



Quick Production Directly from LASER COMPONENTS

Spherical Lenses for High Power Lasers



Higher and higher laser power demands more and more from the material used in the components applied in an optical beam path: Suprasil for fiber lasers, Infrasil for lasers at 2.1 μm or special quartz such as Q1E-193 for UV lasers are just some of the many requests that reach us on a daily basis.

With our in-house lens production capabilities, we can fulfill special requests made on short notice. Base materials such as N-BK7, Schott Q1, Corning 7980, Infrasil® 301, Suprasil® 300, and Suprasil® 3001 in standard diameters are available in stock.

The Shortest Delivery Times

If the appropriate material and tools are available in stock, you will receive your uncoated optics within 10 business days of ordering them. If you need a product "yesterday," so to speak, we can arrange for even shorter delivery times upon request.

At LASER COMPONENTS we manufacture planoconvex, planoconcave, biconvex, biconcave, and meniscus lenses of the highest quality 3/0.5(0.2/0.1) and laser-grade polishing in diameters from 12.7 mm to 50.8 mm. The achievable surface roughness is $< 0.4 \text{ nm}$.

There are many reasons to rely on our lenses:

- Quick production even of customer-specific requests
- Interesting prices – even for orders in small quantities
- High quality – made in Germany

In combination with our experienced coating department, you can receive coated optics all from one source. This means less trouble and risk on the part of the customer and the best results.

Datasheets at: www.laser-components.com
Webcode: 001

LASER COMPONENTS IG, Inc.

Certifications

Dear Reader,

I am pleased to announce to the photonics community that LASER COMPONENTS IG, Inc. is now registered with the United States Department of State, Directorate of Defense Controls, and is conducting business in accordance with International Traffic in Arms Regulations (ITAR).

ITAR Registered

Working with you under our strict compliance to ITAR regulations enables confidence that your sensitive technical information and specifications are fully protected from export violation.

ISO Certification of LASER COMPONENTS DG, Inc.

We would also like to inform you that LASER COMPONENTS DG, Inc., has recently received ISO 9001:2008 certification.

Avalanche Photodiodes are produced at our Arizona facility, both standard and custom designed. Silicon APD's offer high sensitivity across the spectral range of 400 – 1100 nm and can be enhanced for sensitivity at 1064 nm. InGaAs APD's offer high performance from 1000 – 1650 nm with considerable market interest at 1550 nm.

Congratulations to our colleagues and LASER COMPONENTS DG, Inc.

Welcome to the expanding world of LASER COMPONENTS.

Gary B. Hayes
CEO / General Manager



Four-Channel Detector for Low-Cost Applications

Miniature Multi-Gas Detector

The high performance miniature four channel detector from Pyreos opens some new opportunities in low cost multi-gas sensing. Capable of detecting up to four gases simultaneously down to single digit ppm levels, the TO-5 packaged product can be used to build lower cost gas detection systems that can rival the performance offered by the more expensive and bulky laser based products.

The Pyreos thin film pyroelectric MEMs technology offers unrivalled sensor performance alongside a wide operating frequency range, which can be harnessed to deliver a signal:noise

of > 5000. This level of performance enables medical applications such as portable breath analysers where the identification of trace levels of certain gases can be early indicators of serious diseases including hepatitis, breast cancer and hemololysis.

The small footprint and low power consumption make this an ideal detector for portable products. With the opportunity to specify the four filter windows in the detector it is possible to use the broad absorbance of the pyroelectric thin film material to detect four discrete wavelengths anywhere from 0.1-100 microns. This versatility



offers new opportunities in multi-gas detection, medical analysis, in-line process analysis and new possibilities for multi-wavelength analysis of single gases such as nitrous oxides.

