

MOSQUITOO | NANOSECOND LASERS

Exceptional Performance in the Smallest Footprint



Longevity in a Compact Footprint

Mosquito lasers offer exceptional longevity and performance in a compact footprint



Easy Integration

The field proven laser control interface allows easiest Integration.



Exceptional Performance

Pulse widths as short as 6 ns and pulse peak powers above 10 kW

Exceptional Performance

Superior Pulse-to-Pulse Stability

The second generation of mosquito pulsed nanosecond laser is designed to deliver exceptional performance in a compact footprint. The innovative system architecture provides a nearly diffraction limited beam with short pulse widths and superior pulse-to-pulse stability even at high repetition rates. Thanks to its short pulse width and pulse peak powers above 10 kW, processes which previously required cost – intensive high power lasers can now be accomplished with the compact and conduction – cooled mosquito pulsed nanosecond laser.

Benefits

Exceptional Performance in a Compact Design

The Mosquito pulsed nanosecond pulsed laser delivers precise results in a small footprint especially in applications where space is limited. It also offers an excellent pulse-to-pulse stability as well as precise pulse control which makes it particularly suitable for laser marking of plastics and other delicate materials. The Mosquito pulsed nanosecond pulsed laser is the perfect tool for 24/7 industrial applications profiting from excellent process repeatability and high throughput at a minimal cost per part.

Applications

Small but Powerful: The Mosquito

Get precise results for the following applications:

- LCD repair
- PCB marking
- Plastic marking
- Medical or BioTech marking
- Photovoltaics
- Resistor trimming

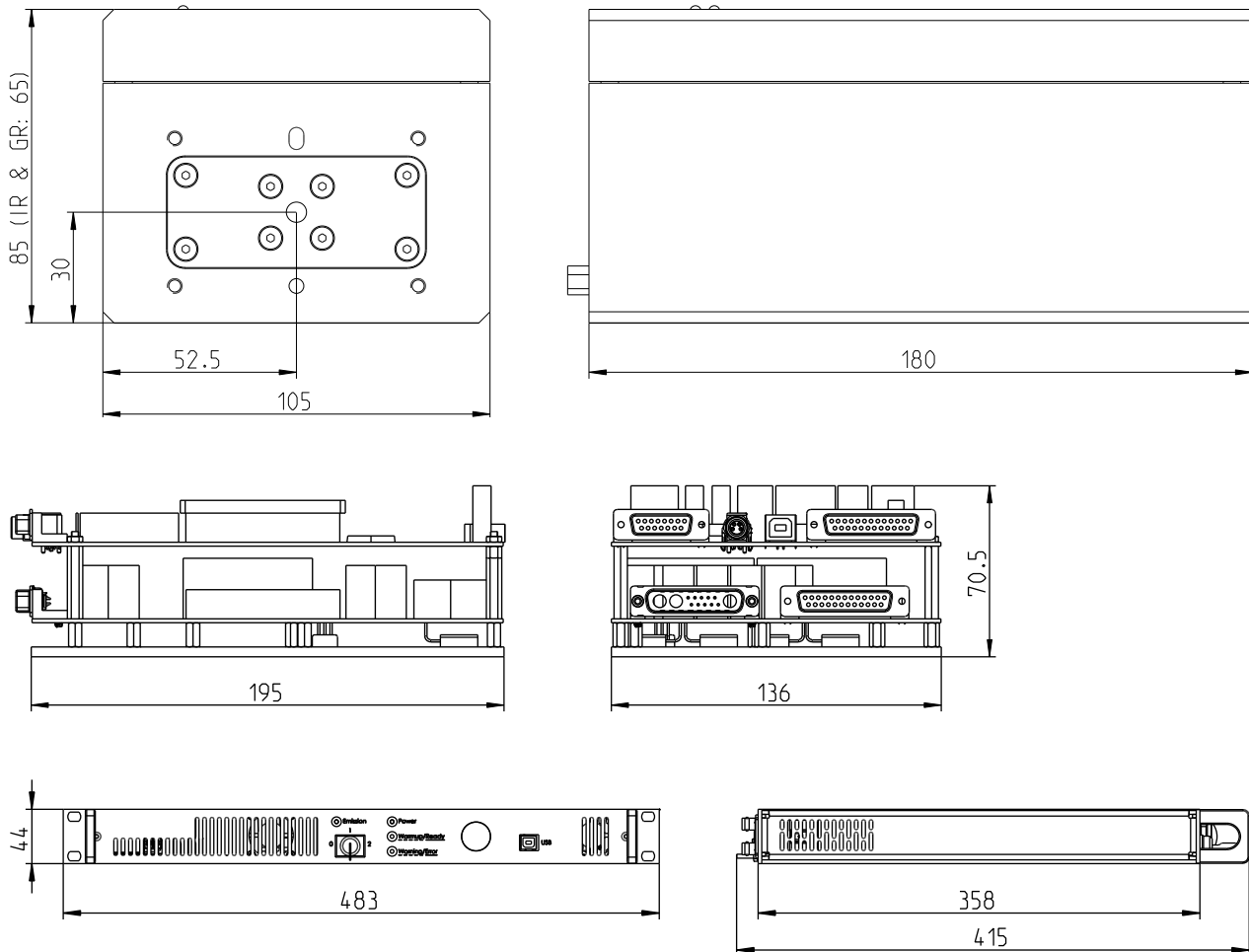
Advantages

Short Pulse Widths in an Exceptional Small Footprint

Experience the Mosquito advantages:

