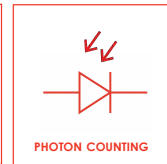
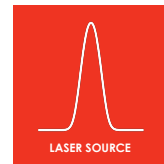


PIXEA_1550

Picosecond Laser Source

Excitation | Pump | Seed

1550 nm • 50 – 70 pulse width • PM fiber output



AUREA Technology's **PIXEA_1550** is a gain-switched picosecond pulsed laser delivering **stable 1550 nm emission** with polarization-maintaining fiber output. Engineered for precision optical timing, it generates **50 to 70 ps optical pulses** with timing jitter below 5 ps, peak powers exceeding 10 mW, and continuously tunable repetition rates from 5 kHz to 40 MHz (100 MHz optional).

Supporting internal/external clocking and master/slave synchronization, the compact unit integrates turnkey USB/UART interfaces and Python/C++ APIs for **SPAD characterization**, **TCSPC**, and **fiber diagnostics**.

Features

- Pulse width: 50–70 ps (low tails)
- Timing jitter < 5 ps
- Rep. rate: 5 kHz to 40 MHz
- Peak power ≥ 10 mW (stabilized)
- Int./ext. trigger & master/slave
- Compact 1U form factor

Applications

- Quantum Key Distribution (QKD)
- Detector Characterization
- TCSPC & Spectroscopy
- LiDAR & Time-of-Flight
- Fiber Sensing & Diagnostics
- Semiconductor Inspection

Options

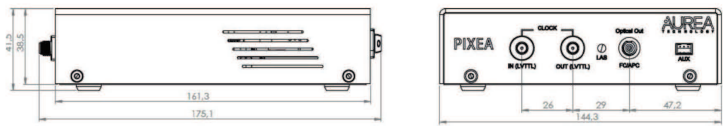
- 1310 nm centered wavelength
- 100 MHz Rep. rate
- TTL to NIM Converter

TECHNICAL SPECIFICATIONS

OPTICAL & TEMPORAL PERFORMANCE	
Center Wavelength	1550 nm ± 0.1 nm
Laser Technology	Gain-switched laser diode
Peak Power ¹	≥ 10 mW
Pulse Width (FWHM)	50 – 70 ps typ. (< 100 ps max.)
Peak Power	≥ 10 mW
Repetition Rate	5 kHz – 40 MHz
Timing Jitter	< 5 ps typ.
Trigger Modes	Internal External
Synchronization	Master Slave

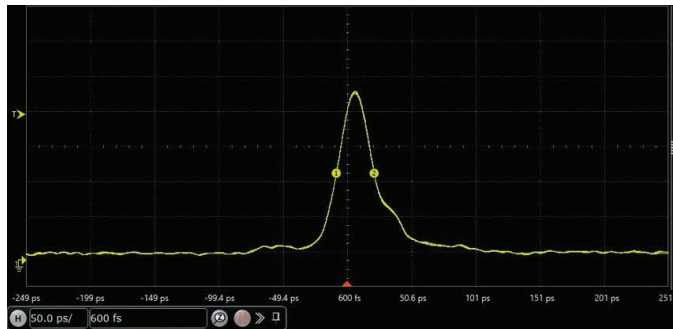
¹ Peak Power measured at 1550 nm.

MECHANICAL DRAWING (measurements in mm)



Compact OEM module footprint for seamless system integration

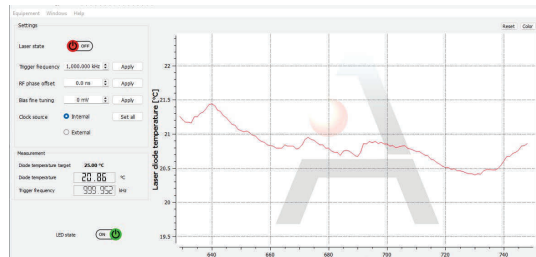
OPTICAL PULSE PROFILE & GUI



Sub-100 ps optical pulses optimized for precision timing

MECHANICAL – POWER – ENVIRONMENTAL	
Form Factor	1U Rack Compatible
Dimensions (L x W x H)	161.3 x 144.3 x 38.5 mm
Weight	0.5 kg
Power Supply	+ 5 V DC
Cooling System	Internal fan
Warm-up Time	< 20 min
Operating Temperature	+15° C to +35 °C
Storage Temperature	0° C to +65 °C
Laser Safety	Interlock Class 3B laser

DIGITAL INTERFACES – INPUT/OUTPUT – SOFTWARE	
Optical Output	FC/APC
Optical Fiber Type	PMF (SMF on request)
Clock In/Out (Sync)	SMA LVTTTL (IN / OUT)
Auxiliary / Interlock	AUX port
Status Indicator	Laser emission LED (LAS)
Host Interface	Mini-USB 2.0 port
Control Software	Dedicated GUI
Programming APIs	Python C++
Supported OS	Windows Linux



Intuitive GUI for live diode temperature tracking and parameter control

SOFTWARE

Control the PIXEA through its intuitive graphical user interface. Easily configure repetition rates (5 kHz to 40 MHz), master/slave operation modes, and trigger settings while monitoring laser status, clock source, and system temperature in real time.

For custom system integration, C++ DLLs and Python APIs with programming examples are provided. The software supports Microsoft Windows and Linux.

CUSTOMER SUPPORT

Integrating advanced technologies can be challenging, but AUREA Technology is here to help you achieve your objectives.

Work with AUREA Technology and benefit from our dedicated technical support team. Our experts in single-photon detection, low-light detection, and QKD systems are available to support you throughout your integration.

Contact our technical support team and receive an answer within a day at sales@aureatechnology.com.

ORDERING INFORMATION

PIXEA_1550

1310 nm wavelength and 100 MHz repetition-rate configurations available on request.

WARRANTY

Any warranty shall be void if the Product has been damaged, disassembled, modified, misused, neglected, improperly installed, used beyond its specified ratings or operating conditions, otherwise abused, or used in hazardous activities.

DISCLAIMER

ACCESSORIES INCLUDED

- +5V, 12W, AC/DC power adapter, with AC power cord