

VIVIO | NANOSECOND LASERS

Enduring Excellence, pulse by pulse



Long-Term Reliability

Long laser lifetime due to unique metal-sealed hyperclean UV technology



PULSECORE Technology

Unmatched process control with highest pulse-to-pulse stability



All-In-One Design

Easy to integrate with fully integrated single-board power supply and laser control electronics

Compact. Powerful. Reliable.

All-in-One Q-switched Lasers

The all new Vivio is the latest addition to our growing line-up of Q-switched lasers. The all-in-one concept comes with a fully integrated one-board power supply and control electronics. This design allows for easy and rapid integration into complex systems. Its latest hyperclean UV technology and the integrated closed-loop air purification system ensure exceptional UV lifetimes and hands-off operation.

Pulse control redefined – The core of the Vivio is a high-speed pulse control unit that allows you to achieve application results like never before.

Benefits

Hands-off Operation for 24/7 Industrial Applications

Thanks to the PULSECORE technology, the Vivio Q-switched laser has the fastest and most precise pulse control for the best manufacturing quality with no need of an AOM and at the highest pulse-to-pulse stability.

The laser comes with a fully integrated one-board power supply and control logic. Its compact design and the high number of control modes ensure an easy integration into various types of industrial laser equipment. The excellent longevity results in lowest operational costs for 24/7 industrial applications.

Applications

Superior Manufacturing Quality for Your Applications

The Vivio nanosecond laser does offers best pulse-to-pulse stability and the most precise control of the pulse energy for 24/7 industrial applications.

- Chip marking
- SD Card cutting
- Plastic marking and cutting
- On-the-fly and high-speed marking
- Precision and high-contrast marking
- Wafer marking and scribing
- PCB processing
- Fine cutting and drilling
- Flat Panel Display manufacturing
- Coding for tracking and tracing
- And many more demanding applications

