

# **CALZ-NANO-M050-353 353nm 50mW Nano Second UV Laser**

**Technical Specifications V1.00**

**Nov., 2013**



 **UC INSTRUMENTS CORP.**

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## **CALZ-NANO-M050-355 355nm 500 mW Nano Second UV Laser**

CALZ-NANO-M050-355 combines innovative and leading edge laser technology by uniting control electronics and laser resonator design into the same footprint of its predecessor, the CALZ-NANO re-engineered to offer the most compact and powerful solution, the CALZ-NANO-M050-355 new design sets the pace for innovation and unmatched laser performance in a tiny package.

The CALZ-NANO-M050-355 laser models are available in the UV 355 nm. The 355 nm model produces over 500 mW of average power at a repetition rate of 30 kHz. The very small dimensions of the air-cooled CALZ-NANO-M050-355 makes this laser the technology of choice for system integrators who require integrating a UV laser into a tight space or small tabletop-like instrument. Only the supply cable and a serial or analog control cable is required to install and operate the laser on a moving system like gantry integration. Versatility and flexibility is realized by integrating advanced and value-added hardware and software elements such as first pulse suppression, active pulse detection, Burst mode, on demand auto-calibration, and single pulse energy measurements up to 100 kHz.

Based on the UC INSTRUMENTS design architecture, the CALZ-NANO-M050-355 is extremely rugged, highly reliable, and ideal for demanding 24/7 applications. All optical components are soldered in place to ensure exceptional ruggedness and durability in harsh operating environments. The minimizing organic contaminants that can degrade laser performance. The CALZ-NANO-M050-355 has been tested to endure shock and vibration with accelerations of up to 100 g. Like its predecessor, the CALZ-NANO-M050-355 laser provides superior mode quality ( $M < 1.2$ ) over the full repetition range of up to 100 kHz. The UC INSTRUMENTS high quality design enables efficient conversion to the UV, resulting in the highest pulse-to-pulse stability for consistent processing and higher yields

## FETURES

- Unique all-in-one design
- Lightweight
- Pulse energy stability of <3% for stable manufacturing processes
- Superior flexibility from single shot to 100 kHz
- Single pulse energy measurement capability single shot – 100 kHz for precise and accurate laser performance feedback
- Air-cooled and water cooler pad design selectable
- Rugged, reliable design and construction for demanding 24/7 applications

## APPLICATIONS

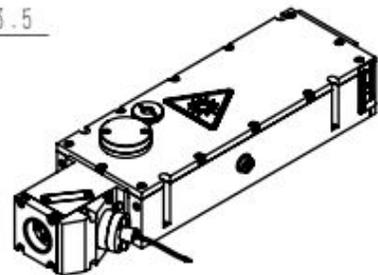
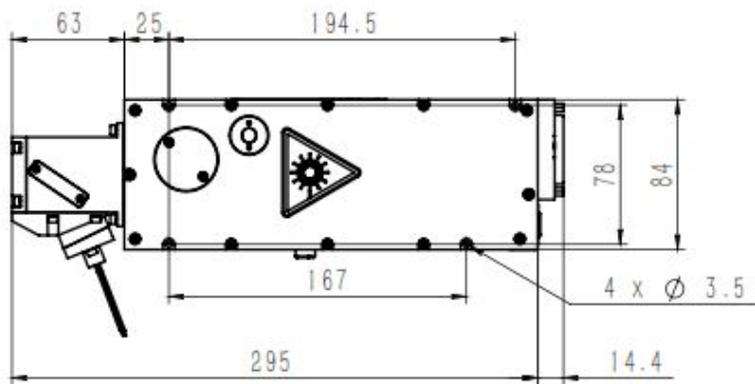
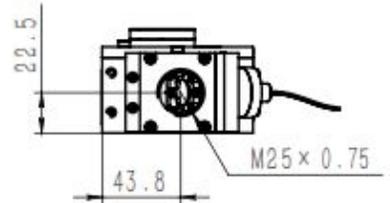
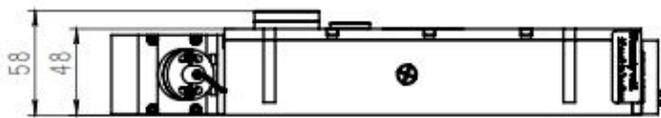
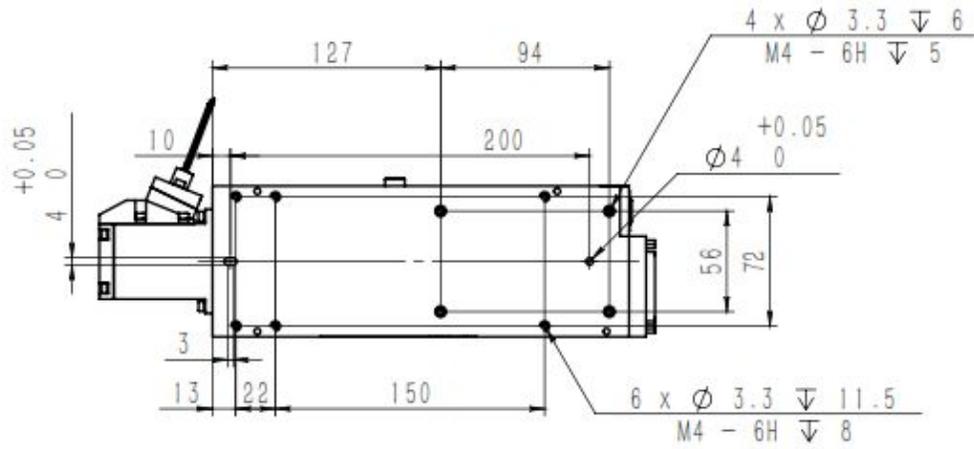
- Consumable electronics precision laser mark
- Plastic material laser mark
- Laser microdissection
- FPD repair
- UV titling
- Intra-glass and glass surface marking
- General UV marking
- Micromachining
- Wafer inspection and marking
- Metal marking
- Thin film scribing
- LIDAR