Datasheets at: www.laser-components.com
Webcode: 2000

Better Safe than Sorry – LSP40 Series for the Easy Handling of PLDs

Plug & Play Driver for Pulsed Laser Diodes

LASER COMPONENTS' LSP40 series is an inexpensive plug & play driver module used to accurately control pulsed laser diodes (PLDs). With just two resistors the user is able to regulate both the operating current (and thus the laser power) and the pulse length. All

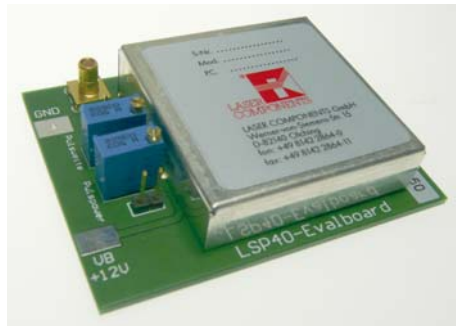
the module requires is an operating voltage of +12 V DC and an external trigger signal. The laser current can be set to any value up to a maximum of 40 A; the pulse length can be set to between 30 ns and 150 ns. At a reduced current, it is possible to achieve pulse lengths up to 1 µs.

Flexibility

With the LSP40 module, all pulsed laser diodes available at LASER COMPONENTS can be operated immediately. Plus the PLDs are interchangeable, guaranteeing maximum flexibility.

Also available is an evaluation board. Equipped with two potentiometers, both the pulse power and the pulse length can be regulated.

Datasheets at: www.laser-components.com
Webcode: 055



Green Light for Hot Times!

532 nm Laser Module for 10 °C – 50 °C

The AML-53041XX-01 is a 532 nm laser module introduced by LASER COMPONENTS for the first time for the extended temperature range of 10 °C – 50 °C. Operated at 5VDC, an output power of 5 mW can be achieved with this module. The diameter of the collimated beam is approximately 2 mm at the point of exit.

This module is only 52 mm in length and 12 mm in diameter. The drive electronics are also already integrated. Because of its small design this module can be easily integrated into any system.

This module represents a temperature-enhanced alternative available for lasers which once yielded heavy losses in performance at operating temperatures of above 35 °C.

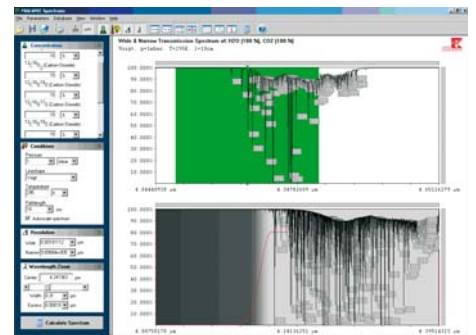
The green module is primarily used in laser levels, optical measurement, outdoor applications, and instruments that produce a large amount of heat.

Datasheets at: www.laser-components.com
Webcode: 074

Spectroscopic Software Upgrade

MOLSPEC V Industrial

In version V, the software for the spectrum calculation of 39 molecules is based on the HITRAN 2008 database. Pressure, temperature, concentration, and the composition of the mixture are just as easily modifiable as the absorption length. It is possible to generate artificial band-pass and long-pass filters and to integrate them into the spectrum representation.



The new version offers additional features. As an alternative to the previous system of user-defined nodes, integration according to the Romberg algorithm is now possible. Furthermore, in addition to the graphical representation, the data may also be exported in ASCII format. A free demo is available for testing.

Datasheets at: www.laser-components.com
Webcode: 075

Expanding Family of Blue Lasers

405 nm and 450 nm Laser Diodes and Modules

High quality, excellent performance, fast availability, low price!

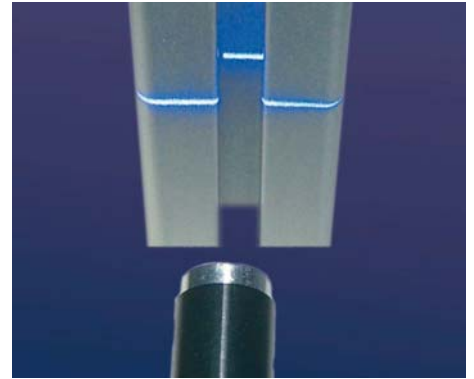
Both the CS405 and CS450 series blue laser diodes meet all expectations of technologically sophisticated products – and at unbeatable prices, too!

These components are available in the wavelengths 405 nm and 450 nm. They feature a stable beam profile, an extremely low noise level, minimal current consumption, and a very

long lifespan, which distinguish them from comparable products by other manufacturers.