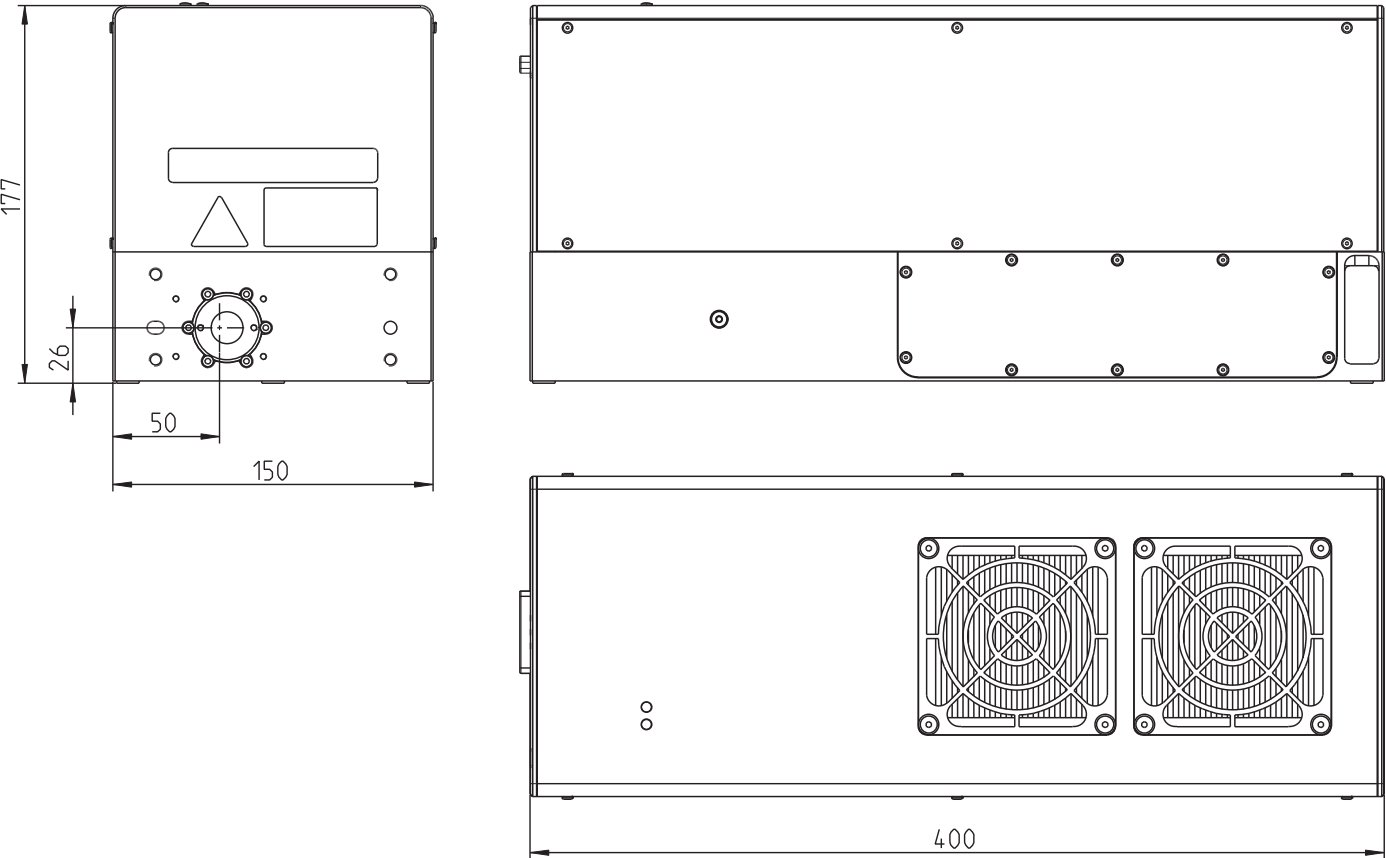
Advantages

Engineered for Demanding Applications

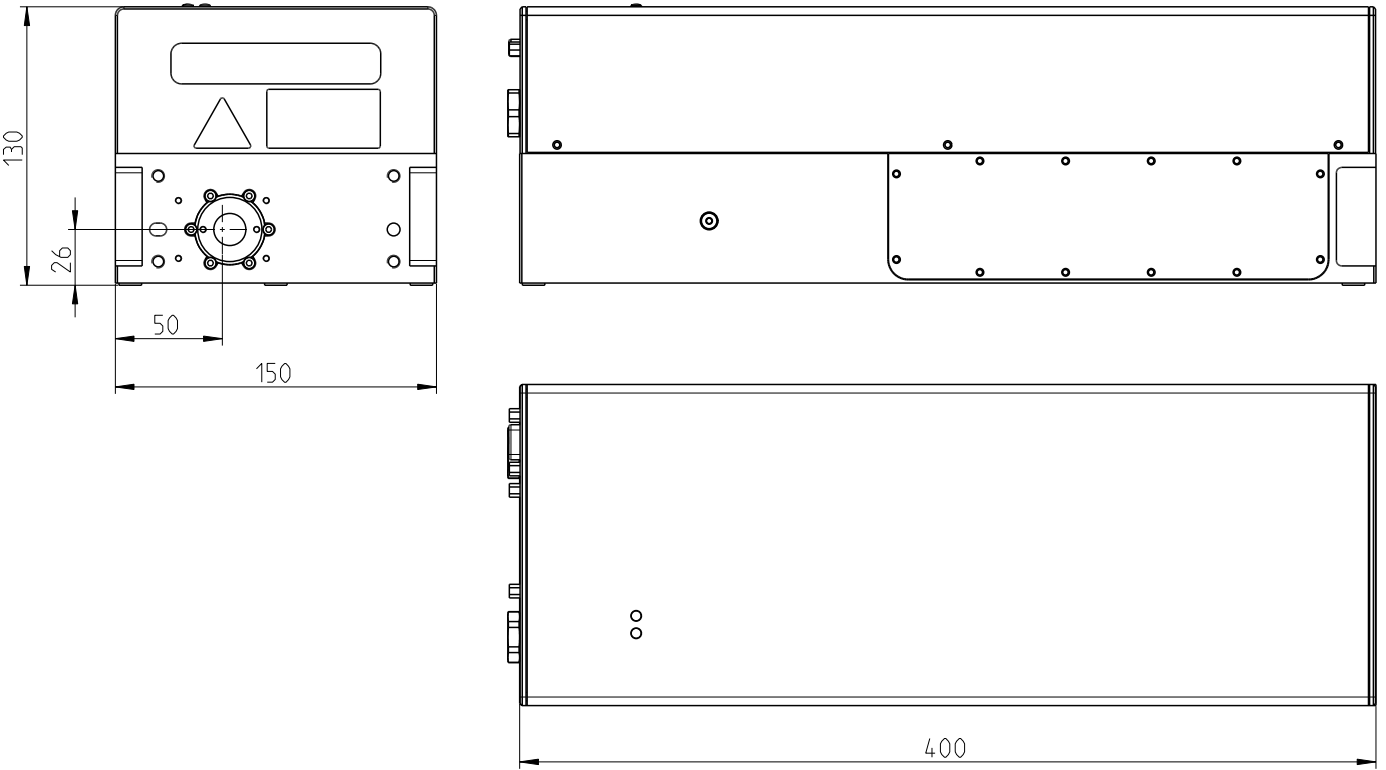
- Most precise and high-speed control of pulse energy
- Best pulse-to-pulse stability
- Short pulse widths
- Rugged and compact all-in-one design
- Best laser longevity
- Low operational costs