## Specifications

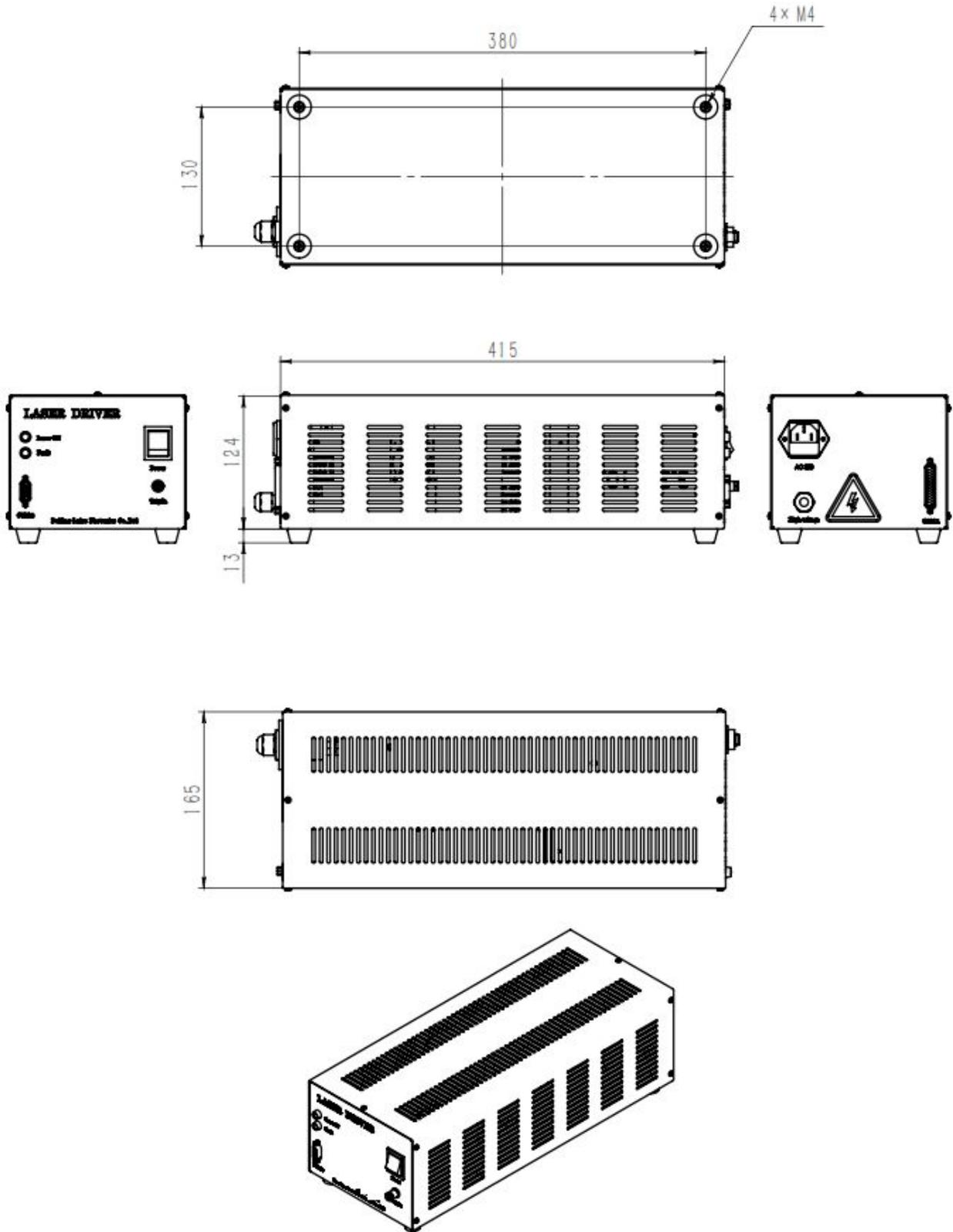
Wavelength	355 nm	
Gain Medium	Nd:YVO4	
Average Output Power	≥ 0.5 W (@30kHz)	
Maximum Pulse Energy	≥ 20 μJ @ 10kHz	
Repetition Rate	20 - 100 kHz	
The Best Operation Frequency	30kHz	
Pulse Width (FWHM)	≤ 8 ns @100kHz	
Long Term Power Stability	< 3%	
Long Term Pulse-to-Pulse Stability	< 5%	
Polarization Ratio	>100:1 (vertical)	
Spatial Mode	TEM00 M2 ≤ 1.2	
Beam-pointing Stability in Full PRF Range	< 25 urad	
Beam Divergence	< 0.8 mrad	
Beam Size (1/e <sup>2</sup> )	≤ 0.8 mm	
Warm-up Time (cold start to >95% full power)	<15 min	
Operating Temperature	Laser Head 10–35 °C	
Cooling Model	Air Colling and Water Pad Cooling selectable	
LD Module Lifetime	> 10,000 hrs	
Dimensions (L x W x H)	Laser Head:	309.4 x 84.0 x 58.0 mm
	Power Supply:	415 X 165 X 137 mm

