

nanio series*
Industrial DPSS Lasers

NANIO 1064

Think of **LASER** as a tool



nano series* Industrial DPSS Lasers

nano series

The nano 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.

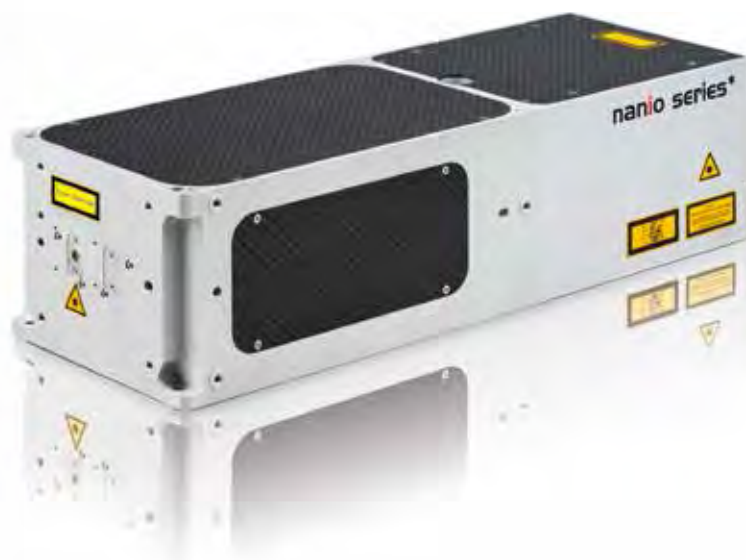
Besides customer needs, reliability was the main driving force during the development of the nano series. Our clean room production and the use of highest quality components ensures consistent quality and longest laser lifetime.

Applications

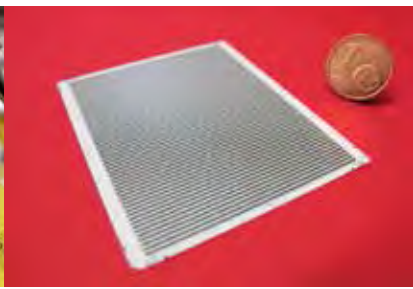
- * ID Card Marking
- * LED Back Light
- * Resistor Trimming
- * Ceramic Scribing
- * Diamond Cutting

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 nano series lasers simplifies servicing and minimizes downtime. Every field replaceable component can be exchanged within minutes without dismounting the laser head. So the beam path in your machine remains aligned.



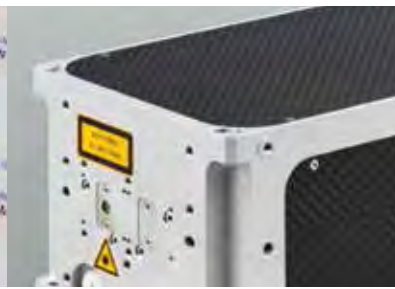
NANIO 1064

Specifications

	1064-25-V	1064-20-V-20
Laser Medium	Nd:YVO ₄	Nd:YVO ₄
Wavelength	1064 nm	1064 nm
Nominal Power	23 W @ 50 kHz	20 W @ 20 kHz
Repetition Rate	Single Shot to 300 kHz	Single Shot to 60 kHz
Pulse Width	< 40 ns @ 50 kHz	< 10 ns @ 20 kHz
Pulse Energy	460 µJ @ 50 kHz	1000 µJ @ 20 kHz
Peak Power	> 11.5 kW @ 50 kHz	> 100 kW @ 20 kHz
Pulse-to-Pulse Stability	< 0.5 % @ 50 kHz	< 1 % @ 20 kHz
Power Stability (rms, 8h)	< 1 %	< 1 %
Spatial Mode	M ² < 1.2, TEM ₀₀	M ² < 1.2, TEM ₀₀
Nominal Beam Diameter (at waist)	0.7 mm	0.6 mm
Nominal Waist Location (from output)	-49 mm	-89 mm
Beam Divergence (full angle)	2.3 mrad	2.7 mrad
Nominal Beam Diameter (at output)	0.7 mm	0.7 mm
Polarization	Vertical, > 100:1	Vertical, > 100:1
Circularity	> 90 %	> 90 %
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-ondensing	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)	490 x 180 x 135 mm (19.29 x 7.09 x 5.31 in.)	490 x 180 x 135 mm (19.29 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	17 kg (37.5 lbs.)	17 kg (37.5 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.