Technical Drawings

Vivio 355-6-V, Vivio 532-14-V, Vivio 1064-15-V

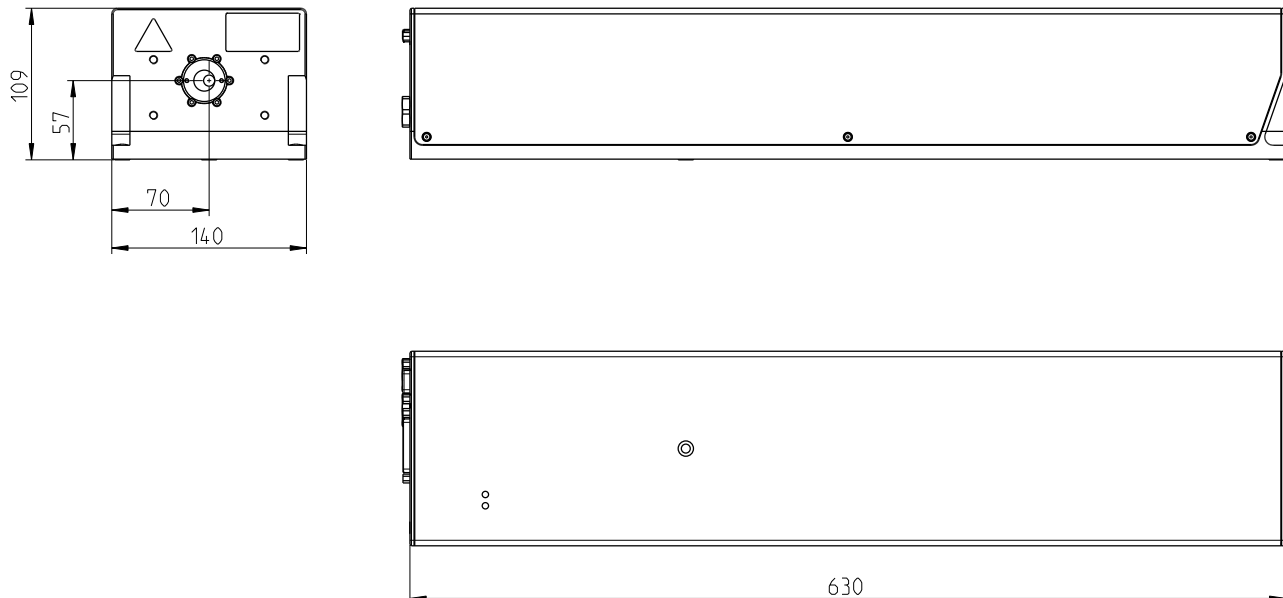


Vivio 355-10-V and Vivio 532-20-V



Technical Drawings

Vivio 355-20-V, Vivio 532-55-V



Customizations & Options

Easy to Customize and Integrate

The Vivio Q-switched laser provides various customization options. And, it is simple to integrate because there are no sensitive cable connections in the system.

Choose from the following customization options for Vivio series lasers:

- Air or water cooling
- Beam expander box
- Motorized variable attenuator
- Scan head adapter flanges
- Constant pulse energy mode CPEM+
- Safety shutter*

Other available options:

- Customized laser performance
- Customized control and operation modes
- Customized laser interfacing & software control
- Branded laser control software
- Special laser developments