# Dimensions

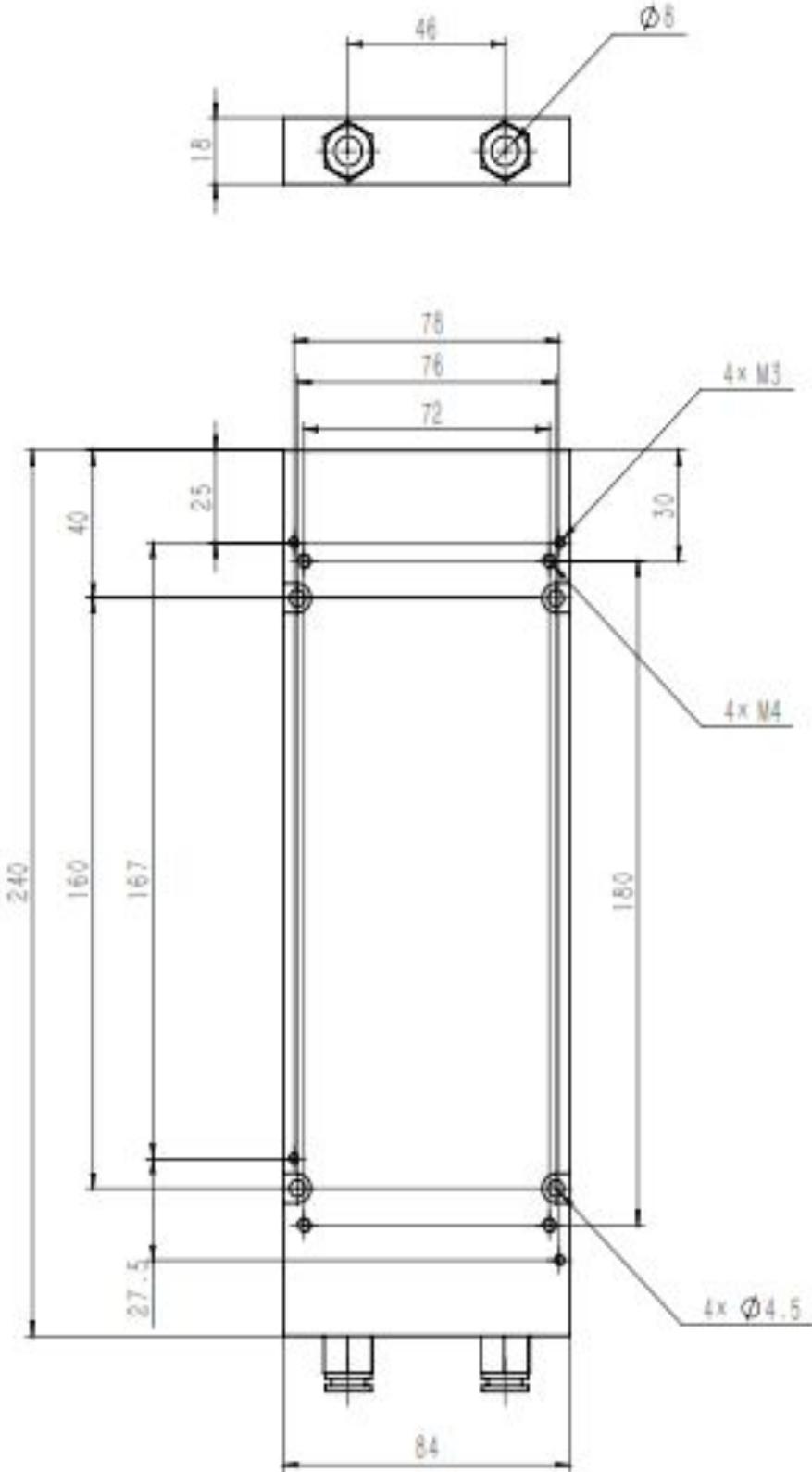
## Laser Head Dimension



# Power Supply Dimension



# Water Cooler Pad Dimension



## Real Product Application Pictures



Apple iPhone Power Cable Laser Mark



2D Bar Code PVC/ Plastic Material Laser Mark

# Contact Information

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