

Fiber coupled high power diode lasers as a 'stand alone' system or for integration into machines and systems



OEM-system with software-controlled galvoscan. The controls are located on the front panel of the 19" housing. At a system integration they can also be replaced by the corresponding control elements of a higher-level control system.

All diode lasers listed below are cw lasers and air cooled. Due to the high output powers and the different emission wavelength there are a wide range of applications. In industrial quality control the influence of ambient light is eliminated through monochromatic lighting and correspondent monochromatic detection. In the sector of laser material processing the focus is on thermal processes like such as plastic welding. For this application the infrared wavelengths are mainly of interest (790...1064 nm). Under certain circumstances these lasers can also be used for laser marking or material removing, if it is based on thermal processes such as in tempering marking or other thermal surface processing. By using a 2D galvoscan (see the figure above) the laser beam can also be guided over the workpiece under software control. Especially due to the two wavelength in the visible spectral range these diode lasers are also suitable for cw-luminescence studies or the generation of photochemical and photophysical processes. The lasers can also be digitally modulated, where the maximum modulation frequency is typically around 5 kHz.

Some technical data:

Wavelength [nm]	450	640	790	808	880	915	940	980	1064
Maximum power [W] *	30	40	100						
Core diameter of the fiber [µm]	400	400	100...600						

* higher output powers are also possible in the infrared range (790...1064 nm), but water cooling is then necessary.