

The Innovative Company

Founded in 2001, EdgeWave is a leading provider of cutting-edge laser beam sources. Renowned for spearheading the InnoSlab technology, EdgeWave has established itself as the industry leader. Setting new standards in performance, InnoSlab lasers offer not only superior features but also deliver value added differentiators. They enable customers to enhance existing manufacturing processes, develop novel applications and tap into new markets.

EdgeWave specializes in the development and manufacturing of short and ultrashort pulse InnoSlab lasers as well as peripheral components. Additionally, the company's dedicated application center offers comprehensive consultation services regarding the utilization and integration of such beam sources. EdgeWave caters to a diverse spectrum of industries, including, but not limited to, semiconductor, electronics, battery, hydrogen, photovoltaic, printing and more.

The Technology

EdgeWave's key products are diode-pumped solid-state lasers, based on the unique InnoSlab technology. Through an optimal combination of a slab shaped laser crystal, line shaped diode laser beam, large area conduction cooling and hybrid resonator design, InnoSlab lasers exhibit a unique array of characteristics that distinguishes them from other laser types:

- constant 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



The Application

Through the implementation of InnoSlab technology, the property profiles of EdgeWave lasers can be precisely customized to meet the specific requirements of a wide range of applications:

- semiconductor industry, e.g. wafer dicing, milling, drilling and cutting, EUV generation
- electronics industry, e.g. milling, drilling and cutting of printed circuit boards
- hydrogen technology, e.g. drilling, structuring of electrodes
- glass industry, e.g. milling, drilling, cutting and marking
- printing industry, e.g. engraving of embossing cylinders
- photovoltaic, e.g. scribing, drilling and cutting of solar cells
- battery technology, e.g. surface structuring, cutting
- scientific, e.g. pumping of dye lasers, pumping of OPO and Ti:Sapphire lasers, particle imaging velocimetry

The Product

EdgeWave offers a comprehensive range of standardized and customized short and ultrashort pulse InnoSlab lasers.

Parameters of short pulse lasers:

- beam quality: $M^2 < 1.2$
- pulse energy: up to 120 mJ
- pulse length: down to 1 ns
- peak power: up to 20 MW
- pulse rep. rate: up to 200 kHz
- average power: up to 800 W
- wavelength: IR, VIS, UV, DUV

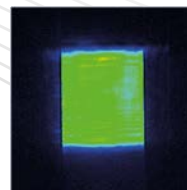
Parameters of ultrashort pulse lasers:

- beam quality: $M^2 < 1.2$
- pulse energy: up to 3000 μ J
- pulse length: down to 300 fs
- peak power: up to 3 GW
- pulse rep. rate: up to GHz
- average power: up to 600 W
- wavelength: IR, VIS, UV, DUV

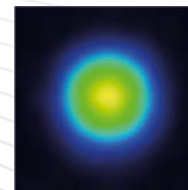


The Tailored Beam Profiles

InnoSlab lasers boast a distinctive attribute in the form of their customizable beam profile. It can be configured as circular gaussian, one-dimensional line-shaped top-hat or two-dimensional rectangular/square top-hat, tailored to suit diverse application needs.



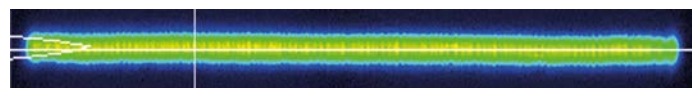
square top-hat



circular gaussian



rectangular top-hat



line-shaped top-hat