



LASER 2000

THE FUTURE OF PHOTONICS

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Novelties Magazine

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Cross table, based on linear synchronous motors

Ruchservomotor is manufacturer of linear motors and direct driven systems with high accuracy, load and speed.

Take for example the Ruchservomotor's Cross Table 2D-24-1054-550:

Construction

The cross table consists of two axes X and Y based on linear synchronous servomotors, built in aluminium profiles with roller guideways and magnetical encoder.

Axis Y is mounted on top of carriage of axis X with the usage of locating pins. The motor consists of a fixed steel plate with glued permanent magnets (stator), protected by stainless steel cover, and movable lamination stack with windings (forcer). The windings are encapsulated in thermally conductive epoxy. The smoothness of movement is achieved by sinusoidal commutation of motor phases currents.



Applications

Pick and place machinery, laser cutting, packaging machines and manipulators.

Key features

- ✓ peak force: 323 N
- ✓ maximum velocity: 4.6 meter per second
- ✓ repeatability: 5 micron
- ✓ resolution: 1 micron

Blue, violet and UV IQ laser diode modules

Power Technology Inc. now offers compact, versatile and highly cost-effective solutions for applications that require blue, violet and ultraviolet laser sources. Ideal replacements for bulky inefficient gas lasers: 375, 405, 445, 450, 473 and 488 nm IQ laser diode modules.



Typical applications include laser-induced fluorescence, high-resolution printing, interferometry, confocal microscopy, holography, Raman spectroscopy and bio-analysis. The IQ series modules can be offered in various configurations that offer the following features:

- ✓ Active temperature control for stable wavelength & power output.
- ✓ Beam circularization option.
- ✓ Analog & TTL modulation input (upto 100MHz) options.
- ✓ Narrow bandwidth option.
- ✓ Single & multimode fiber coupling options.
- ✓ Microprocessor control.

Fine Adjustment

The **Fine Adjustment** high-precision optomechanical components distinguish themselves by the very high sensitivity of 170 tpi. They are very stable, available in various colors and very competitively priced!



For more information, brochures and/or specifications you can send an e-mail to info@laser2000.nl

Radiant Imaging now represented in de Benelux by Laser 2000

Recently Laser 2000 was appointed the representative of Radiant Imaging in the Benelux

To introduce the Radiant Imaging products to you, we created this brief overview.

Radiant Imaging is world-leader for the use of digital cameras for measuring brightness and chromaticity distributions for luminaries and displays. For this, a complete program of camera's and application software is available.

ProMetric cameras

These cameras are available in several CCD resolutions and dynamic range (from 512 x 512 pixels to 3072 x 2048 pixels and from 10 bits to 16 bits).

The cameras have high accuracy and full-glass tristimulus filters. A big variety of lenses and analysis modules is available for a lot of applications.

These PM series cameras can also be integrated in other instruments.



Imaging Sphere

By using a semi sphere, which is semi diffuse at the inside and with a convex lens, an image can be taken of the inside of the sphere.

When a lightsource like a LED is mounted in the centre of the sphere, a complete distribution of brightness and chromaticity can be determined of this lightsource in just one image.

With this application it is also possible to measure view-angles of displays and the diffuse scattering of materials (both in reflective and transmissive mode). In this last application, an extra lightsource is used. This light-source can be equipped with a monochromator.

Goniometer

In this application, the camera is located in a goniometer that can measure every type of lightsource (from "die" of a LED upto complete luminaries).

The measurement results are stored in the form of a Radiant Source Model. (A library of these models is available with a big variety of lightsources).

With the help of ProSource, ray sets can be generated to be used in optical design software like FRED, LightTools, ASAP, TracePro and many others.



LED screen correction

LED screen displays are built from individual LEDs. Each of these LEDs has its own characteristics with respect to brightness and color.

Even if the color and brightness of the displays are tuned perfectly by the supplier, after some time of use, the brightness of each of the LEDs will change differently. As a result the display will show patchiness and not create the image as required by that user (and advertiser).

To correct these problems, Radiant Imaging recently released a complete line of products:

VisionCAL: for correction of displays and storing correction data (both for modules and screens).

VisionLINK: for correction of displays on video-level (DVI).

VisionMATCH: for tuning a replacing module in a large screen with respect to the other modules in the screen.



Next generation fiber lasers for micromachining

Multiwave Photonics' MOPA-M Series is a family of diode-pumped all-fiber lasers which have been specifically designed to produce the highest possible pulse energies and peak powers over the largest repetition range.

Key features:

- ✓ Multiwave's MOPA architecture allows pulse shape control, triggering, gating and ASE suppression well beyond fiberbased Q-switched laser designs.
- ✓ independant control of puls length, frequency and puls energy.
- ✓ pulse widths as short as 10 ns maintained from single shot to 500 kHz.
- ✓ very high peak powers making the MOPA-M the ideal pulsed fiber laser for all micromachining applications.
- ✓ offered as compact OEM module or fully integrated IEC/CDRH compliant system.
- ✓ air cooled, power levels 1 W to 20 W.
- ✓ ideal for PV process step 1 and datacard grayscale marking.



