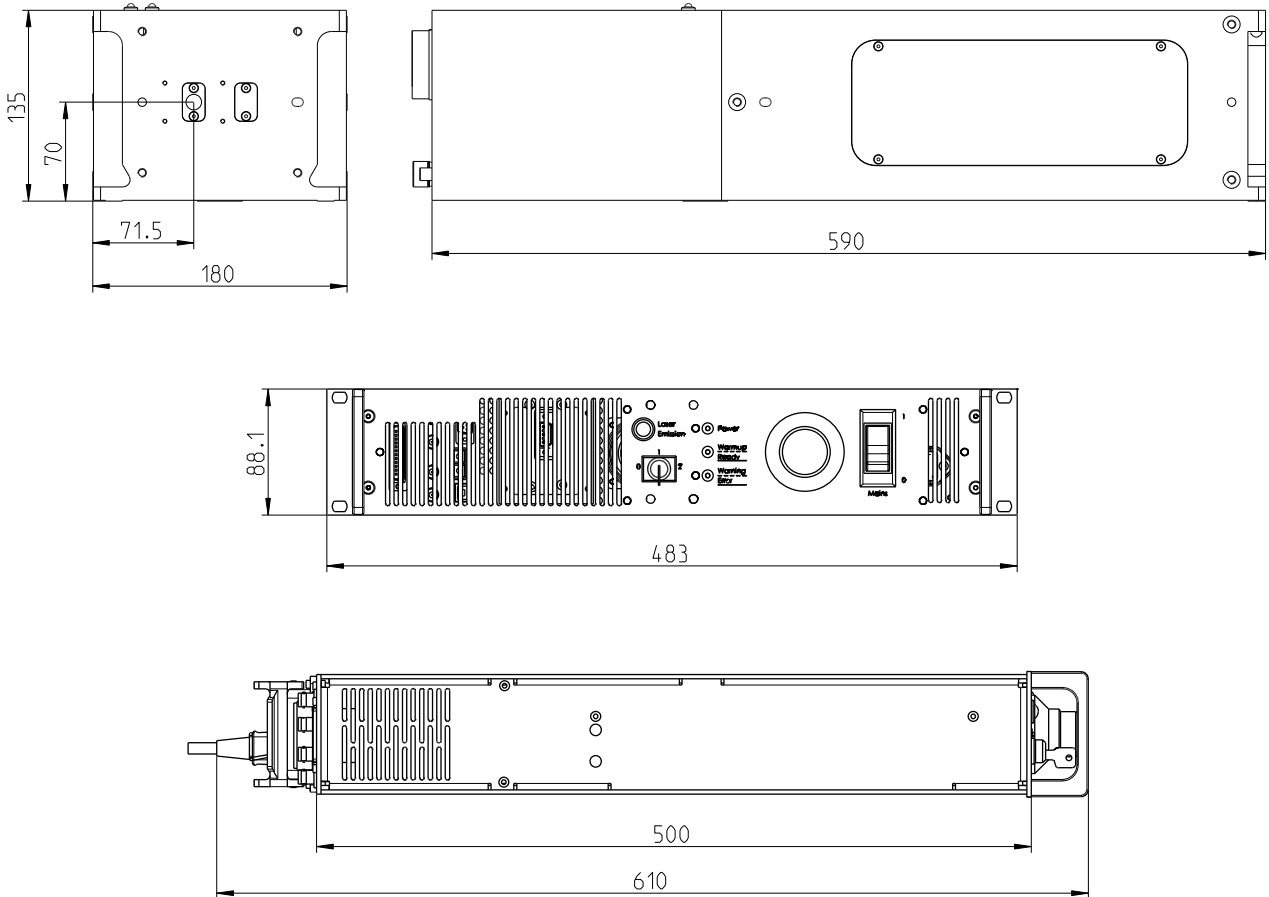
Being close to the customer is our strength. We guarantee fastest response times for all customer requests, new development challenges or service issues as you expect it.

## Customization

Since today's demanding applications deserve optimized laser parameters, we do not only sell off-the-shelf products. We can tailor our laser performance, design, interfacing or software to perfectly fit your individual application needs.



# Technical Drawing



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