*available for Vivio 355-20-V/532-55-V

Specifications

Vivio	355		
Model	Vivio 355-20-V	Vivio 355-10-V	Vivio 355-6-V
Laser Medium	Nd:YVO ₄	Nd:YVO ₄	Nd:YVO ₄
Wavelength	355 nm	355 nm	355 nm
Nominal Power	20 W @ 60 kHz	10 W @ 60 kHz	6 W @ 40 kHz
Repetition Rate	single shot to 400 kHz	single shot to 150 kHz	single shot to 150 kHz
Pulse Width	<25 ns @ 60 kHz	<20 ns @ 60 kHz	<20 ns @ 40 kHz
Pulse Energy	333 µJ @ 60 kHz	166 µJ @ 60 kHz	150 µJ @ 40 kHz
Peak Power	13.3 kW @ 60 kHz	8.3 kW @ 60 kHz	7.5 kW @ 40 kHz
Pulse-to-Pulse Stability	<2 % @ 60 kHz	<2 % @ 60 kHz	<2 % @ 40 kHz
Power Stability (RMS, 8h)	<2 %	<2 %	<2 %
Spatial Mode	M ² ≤ 1.2, TEM ₀₀	M ² ≤ 1.3, TEM ₀₀	M ² ≤ 1.2, TEM ₀₀
Nominal Beam Diameter (at waist)	3.0 mm	0.34 mm	0.35 mm
Nominal Waist Location (from output)	collimated	-340 mm	-340 mm
Beam Divergence (full angle)	< 0.3 mrad	1.7 mrad	1.5 mrad
Polarization	Vertical, > 100:1	Vertical, > 100:1	Vertical, > 100:1
Circularity	>90 %	>90 %	>90 %
Warm-up Time	< 5 min (warm start), < 20 min (cold start)	<15 min	<15 min
Operating Voltage Laser	48 VDC	24 VDC	24 VDC
Laser Power Consumption	<480 W	<480 W	<480 W
Cooling	Water	Water	Air; optional: Water
Ambient Temperature	15-40 °C, non-condensing	15-40 °C, non-condensing	15-35 °C, non-condensing
External Control	RS232, USB, TTL, Analog Q-Switch Control	RS232, USB, TTL, Analog Q-Switch Control	RS232, USB, TTL, Analog Q-Switch Control
Dimensions (L x W x H)	630 x 140 x 109 mm	400 x 150 x 130 mm	400 x 150 x 177 mm
Weight	14 kg	14 kg	13 kg

Specifications

Vivio	532			1064
Model	Vivio 532-55-V	Vivio 532-20-V	Vivio 532-14-V	Vivio 1064-15-V
Laser Medium	Nd:YVO ₄	Nd:YVO ₄	Nd:YVO ₄	Nd:YVO ₄
Wavelength	532 nm	532 nm	532 nm	1064 nm
Nominal Power	55 W @ 60 kHz	20 W @ 60 kHz	14 W @ 60 kHz	15 W @ 40 kHz
Repetition Rate	single shot to 400 kHz	single shot to 150 kHz	single shot to 200 kHz	single shot to 100 kHz
Pulse Width	<25 ns @ 60 kHz	<20 ns @ 60 kHz	<25 ns @ 60 kHz	<30 ns @ 40 kHz
Pulse Energy	916 µJ @ 60 kHz	333 µJ @ 60 kHz	233 µJ @ 60 kHz	375 µJ @ 40 kHz
Peak Power	36.6 kW @ 60 kHz	16.6 kW @ 60 kHz	9.3 kW @ 60 kHz	12.5 kW @ 40 kHz
Pulse-to-Pulse Stability	<2 % @ 60 kHz	<2 % @ 60 kHz	<1 % @ 60 kHz	<1 % @ 40 kHz
Power Stability (RMS, 8h)	<2 %	<2 %	<2 %	<2 %
Spatial Mode	M ² ≤ 1.2, TEM ₀₀	M ² ≤ 1.3, TEM ₀₀	M ² ≤ 1.2, TEM ₀₀	M ² ≤ 1.2, TEM ₀₀
Nominal Beam Diameter (at waist)	3.0 mm	0.34 mm	0.4 mm	0.4 mm
Nominal Waist Location (from output)	collimated	-340 mm	-340 mm	-250 mm
Beam Divergence (full angle)	< 0.3 mrad	2.3 mrad	2.0 mrad	4.0 mrad
Polarization	Horizontal, > 100:1	Horizontal, > 100:1	Horizontal, > 100:1	Vertical, > 100:1
Circularity	>90 %	>90 %	>90 %	>90 %
Warm-up Time	< 5 min (warm start), < 20 min (cold start)	<15 min	<15 min	<15 min
Operating Voltage Laser	48 VDC	24 VDC	24 VDC	24 VDC
Laser Power Consumption	<480 W	<480 W	<480 W	<480 W
Cooling	Water	Water	Air; optional: Water	Air
Ambient Temperature	15-40 °C, non-condensing	15-35 °C, non-condensing	15-35 °C, non-condensing	15-35 °C, non-condensing
External Control	RS232, USB, TTL, Analog Q-Switch Control	RS232, USB, TTL, Analog Q-Switch Control	RS232, USB, TTL, Analog Q-Switch Control	RS232, USB, TTL, Analog Q-Switch Control
Dimensions (L x W x H)	630 x 140 x 109 mm	400 x 150 x 130 mm	400 x 150 x 177 mm	400 x 150 x 177 mm
Weight	14 kg	14 kg	13 kg	12.5 kg

Iradion follows a policy of continuous product improvement. All specifications are subject to change without notice. Rev. 3.1, 10/2025.
Iradion Laser GmbH is DIN EN ISO 9001 certified.

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