The innovative Company

EdgeWave was established in 2001 and is an innovative provider of high-end laser sources. EdgeWave is the pioneer and leader of innovative slab (InnoSlab) technology. InnoSlab lasers and amplifiers are not only superior in features but also have value added difference. They allow users to improve existing manufacturing processes and enable new types of products and new production processes.

The range of services offered by EdgeWave includes the development, manufacture and marketing of solid-state lasers and peripheral components, together with consulting on applications of such sources. EdgeWave supplies its products to system manufacturers and engineering companies and to end users who need application-specific, tailor-made laser solutions.

The unique Technology

EdgeWave’s key product is a diode-pumped solid-state laser, based on the unique InnoSlab technology. Through an optimal combination of slab shaped laser crystal, line shaped diode laser beam, large area conduction cooling and hybrid-resonator design, InnoSlab lasers and amplifiers possess unification of special features not found in other types of laser:
- Constantly high beam quality
- Variable pulse length
- High pulse energy and high peak power
- High pulse repetition rate and average power
- Scalability at high performances
- Low cost of ownership

InnoSlab laser Family

- BX-Series
- IS-Series
- PX/FX-Series

The tailored Product

Our standard product portfolio encompasses short pulse and ultra short pulse InnoSlab lasers and amplifiers. Performances of short pulse lasers are:
- Highest beam quality M²=1.1
- Pulse energy up to 120mJ
- Pulse length down to 1ns
- Peak power up to 12MW
- Pulse rep. rate up to 200kHz
- Average power up to 800W
- Wavelength 1064, 532, 355, 266nm

Performances of ultra short pulse lasers and amplifiers are:
- Highest beam quality M²=1.1
- Pulse energy up to 3000μJ
- Pulse length down to 400fs
- Peak power up to 3GW
- Pulse rep. rate up to 100MHz
- Average power up to 600W
- Wavelength 1064, 532, 355, 266nm

A distinguished and enabling feature of InnoSlab lasers and amplifiers is the tailored beam profile: from circular Gaussian, through line shaped one-dimensional top-hat to square two dimensional top-hat.

We are able to offer customized InnoSlab lasers and amplifiers based on the standard system technology and design, tailored to the customer’s specific applications and requirements.

The favourable Application

InnoSlab lasers and amplifiers represent a new generation of laser beam sources. Because of its tailor made features, InnoSlab technology is suitable for an immense variety of applications.
- Glass industry, e.g. milling, drilling, cutting and marking of display glass
- Printing industry, e.g. engraving of embossing cylinder
- Mechanical engineering, e.g. milling, drilling and cutting of carbon fiber reinforced polymer
- Photovoltaic, e.g. scribing, drilling and cutting of solar cells
- Tool making, e.g. 3D rapid prototyping via ablation
- Electronics and semiconductor industry, e.g. dicing of wafer, milling, drilling and cutting of printed circuit boards, generation of EUV for photolithography
- Lightning industry, e.g. scribing of LED wafer
- Scientific, e.g. pumping of dye laser, pumping of OPO and Ti:Sapphire laser, particle imaging velocimetry

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