GMP INFO

LASER 2007 AT MUNICH 18-21JUNE

Our General Manager, Mr. Jean-Jacques Goy together with our sales engineers, Mr Marcel Dubey and Mr. Stefano Okretic will be at your disposal on the stand of our suppliers.

To contact them, please call our headquarter at + 41 21 633 21 21. We will connect you directly to them or take your message.

30 ans de rayonnement
Laserpioniere seit 30 Jahren
Laser pioneers for 30 years

Summary :

1. Telecom Industry Designs Visible Solid State Lasers

JDSU launches the new solid-state laser LCD488 emitting at 488nm.

THE FCD 488 LASER is based on JDSU's methods and process and qualifying products to stringent telecom standards.
These diode-pumped solid-state laser have already dramatically improved the efficiency and lifetime and reduced the package size compared to the old gas-discharge lasers.
The FCD488 houses a 976nm single mode laser diode in a standard butterfly package size, with a fiber bragg grating stabilizing the laser's wavelength and serving as its output coupler. The emerging 976nm power is coupled with a single-mode polarization-maintaining fiber into a periodically poled LiNbO3 waveguide, where its frequency is doubled to 488nm. The waveguide also is in butterfly package.
The resulting blue light is collected into another single-mode polarization-maintaining fiber and transported to the final beam –shaping optics. A feedback loop at the output stabilizes the light power level. This fiber-based telecom-style architecture delivers excellent performances. The mode quality and the beam-pointing stability are extremely good because the coupling laser to single mode fiber.

FCD488 Benefits

***Compact - optics and electronics in one housing**

***No heat sink required**

***Good efficiency—requires only small power supply**

***Fiber based architecture**

***High reliability due to telecom style packaging.**

2. High Power Laser Diode Instrumentation

ILX Lightwave offers a range of laser diode drivers, temperature controllers and mounting fixtures for precision control of high power laser diodes. These offer high stability, low noise CW and QCW current from 3A over 40A .

High Power Laser Diode Drivers: 10 to 120 Amp Laser Diode Drivers.

High Compliance Laser Diode Drivers: single channel high compliance voltage current source for quantum cascade laser diodes

Multichannel Laser Diode Controllers: high power multi-channel current and temperature control.

The LDX-3600 Series intuitive front panel is designed for quick and easy operation. Laser diode current, voltage and temperature limits along with pulse mode parameters such as pulse width and duty cycle are quickly and easily set.

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3. OXXIUS Compact Monolithic DPSS Lasers

The company's flagship product line, the SLIM range of ultra-compact diode-pumped lasers is available in blue, green and yellow. These lasers all feature continuous-wave single-mode output.

The monolithic optical design greatly improves robustness and long-term reliability. Its exceptional power stability, spectral and spatial beam characteristics are a definite asset in the applications.

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Product	λ (nm)	Power (mW)
SLIM-561	561	25—100
SLIM-532	532	50—300
SLIM-473	473	25—50
OXV-445	445	40
OXV-405	405	50
OXV-375	375	7-15

The Oxxius Violet products (OXV) leverage state-of-the-art GaN technology and feature outstanding stability and low noise in a compact package.

Product highlights

- Visible DPSS and diode based UV lasers
- High Output Power
- Ultra Compact Package¨Low Noise¨Single Frequency
- Outstanding Power Stability
- Superior Pointing Stability
- Low Power Consumption

4. IGNIS New Red DPSS Laser from Laser Quantum

Laser Quantum is specialized in innovative, high quality diode-pumped solid state laser manufacturing.

The Ignis laser produces a high quality red beam (660nm), while in a TEM_{00} transverse mode.

Features are:

- Compact design
- Zero stress cavity sealed hermetically
- Scientific PSU option
- High brightness
- Direct modulation up to 30 kHz
- Extended warranty available
- Single-phase mains driven diode 18 000 hrs MTBF
- Full RS232 control
- ISO 9001: 2000

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Specifications

Available powers	50-500 mW
Wavelength	660 nm
Beam size	2.0 mm
Bandwidth	30 GHz
Divergence	<0.6 mrad
Polarisation ratio	100:1
Polarisation	horizontal
Coherence length	1 cm
Head weight	1.3 kg
Umbilical length	1.5 m
Warm-up time	10 min

5. Active Pneumatic Vibration Damping System

TMC™ Technical Manufacturing Corporation

The TMC Electro-Damp II is the first commercial, active vibration system designed specifically to increase throughput, resolution and yield in semiconductor manufacturing applications. It is ideal for tools which incorporate X-Y stages. Not only does the Gimbal Piston air isolator provide extremely effective vibration isolation, but the force motors provide aggressive damping of X-Y stage-induced motion, resulting in minimum payload motions, rapid settling time, and, ultimately, higher tool throughput.

