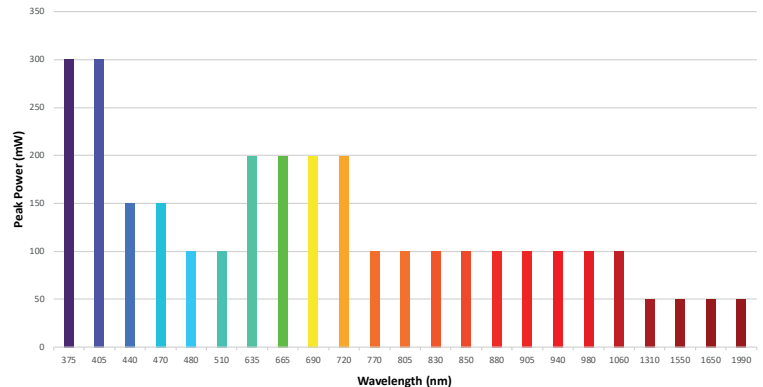


PIXEA

Picosecond laser source

Excitation source - Seed laser

[375 nm - 1900 nm]



The PIXEA is a high performance and versatile picosecond laser based on gain-switched laser diode managed by its flexible control unit and user-friendly software. The PIXEA offers a large variety of center wavelengths from 375 nm to 1990 nm.

Designed for the most demanding applications, the PIXEA generates ultrashort laser pulses down to 50 ps with an extremely-low timing jitter down to 3 ps and excellent beam quality. Its control unit is able to continuously tune the repetition rate from single shot up to 80 MHz, the pulse width from few ps to ns. It is also easily triggerable by an external source and remotely controlled by a PC via its USB port. Dual mode operation (CW & pulsed) and different optical output options are also available.

Features

- Continuously tunable from single shot to 80 MHz
- pJ energy pulse
- Pulse width < 50 ps
- Master/Slave operation
- Very low timing jitter < 3 ps
- Adjustable output power
- Minimize pulse tails
- Remote control
- User friendly graphical interface
- DLL libraries : LabVIEW, C++

Applications

- FLIM microscopy
- Time resolved spectroscopy
- Photodetector characterization
- Time Correlated Single Photon Counting (TCSPC)
- Seed laser
- Semiconductors inspection
- LIDAR and range finder
- Optical fiber sensing

Options

- Continuous Wave operation
- Free-space or optical fibered
- Multi-channel Control Unit
- Wavelength tuning
- TTL to NIM converter
- Narrow linewidth (DFB)

WAVELENGTHS - FP LASER TYPE

PIXEA-XXXX	Wavelength (nm)	Spectral Width (nm)	Pulse width ¹ (ps)	Peak Power ² (mW)	Average ³ Power (mW)
PIXEA-375	375 ± 10	< 5	< 45	> 300	2
PIXEA-405	405 ± 15	< 5	< 45	> 300	2
PIXEA-440	440 ± 20	< 5	< 60	> 150	1.5
PIXEA-470	470 ± 10	< 5	< 60	> 150	1.5
PIXEA-480	480 ± 10	< 5	< 60	> 100	1
PIXEA-510	510 ± 20	< 10	< 120	> 100	1
PIXEA-635	635 ± 15	< 7	< 45	> 200	1.5
PIXEA-665	665 ± 15	< 7	< 45	> 200	1.5
PIXEA-690	690 ± 15	< 7	< 50	> 200	1.5
PIXEA-720	720 ± 30	< 7	< 50	> 200	1.5
PIXEA-770	770 ± 20	< 7	< 50	> 100	1
PIXEA-805	805 ± 20	< 7	< 50	> 100	1
PIXEA-830	830 ± 15	< 10	< 45	> 100	1
PIXEA-850	850 ± 15	< 10	< 50	> 100	1
PIXEA-880	880 ± 20	< 10	< 50	> 100	1
PIXEA-905	905 ± 15	< 10	< 50	> 100	1
PIXEA-940	940 ± 20	< 10	< 50	> 100	1
PIXEA-980	980 ± 20	< 10	< 50	> 100	1
PIXEA-1060	1060 ± 20	< 15	< 60	> 100	1
PIXEA-1310	1310 ± 20	< 15	< 35	> 50	1
PIXEA-1550	1550 ± 20	< 15	< 35	> 50	1
PIXEA-1650	1650 ± 25	< 10	< 70	> 100	1
PIXEA-1990	1990 ± 20	< 50	< 80	> 100	1

