

ps

ns

GAIN SWITCHED LASER DIODE MODULE

PiLas



MADE IN GERMANY

**CONTINUOUSLY
TUNABLE
PULSE
REPETITION
RATE**

PiLas is a versatile, picosecond laser diode module designed for all industrial and scientific applications that require maintenance-free operation, continuous tuning of the repetition rate and low cost of ownership. Gain-switched operation of the semiconductor laser diode allows to emit optical pulses from **20 ps to 5 ns** pulse width and peak power from **20 mW to 1 W** in the wavelength range from **375 nm to 1600 nm**. PiLas can be operated from pulse-on-demand up to **120 MHz** and it can be easily triggered from an external source (master or slave mode). Every laser head is optimized to meet the customer's specifications requirements.

OPTIONS:

- + Fiber output (PM, SM, MM)
- + Fiber collimator w/o microfocus
- + Thermal wavelength tuning
- + Converter TTL to NIM level for trigger-out
- + Narrow spectral linewidth DFB-laser
- + Single-box OEM package

MAIN APPLICATIONS:

- + Detector testing (PMT, APD, etc.)
- + Time-resolved spectroscopy
- + Analysis of ultrafast electrical circuits
- + Semiconductor inspection
- + Fiber testing

OUTSTANDING FEATURES :

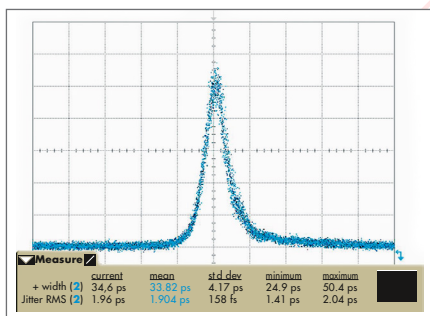
- + Wavelengths: 375 – 1600 nm
- + Pulse duration: 20 ps – 5 ns
- + From pulse-on-demand up to 120 MHz
- + External laser triggering
- + Continuously tunable repetition rate
- + Low timing jitter
- + Compact, light, dust-sealed OEM package
- + Maintenance free – no alignment required
- + Remote control
- + 24/ 7 operation

PiLas	
CENTER WAVELENGTH ¹	375 nm – 1600 nm
PULSE DURATION ²	120 ps – 5 ns
PULSE PEAK POWER ³	10 mW – 1 W
PULSE PEAK POWER ³	1 – 50 p J
AV. OUTPUT POWER AT 100 MHZ	0.5 – 2 mW
PULSE REPETITION RATE	pulse-on-demand – 120 MHz
BEAM QUALITY	$M^2 < 1.1$, TEM ₀₀
POLARIZATION EXT. RATIO	> 20 dB
TIMING JITTER ⁵	< 3 ps (rms)
LASER OUTPUT	free-space or fiber output (PM, SM, MM)
ENVIRONMENTAL	
WARM-UP TIME	< 10 minutes
OPERATION TEMPERATURE	15 °C – 35 °C
STORAGE TEMPERATURE	- 20 °C – 65 °C
ON/OFF CYCLES	> 10000
MECHANICAL	
SIZE LASER HEAD	97 x 31 x 147 mm ³
WEIGHT LASER HEAD	0.45 kg
SIZE OEM CONTROL UNIT ⁶	168 x 129 x 33 mm ³
WEIGHT OEM CONTROL UNIT	0.7 kg
SIZE STAND-ALONE CONTROL UNIT	235 x 88 x 326 mm ³
WEIGHT STAND-ALONE CONTROL UNIT	2.5 kg
ELECTRICAL	
POWER SUPPLY	12 VDC/3 A or 100 – 264 VAC, 47 – 63 Hz
POWER CONSUMPTION	< 30 W
COOLING	
LASER SYSTEM	air cooled

¹ All commercially available laser diode wavelengths in this range
² Depending on laser head model, pulse duration up to 5 ns possible
³ Depending on laser head model
⁴ Depending on laser head model and pulse duration
⁵ Not for DFB/DBR lasers
⁶ Other OEM versions available

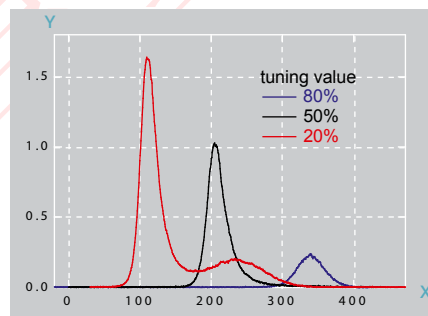


PULSE PROFILE



X TIME DELAY (ps)
 Y SAMPLING SCOPE SIGNAL (A.U.)

PULSE SHAPE VS TUNE VALUE



X TIME DELAY (ps)
 Y OPTICAL POWER (W)

