Picosecond Pulse Diode Lasers with Driver

PICOPOWER™-LD Series

Available with the standard wavelengths: 375, 405, 450, 488, 635, 670, 785, 976, 1030, 1064, 1300, 1550 nm as well as many other custom-specific wavelengths!

Laser pulses shorter than 40 ps. Up to 3 W peak power for specific wavelengths. Exchangeable laser heads.

Features

- Laser pulses shorter than 40 ps
- Up to 3 W peak power for specific wavelengths
- Proprietary high-frequency design for the shortest & highest peak power laser diode pulses available on the market
- Collimated output with spatial filtering
- Exchangeable laser heads with different wavelengths for greatest flexibility
- Proprietary laser diode driver generating picosecond high-current pulses
- Built-in Direct Digital Synthesis (DDS) frequency generator for repetition rate adjustment up to 20 MHz in steps of 0.1 Hz (optional 40 MHz & 80 MHz)
- External TTL trigger capability and synchronized TTL output
- Optional fiber coupling

Applications

- Fluorescence lifetime measurements
- Pump-probe experiments
- Photodetectors & opto-electronics time response measurements
- Optical communication tests
- Optical Time Domain Reflectometry (OTDR)
- Seeding of fiber lasers
- Optical tomography

Lasers, Optics, Electronics.
Made in Germany.
WWW.ALPHALAS.COM

ALPHALAS™

Picosecond Pulse Laser Diode Performance

Standard Wave-lengths (nm)	Pulse Width (ps)	Average Power (mW) @ 20 MHz / @ 40 MHz [1)]	Peak Power (mW)	Beam Divergence (mrad)	Comments
375	< 60	0.2 / 0.4	250	1.3	
405	< 40	0.5 / 1.0	750	1.2	Up to 3 W peak-power available
450	< 60	0.4 / 0.8	450	1.2	
488	< 60	0.25 / 0.5	250	1.4	
635	< 60	0.2 / 0.4	200	n/a	Fiber coupled
670	< 60	0.5 / 1.0	450	1.3	
785	< 60	0.2 / 0.4	200	0.5	
976	< 80	0.5 / 1.0	500	n/a	Fiber coupled
1030	< 60	0.5 / 1.0	250	1.5	
1064	< 50	0.5 / 1.0	300	1.5	[2)]
1300	< 40	0.5 / 1.0	250	n/a	Fiber coupled
1550	< 40	0.5 / 1.0	250	n/a	Fiber coupled

Notes:
[1)] Higher average powers are available for longer pulse durations.
[2)] Single frequency and fiber-coupled for amplifier seeding available.
Wavelength tolerance is typically 1%. Beam profile is TEM_{00}, but slightly elliptical.
Laser class is typically 1M, maximum 3B, depending on the wavelength.

Laser Head Mechanical Specifications

Dimensions (Ø × D)	Ø 25 × 125 mm	Custom-specific housing is also available
Operating Temperature	15°C to 35°C (59°F to 95°F)	
Weight	120 g	

Picosecond Laser Diode Driver: PLDD-100-40

Parameters	Specifications	Comments
MECHANICAL		
Dimensions (W × H × D)	235 × 110 × 280 mm	OEM and custom-specific options available
Operating Temperature	15°C to 35°C (59°F to 95°F)	
Weight	2.6 kg	
ELECTRICAL		
Frequency Generator	Direct Digital Synthesis (DDS)	8-Digit Display
Frequency Range / Step	0.2 Hz - 20 MHz / 0.1 Hz	Optional: max. 40 MHz or 80 MHz or customized max. frequency
External Trigger Input	max. 20 MHz	apply TTL signal, rising edge
General		
Voltage / Current Requirements	100 V AC / 0.2 A 230 V AC / 0.1 A	12 V DC supply input is optionally available
Power Consumption	max. 30 W	

Notes: *Customer specific parameters are available upon request. Please contact us for further information.*
Specifications are subject to change without notice.

Regulatory Requirements Compliance

The PICOPOWER™-LD series comply with IEC/EN 60825-1.

ALPHALAS GMBH
Bertha-von-Suttner-Str. 5
D-37085 Goettingen
Germany

TEL +49 - 551 - 77 06 147
FAX +49 - 551 - 77 06 146
E-MAIL sales@alphalas.com
WEB www.alphalas.com

Lasers, Optics, Electronics.
Made in Germany.
WWW.ALPHALAS.COM

Options and further specifications are available upon request. Specifications in this data sheet are subject to change without notice. No responsibility for typing or printing errors. ALPHALAS GmbH reserves the right to make changes without further notice to any products herein. ALPHALAS GmbH makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ALPHALAS GmbH assume any liability arising out of the application or use of any product, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in ALPHALAS GmbH data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. ALPHALAS GmbH products are intended for expert users only. ALPHALAS GmbH products are not designed, intended, or authorized for use in medical, surgical or any other human *in vivo* applications, or for any other application in which the failure of the ALPHALAS GmbH product could create a situation where personal injury or death may occur. Therefore, ALPHALAS GmbH products must not be used in such applications. Furthermore, ALPHALAS GmbH products must not be used in critical applications (e.g. in life support systems, in aviation, in nuclear facilities, in weapon systems, in safety or security systems, etc.). ALPHALAS GmbH products must not be used where damage to property may occur.

Copyright © ALPHALAS GmbH. Printed in Germany. PICOPOWER-LD_120329