WAVELENGTHS - NARROW SPECTRAL LINEWIDTH DFB-LASER TYPE

PIXEA-XXXX	Wavelength (nm)	Spectral Width (nm)	Pulse width (ps)	Peak Power (mW)	Average Power (mW)
<i>PIXEA-850-DFB</i>	852 ± 2	< 0.5	< 90	>100	0.5
<i>PIXEA-1064-DFB</i>	1064 ± 2	< 0.5	< 60	> 100	0.5
<i>PIXEA-1310-DFB</i>	1310 ± 2	< 0.5	< 30	> 50	0.5
<i>PIXEA-1550-DFB</i>	1550 ± 2	< 0.5	< 30	> 50	0.5
<i>PIXEA-1610-DFB</i>	1610 ± 2	< 0.5	< 30	> 50	0.5

Other wavelengths, pulse widths and power are available on request

¹ Minimum pulse widths. The pulse widths depend on repetition rate,

² Peak power for collimated beam. Fiber coupling will reduce peak power. Corresponding pulse energy depends on pulse width,

³ Typical average output power for collimated beam at 80 MHz. Average power depends on rate.

The PIXEA laser source is proposed in two units : a remote laser head and its associated Control Unit.

LASER HEAD SPECIFICATIONS

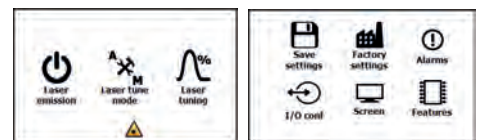


LASER HEAD SPECIFICATION	
Center wavelength	375 nm - 1990 nm
Pulse Rep. Rate	Continuously triggerable from single shot up to 80 MHz
Timing jitter	< 3 ps (rms)
Beam quality	$M^2 < 1.1$, TEM_{00}
Polarization ratio	> 20 dB
MECHANICAL	
Operating temperature	15°C - 35°C
Storage temperature	- 20°C - +65°C
Warm-up time	< 10 minutes
Dimensions	147 x 95 x 31 mm ³
Weigth	450 g
On/Off cycle	> 10 000
Cooling laser head	Air/Peltier cooling
LASER HEAD OUTPUT	
Optical output	Free-space (Collimated output 2mm) OR Fiber coupled (PM - SMF - MMF)

OPTIONS	
Dual mode	CW & pulsed
Signals Converter	NIM to TTL converter

CONTROL UNIT SPECIFICATIONS

CONTROL UNIT SPECIFICATION	
External trigger repetition rate	Adjustable from single shot to 80 MHz
Internal trigger repetition rate	Adjustable from 50 Hz to 80 MHz
Trigger output	SMA (TTL signal)
Trigger input	SMA (TTL signal)
Adjustable trigger input	SMA (TTL signal)
Power supply	+12 VDC - Power supply provided
LCD Display	Color LCD touch screen
Security	Interlock
External PC connection	USB port
Dedicated software	GUI with DLL for LabVIEW, C++, VBS
MECHANICAL	
Dimensions	240x245x105 mm ³
Weigth	< 2 kg
Cooling system	Fan

