

OXIDE Deep-UV Quasi-CW Lasers

OXIDE's Deep UV QCW pulsed lasers combine OXIDE's nonlinear crystals with wavelength conversion technology to deliver high output and a long operational life.

Sintec Optronics is OXIDE's partner in Singapore.



1. QCW Kamala 266nm Laser

OXIDE's QCW 266nm laser has been developed for customers who pursue higher output power than is available with conventional CW (continuous wave) lasers. Because of the low peak power pulses realized by its high repetition rate at 100MHz, users can minimize the damages of optics and samples that can be as low as those caused by continuous wave lasers. This is a novel and highly reliable 266nm high power laser that is realized based on the more than 20 years of history of high-performance nonlinear optical crystals and of accumulated expertise of reducing the deep ultraviolet (DUV) damages in CW single frequency lasers.

Features

- **Long-term stable output and beam quality**
OXIDE's proprietary ultra-high-purity crystals deliver outstanding quality, resulting in an expected lifetime of over 10,000 hours. With minimal crystal degradation, high beam quality and stable operation over long periods are ensured.
- **High-reliability fiber optical amplification technology**
Using proprietary technology, a stable high-power infrared source is generated and, through two-stage wavelength conversion, provides a laser with long-term stable performance.
- **Low power consumption**
The high-efficiency wavelength-conversion laser system enables very low power consumption.



Applications

- Semiconductor inspection
- Microfabrication

Specification	Value
Wavelength	266nm
Output Power	2W, 3W, 6W, 8W
Spectral width	<0.1nm
Repetition rate	100MHz
Extinction Ratio	>100:1
Beam Quality	M2 <1.2 (2W, 3W, 6W) M2 <1.5 (8W)
Polarization	Horizontal, Linear
Power Supply	AC 100-240V, 50/60Hz
Power Consumption	<450W (2W, 3W, 6W) <650W (8W)
Cooling	Water
Dimensions (Head)	290 x 780 x 494mm

2. QCW Kamala 193nm Laser

OXIDE's QCW 193nm laser is an all-solid-state deep-ultraviolet picosecond laser achieving a wavelength of 193 nm, a repetition rate of 50 MHz and an average output exceeding 0.2 W. By utilising the wavelength conversion technology and high-quality CLBO crystals that we have developed over many years, we have succeeded in achieving both high output and short wavelengths in an all-solid-state laser. In addition to conventional wafer inspection, it can be applied to photomask inspection for ArF lithography, the medical field, and as a light source for optical component inspection.

Applications

- Semiconductor inspection
- Spectral analysis
- Optical microscope/UV microscope
- Biotechnology and Biological research
- Material evaluation and surface analysis
- Photolithography prototype



Specification	Value
Wavelength	193nm
Output Power	200mW
Spectral width	<5pm
Repetition rate	50±1 MHz
Extinction Ratio	>100:1
Beam Quality	M2 <1.5
Polarization	Horizontal
Power Supply	AC 200-240V, 50/60Hz
Power Consumption	<3kW
Cooling	Water
Dimensions (Head)	TBD

OXIDE Pulsed Vacuum-UV Laser

OXIDE's VUV Laser Source (PEV Series) is a vacuum-ultraviolet (VUV) coherent light source specially designed for excitation light source for photoelectron spectroscopy (PES) applications. It is developed based on OXIDE's deep-ultraviolet laser technology.

By integrating the VUV light source with an Angle-Resolved Photoemission Spectroscopy (ARPES) and TOF analyzer, for example, new material development tools to develop such as battery materials and nanomaterials can be built. It can also contribute to realize entirely new laser photoelectron spectrometer.

Sintec Optronics is OXIDE's appointed distributor.



Features

- OXIDE's 11eV laser output is coherent thus can be focused on the target sample with a single lens (micro focus option available).
- By integrating all the optics into one unit, adjustment of the equipment on-site is not required. Thus, the lead time from the delivery of the equipment to start photoelectron spectroscopy can be shortened.
- PEV Series VUV Laser Source is highly reliable with industrial quality while it is intended for research applications.

Applications

- Photoelectron spectroscopy
 - ARPES (Angle-Resolved Photoemission Spectroscopy): Excitation light source of angular resolution electron spectrometer
 - TOF: Excitation light source for photoelectron spectrometer

Model	PEV-H	PEV-L
Photon Energy	11eV ^{*1}	11eV ^{*1}
Energy Resolution	≤0.6 meV	≤0.6 meV
Repetition Rate	50MHz	5MHz ^{*1}
Output Power ^{*3}	≥5uW	≥3uW
Pulse Bandwidth	≤30ps	≤30ps
Features	Peak power is suppressed so that the space charge effect is reduced	Factory pre-set repetition rate can be selectable for the customer's TOF application ^{*2}

^{*1} Corresponds to 114nm light wavelength

^{*2} Setting from 0.5MHz – 5MHz available

^{*3} Initial output power