

PNx High Peak Power Powerchip Series



KEY FEATURES

- Peak power up to 200 kW
- Pulse width down to 350 ps
- 1064, 532, 355 and 266 nm
- Single shot to 1000 Hz
- Excellent beam quality, TEM00 $M^2 < 1.1$
- All-in-one package

The PowerChip™ passively Q-switched MicroChip lasers offer the highest peak powers and shortest pulses at kilohertz repetition rates with an excellent beam quality. They feature a completely integrated platform which includes the laser head, power supply and air cooling in a compact, rugged, and turnkey package.

APPLICATIONS

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

TECHNICAL SPECIFICATIONS

	PNP-M08010 1x0	PNG-M02010 1x0	PNG-M04005 1x0	PNV-M02510 1x0	PNU-M01210 1x0 ⁽⁶⁾
Wavelength	1064nm	532nm	532nm	355nm	266nm
Max Repetition Rate RR_{max}⁽¹⁾	1000Hz	1000Hz	500Hz	1000Hz	1000Hz
Constant Pulse width range (FWHM)	<500ps	<400ps	<400ps	< 350ps	<350ps
Output energy	>80μJ	>20μJ	>35μJ	> 25μJ	>12μJ
Peak Power	>160kW	>50kW	>80kW	> 60kW	>35kW
Short term (1min) pulse to pulse stability 1σ	≤ 1 %	≤ 3 %	≤ 3 %	≤ 3 %	≤ 3 %
Long term (1h) output power stability⁽²⁾	± 3%	± 3%	± 3%	± 5%	± 5%
Beam profile	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00	See note ⁽⁵⁾
Beam divergence (Full@1/e²)					
Horizontal	2.0±0.5mrad	1.8±0.5mrad	5.0±1mrad	3.3±0.5mrad	<0.9mrad
Vertical	2.0±0.5mrad	1.8±0.5mrad	4.0±1mrad	3.0±0.5mrad	<0.9mrad
M²⁽³⁾	<1.3	<1.3	<1.3	<1.3	<1.4
Beam ellipticity⁽⁴⁾	<1.3	<1.3	<1.3	<1.3	-
Polarization	> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB

NOTES

- (1) See options p3
- (2) For temperature variation $\pm 3^{\circ}\text{C}$ and $<3^{\circ}\text{C}/\text{hour}$
- (3) Mean average value $M = \sqrt{(XY)}$, X and Y being respectively the major and minor axis of the ellipse
- (4) Beam ellipticity is calculated as the ratio of the main axis far-field divergence.
- (5) Beam exhibits different profile in horizontal (Gaussian) and vertical ($(\sin x/x)^2$ in far-field) plans
- (6) Contact factory for availability
- (7) More compact separated laser head and electronics package may be available upon request – Contact factory for further details

COMPLEMENTARY INFORMATION & OPTIONS:

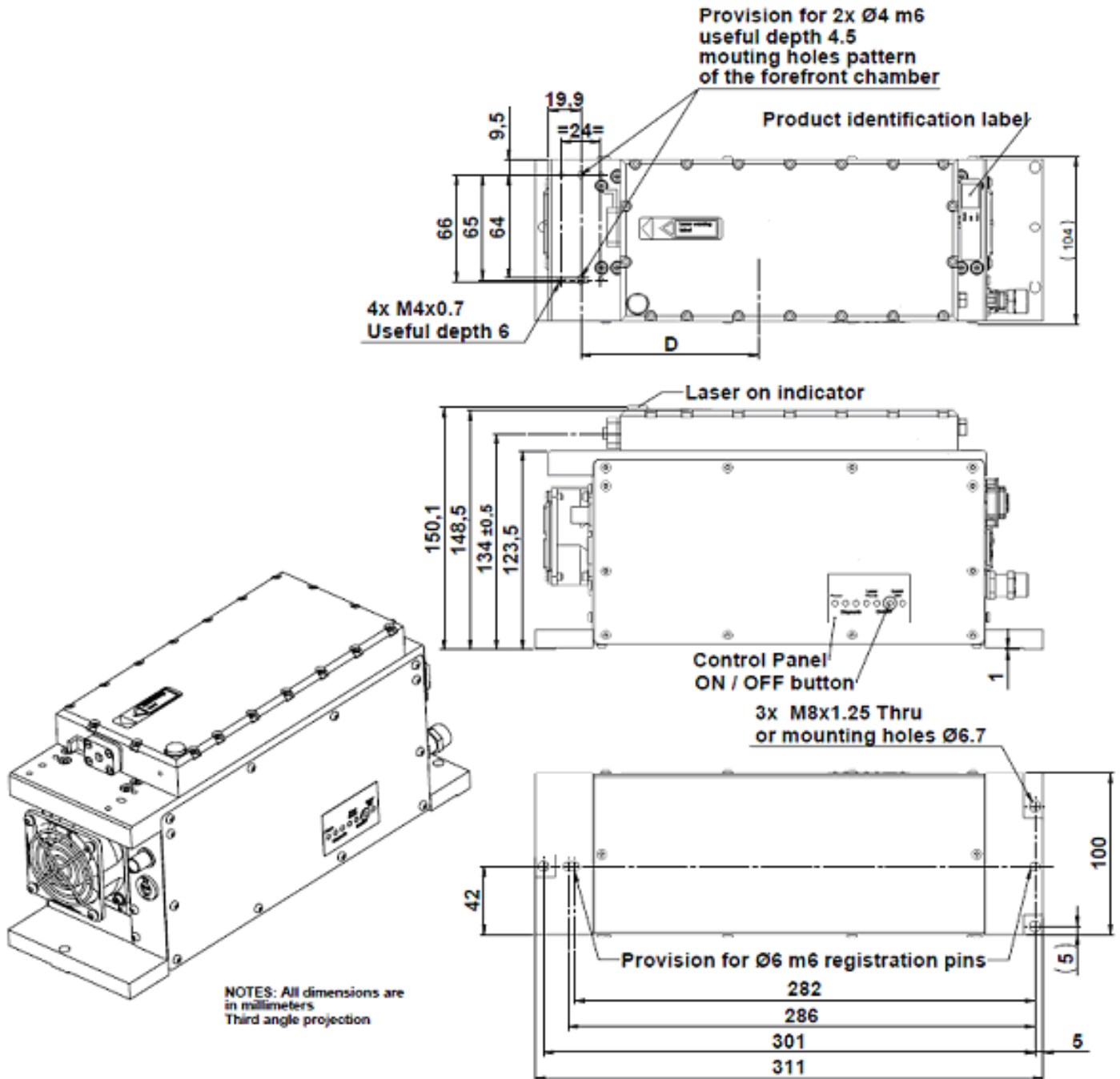
Environment parameters	
Operating Temperature	20-35 °C
Maximum Power Consumption	<75 W
Storage Temperature	0-50 °C
Shock of 11ms according to IEC 68-2-27, non operating	25 g
Vibration 5Hz to 500Hz sinusoidal according to IEC 68-2-6, non operating	2 g

Certification	
Laser Classification according to IEC 60825-1:2007	Class 3B Except PNU : Class 4
CDRH	Yes if used with PCR-240500-100 power supply
ROHs	Yes

Package	
Laser Head dimensions, LxWxH ⁽⁷⁾	311x100x149 mm
Laser Head weight	5.5 kgs
PCR-240500-100 AC/DC converter dimensions, LxWxH	315x262x77 mm
PCR-240500-100 AC/DC converter weight	3 kgs

Options	
Fixed Repetition Rate = RR _{max}	-100 version
Fixed Repetition Rate ≠ RR _{max}	-110 version ; RR to be chosen over 10Hz-RR _{max}
External Variable Repetition Rate	-120 version ; single shot to RR _{max} , 1 optimized RR value
External Variable Multi-Repetition Rate	-130 version ; single shot to RR _{max} , 3 optimized RR values

MECHANICAL DRAWINGS : CDRH LASER HEAD



MECHANICAL DRAWINGS : PCR-240500-100 (CDRH COMPLIANT AC/DC CONVERTER)