Faster and smaller: the Firestar Ti at a wavelength of 10,6 microns

Synrad, manufacturer of sealed CO₂ lasers has developed another new laser: the Firestar-Ti.

Unlike the T-series; the new Ti-series has the RF powersupply integrated in the laser housing. This fills the gap of the need for a compact laser source without compromising performance.

The advantages of the Ti-lasers are the low dissipated electrical power and the high puls repetition rates - still with high optical laser quality. This makes the Ti-laser very suitable for high speed marking of large surfaces.



The power levels are 60 and 80 Watts, and are available with air- or watercooling. The 100W model is available with water cooling.

For more information, brochures and/or specifications you can send an e-mail to info@laser2000.nl

Of course you can also call us at (+31) 0297-266 191 or send a fax to (+31) 0297- 266 134

Piezosystem Jena expands the MIPOS series with the MIPOS N100

With the MIPOS series, piezosystem Jena sets and exceeds standards in the area of nanopositioning systems. These MIPOS systems are optimized for tilting, stiffness, resonant frequency and maximum additional mass load.

The nanopositioning actuators of the MIPOS series are developed for highly precise fine focusing of objectives in microscopes and other optical systems. They are characterized by their compact construction and

simple, quick assembly and travels from 20 – 500 µm.

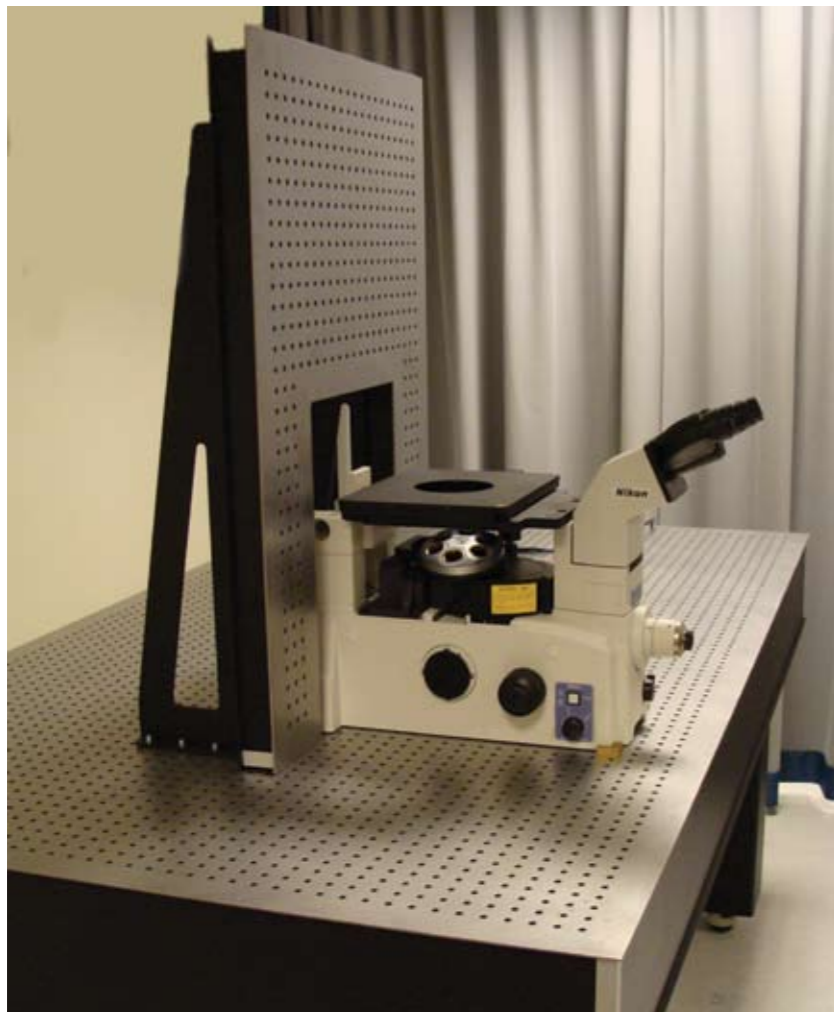
Piezosystem Jena has now expanded the MIPOS series Until now, systems like these were used exclusively for moving individual objective lenses.

Newly available is the positioner MIPOS N100, which has the capability to move the whole nosepiece with the accuracy and speed expected of piezo based actuators. With an additional load of 5



kg the MIPOS N100 has a resonant frequency well over 100 Hz. To increase the positioning accuracy, a version with a capacitive sensor is available.