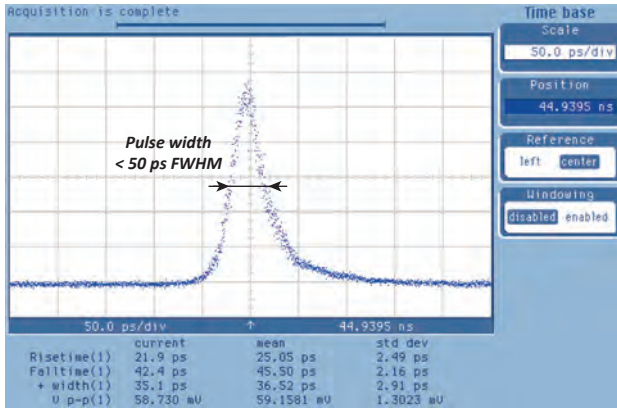


Color LCD Display

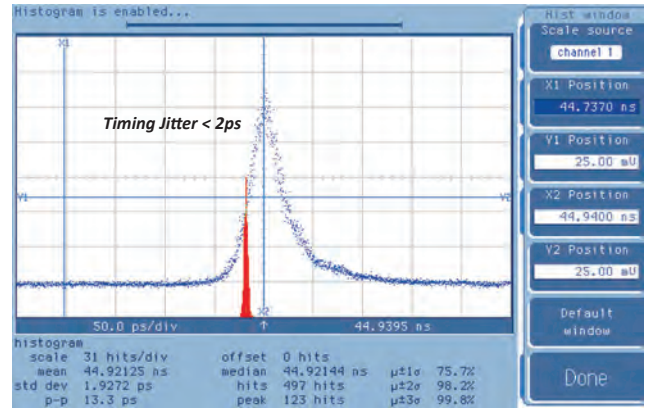
The Control Unit features a front-panel color LCD display, the fast USB interface and the synchronisation input/output trigger. The easy-to-use Graphical User Interface and the DLL libraries for the most common programming software (LabVIEW, Visual Basic, C++) are provided. Connected with a DVI cable, the Control Unit manages the laser head.

Its modern electronics fully integrates a delay generator and a pulse width tunability. In master/slave configurations, the PIXEA is continuously triggerable from single shot up to 80 MHz by being either externally triggered (slave) or internally triggered (master).

PERFORMANCES

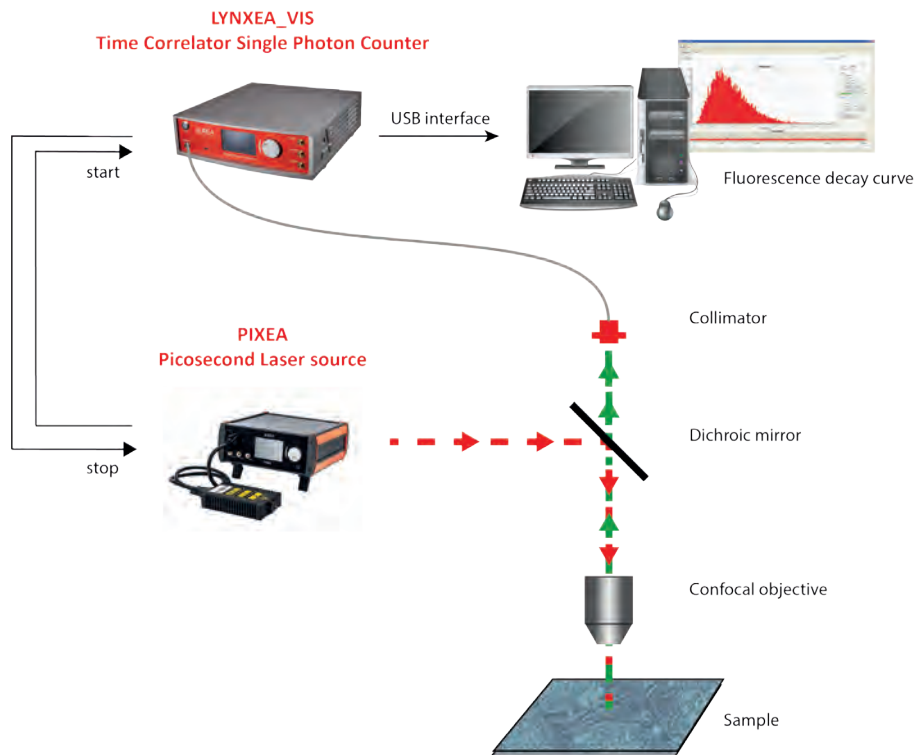


Pulse width measurement @780nm



Timing jitter measurement

APPLICATION EXAMPLE

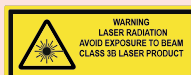


ORDERING INFORMATION

PIXEA_XXXX_YY_ZZ_01

XXXX Wavelength
YY FS : Free space
FC : Fiber coupling
ZZ P: Pulsed mode
D: Dual mode (CW & Pulsed)
01 40 : 40 MHz max rep.rate
80 : 80 MHz max rep.rate

Please contact us for custom solutions & options



NOTE