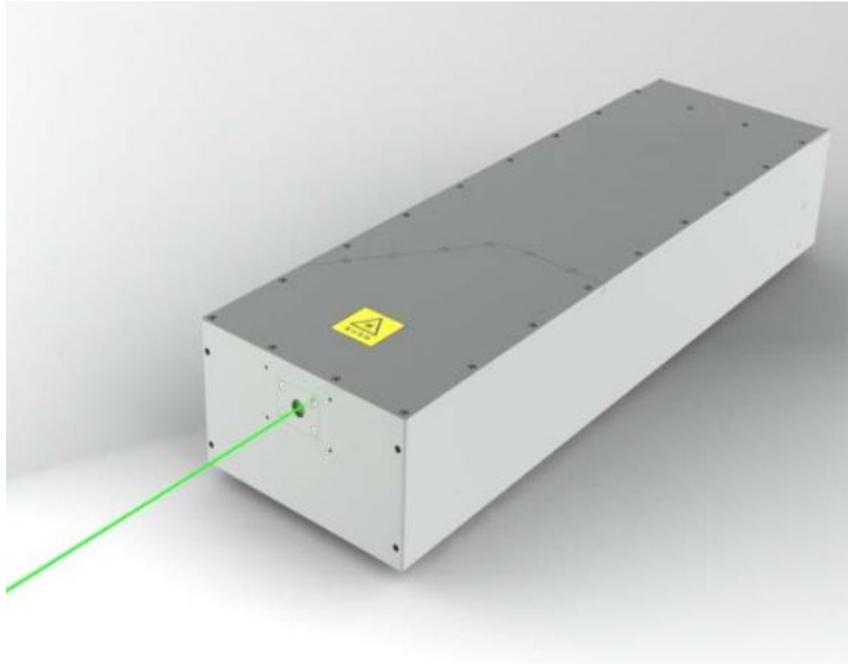


CALZ-NANO-H20-532 20W 532nm Nano Second DPSS Laser

Technical Specifications V1.00

Nov., 2013



 **UC INSTRUMENTS CORP.**

www.ucinstruments.com

CALZ-NANO-H20-532 20W 532nm Nano Second DPSS Laser

UC INSTRUMENTS CALZ-NANO-HXX laser is a family of diode-pumped, solid-state, Q-switched lasers, available with average powers currently ranging from 3W to 120W. These lasers deliver high repetition rate and high output power at wavelengths of 355 nm, 532 nm and 1064 nm.

The CALZ-NANO-H green solid-state laser series developed by UC INSTRUMENTS offer optimal power at high repetition rates. Innovative technologies employed such as electro-optical Q-switch and MOPA supports a high beam quality and high output power nanosecond laser. Within the full operating frequency range, the pulse duration is less than 10ns. High material processing efficiency can be actualized with repetition frequency of up to 100 kHz. Special optical welding techniques ensure laser fidelity and stability for any demanding 24/7 production environment. Equipped with MOPA, laser modulation methods can be easily changed to obtain various pulse widths and repetition frequencies to adapt to corresponding material processing requirements.

Base on high quality and innovation design experience, we design our systems to meet your 24/7 operation's requirements. System performance is maximized though closed loop design, where each critical process is optimized for your specific application and operating conditions. All UC INSTRUMENTS products are designed to be scalable to meet your requirements both today, and in well into the future. Our products are designed with serviceability in mind, and our training and extensive documentation make you the expert.

FETURES

- Solid-State, Q-Switched, Green Laser
- 20 -30 W 532 nm at 100 kHz: M2 <1.5
- Ultra-long life laser diode material
- Uniform pulse energy across a burst of pulses
- Stable pulse repetition rates.
- Uniform pulse energy control

