

## 1064 nm Sub-ns Microchip Lasers

### HLX-I series

The HLX-I products are based on a solid-state, diode-pumped and passively Q-switched laser.

With our proprietary and patented design, our lasers generate single pulse at 1064 nm with duration as short as 450 ps, repetition rates up to 70 kHz, average power up to 500 mW and energies up to 50  $\mu$ J.

The extremely reliable and robust microchip design is perfect for advanced OEM industrial and scientific applications.

The compact design is best suited for almost any system integration.



Applications	Features
<p>Supercontinuum generation</p> <p>Laser seeding for fiber amplification</p> <p>Light Detection and Ranging (LIDAR)</p> <p>3D Scanning</p> <p>3D Imaging</p> <p>Biophotonics</p> <p>CARS pumping</p> <p>Pollution monitoring</p> <p>Atmospheric Sciences</p> <p>Micromachining</p> <p>Gemstone marking</p>	<p>Passively Q-Switched</p> <p>Proprietary and patented Microchip design</p> <p>Sub-ns pulses (450 ps to 2 ns) at 1064 nm</p> <p>Pulses without parasite (no second pulse)</p> <p>Repetition rate up to 70 kHz</p> <p>Average power up to 500 mW</p> <p>Peak power up to 30 kW</p> <p>Externally triggerable</p> <p>Electronic power supply with analog or numerical control</p>



## ◆ Technical specifications:

	HLX -I-F005	HLX -I-F020	HLX -I-F040	HLX -I-F070
Wavelength	1064 nm	1064 nm	1064 nm	1064 nm
Pulse Repetition Rate (fixed)	5 kHz	20 kHz	40 kHz	70 kHz
Average Power <sup>i</sup>	50 - 200 mW	200 - 300 mW	320 - 500 mW	280 - 420 mW
Pulse Energy <sup>i</sup>	10 - 40 $\mu$ J	10 - 20 $\mu$ J	8 - 12 $\mu$ J	4 - 6 $\mu$ J
Pulse Width <sup>i</sup>	0.6 - 2 ns	0.7 - 2 ns	0.8 - 2 ns	0.8 - 2 ns
Power Stability (6 hours) <sup>ii</sup>	< $\pm$ 3%			
Second Pulses	NA <sup>iii</sup>			
Beam Quality (M <sup>2</sup> )	< 1.2			
Polarization	> 100:1			
Waist radius (1/e <sup>2</sup> in intensity)	60 $\mu$ m $\pm$ 6			
Beam Divergence (full angle)	12 mrad			
Ellipticity at the Focusing Point	< 1.1			
Package Size (without heatsink)	90 x 90 x 50 mm <sup>3</sup>			
Expected Lifetime	> 15.000 h			
Operating Temperature	5 - 45 °C (non condensing)			
Storage Temperature	0 - 60 °C			
Laser Classification	3B - IIIB			
Options	External trigger, Photodiode signal output			

i. Fixed and depends on other parameters (average power, pulse width, pulse energy).

ii. After 10 minutes warm-up and temperature variation <  $\pm$  3 °C.

iii. Less than 1% (limited by detection).

*Other specifications (pulse repetition rates, powers and pulse widths) on request.*

## ◆ Electronic controller:

OEM module: 12VDC, size: 110 x 90 x 35 mm<sup>3</sup>

Desktop module: 110-240VAC, size: 210 x 190 x 45 mm<sup>3</sup>

## ◆ Ordering information:

**HLX-I-Fxxx-XYZ**

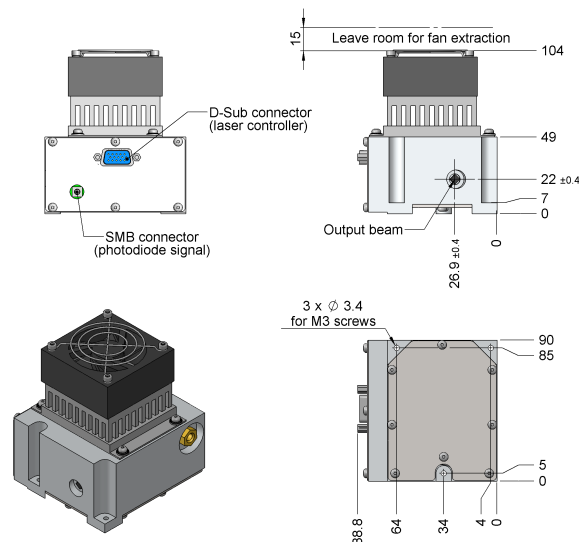
Frequency in kHz

**X:** Electronic Controller { 0: OEM Module  
1: Desktop Module

**Y:** External Trigger { 0: Free Running  
1: with Internal Trigger  
2: with External Trigger

**Z:** Photodiode Output Signal { 0: without  
1: with

## ◆ Laser footprint:



*Can be supplied without the heatsink module.*