1064-16-V	1064-16-V-LP	1064-20-Y
Nd:YVO ₄	Nd:YVO ₄	Nd:YAG
1064 nm	1064 nm	1064 nm
14 W @ 50 kHz	15 W @ 50 kHz	18 W @ 10 kHz
Single Shot to 300 kHz	Single Shot to 150 kHz	Single Shot to 100 kHz
< 45 ns @ 50 kHz	< 100 ns @ 50 kHz	< 40 ns @ 10 kHz
280 μJ @ 50 kHz	300 μJ @ 50 kHz	1800 μJ @ 10 kHz
> 6.2 kW @ 50 kHz	> 3 kW @ 50 kHz	> 45 kW @ 10 kHz
< 0.5 % @ 50 kHz	< 1 % @ 50 kHz	< 1 % @ 10 kHz
< 1 %	< 1 %	< 1 %
M ² < 1.2, TEM ₀₀	M ² < 1.2, TEM ₀₀	M ² < 1.2, TEM ₀₀
0.7 mm	1.2 mm	0.6 mm
-49 mm	-273 mm	-57 mm
2.3 mrad	1.3 mrad	2.7 mrad
0.7 mm	1.3 mm	0.6 mm
Vertical, > 100:1	Vertical, > 100:1	Vertical, > 100:1
> 90 %	> 90 %	> 90 %
< 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
490 x 180 x 135 mm (19.29 x 7.09 x 5.31 in.)	850 x 180 x 135 mm (33.46 x 7.09 x 5.31 in.)	490 x 180 x 135 mm (19.29 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
17 kg (37.5 lbs.)	22 kg (48.5 lbs.)	17 kg (37.5 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. 2.0, 04/2013.
 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

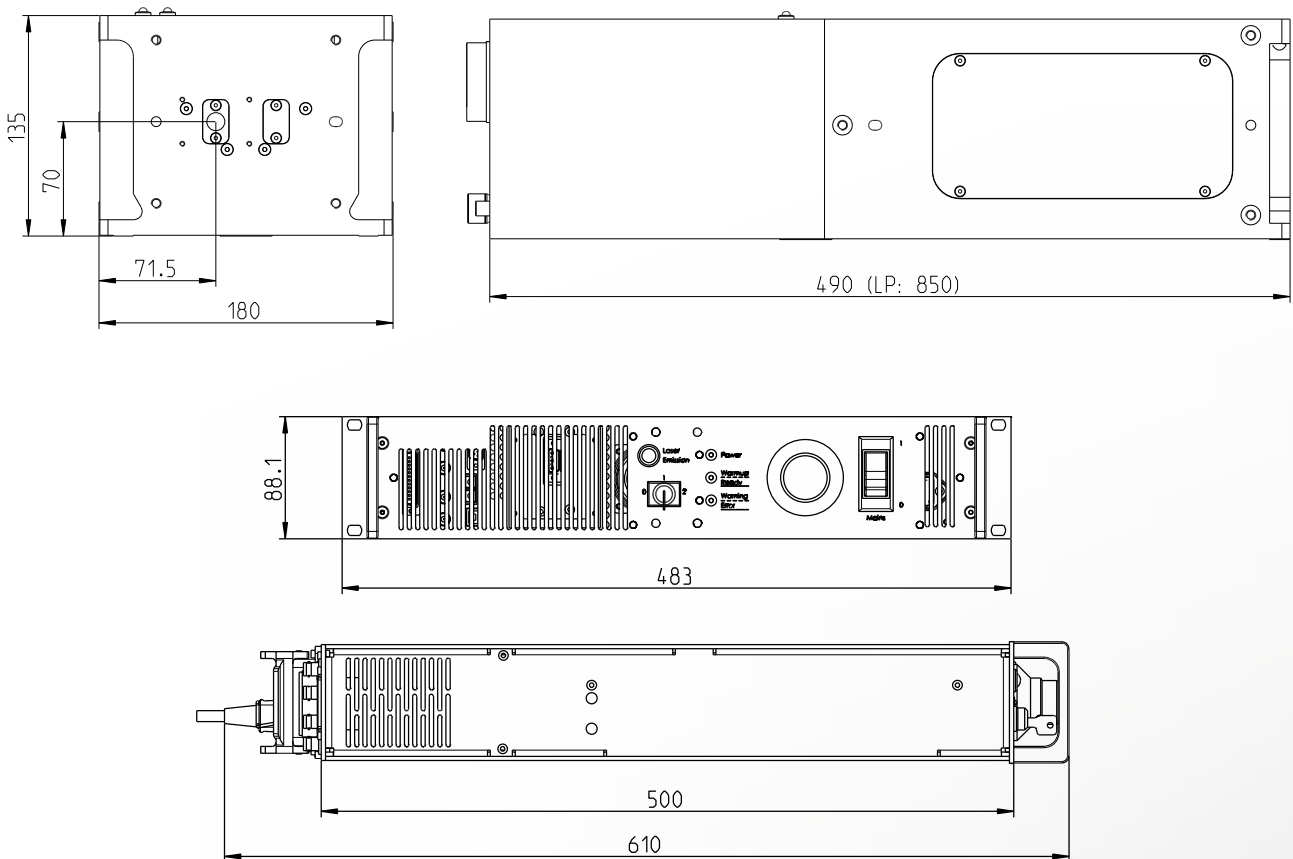
Being close to the customer is our strength. We guarantee fastest response times for all customer requests, new development challenges or service issues as you expect it.

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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