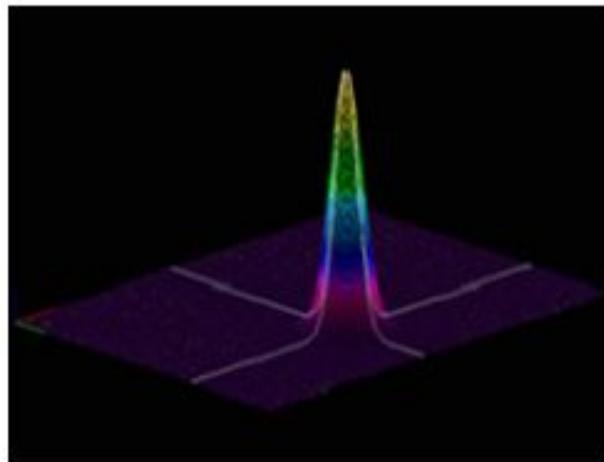
APPLICATIONS

- FPD/Glass Cutting and Micromaching
- Silicon and Low-K Dielectrical Scribbling
- Ceramic Material Cutting and Drilling
- Solar Cell Manufacturing
- Semiconductor Manufacturing (Wafer Cutting and Scribbling)
- Microvia Drilling in PCBs and Silicon
- Intra-glass and glass surface marking
- General laser marking
- Micromachining
- Wafer inspection and marking
- Metal marking
- LIDAR

Specifications

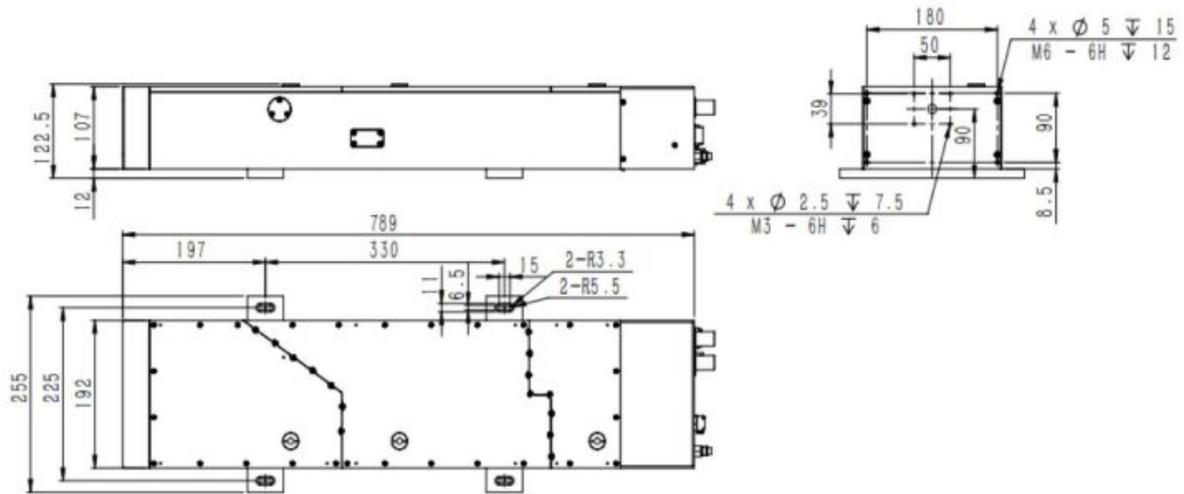
Model Number	CALZ-NANO-H20-532	CALZ-NANO-H30-532
Wavelength	532 nm	
Output Power	20 W @ 100kHz	30 W @ 100kHz
Maximum Pulse Energy	> 0.3 mJ @ 50kHz	> 0.5 mJ @ 50kHz
Pulse Repetition Rate	50 - 150 kHz	
Spatial Mode	TEM00 M2 <= 1.5	
Pulse Duration	<= 10 ns @100kHz	
Pulse to Pulse Stability	< 5%	
Average Power Stability	< 2%	
Polarization Ratio	>100:1 (vertical)	
Beam Circularity	> 80%	
Waist Diameter Stability in Full PRF Range	< 10%	
Beam-pointing Stability in Full PRF Range	< 25 urad	
Beam Divergence	< 0.26 mrad	
Beam Size (1/e2)	<= 3.4 mm	
Bore-sight Accuracy	<1 mm and < 10 mrad	
Warm-up Time (cold start to >95% full power)	<15 min	
Operating Temperature	Laser Head 10–35 °C	
Cooling Model	Water Cooling	
LD Module Lifetime	> 10,000 hrs	
Dimensions (L x W x H)	Laser Head:	820 x 255 x 122.5 mm

