HNx High Peak Power Amplified Microchip Series

Key features

- **1064nm and 532nm**
- **Ultra-short pulses down to 500ps@70kHz**
- **Peak power over 100kW**
- **Excellent beam quality – TEM00, M^2<1.1**
- **Efficient, air-cooled**
- **Sealed package, extremely long life**

The PicoSpark™ series combines multi-watt output level with high repetition rate and exceptional pulse characteristics to provide the best price/quality ratio for micromachining application.
Passively Q-Switched (PQS) microchip laser technology and fiber amplification are brought together, delivering pulses with hundreds of kilowatt peak power and hundreds of gigawatt per square centimeter power density in a sealed and air-cooled compact package.
This Master Oscillator Fiber Amplifier (MOFA) architecture notably offers a full control over the pulse energy (or peak power) while leaving unchanged the pulse width and pulse shape.

Applications

- Micromachining
  - Selective ablation of µm to nm scale layers
  - Edge isolation
  - Cutting from PCB to PCD with no heat effect
- Instrumentation
  - Laser Induced Breakdown Spectroscopy
  - Raman spectroscopy
  - Supercontinuum generation
  - Ranging
  - Differential absorption LIDAR
- Biophotonics
  - Dense tissue ablation
  - Tattoo removal
  - Micro-surgery

Technical specifications:

	HNP-70F-100(6)	HNG-70F-100
Wavelength	1064nm	532nm
Repetition Rate	>70kHz	>70kHz
Constant Pulse width range (FWHM) (1)	<0.6ns	<0.55ns
Output power(2)	>6W	>4W
Output energy	>80µJ	>50µJ
Peak Power	>130kW	>100kW
Short term(10min) power stability(3)	<±3%	<±3%
Long term (6 hrs) power stability(3)	<±5%	<±5%
Beam profile	Gaussian TEM00	Gaussian TEM00
Beam diameter at output	3mm±0.5mm	0.65mm±0.2mm
Full angle divergence @1/e²		
Horizontal	<2 mrad	3±1 mrad
Vertical	<2 mrad	3±1 mrad
M²(4)	<1.2	<1.2
Beam ellipticity(5)	<1.20	<1.22
Polarization	Linear PER>20dB	Linear PER>20dB
Energy control function	RS232, Analog 0-5V	RS232, Analog 0-5V
Gating function	TTL 0-5V	TTL 0-5V
Options included	S	S

Notes	
(1)	Measured with 1Ghz photodiode and 1GHz/10GS/s oscilloscope.
(2)	Measurement performed with an OPHIR thermal power sensor (OPHIR 3A-FS-SH)
(3)	For temperature variation < ± 3°C and < 3°C/hour, stability is measured with calorimeter - detector band [DC, 2Hz]
(4)	Mean average value M = √(XY), X and Y being respectively the major and minor axis of the ellipse
(5)	Beam ellipticity is calculated as the ratio of the main axis far field divergence
(6)	Contact factory for availability

Complementary information & options:

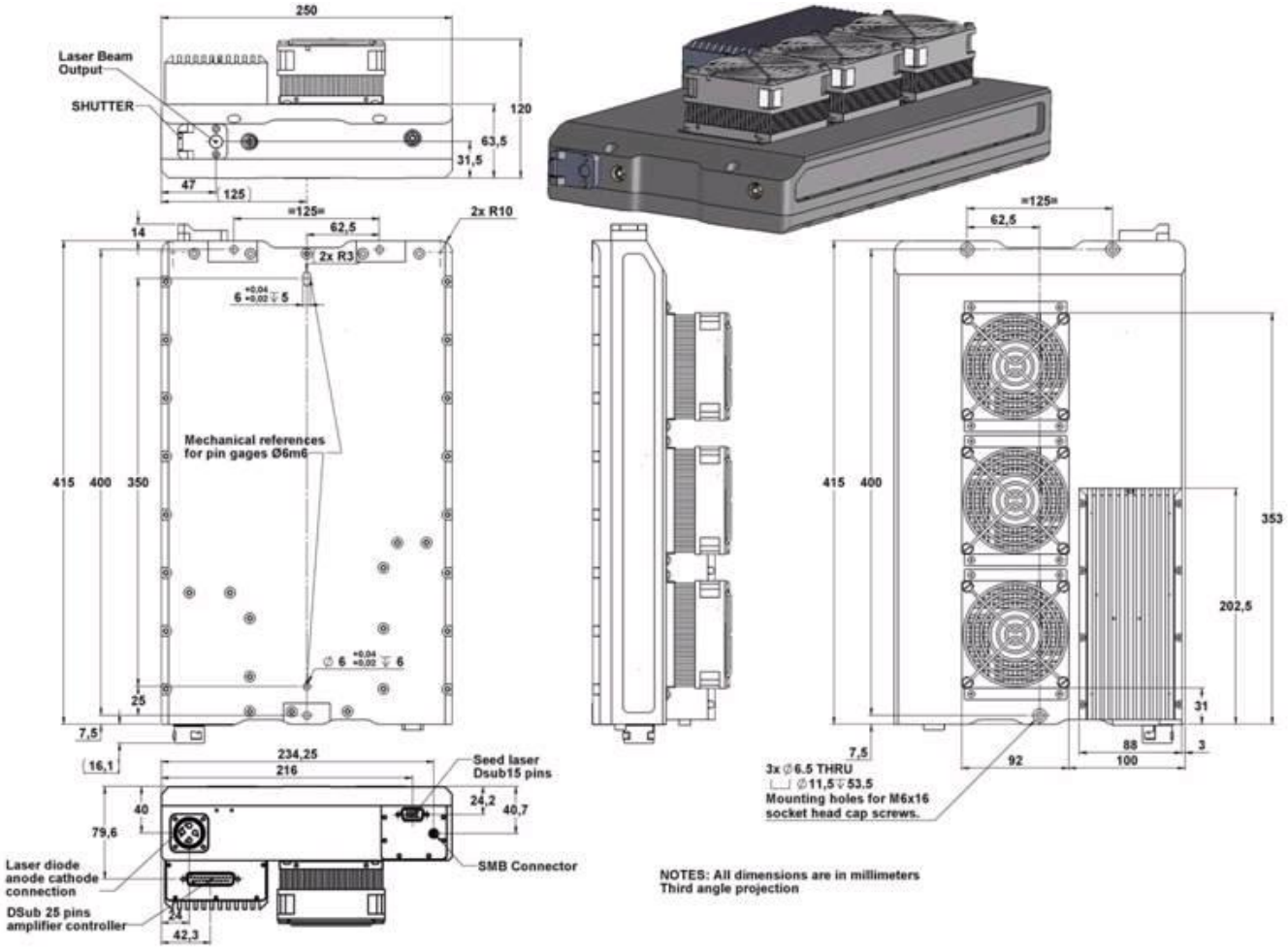
Environment Parameters	
Operating Temperature Range	15-30°C
Maximum Power Consumption	<600W
Storage Temperature	0-50°C
Shock of 11ms according to IEC 68-2-27, non operating	25g
Vibration 5Hz to 500Hz sinusoïdal according to IEC 68-2-6	2g

Certification	
Laser classification according to IEC 60825-1:2007	4
CDRH compliance	Yes
ROHs	Yes

Package	
Laser Head dimensions, LxWxH(7)	429x250x120mm
Laser Head weight	9kgs
Cable length between head and controller	2m
Controller dimensions, LxWxH	483x390x88mm
Controller weight	10kgs

Options	
Synchronization output (S)	TTL compatible output signal for synchronization/monitoring

CDRH Laser Head Mechanical Drawings



CDRH Controller Mechanical Drawings