

Picosecond, high peak power Infrared 1064nm microchip lasers

teem photonics™

Features & benefits

Ultrashort pulses

As low as 550ps durations

High peak power

Exceeding 20kW per pulse

Variety of frequency options

Free running to 40kHz
Fixed frequency to 4kHz
Triggerable to 2kHz

Excellent beam quality

Gaussian, TEM00,
 $M^2 \leq 1.3$

Efficient, air cooled

Typically dissipates
<10W from laser head
and consumes <20W

Extremely long life

High reliability pump diode, specialty optics, and sealed package contribute to MTTF over 14 years and expected lifetimes exceeding 10,000 hours (consult factory for details)

Licensed Technology

Exclusive license on Passively Q-switched pico-second microchip laser:

US Patent 5394413

Optional features

Connector receptacle for multimode fiber coupling

Photodiode output for synchronization

Manual controls for CDRH compliance

1064nm Passively Q-Switched lasers: 40kHz, fixed frequency, triggered versions

For generating high peak power Infrared pulses of a few hundred picoseconds, our SxP microchip lasers are economical, compact, and reliable. 1064nm microjoule pulses are generated from a diode pumped passively Q-switched Nd:YAG microchip engine; 2 compact packages are proposed for a better flexibility. The SxP series are designed for high average power, from pulse energies of 15µJ at 1064nm, or from free running repetition rates up to 40kHz; the SFP series allow users to select up to three fixed frequencies, set at the factory, from 10Hz to 4kHz; the STP series enable the user to trigger the laser on demand, varying the period from 100ms to 500µs, pulse to pulse.



Infrared 1064nm SxP lasers (typical values) – Package A

Model	SNP-04E	SNP-06E	SNP-08E
Peak Power (kW)	8	10	13
Average Power (mW)	70	60	60
Repetition rate (kHz)	12	9	7
Pulse Width (ps)	700	700	700
Energy/Pulse (µJ)	>6	>7	>9

Infrared 1064nm SxP lasers (typical values) – Package B

Model	SNP-13E	SNP-20F	SNP-40F	SFP-07E	STP-07E
Pulse Width (ps)	700	700	850	550	550
Energy/Pulse (µJ)	15	8	5	8	8
Peak Power (kW)	21	12	6	14	14
Repetition rate (kHz)	6	21	40	0.01 - 4	0.01 - 2
Average Power (mW)	90	170	200	≤32	≤16
Peak Power(kW)	11	6	3	10	10
Repetition rate (kHz)	8	21	40	0.01 - 4	0.01 - 2
Average Power (mW)	50	70	70	≤14	≤7

Applications

- ▶ Material processing
 - Marking
 - Graphitization
 - Metal ablation
- ▶ Biophotonics
 - Nanosurgery
 - Protein crosslinking
- ▶ Instrumentation
 - Supercontinuum generation
 - Raman spectroscopy
 - Ranging
 - Differential absorption LIDAR
 - Distributed temperature sensing