

CW SF UV Visible

Fully Automated

ULTRA-STABLE, HIGH-POWER
CW LASER IN THE UV AND VISIBLE

脉动科技有限公司

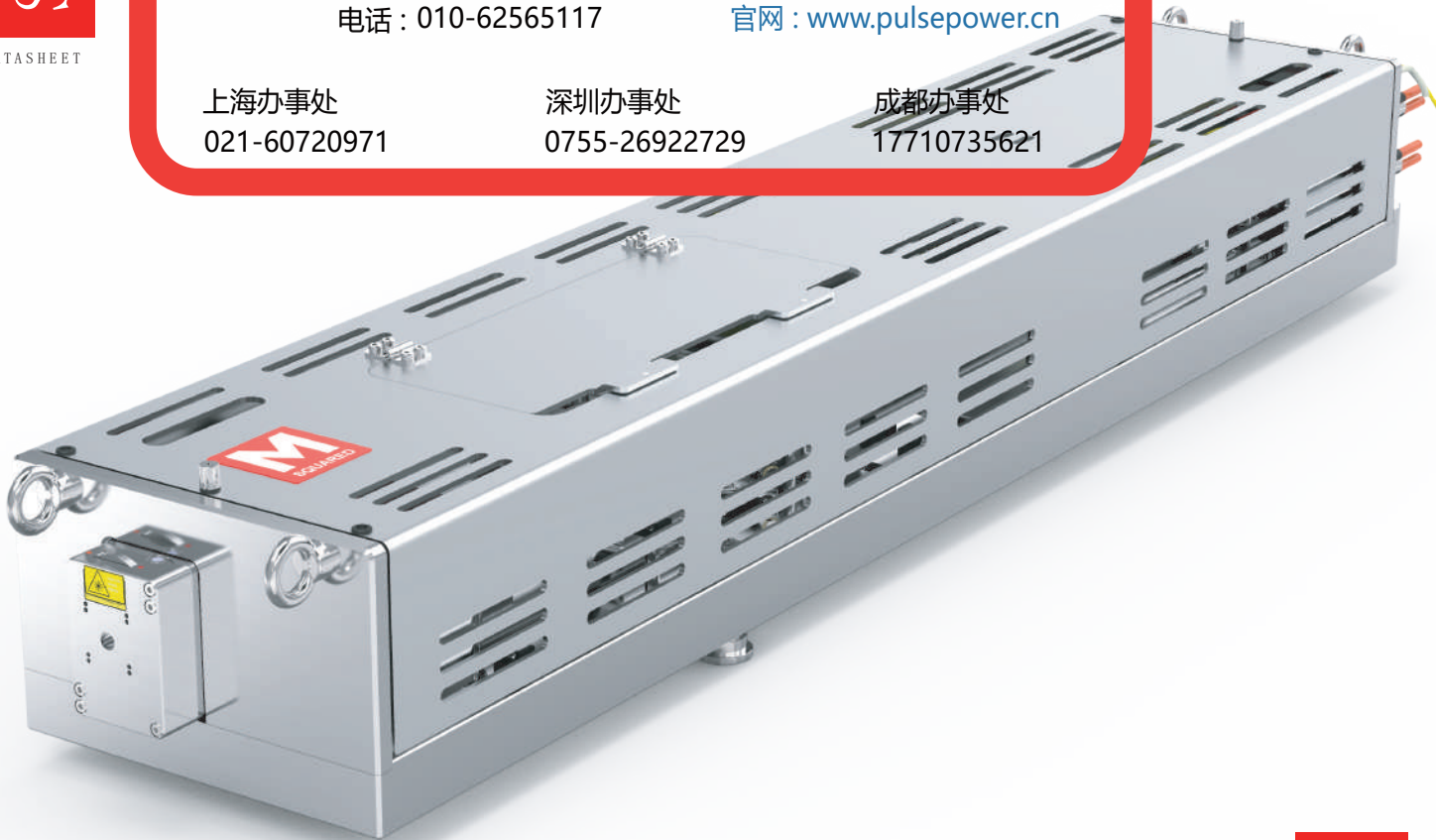
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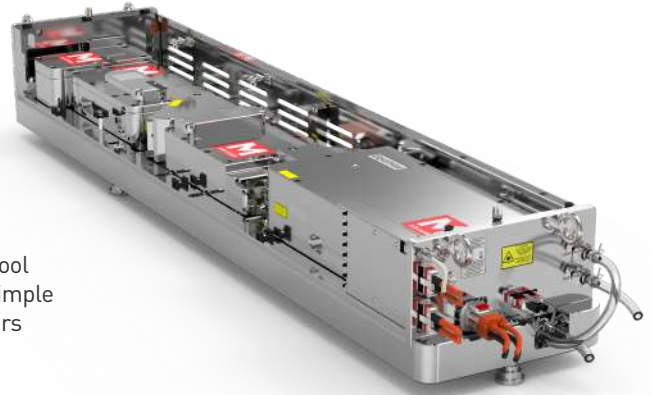
Based on the award-winning SolsTiS CW Ti:Sapphire laser platform, SolsTiS Titan is a fully-automated, high-power, single-frequency laser operating in the UV and Visible with unprecedented stability and reliability. Titan is simple to integrate into diverse industrial and deep-tech application scenarios and delivers dramatic cost savings over legacy laser technologies.

