



**Petr Provazník-čárové lasery**  
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Line Lasers

### **Petr Provazník – point lasers 5mW, 635nm, 12V or 24V AC/DC**

Lasers developed in the first place for marking cutting areas and planes in simple machines, NC and CNC systems, as well as in complex working systems.

#### **What else can they serve for?**

- used as an instrument to mark the spot of cutting for band, circular and reciprocal sawing machines,
- marking the cut of pneumatic shears and plate-cutting machines,
- marking the safe space at power presses,
- laying-out of a plane on construction works,
- plane marking at blow moulding of e.g. aircraft calottes on exhausters,
- plane and material marking for working by automatic machines,
- punctuating road billboards and other firm signs,
- decoration of discotheques, nightclubs and restaurants.

#### **Equipment description**

The laser diode modulus includes a laser diode with optics for collimation of optical pencil to a laser beam, in the version for line forming the line optics. It includes a serve loop (control circuit) for laser diode in feed, a stabilizer and a voltage rectifier. The modulus serves as a source of laser radiance in technical appliances with defined properties of the optical beam (see below).

#### **Connection of the laser modulus**

We produce two types of products.

- 1) The first type is aimed to the professional mounting by a person with an electro technical qualification. These are lasers without adapter supplying, and it is necessary to provide the electricity supply in that machine, where the laser is installed. Connect the modulus to the voltage supply 12V AC/DC or 24V AC/DC, according to the laser modulus type. **Through a wrong infeed voltage the laser will be destroyed!** It does not matter how you connect the conductors. The modulus cannot be destroyed by polarity reversing, it functions in both connection possibilities. The laser itself is already rectified, it cannot be reset in any way, only by a deliberate and break-in damage (in this case, the guarantee has been finished, and this is also forbidden because of security reasons).
- 2) The second type is for those without any professional qualification, the mounting can be done by laymen. It means to connect the laser through a supplying connector to an adapter for 230V/12V AC/DC or 230V/24V AC/DC, according to the laser modulus type. **Through a wrong infeed voltage the laser will be destroyed!** Plug the adapter into the socket in the same way as you plug in any other electric appliance or a GSM charger. The laser itself is already rectified, it cannot be reset in any way, only by a deliberate and break-in damage (in this case, the guarantee has been finished, and this is also forbidden because of security reasons).



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## Laser modulus clamping

The laser can be clamped to our laser holders with a magnetic support or to a holder with a spherical joint. Then you have to set up the light exposure spot. You can also bolt the holder on into a tapped hole in the machine. We recommend a clamping provided with heat removal, or at least with air access. Do not install the modulus under a covering. Never let the laser shine in the eyes of people or animals, not even for a short time, or don't let it be reflected in the eyes when being used or switched on accidentally. The health risks are quoted below.

## Instructions when used for the first time:

- **Check the correct source voltage before switching it on. Wrong setting can destroy the modulus.**
- Check the running temperature whether it is within the required limits (about 20°C – 40°C)
- Every modulus should be tested by warming-up during at least 1 hours. Thus the quality would be verified and the operating life of the product guaranteed.
- Read the security warnings.

## Security warnings

**Caution! The modulus contains a laser source Class 3R. Avoid hitting the eyes by a direct or reflected beam. Never look directly into the switched-on laser optics! Danger of permanent eye damage! Prevent the access to children!**

## What is a laser of the Class 3R?

This group includes lasers emitting radiance in the continual regime and in the visible part of the spectrum 400-700nm, the capacity of which does not surpass 5mW. They cannot cause eye damage by an accidental glance, the eye is protected by a natural blinking reflex of a healthy person, not influenced e.g. by drugs. A period of less than 0.25 sec. Is presumed between the hitting of the eye by a laser beam and the closing of the eye-lid, or by turning away the head. This is enough for not letting the light energy surpass 0.25 milijoul to the eye retina, which is, in this case, exactly the permissible rate for exposing the eye to the direct glance into a laser beam. There is a danger during a deliberate and long-time glance into the beam, or if the beam is regarded through an optical set. It is not permissible e.g. to watch the beam through a binocular. These lasers can then cause permanent eye damage.

## Guarantee

A guarantee during 24 months following the delivery date is given to these laser moduli. Because of this, please do not remove the modulus labels. The guarantee is given for all defects, except of those caused by manipulation mistakes, by not respecting the instructions for the installation and operation, or caused through another than usual operation of the mechanism. The guarantee expires through an interference into the modulus construction or content. This is forbidden because of safety. The guarantee and after-guarantee service is provided by our firm Petr Provazník – čárové lasery.



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## Technical Specifications

- Minimal working distance 0.2 m, maximal about 10 m
- Weight of line 2 mm/1 m
- Optical/mechanic deviation max. 6.25 mrad from laser body axis
- Laser with 3R security class
- Power takeoff max. 45mA
- Protection against polarity inversion through voltage stabilizer
- Infeed according to type 24V or 12V +/- 10% by DC or AC voltage
- Coverage IP 65
- Circuitry separated in a galvanic way from framework by an electro insulating protection up to 400V
- No releasable parts
- Temperature limits 45°C , -15° C
- Working temperature about 40° C by surrounding temperature 20° C
- Dimension 16 mm x 90 mm, weight 20 g (without cable)
- Laser casing : duralumin (black eloxal coating)