



Also for UV and High Power Applications

Polarization Beam Splitter Cubes



Beam splitter cubes can be used to obtain linearly polarized light from unpolarized light. These cubes split the incident light into s and p parts. Polarized light is used, for example, in material processing in order to produce precise edges in laser cutting. Linearly polarized light is also required in the assembly of isolators in order to avoid back reflections.

The splitting of light into its s and p parts can be carried out via an appropriate coating or birefringence of the incident light.

Polarization Via a Coating

Planoparallel plates or cubes are used to obtain a polarized beam via a coating. In the latter case, s and p pol beams are perpendicular to each other when exiting the cube, which makes optical setups much simpler.

In general, a distinction can be made between cemented cubes with high extinction ratios of 1000:1 and optically contacted cubes. The latter is suited for UV applications up to 248 nm as well as high laser power levels with damage thresholds of 10 J/cm² at 10 ns and $\lambda = 1064$ nm.

Polarization Via Birefringence

If higher extinction ratios are desired, it is necessary to revert to birefringent crystals such as calcite or α -BBO.

We would be happy to advise you as to which component is suitable for your application!

Data sheets at: www.lasercomponents.com
Product Code: 001

No Shortage of News

It is a luxury problem to have: having to choose which article to leave out – instead of wondering how to fill that last half page of white space. So I invite you to find out which ones made it into this edition of our international newsletter.

The R&D departments of the different LASER COMPONENTS manufacturing sites have been quite busy throughout the last few months. The result is a multitude of new product releases at the end of the year. The most headlines were made by our laser diode module team, which – with the requirements of the machine vision industry in mind – was able to release several new products just in time for the Vision trade show earlier this month. To prevent other exciting news from drowning in the flood of new laser module developments we recently mailed out a newsletter dedicated to machine vision. If you missed it, simply follow [this link](#).

People who have been using Sanyo lasers in their products should start looking into possible replacements as Sanyo announced the phase out of their entire range of red and NIR LDs by the beginning of next year. Luckily, LASER COMPONENTS customers do not have to look far.

Enjoy the holiday season, and I look forward to seeing you all at Photonics West – this time in San Francisco!

Sincerely,

Sven Schreiber
Export Manager

s.schreiber@lasercomponents.com

High Voltage (HV) Modules – For Easy Operation of Components That Require High Voltage

Generate a High Voltage up to 1000 V!

Avalanche photodiodes, photomultipliers, radiation detectors, radiation counters, and piezo actuators all have one thing in common: These components require a high voltage up to 1000 V to operate.

We offer a solution at a low price with our high voltage module HV1000. With its very small footprint, this module fits onto any circuit board!

The integrated switching regulators operate with a pulse frequency of about 100 kHz. The output noise voltage is approximately 10 mVpp at full power and thus extremely low.

It is possible to generate the control voltage and very precisely regulate it either using a potentiometer, which can be connected to the internal 5 V reference voltage, or through an external source.

So That You Have Everything under Control

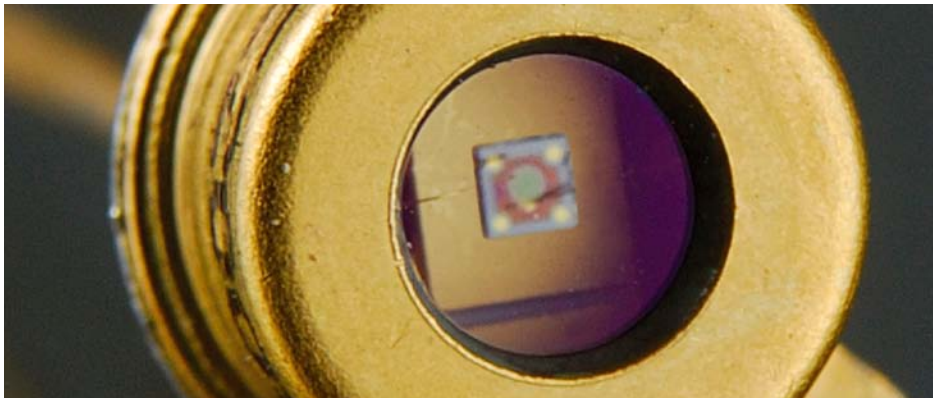
Output voltage and output current test ports are available to monitor operation more easily!

Data sheets at: www.lasercomponents.com
Product Code: **055**



InGaAs APDs That Have a Detector Area from 80 µm to 350 µm

XXL Detector Area in InGaAs Avalanche Photodiodes



In military applications detection signals are typically very weak. Now that eye-safe pulsed laser diodes have just recently been introduced at 1550 nm for rangefinding applications, the appropriate detector will follow.

Maximum Sensitivity at 1550 nm

These new InGaAs photodiodes detect in the spectral range from 1000 nm to 1650 nm. They peak at 1550 nm!

The so-called IAG series offers much more: In addition to the reliable detector areas of 80 µm and 200 µm, an XXL version is also produced. The massive 350 µm diameter of this series almost overshadows its other features:

- Large bandwidth up to 2.5 GHz
- Smallest dark currents possible
- NEP of typically 0.01 pW/sqrtHz
- Damage threshold > 200 kW/cm²

Robust and extremely dynamic, these APDs are delivered in a TO-46 housing. The option of customer-specific solutions is always available with us!