APPLICATIONS

- Semiconductor writing and inspection
- High-resolution display writing and inspection
- Interferometric writing
- Holography
- Quantum computing, sensing and communications
- Raman spectroscopy
- Graphic arts
- Replacement of legacy gas ion lasers

FEATURES

- Up to 2 W single frequency output at key wavelengths across the blue and UV, including 413 nm and 364 nm
- Fully automated, hands-free and simple to install and operate by non-specialist users
- Exceptional beam parameters; can be optimised for application requirements
- Excellent power stability and wavelength stability over extended periods; active power control option
- Zero short term drop-outs during long operating cycles (up to 60 hours)
- Fully integrated into customer tool (optical, mechanical, control); simple swap out for legacy gas ion lasers
- Remote control monitoring via ethernet or legacy protocols
- Web-based user interface with options for cloud-based real-time monitoring
- Low energy use (<1500 W) leading to large, sustained cost savings
- Consistent high performance over extended periods without intervention
- Long lifetime of up to 10 years



Inside SolsTiS Titan: integrated Equinox, SolsTiS, SolsTiS ECD and power control module.

SPECIFICATIONS

Wavelength	Titan will operate at any customer specified wavelength within ± 0.2 nm over the range 350 nm to 525 nm
Linewidth	<200 kHz at 100 μ s
Relative intensity noise	<0.1 % rms
Frequency stability	Inherent frequency stability <1 GHz / $^{\circ}$ C when not locked to a stable reference; <100 MHz / $^{\circ}$ C with incorporation of standard wavemeter; options for enhanced frequency stability
Output power	>2 W at peak (400 \pm 10 nm)

Model	Tuning range	Average power
SolsTiS 5000	350 nm - 380 nm	>0.8 W
SolsTiS 5000	381 nm - 420 nm	>1.5 W
SolsTiS 5000	421 nm - 460 nm	>1 W
SolsTiS 5000	461 nm - 500 nm	>0.4 W
SolsTiS XL	501 nm - 525 nm	>0.15 W
SolsTiS 2000	350 nm - 380 nm	>0.4 W
SolsTiS 2000	381 nm - 420 nm	>0.7 W
SolsTiS 2000	421 nm - 460 nm	>0.5 W
SolsTiS 2000	461 nm - 500 nm	>0.2 W

Power accuracy	< ± 1 % of output power over output power range
Power stability	<0.5 % rms over 24 hours, assuming 0.25 $^{\circ}$ C temp stability
Beam quality (M ²)	<1.2
Spatial mode	TEM ₀₀
Beam circularity	1.0 \pm 0.1
Astigmatism	<15 %
Beam waist diameter	1.6 \pm 0.2 mm, horizontal and vertical, FW @ 1/e ² points
Beam divergence	<0.61 mrad full angle, FW @ 1/e ² points

SPECIFICATIONS

Virtual beam waist location	Not specified
Beam position tolerance	<±1 mm, horizontal and vertical, measured from centre of output aperture
Polarization direction	Vertical ±3 degrees
Polarization ratio	>100:1
Beam pointing temperature tolerance	<30 μrad / °C
Beam pointing switching tolerance	<25 μrad when switching between spots in LBO; <50 μrad when switching laser on after shutoff and complete cool down
Power dropouts	No dropouts over 24 hours, defined as power fluctuations <10 %, power sampled @1 MHz; assuming no large mechanical perturbations

Operating Environment Requirements:

Ambient temperature range: 18 - 25 °C

Ambient pressure range: 960 - 1040 mbar; system will operate over this pressure range - 80 mbar corresponds to ~7 pm drift at 413 nm when not referencing to wavemeter

Max relative humidity: 80 %, non-condensing in operating range

Air: free of dust preferred

Mounting: laser will be mounted in a stable configuration and will not be subject to significant mechanical disturbances or vibration

Dimensions: 1146 x 234 x 153 mm (L x W x H)

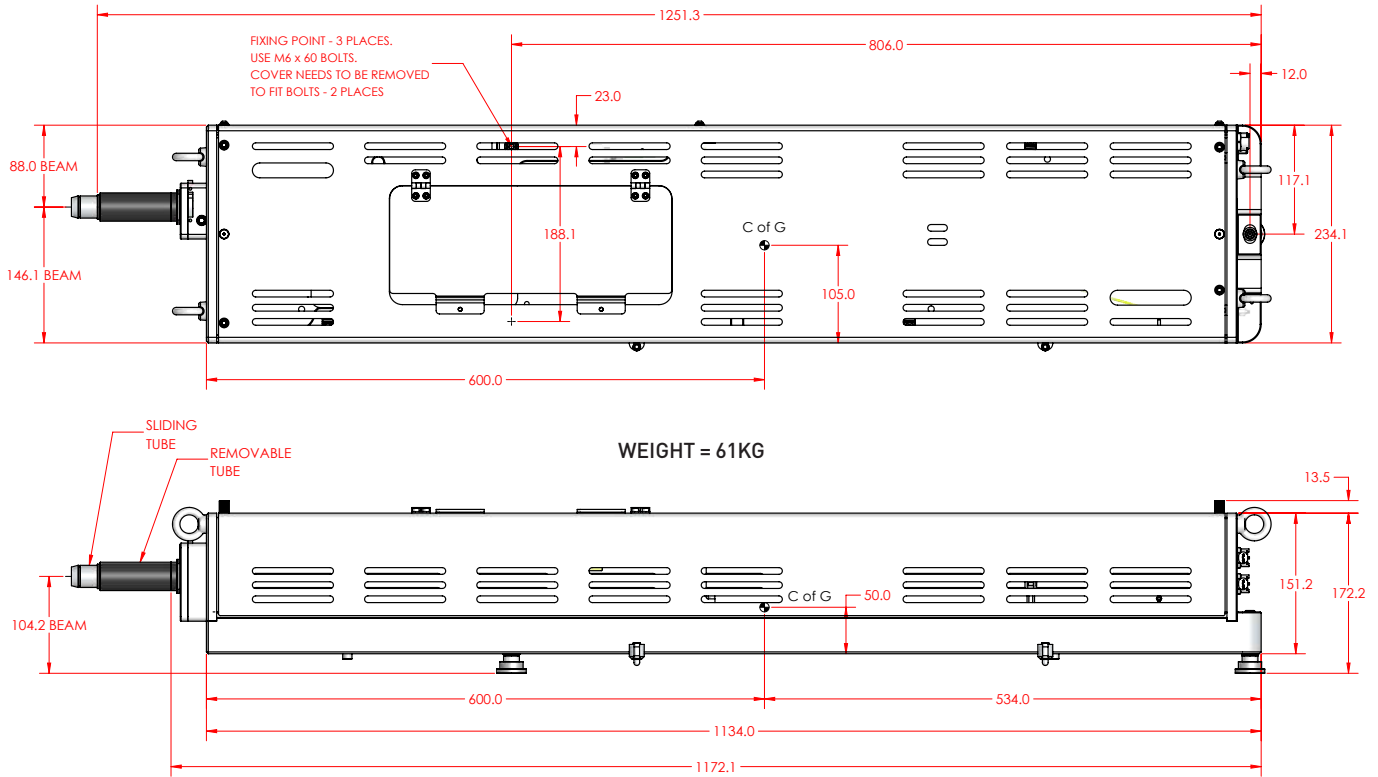
Cooling: rack-mounted, closed-loop water chiller

Shutter: provided and capable of remote operation (electrical)

Power consumption: <1500 W total

Electrical requirements: 120 V, 60 Hz single phase

SOLSTIS TITAN EXTERNAL DIMENSIONS



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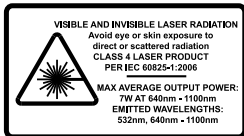
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