

ALPhA NOV

Optics & Lasers Technology Center



PDM+

Pulse-on-Demand Modules

www.alphanov.com

The PDM+ lasers consist of laser modules generating on-demand optical pulses in response to trigger signals with extremely low jitter on the trigger to pulse delay.

From single-shot to continuous wave (CW), with pulse length from 1.5 ns to any required burst configuration, the PDM lasers offer the best temporal flexibility.

The optical pulses can be triggered from input TTL/LVTTL digital signals.

The PDMs are all fibered design lasers with excellent field proven reliability.

The PDM+ lasers enable a large range of peak power (2 to 10 W) for your applications and can easily be used in laser fault injection even through thicker silicon dies.



Front panel of a PDM+ or PDM+ HP laser

FEATURES

- Single-shot, burst mode or CW operation
- Up to 250 MHz repetition rate
- Up to 10 W peak power
- Pulses on-demand for simple synchronization with the IC trigger
- Delay trigger to pulse typ 30 ns in Ext/Ext mode⁽¹⁾
- Low jitter < 20 ps (Std Dev) vs trigger
- Fiber delivery (easy replacement with other PDMs or picosecond lasers)
- Single mode for smallest spot size on sample
- Python compatible

⁽¹⁾«Ext/Ext mode» : the laser uses the external signal for repetition rate and pulse duration. A so-called «Ext/Int mode» enables the user to use the external signal for the repetition rate and to configure the pulse duration via the software interface. In that case, the delay is < 70 ns.

COMPATIBILITY

Single Laser
Microscope
Station

Double Laser
Microscope
Station

Quadruple
Laser
Microscope
Station



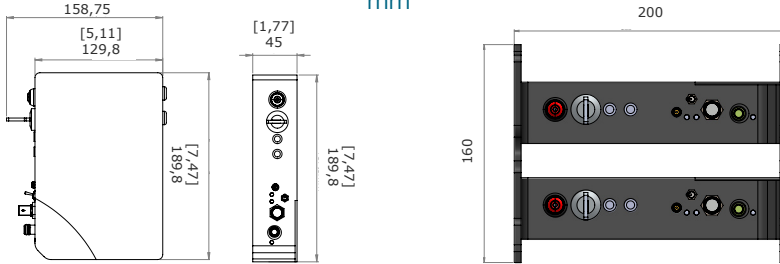
PDM+/ Up to 3.2 W peak power with single-mode output signal



PDM 2+/ Up to 5 W peak power with single-mode output signal

Mechanical indicated dimensions

[inch]
mm



Technical Specifications

Optical	PDM+ / HP	PDM2+ / HP	PDM4+ / HP
Peak power	Up to 2 W / 3.2 W	Up to 4 W / 5 W	Up to 6 W / 10 W
Pulse width	From 1.5 ns to CW / 5 ns to CW		
Repetition rate	From single-shot to 250 MHz		
Typical wavelength⁽¹⁾	808 nm, 980 nm, 1064 nm ⁽¹⁾		
Operating mode	Pulsed and CW		
Spot size	Down to $\sim 1 \mu\text{m}$ ⁽³⁾		
Command interface	TTL / LVTTTL ⁽²⁾ / Software & DLLs		
Output fiber	> 1 m output single mode fiber with FC/APC connector		

⁽¹⁾ Other available wavelengths: 845, 1030; 1310, 1420, 1550 nm

⁽²⁾ LVDS or other on demand (LVPECL, CML, LVS)

⁽³⁾ With ALPHANOV microscope and x50 objective

Electrical

Voltage	12-15 Vdc (OEM) 110 / 220V AC / DC converter included
Input impedance	50 Ω

Options

- Variable Optical Attenuator
- Collimator
- Pulse Delay Generator (Tombak)



Photos - ALPHANOV - Version EB / 02

ALPhANOV
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Bordeaux-Talence
Institut d'optique d'Aquitaine
Rue François Mitterrand
33400 Talence - France

Limoges
CIRE - Bâtiment 3
12 rue Gemini
87280 Limoges - France

Ph.: +33 5 24 54 52 00
sales.alphanov@alphanov.com
www.alphanov.com

