REA-JET Laser FL

Diode-pumped
Fiber laser

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Coding · Dating · Marking

REA Elektronik GmbH

REA-Laser FL

The **REA-Laser FL** is a diode-pumped fiber laser coding system for permanent marking on various substrates such as metal, plastics and coated surfaces. The system is available as a 12W and a 20W version. The pulsed laser system works with a wavelength of 1065nm and thereby offers an alternative to the maintenance-intensive and bulky Nd:YAG and Vanadate (Nd:YVO) systems.

Possible applications of the **REA fiber laser** are:

- Engraving and annealing metals
- Colour inscription of untreated and with additives transferred plastics
- Day and night design
- Coated substrates

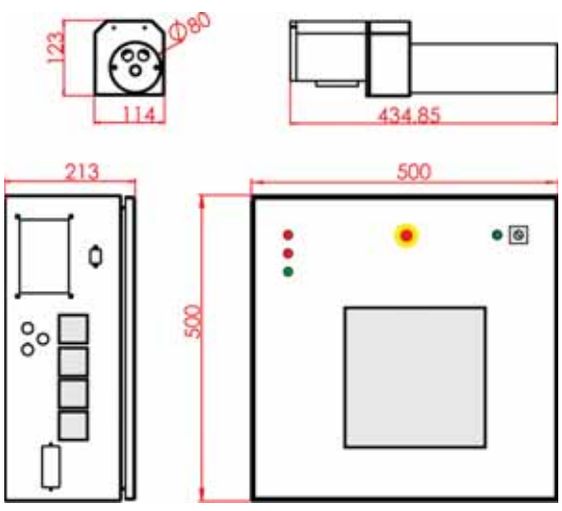
With a focus diameter of less than 30µm the highest resolutions of marking can be achieved. Character heights of less than 150µm are possible. Thus marking in outstanding quality can be applied even on the smallest IC components.

Due to the MOPA (master Oscillator power Amplifier) principle a q-SWITCH is now obsolete, therefore the pulse parameters like pulse duration, repetition frequency and peak power can generally be controlled independently. Thus the maximum flexibility in application is maintained.

The maximum pulse frequency of 500 kHz makes it possible to extend the range of application and also improve the product throughput substantially. Product-dependent marking speeds of 900 m/min are possible. Additionally the system can be operated in continuous mode.

Due to the fiber technology specified no thermal effects occur within the source of the laser. Thermal lens effects and time-consuming warming up cycles are a thing of the past.

Unlike with the lamp and diode-pumped Nd:YAG systems by selecting the **REA FL laser** you can expect a life span (MTTF) of 400.000h, with no regular maintenance required.



Control Unit and Marking Head (dimensions in mm)

The **REA FL laser** concept of separate marking head and control unit substantially reduces the space required, for the installation of the laser system, compared with the solid lasers used to date.

The **REA-LASER FL** has in every case six digital inputs and outputs, which can be used and customized, for example as start -, stop -, shaft encoder input and "Marking in Process" -, "Marking finished" - output. The graphically orientated and Windows® based operator interface permit a simple and comfortable handling of marking content and make clear control of all laser parameters possible by the operator.

Beside simple and automated texts, as well as all usual bar codes (1D and 2D) logos can be imported and be generated with the highest resolution and also as gray tone objects.

High-Tech for the Industry

REA Elektronik GmbH

Rationalisierung · Entwicklung · Automation
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Technical Data

Laser source
- Diode-pumped Fiber Laser
- Wavelength: 1065nm
- Power: 12W & 20W
- Variable pulse length (cw, 9-200ns)
- Variable pulse frequency (cw-500kHz)
- Beam quality: M^2 - 1.6 (optimized for marking)
- Ø Primary beam: 2-9 mm

Optics
- Large assortment of focussing lenses
- Selectable beam expander

Marking characteristics
- Marking speed variable up to 20.000mm/s
- Formats: stroke and true type fonts, individual fonts, barcodes and 2D-Codes, graphics, logos, lines, arcs, circular-marking
- Automated text (serial numbers, dates, shift, time etc.)

Software
- REA Laser Control: graphical User interface (Windows® 2000/XP)
- User-dependent interface
- Password protection (three levels)

Control
- Interfaces: USB to PC/Controller
- All with 6 inputs and outputs
- Shaft encoder, product sensor
- Safety interlock
- Individual options possible

Marking Head
- Digital high-speed galvanometer scanners
- Focusing optics: F-Theta lense, focal length 165 mm, 273 mm (further on request)
- Marking area: depending on focal length
- Focal diameter: depending on focal length and beam expander (>20µm)

Dimensions / weights
- Control unit: HxWxD = 500x500x210mm, 27kg
- Marking head: HxWxD = 123x114x435mm, 6kg
- Cooling: ambient air-cooled
- Power supply: 110/230V, 550W, 47-63Hz
- Ambient conditions: 10-40° C, humidity 5-85% not condensed
- Umbilical between marking head and controller: 1.8 m