

OEM Dot Laser Modules

Technical Information · Dot Laser & Diode Laser Modules 12 mm

Product name	Dot laser modules, diode laser modules	Spec	3 – 2020
Description	OEM laser modules, 12 mm housing	Rev	09/2026
Product line	Diode lasers	Status	Release

Product description



Dot laser module 12 mm

Very small and reliable dot laser modules in different powers and wavelengths. The focus is very easy to adjust.

The laser diodes are equipped with ACC control, so that a high degree of stability is guaranteed. However, this also means that the specified supply voltage should not be exceeded, otherwise the module may overheat.

As an option, we offer various dot laser modules with a modulation input. The on/off switching is carried out by a currentless control signal in TTL form. If the input is left open, the laser diode is dark.

The modules, like most OEM electronic components, are very sensitive to static electricity. For this reason, a discharge should be carried out before working on the module. Ideally, the wiring or connection should be undertaken in an antistatic working environment.

Adjusting the focus point

The focus (dot size) is adjusted by turning the collimator. Turn the front collimator until the dot size corresponds to the size you require.

Caution: Do not touch the surfaces of the optics with your fingers under any circumstances. Use clean cotton swabs or plastic tweezers for adjustment.

Fixation of the optics

Once the desired setting has been found, the collimator can be glued into the housing using screw lacquer. The adhesive should be viscous to prevent penetration into the module. In this process, the collimator assembly is first unscrewed relatively far, then screw lacquer is applied to the thread and screwed back into the appropriate focus. After the screw lacquer has dried, the optics are fixed.

Cleaning the optics

The cleaning of the optics is critical. If the optics must be cleaned, preferably use clean compressed air or wound wooden cotton swabs (available at the pharmacy) and normal window cleaner. After cleaning, make sure that they are rubbed with a dry cotton swab without pressure. Please note that the plastic optics are very sensitive to scratches. If the optical surfaces are scratched, they must be replaced. Spare parts are also available in the Lasershop.

Assembly and cooling

Higher powered modules must be cooled for permanent operation. To achieve this, the module can be mounted or clamped in a metallic body in order to dissipate the heat. It must be ensured that no concentrated pressure from a screw or the like reaches the module housing. Ideally, the module should be clamped flat.

MediaLas offers a wide range of different mounting options and brackets for mounting the line, cross and dot laser modules.



3D ball head mount

Adjustable in tilt, rotation X, rotation Y, angle 360°, tilt >180°.



Pan/Tilt mount

Massive XY mount with pan and tilt adjustment. Adjustment range $360^\circ \times 210^\circ$. The base plate can be displaced by 90° by removing the lower screws.



Assembly block

Cooling and clamping block for easy mounting of all our 12 mm modules.



Flat bracket

Flat bracket with clamp for our 12 mm modules.

Power supply

The specified operating voltages must be adhered to in order to avoid destruction of the driver electronics. The power supply must be free of voltage peaks. If only higher voltages are available in the system in question, a simple and very effective voltage adjustment can be carried out with our StepDown module, which can be ordered separately.

In systems which also contain motors or magnetic devices, it is recommended to connect a filter upstream in the supply line in order to screen switch-on peaks.

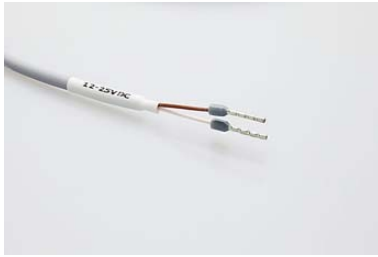
Caution: On some laser modules the positive supply is connected to the housing by design. Care must be taken that no short circuit to ground occurs. If necessary, the mount must be installed in an insulated manner.

Overview of the recommended supply voltages

Model	Voltage, stabilised	Operating current	Notes
LDM-5-650	3 – 5 V	< 60 mA	positive potential on housing
LDM-5-650-I	3 – 5 V	< 60 mA	housing electrically isolated
LDM-4-635	3 – 5 V	< 60 mA	positive potential on housing
LDM-10-650	3 – 5 V	< 100 mA	housing electrically isolated
LDM-30-650	3 – 4 V	< 150 mA	housing electrically isolated
LDM-60-650	3 – 4 V	< 160 mA	housing electrically isolated
LDM-100-650	3.3 – 4 V	< 200 mA	housing electrically isolated
LDM-10-635	3 – 4 V	< 100 mA	housing electrically isolated
LDM-20-635	3 – 4 V	< 100 mA	housing electrically isolated
LDM-100-635	3 – 4 V	< 180 mA	housing electrically isolated
LDM-20-405	3 – 3.3 V	< 200 mA	positive potential on housing
LDM-40-450	3 – 4 V	< 200 mA	positive potential on housing
LDM-80-450	3 – 4 V	< 250 mA	positive potential on housing
LDM-50-780	3.3 – 4 V	approx. 200 mA	–
LDM-120-780	3.3 – 4 V	approx. 200 mA	–
LDM-60-850-IR	3.3 – 4 V	approx. 250 mA	–

In addition, we offer various adapters for supply voltages up to 230 VAC. You will find an overview in the Lasershop.

Models with a cable adapter 12 – 24 VDC



Cable adapter

The models with a cable adapter are supplied with two different connection cables, depending on the model. If nothing else is desired, the connections are made using open cores with ferrules. The cable adapters feature reverse polarity protection.

The connection assignments must be observed:

- **Wire pair white / brown** – White: +12 – 25 VDC, Brown: Ground
- **Wire pair black / red** – Red: +12 – 25 VDC, Black: Ground

Dimensions

Diameter	12 mm
Length	model with open wires: 37 – 38 mm; model with barrel plug / 24 V adapter: approx. 42 mm
Connections	approx. 150 mm open; approx. 200 mm with DC connector; approx. 100 cm for 12 – 25 VDC kit modules

Longer connection cables are possible at any time depending on customer requirements.

Laser safety

Every laser is potentially dangerous. Therefore, the current regulations on laser safety must be observed and complied with. The current standards and regulations can be found in EN 60825-1 and IEC 60825-1, and in the German OStrV. Further information is also available in the TROS Laser Radiation or on our websites.