OPTA optical tables installed at the Vrije Universiteit



Recently, three OPTA optical tables have been installed at the Vrije Universiteit in Amsterdam.

Dr. ir. Erwin Peterman is involved at the department of Physics and Astronomy & Laser Centre (section of Physics of Complex Systems), with functional research of structures and dynamical behavior of proteins. Therefore, microscopic and spectroscopic setups are being used with regards to optical tweezers and optical trapping.

Erwin's new, complex microscopes are being used on the OPTA tables for further study of these fields of research. The photo shows one of the special tables that OPTA has delivered and installed together with Laser 2000. Erwin is very pleased with the result.

More about the work of Erwin Peterman you can find on this site: www.nat.vu.nl/~erwinp

Intelligent Positioning Systems

The newly developed chip OWISid will be integrated in all OWIS® positioning stages. It ensures fast and easy initial operation of the OWIS® positioning system.

This chip stores every information concerning the positioner such as type, spindle pitch, gear reduction, motor features. Thus, the positioning system can be set into operation and configured within short time.

The control software OWISoft together with the position control PS 10 enables the readout of the specific data of the positioning unit. The positioning system is immediately identified and mostly automatically configured.

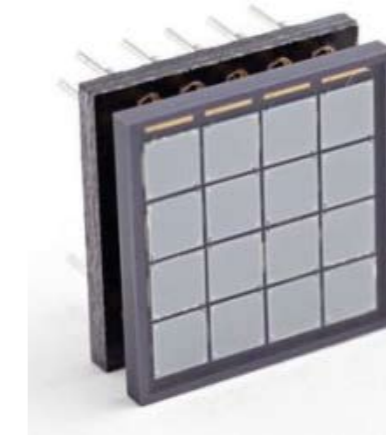
Setting errors can therefore be avoided and operating errors can nearly be excluded. The positioning unit is ready for use within shortest time.

Using this plug & play solution, complex setups can be put into operation simply and safely. Required motion sequences can be directly executed by means of the comfortable control software OWISoft.



Scalable SPM array for large area, low light detection

SensL released the industries' first four-side scalable low light detecting silicon photomultiplier array.



This SPM Array4 detector builds on the proven low light detector technology from SensL which is rapidly becoming the new standard for solidstate low light detection.

4 sides scalable

The four side scalable low light detector solves the problems faced with scaling silicon photomultiplier technology to very large areas. This is a key requirement for the adoption of solidstate low light detector technology in many markets which are currently served by the PMT.

Small size

The small form factor makes the SensL SPMArray4 ideal for weight and space constrained handheld radiation detection and identification systems for simpler and more compact PET and SPECT ring assembly in Medical Imaging applications.

Magnetic fields

Additionally, to allow operation in magnetic fields, the unique package used in the SPMArray is not impacted by large magnetic fields and is designed to be magnetic compatible up to 3 Tesla.

Electronics

SensL offers the SPMArray4 with a full range of readout and evaluation boards designed to suit customer applications and rapid prototyping.

Unique broadband Terahertz radiometer

The T.rad 1000D from SpectrumDetector is a broadband radiometer for intensity measurements in the whole THz spectrum (0,1 - 30 THz).



Large sensitive area

This new radiometer is based on a very sensitive pyroelectric detector with a large surface, and lock-in electronics with software. The sensor is housed in a thermal isolated body. Power is supplied via the USB connection to the LIA-DPM digital lock-in module.

Easy to use

Install the supplied software (labview executable) and hook up the pyro-probe; that's the only

thing you need to do in order to measure any chopped THz source. Sources from 100nW to 20mW average power can be measured.

This easy-to-use setup clearly separates itself from standard lock-in amplifier systems: Simply enter the range, filter-tau and batchsize and you are ready to go.

The LIA-DPM lock-in module is versatile and easy to use: the software allows several analysis windows like strip chart, statistics, tuning and setup. The left side of the windows is

always for the parameter settings. Data that shows on the screen, can also be logged to a file on the computer. This file can be opened at a later stage for further analysis.

Finally, now there is this affordable alternative for the expensive and vulnerable Golay cell.

The T.rad 1000D radiometer is developed to let researchers do broadband measurements with a pyroelectric instruments, in the lowest THz signal levels.

Laser Interface+

Universal Laser Systems, leading manufacturer of laser plotter systems, has written a very powerful printer driver for engraving, marking and cutting of various kinds of materials.



The **Laser Interface+** is a printer driver that uses its own, extensive, materials database. Every material has its own laser settings like power, speed and number of pulses per inch. Included in this driver are also the 3D contouring and rubber stamp shoulder option. And for rastering of pictures, an image enhancement function is built-in.

Ofcourse it still remains possible to set your own laser parameters, or even change the library settings, to perfectly adapt your requirements. Your experience settings can be added to the library.

The Laser Interface+ driver is suitable for the Professional, Industrial and Versalaser models.

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