- Short pulse widths of <10 ns
- Rugged design for hands-off operation
- Contact cooling
- Small footprint

Technical Drawings



Customization & Options

Customization and Special Laser Developments

Customize your Mosquito pulsed nanosecond laser:

- Customized laser performance
- Customized Laser interfacing
- Special laser developments

Expand your laser system with the following options:

- Umbilical length 1-10 m
- Cooling options for water and air
- Beam expander box
- Scan head adapter flanges
- Motorized attenuator

Specifications

Mosquito	355		
Model	355-1-V	355-0.3-V	355-0.3-Y
Laser Medium	Nd:YVO ₄	Nd:YVO ₄	Nd:YAG
Wavelength	355 nm	355 nm	355 nm
Nominal Power	1 W @ 50 kHz	0.3 W @ 50 kHz	0.3 W @ 10 kHz
Repetition Rate	Single Shot to 200 kHz	Single Shot to 200 kHz	Single Shot to 100 kHz
Pulse Width	<12 ns @ 50 kHz	<10 ns @ 50 kHz	<13 ns @ 10 kHz
Pulse Energy	20 μJ @ 50 kHz	6 μJ @ 50 kHz	30 μJ @ 10 kHz
Peak Power	>1.6 kW @ 50 kHz	>0.6 kW @ 50 kHz	>2.3 kW @ 10 kHz
Pulse-to-Pulse Stability	<2%	<4%	<4%
Power Stability (rms, 8h)	<2%	<2%	<2%
Spatial Mode	M ² < 1.3, TEM ₀₀	M ² < 1.3, TEM ₀₀	M ² < 1.3, TEM ₀₀
Nominal Beam Diameter (at waist)	0.2 mm	0.2 mm	0.2 mm
Nominal Waist Location (from output)	-164 mm	-164 mm	-164 mm
Beam Divergence (full angle)	2.9 mrad	2.9 mrad	2.9 mrad
Nominal Beam Diameter (at output)	0.5 mm	0.5 mm	0.5 mm
Polarization	Vertical, >100:1	Vertical, >100:1	Vertical, >100:1
Circularity	>85%	>85%	>85%
Warm-up Time	<10 min	<10 min	<10 min
Operating Voltage OEM P/S (standard)	24 VDC	24 VDC	24 VDC
Operating Voltage 19" P/S (optional)	115-230 VAC ± 10%, 50-60 Hz	115-230 VAC ± 10%, 50-60 Hz	115-230 VAC ± 10%, 50-60 Hz
Laser Power Consumption	<170 W	<150 W	<150 W
Cooling	Contact, <100 W, 40 °C Maximum Base Temperature	Contact, <80 W, 40 °C Maximum Base Temperature	Contact, <80 W, 40 °C Maximum Base Temperature
Ambient Temperature	15-35 °C, non-condensing	15-35 °C, non-condensing	15-35 °C, non-condensing
External Control	RS232, USB, TTL and Analog Q-Switch 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)	180 x 105 x 85 mm	180 x 105 x 85 mm	180 x 105 x 85 mm
Dimensions OEM P/S (standard) (L x W x H)	195 x 136 x 71 mm	195 x 136 x 71 mm	195 x 136 x 71 mm
Dimensions 19" P/S (optional) (L x W x H)	358 x 447 x 44 mm, 1 RU high	358 x 447 x 44 mm, 1 RU high	358 x 447 x 44 mm, 1 RU high
Weight Laser Head	1.7 kg	1.5 kg	1.5 kg
Weight Power Supply (standard/optional)	2 kg/6 kg	2 kg/6 kg	2 kg/6 kg