Beam Profile

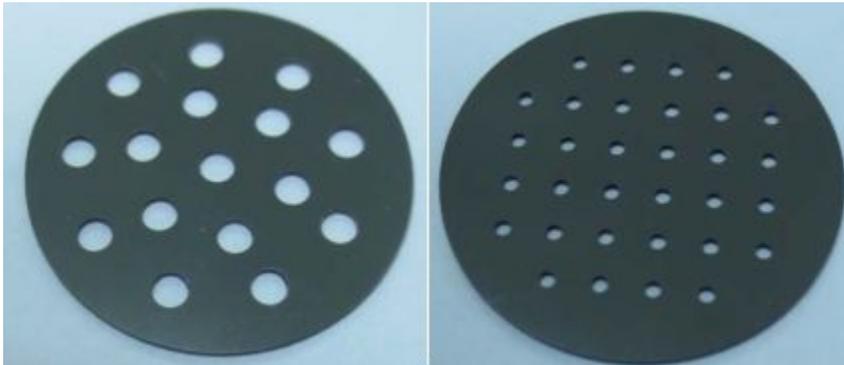


High Quality Beam Profile

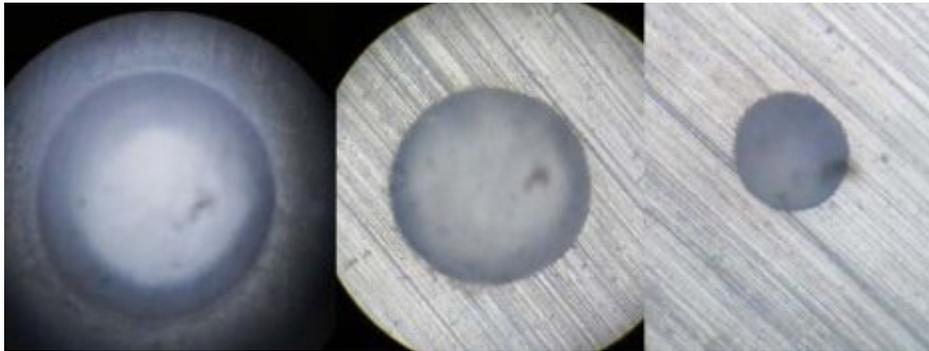
Dimensions



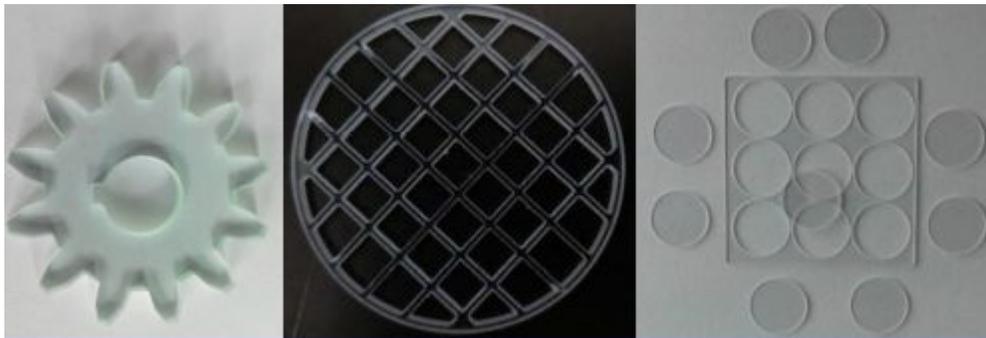
Real Product Application Pictures Samples



