



方全有限公司

Rapitech Enterprise Co., Ltd.

脈衝式固態雷射 Pulsed Solid-State Laser



PowerChip系列脈衝雷射

Compact, High Peak Power,
Picosecond PowerChip

Applications

- Materials processing
 - Inscribing glass
 - Via drilling printed circuit boards
 - Micromachining diamond
- MALDI-TOF
- Microdissection
- Laser Induced Fluorescence (LIF)
- Laser Induced Breakdown Spectroscopy (LIBS)
- Light Detection and Ranging (LIDAR)

When high peak power, ultrashort pulses are needed, and space for a laser is tight, the compact 1064 PNP-B or 532nm PNG-B PowerChip is the right fit. These lasers are powered by an exclusively licensed passively Qswitched Nd:YAG microchip especially designed for delivering short, energetic pulses economically and reliably. The infrared version reaches peaks of 225kW with pulses of 400ps; frequency doubled, the green version reaches 60kW.

Particularly well suited for OEM applications, the "B" bi-block version of the PowerChip consists of a compact, lightweight head along with a discrete controller. The head – just 682cc and 2kg – is designed to fit in tight locations close to the target, while the controller can be placed remotely, where space and cooling may be more readily available (cooling also needed for the laser head).

The 1064nm PNP-B comes in two grades, one at 70EJ typical and a higher energy version at 90EJ typical per pulse; the 532nm PNG-B is available with typical pulse energy of 25EJ. The standard repetition rate for all PNx-B lasers is 1kHz; the option also exists to trigger the lasers externally, with each tested at the factory at up to three frequencies from 10Hz to the standard repetition rate. In all cases, the PNx-B PowerChip provides excellent pulse to pulse stability.

Typical values

Model	PNP-B08010	PNG-B02010	PNV-B01510	PNV-B02510
Wavelength (nm)	1064	532	355	355
Energy/Pulse (μJ)	90	25	18	28
Pulse Width (ps)	400	400	400	400
Peak Power (kW)	225	60	45	70
Repetition rate (Hz)	1,000	1,000	1,000	1,000
Average Power (mW)	90	25	18	28



Optional features

- Fixed frequency choices
 - Can operate at up to 3 fixed frequencies, set at factory
- Triggerable by user
 - External trigger, with TTL compatible input on Sub-D connector
- Manual controls for CDRH compliance

Features & benefits

Ultrashort pulses

As low as 400ps duration

High peak power

Achieving 225kW per pulse

Excellent beam quality

Gaussian beam, TEM₀₀, M²≤1.3

Compact laser head

Volume <700cc

Efficient, air cooled

Typically dissipates <10W from laser head and consumes 25W

Synchronization output

Photodiode monitoring of laser emission

Long life

High reliability pump diode, specialty UV optics, and sealed package contribute to lifetimes expected to exceed 5,000 hours (consult factory for details)

Licensed Technology

Exclusive license on Passively Q-switched picosecond microchip laser: US Patent 5394413

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