Specifications

Mosquito	532		
Model	532-5-V	532-2-V	532-2-Y
Laser Medium	Nd:YVO ₄	Nd:YVO ₄	Nd:YAG
Wavelength	532 nm	532 nm	532 nm
Nominal Power	5 W @ 50 kHz	2 W @ 50 kHz	2 W @ 10 kHz
Repetition Rate	Single Shot to 200 kHz	Single Shot to 200 kHz	Single Shot to 100 kHz
Pulse Width	<12 ns @ 50 kHz	<12 ns @ 50 kHz	<15 ns @ 10 kHz
Pulse Energy	100 μJ @ 50 kHz	40 μJ @ 50 kHz	200 μJ @ 10 kHz
Peak Power	>8.3 kW @ 50 kHz	>3.3 kW @ 50 kHz	>13.3 kW @ 10 kHz
Pulse-to-Pulse Stability	<2%	<3%	<3%
Power Stability (rms, 8h)	<2%	<2%	<2%
Spatial Mode	M ² < 1.3, TEM ₀₀	M ² < 1.3, TEM ₀₀	M ² < 1.3, TEM ₀₀
Nominal Beam Diameter (at waist)	0.3 mm	0.3 mm	0.3 mm
Nominal Waist Location (from output)	-164 mm	-164 mm	-164 mm
Beam Divergence (full angle)	2.9 mrad	2.9 mrad	2.9 mrad
Nominal Beam Diameter (at output)	0.6 mm	0.6 mm	0.6 mm
Polarization	Horizontal, >100:1	Horizontal, >100:1	Horizontal, >100:1
Circularity	>85%	>85%	>85%
Warm-up Time	<10 min	<10 min	<10 min
Operating Voltage OEM P/S (standard)	24 VDC	24 VDC	24 VDC
Operating Voltage 19" P/S (optional)	115-230 VAC ± 10%, 50-60 Hz	115-230 VAC ± 10%, 50-60 Hz	115-230 VAC ± 10%, 50-60 Hz
Laser Power Consumption	<170 W	<150 W	<150 W
Cooling	Contact, <100 W, 40 °C Maximum Base Temperature	Contact, <80 W, 40 °C Maximum Base Temperature	Contact, <80 W, 40 °C Maximum Base Temperature
Ambient Temperature	15-35 °C, non-condensing	15-35 °C, non-condensing	15-35 °C, non-condensing
External Control	RS232, USB, TTL and Analog Q-Switch 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)	180 x 105 x 65 mm	180 x 105 x 65 mm	180 x 105 x 65 mm
Dimensions OEM P/S (standard) (L x W x H)	195 x 136 x 71 mm	195 x 136 x 71 mm	195 x 136 x 71 mm
Dimensions 19" P/S (optional) (L x W x H)	358 x 447 x 44 mm, 1 RU high	358 x 447 x 44 mm, 1 RU high	358 x 447 x 44 mm, 1 RU high
Weight Laser Head	1.7 kg	1.5 kg	1.5 kg
Weight Power Supply (standard / optional)	2 kg/6 kg	2 kg/6 kg	2 kg/6 kg

Specifications

Mosquitoo	1064	
Model	1064-6-V	1064-3-V
Laser Medium	Nd:YVO ₄	Nd:YVO ₄
Wavelength	1064 nm	1064 nm
Nominal Power	6 W @ 100 kHz	3 W @ 100 kHz
Repetition Rate	Single Shot to 200 kHz	Single Shot to 200 kHz
Pulse Width	<13 ns @ 50 kHz	<13 ns @ 50 kHz
Pulse Energy	100 µJ @ 50 kHz	50 µJ @ 50 kHz
Peak Power	>7.6 kW @ 50 kHz	>3.8 kW @ 50 kHz
Pulse-to-Pulse Stability	<1%	<2%
Power Stability (rms, 8h)	<2%	<2%
Spatial Mode	M ² <1.2, TEM ₀₀	M ² <1.2, TEM ₀₀
Nominal Beam Diameter (at waist)	0.4 mm	0.4 mm
Nominal Waist Location (from output)	-85 mm	-85 mm
Beam Divergence (full angle)	4.0 mrad	4.0 mrad
Nominal Beam Diameter (at output)	0.5 mm	0.5 mm
Polarization	Vertical, >100:1	Vertical, >100:1
Circularity	>90%	>90%
Warm-up Time	<10 min	<10 min
Operating Voltage OEM P/S (standard)	24 VDC	24 VDC
Operating Voltage 19" P/S (optional)	115-230 VAC ± 10%, 50-60 Hz	115-230 VAC ± 10%, 50-60 Hz
Laser Power Consumption	<170 W	<150 W
Cooling	Contact, <100 W, 40 °C Maximum Base Temperature	Contact, <80 W, 40 °C Maximum Base Temperature
Ambient Temperature	15-35 °C, non-condensing	15-35 °C, 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)	180 x 105 x 65 mm	180 x 105 x 65 mm
Dimensions OEM P/S (standard) (L x W x H)	195 x 136 x 71 mm	195 x 136 x 71 mm
Dimensions 19" P/S (optional) (L x W x H)	358 x 447 x 44 mm, 1 RU high	358 x 447 x 44 mm, 1 RU high
Weight Laser Head	1.7 kg	1.7 kg
Weight Power Supply (standard/optional)	2 kg/6 kg	2 kg/6 kg

Iradion follows a policy of continuous product improvement. All specifications are subject to change without notice. Rev. 3.2, 06/2017.
Iradion Laser GmbH is DIN EN ISO 9001 certified.

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