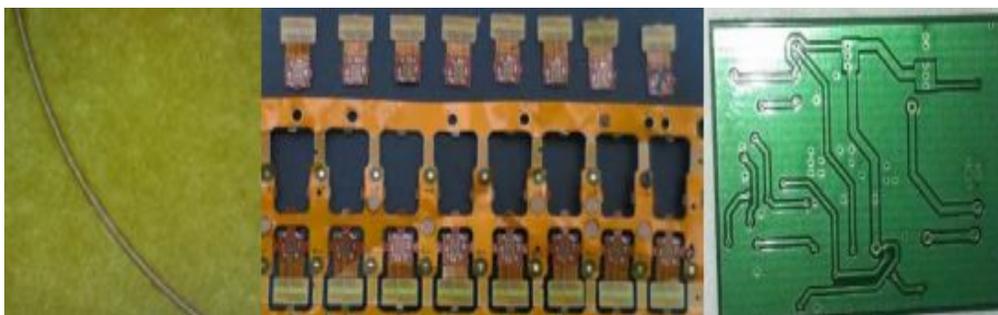
Semiconductor Manufacturing (Dicing and Scribbling)



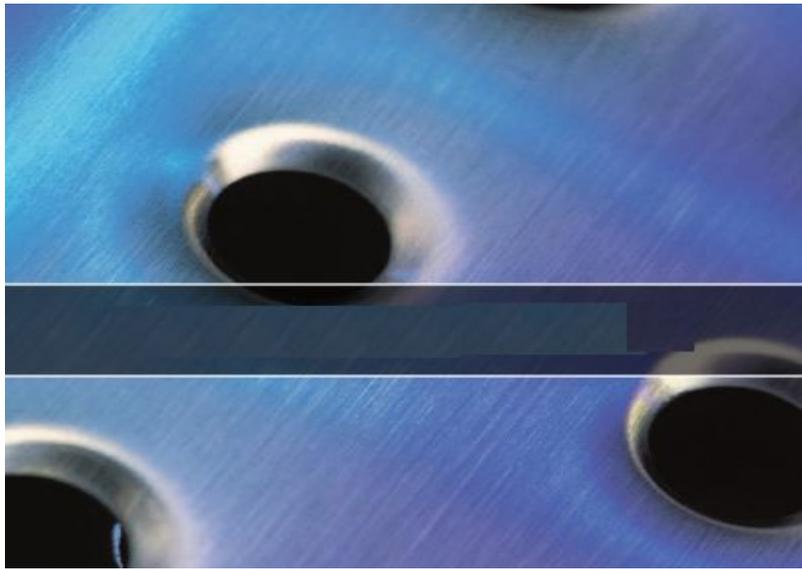
Ceramic Material Cutting and Drilling



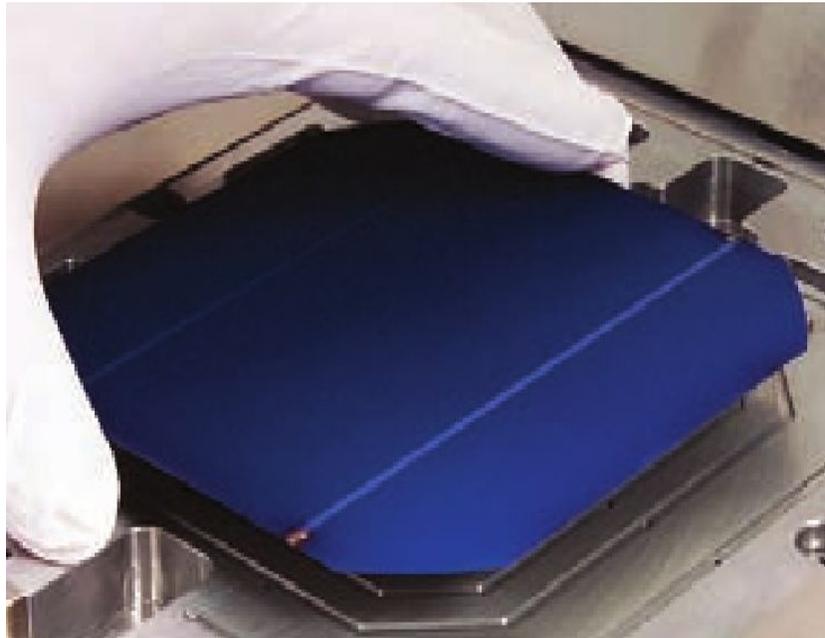
Glass Material Cutting and Micromachining



PCB/FPCB Material Cutting and Micromachining



Microvia Drilling in PCBs and Silicon



Solar Manufacturing

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Product specifications and descriptions in this documentation subject to change without notice.

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