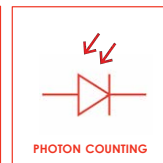
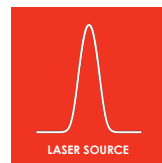


PIXEA_GIGA_1550

GHz Picosecond Laser Source

Quantum Dot & Qubit Excitation Module

1550 nm · Tunable Pulse Width · Low Jitter



AUREA Technology's **PIXEA_GIGA_1550** is a gigahertz picosecond pulsed laser engineered for **quantum-dot excitation**, photonic integrated circuits (PICs), and **high-rate QKD**. Operating at **1550 nm** with fine wavelength tuning, it delivers **tunable 50–500 ps pulses** at **100 MHz to 1 GHz repetition rates**, with pulse energies up to 2 nJ.

Engineered with **20 ps jitter**, sub-1% RIN, and external clock synchronization, it provides turnkey **lab and OEM integration** through USB/UART and full Python/C++ API support.

Features

- Rep rate: 100 MHz to 1 GHz
- Tunable width: 50–500 ps
- Pulse energy up to 2 nJ
- Timing jitter down to 20 ps typ.
- Low noise: RIN < 1% typ.
- 1550 nm wavelength tuning
- External clock sync

Applications

- Quantum-Dot Excitation
- GHz QKD Transmitters
- Silicon Photonics (PICs)
- Quantum Computing
- Optical Test & Measurement
- Time-Resolved Spectroscopy

Options

- 1310 nm (O-band)
- OEM embedded module or bench-top casing
- Custom software integration libraries

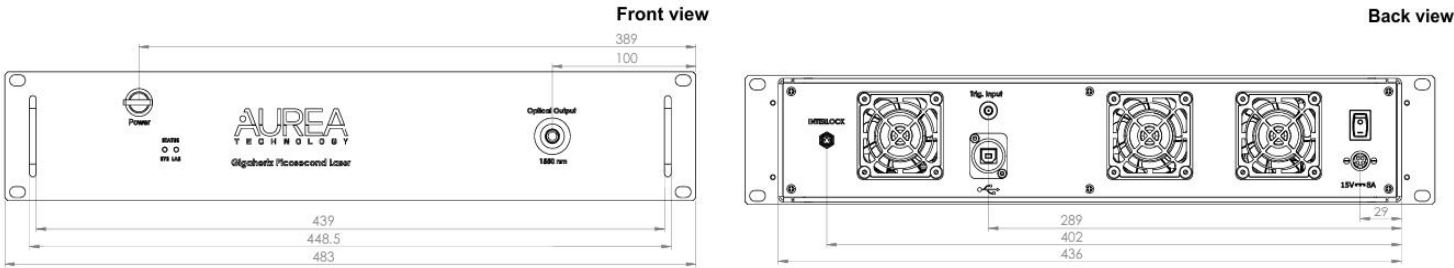
TECHNICAL SPECIFICATIONS

OPTICAL PERFORMANCE ¹	
Center Wavelength	1550 nm ± 0.1 nm
Average Power	3 W
Emission Linewidth	700 MHz min. 3000 MHz typ.
Timing Jitter	< 5 ps
Repetition Rate	100 MHz – 1 GHz (adjustable)
Pulse Width	50 ps – 500 ps (tunable)
Max. Pulse Energy	2 nJ
Relative Intensity Noise (RIN)	< 1%

MECHANICAL – POWER – ENVIRONMENTAL	
Form Factor	2U Rack Compatible
Dimensions (L x W x H)	483 x 365 x 88 mm
Weight	3.5 kg
Power Supply	15 V DC
Cooling System	Internal Fan (Air-cooled)
Warm-up Time	< 2 min (ready) 20 min (full stability)
Operating Temperature	+15 °C to +35 °C
Storage Temperature	0 °C to +65 °C
Laser Safety	Key switch Interlock

DIGITAL INTERFACES – INPUT/OUTPUT – SOFTWARE	
Trigger Signal Format	Analog (Sine Square wave)
Output Voltage Level	0.3 – 0.5 Vpp
Electrical Interface	SMA 50 Ω
Host Interface	USB 2.0 Dedicated UART port
Control Software	Dedicated GUI
Programming APIs	Python C++
Supported OS	Windows Linux

MECHANICAL DRAWING (measurements in mm)



Designed for seamless 19-inch 2U rack integration with synchronous GHz picosecond pulsing for quantum networks.

REMOTE CONTROL

Control the PIXEA_GIGA through its intuitive graphical user interface. Easily configure repetition rates (100 MHz to 1 GHz), 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_GIGA_1550

1310 nm wavelength configuration 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