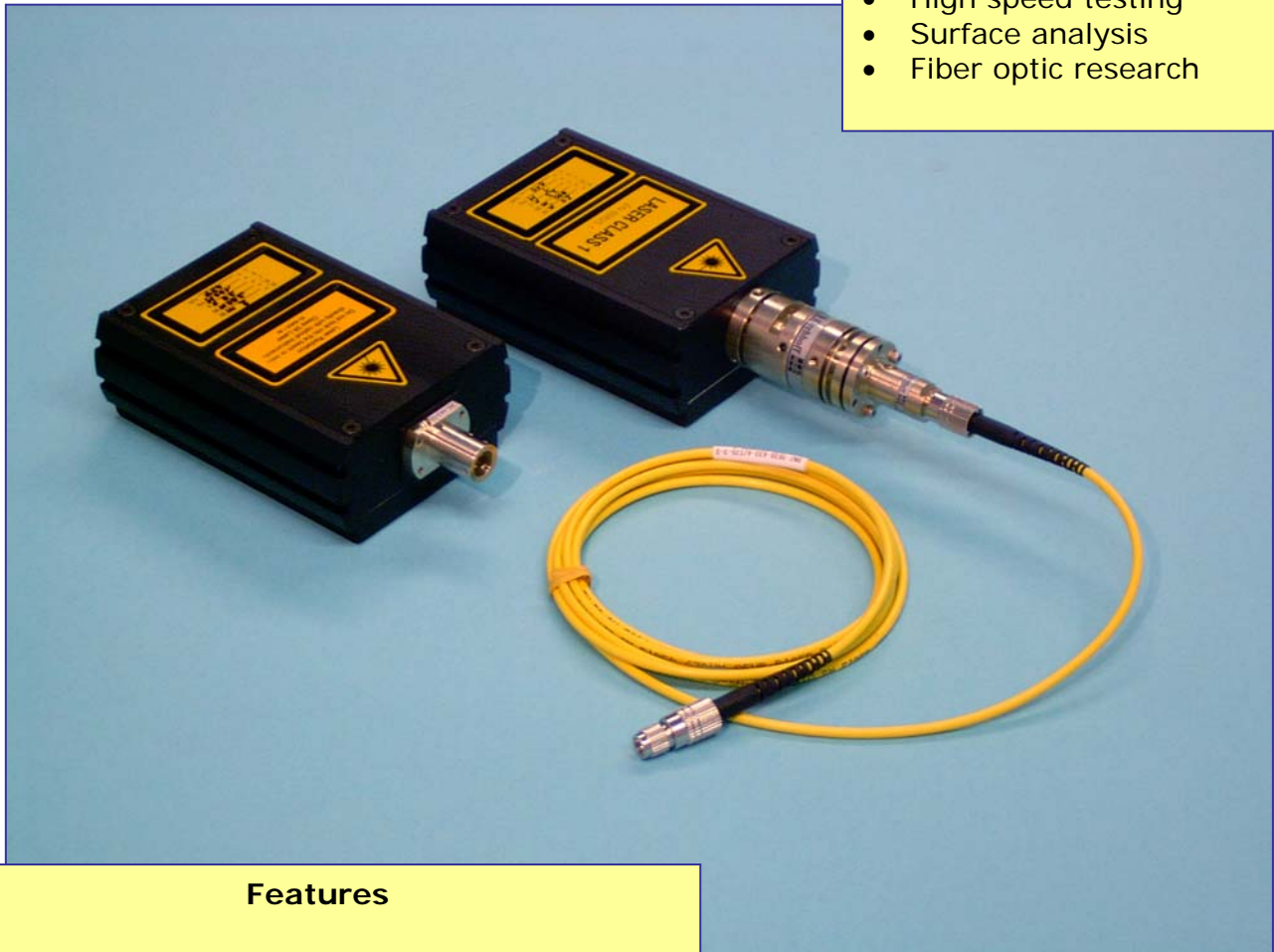


# PiLas S Series Picosecond Laser Diode Systems

The PiLas Systems are diode lasers that emit very short optical pulses with pulse widths down to 20 ps (FWHM). Standard systems consist of a digital electrical pulse generator EIG and an optical head with a laser diode and collimating optics (paralleling optics, single mode fiber output or multimode fiber output versions are also available). The laser diodes of the various models are pre-configured to emit on a fixed wavelength within a spectral range between 375 nm and 1670 nm, based on all commercial available diode wavelengths. Typical peak powers are in the range of 25 mW to more than 1000 mW, depending on the laser diode used. The jitter between electrical trigger and optical pulse is about 4 ps. Special wavelengths or specifications are available on request.

## Applications

- Time-resolved fluorescence
- High speed testing
- Surface analysis
- Fiber optic research



## Features

- pulse widths down to 20 ps
- jitter less than 4 ps
- wavelengths from 375 nm to 1550 nm
- minimized pulse tail
- optical peak power up to more than 1000 mW
- optional temperature control

# PiLas S Series

## Optical Head with laser diode (up to 1 MHz)

Parameter (unit)	PIL037	PIL040	PIL043	PIL047	PIL063	PIL067	PIL078
wavelength (nm)	375	408	440	473	635	670	780
tolerance (nm)	± 10	± 10	± 10	± 10	± 10	± 10	± 15
spectral width (nm)	< 7	< 7	< 7	< 7	< 7	< 7	< 7
pulse width (ps)	< 60	< 45	< 60	< 60	< 35	< 35	< 35
peak power in collimated beam (mW)	> 140	> 400	> 140	> 140	> 150	> 300	> 300

Parameter (unit)	PIL083	PIL085	PIL090	PIL106	PIL130	PIL155	PILxxxDFB
wavelength (nm)	830	850	905	1060	1300	1550	850, 1310 1550
tolerance (nm)	± 15	± 15	± 15	+5/-15	+5/-15	± 15	± 3
spectral width (nm)	< 10	< 10	< 10	< 12	< 13	< 15	< 0.1
pulse width (ps)	< 35	< 25	< 50	< 40	< 35	< 25	50 - 100
peak power in collimated beam (mW)	> 300	> 100	> 400	> 400	> 50	> 40	> 20

There are additional wavelengths available. Dimensions of the optical heads: width x height x depth = 74mm x 38mm x 107mm  
A.L.S. GmbH reserves the right to change specifications without prior notice

Note: The optical heads are interchangeable to get different wavelengths with one EIG. However, the heads can not be exchanged between drivers with 1 MHz or 100 MHz repetition rate.

## Control Unit EIG1000D

Parameter	EIG1000D (for PiLas 1 MHz version)
<b>internal trigger</b>	
repetition rate	1 MHz max
repetition rate of internal trigger adjustable at	1 MHz, 500 kHz, 200 kHz, 100 kHz...10 Hz, single shot
external trigger input	0 – 1 MHz
amplitude	-5V...+5V / TTL / NIM
impedance	1 MOhm / 50 Ohm
pulse width	typ. 10 ns
<b>pre-trigger output</b>	
amplitude	TTL level
pulse width	typ. 10 ns
trigger delay (others on request)	70 ns
typical jitter between pretrigger and optical output	typ. 3 ps

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Dimensions of EIG: width x height x depth = 235mm x 88mm x 326 mm

### Notice

This product complies with 21 CFR 1040 and IEC 60825-1, -2.



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