Blue-violet laser diodes are an optimal light source in high-resolution printing technology and optical data storage. Other applications include medical technology and industrial use.

In addition to the lasers in TO cans complete modules with drive electronics and beam-shaping optics are available – our FLEXPOINT® series.



Datasheets at: www.laser-components.com
Webcode: 048

ILM12 Dot, Line, and Cross-hair Lasers for Industrial Applications

Laser Modules in M12 Industrial Housings

The new eye-safe ILM12 series laser module was developed for rigorous use under harsh conditions in industrial applications. The corresponding modules can project either dots, lines, or cross hairs in a bright red at 635 nm. All modules are integrated into a potential-free M12 housing. The operating voltage is 8-30 VDC.



The prerequisites for easy installation in existing product lines are thereby met and quick substitution guaranteed!

Used in positioning, aligning, marking or as an illumination source in image processing,

the application fields of the ILM12 series are quite versatile.

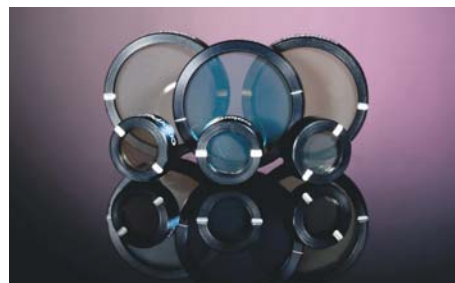
Datasheets at: www.laser-components.com
Webcode: 174

Glass Absorption-Based Polarizers for the Mid-IR

Enabling New Applications for the 1.5 – 5.0 μm Range

The complete colorPol® family offers high performance polarizers for the UV, Vis, NIR, and Mid-IR ranges. Leveraging their unique nano-particle technology CODIXX achieves >10,000:1 contrast over the 2.0 – 4.5 μm range while meeting >1,000:1 for the 1.5 – 2.0 and 4.5 – 5.0 μm ranges.

The physics features elongated nano-particles embedded inside soda lime glass. The polarizers can be handled and cleaned like any other glass optic making them useful across many laboratory as well as harsh environments. The polarizers are available in standard 12.5 mm and 25.0 mm sizes. Custom sized components



made to order ship quickly to meet customer demand.

Datasheets at: www.laser-components.com
Webcode: 085

For Medical, Military, and Illumination

Powerful IR Laser Diodes

For applications in industry, medical technology, and the military, LASER COMPONENTS offers two types of powerful single mode laser diodes at 830 nm. The ADL-83Z01HL generates an optical cw output power of up to 100 mW; the ADL-83Z15HL even reaches 150 mW. Both emitters are integrated into a hermetically sealed TO-56 housing and can be overdriven in pulse mode accordingly.



Primary applications include radiation in medical technology and IR illumination.

Even applications in night-vision goggles and rangefinders, which are exposed to harsh environmental conditions such as heat and moisture, do not present a problem for these laser diodes.

Datasheets at: www.laser-components.com
Webcode: 049

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PHOTONICS NEWS

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Your Laser Diode Has Been Discontinued? No Problem!

Red Laser Diodes – Alternatives to Opnext/Sanyo

■ Sanyo has phased out their lasers in the red and NIR range. Opnext/Hitachi has discontinued some of their laser diodes in this spectral region as well.

We offer viable alternatives: available immediately we have laser diodes at wavelengths from 635 nm to 850 nm having output powers from 3 mW to 60 mW.

Lifetimes are competitive and our lasers can be used as direct drop in replacements. See our website for a comparison table or call us to help in your selection.

Datasheets at:
www.laser-components.com
Webcode: 148



Low Cost Single Mode

SM VCSELs with More Power

■ ULM Photonics offers new polarization-stabilized single-mode VCSELs with an increased output power. The new A4-PL model has an output of 1.4 mW, which is double that of the previous model.

These diode lasers are available both as a chip and in a TO housing. The emission wavelength is 855 nm \pm 10 nm.

This series was primarily developed for use in a PC mouse and for trackball applications in



cell phones. SM VCSELs can also be used in sensor technology.

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.

Datasheets at: www.laser-components.com
Webcode: 083