Data sheets at: www.lasercomponents.com
Product Code: **036**

Operate PLDs as Easily as CW Lasers

PLD Modules for Plug and Play Operation



The new LS series pulsed laser modules include all functions necessary for the

safe operation of pulsed laser diodes in a compact housing (approx. 46 x 34 x 12 mm). Only an operating voltage of +12 VDC and a trigger signal have to be applied. External components are not required. This makes the PLD modules just as easy to handle as common cw laser modules.

At 905 nm, we offer three standard modules with pre-set operating conditions: 25 W at 4 ns, 120 W at 160 ns, and 220 W at 8 ns. The 1550 nm versions deliver 7W at 4 ns and 80 W at 8 ns.

Customers who need different values should turn to our LC series of customized solutions, where any viable combination is possible.

905 nm PLDs

- Pulse power: 3 W to 200 W
- Pulse length: 30 ns to 150 ns

1550 nm PLDs

- Pulse power: 5 W to 50 W
- Pulse length: 30 ns to 150 ns

Data sheets at: www.lasercomponents.com
Product Code: **155**

Don't Waste Any Time – Reliable Vis and NIR Laser Diodes

Red Laser Diodes – An Alternative to Sanyo's LDs



Sanyo is going to phase out all of their laser diodes in the red and NIR range by March 2010. However, we are able to offer replacements.

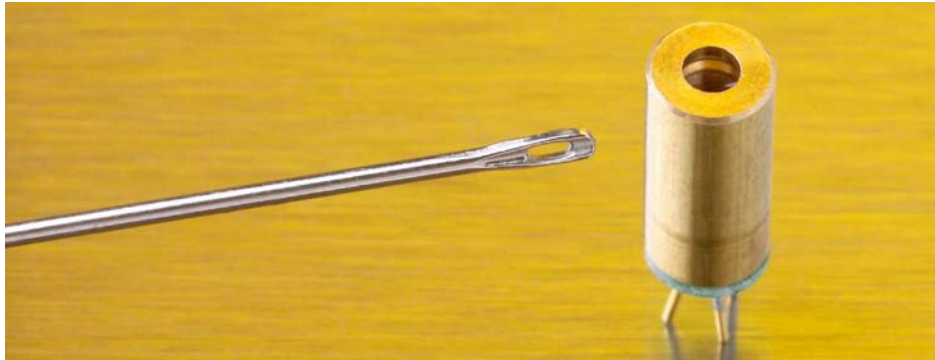
With the help of our reliable partners we are able to quickly find the right solution for

you! Wavelengths from 635 nm to 850 nm and power levels from 3 mW to 500 mW are available. A table for comparison is available for download.

Data sheets at: www.lasercomponents.com
Product Code: **048**

Laser Diode Modules with a Diameter of 3.3 mm

OEM Laser Diode Modules: Small – Red – Low Cost



With a diameter of only 3.3 mm and a length of 7 mm and 6.1 mm, we can offer you the world's smallest laser diode modules. These modules emit a red collimated dot at 650 nm; they already contain collimation optics and drive electronics. This ensures easy electric integration of these modules into your system. The available output power of Type 17 is < 1 mW; Type 07 is available with two levels of output power: < 1 mW and < 2.5 mW.

Due to their small housings, these modules are particularly well suited for applications in which very little space is available in the assembly. The LC-LMD series laser diode modules are an inexpensive and simple solution used in consumer products, hardware and household appliances, as targeting and adjustment aids, or as senders in optical sensors.

Data sheets at: www.lasercomponents.com
Product Code: **074**

New with Integrated Filter

Silicon APDs

Rangefinding using the time-of-flight (TOF) principle is one of the primary applications for silicon avalanche photodiodes (APD), with widespread application examples from sports optics through metrological measurement to speed control systems. A short light pulse emitted from a 905 nm laser diode is reflected from the target object and focussed by a collection optic onto the APD chip. A band pass filter is invariably incorporated within the optical path to enable the optimum signal-to-noise ratio to be achieved by suppressing background light. The SARF series of APDs features this filter integrated into the compact APD housing, as well as an APD chip with optimum sensitivity at 905 nm. The diameter of the active area is 500 µm.



The advantages are:

- Cost saving by eliminating an extra filter
- Extremely compact design
- Optimum performance at 905 nm

The APDs are offered in a compact, low profile TO-46 can or alternatively in an SMD package.

Data sheets at: www.lasercomponents.com
Product Code: **035**



LASER COMPONENTS GmbH
Werner-von-Siemens-Str. 15
82140 Olching/Germany

fon: +49 8142 2864-0
fax: +49 8142 2864-11

www.lasercomponents.com
info@lasercomponents.com

General Managers: Günther Paul, Patrick Paul
Commercial Register in Munich HRB 77055

This Photonics News, including all written and visual entries, is protected by copyright. With the exception of specific cases permitted by law, use of this material without the consent of Laser Components GmbH is punishable by law.

Despite thorough research, Laser Components GmbH will not accept responsibility for any inaccuracy of content. Technical material is subject to change without notice.