6. Passive Q-switched microlasers for subnanosecond pulses

Teem Photonics now offers a broad range of passive Q-switched microlasers.

These are diode pumped solid state lasers distinctive for their subnanosecond pulses, their repetition rates in the tens of kilohertz as well as their compact packages.

Microlasers are available at 1064nm, 532nm or in the UV at 355nm or 266nm. The energy levels are in the range of microjoules to tens of microjoules.

With their high beam quality, pulsed UV microchip lasers can advantageously replace more powerful gas lasers such as nitrogen or helium cadmium lasers.

As an example, a 355 nm microchip laser that produces 15 microjoule pulses can successfully replace a nitrogen laser with 300 microjoule pulses.

Teem Photonics lately introduced new high frequency microchip lasers (up to 40kHz) with average power in excess of 150mWatts as well as the triggering capability between 10Hz and 2kHz, with a specified delay period between trigger demand and pulse emission time along this frequency range. No doubt that this interesting feature will open new applications until now reserved to active Q-switched lasers.

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7. New Generation of Diode-Pumped Nd : YLF Lasers

The Darwin series of high repetition rate Nd : YLF Lasers features the smallest laser head of any system in its class.

Quantronix intracavity frequency doubling results in high conversion efficiency, without resorting to tight focusing (and possible optical damage) in the doubling crystal as would be necessary in the extracavity design. Our patented pumping chamber design further increases the overall efficiency. High pulse energy, excellent beam quality, and long component lifetime are all available in this extremely compact diode-pumped package.

Quantronix offers a complete revision of the successful ***Darwin*** series of diode-pumped Nd: YLF lasers. Now the ***Darwin-20*** offers 20 mJ of 527 nm light per pulse at a repetition rate of 1 kHz. The system will operate up to 15 kHz with a maximum green power output of 30W. The laser head has been reduced to 51 x 10 x 1 3 cm , which is a dramatic 75% reduction in volume over the previous Darwin systems. Along with this decrease in size comes a doubling of the output energy.

Darwin features & benefits

- >25mJ pulse energy at 1 kHz
- Average power >35W
- Repetition rates up to 10 kHz
- Diode lifetimes guaranteed for 10,000 hours
- Compact and hermetically sealed laser head
- Exceptional beam-pointing and power stability

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8. No Vibrations Allowed!

As the World's Leading Designer and Manufacturer of **Standard and Custom Vibration Isolation Systems** and **Optical Tables**, TMC has dedicated a major part of its design and innovative efforts to the Life Sciences Industry.

- CleanTop™ II Steel Honeycomb **Optical Tables for laser / electro-optics** research.

- High Performance Vibration Isolation Lab Tables for **optical microscopes and other small, table-mounted instruments.**

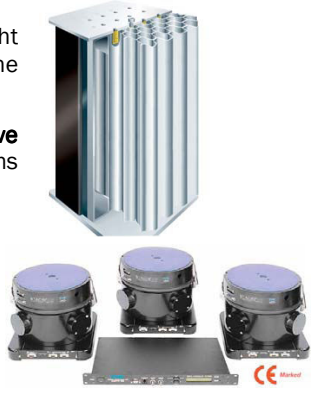
- Floor Platforms for **electron microscopes and other floor-mounted equipment.**

- Quiet Island®sub-floor platforms to **support tools in a cleanroom, raised-floor environment.**

- The ultra-lightweight design of **TMC's two inch think breadboards** are ideal when light loads and low cost are the most crucial factor.

- Stacis® Piezoelectric Active Vibration Isolation systems with inertial feedback.

- A variety of active and semi-active advanced vibration isolation products specifically designed **for semiconductor lithography and metrology tools** .



9. High-Power Q-Switched Diode-Pumped Laser

The JDSU Q series lasers are sophisticated high-power Q-switched diode-pumped laser systems. The Q series family incorporates a rugged, efficient Nd:YAG-based DCP platform with a proprietary design for intracavity harmonic generation. As a result, it provides the highest power 355 and 532 nm laser systems with uncompromising stability and mode quality, from single-shot operation to pulse repetition rates of up to 200 kHz. Whether for high pulse energy processing, of refractory materials such as Kapton, the Q series delivers unsurpassed performance combined with the longest system lifetimes in the industry.

Specifications

- 335 or 532nm outputs
- Spatial mode TEM_{00}
- $M^2 < 1,2$
- Waist location 42 or 50 cm
- Waste diameter 0.26 or 0.35 mm
- Average output power 355nm: 3—10 W
- Average output power 532nm: 12—15 W

(average power depending on rate of pulse repetition)

The Q series lasers enable the tightest possible process tolerances for micromachining and other material processing applications. Due to the well known self-stabilizing characteristics of intracavity harmonic generation, all Q series lasers exhibit inherently high pulse-to-pulse energy and long-term output power stability.

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JDSU