

Multi-band THz source

➤ TeraCascade 1000 series

The high-performance solution of the TC series range

Powerful with >1 mW average power guaranteed

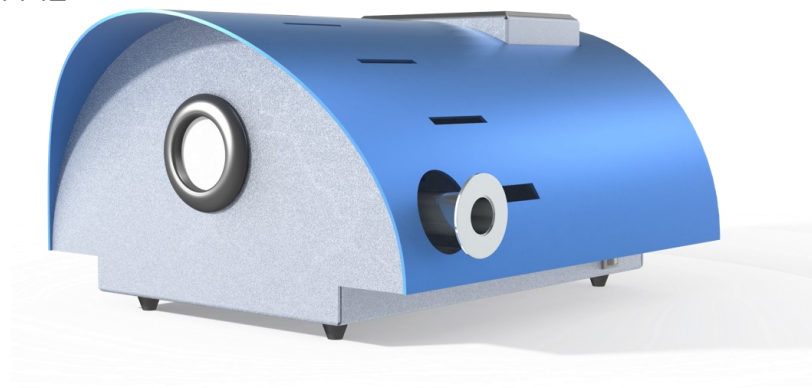
Up to six (6) electronically switchable bands

Select frequencies between 2 and 5 THz

Fully automated vacuum system

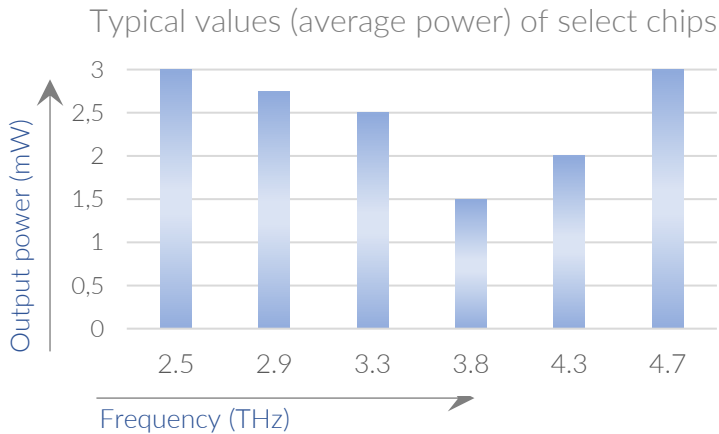
Powerful QCL technology

Cryogen-free cooling



The **TeraCascade 1000 series** is an award-winning THz source based on state-of-the-art quantum cascade laser technology. It is the perfect tool to explore the supra-THz frequency range. With up to 6 chips at select frequencies between 2 to 5 THz in one system and a guaranteed average output power of more than 1 milliwatts in CW or QCW for each band, it is a flexible and powerful tool for any supra-THz applications. The unit is fully integrated and with its automated vacuum control loop and cryogen-free cooling system it is truly plug and play. The integrated custom QCL driver

provides instantaneous electronic switching between the frequency bands and is fully programmable using a user-friendly graphical user interface on a 4.3" capacitive touchscreen or remotely via a USB connection to a PC. With the integrated signal generator and output signal connector, electronic chopping is possible and requires no external device. Beam collimators and beam extenders can be provided as standard components or tailored for a specific application. An automated beam collimator module for multi-band operation is available separately.



Features:

- Multi-band THz QCL source
- Milliwatts level average power
- Cryogen-free cooling
- User set. temperature (40-60 K)
- Automated vacuum loop
- Easy configuration and fully programmable
- Compact plug and play system

Applications:

- Real-time THz imaging
- High-definition THz imaging
- Heterodyne instrumentation
- High-resolution spectroscopy
- Detector characterization
- Power standard

Easy multi-band access:

- ✓ Electronic switching between the bands
- ✓ GUI on 4.3" touch panel

Connectivity:

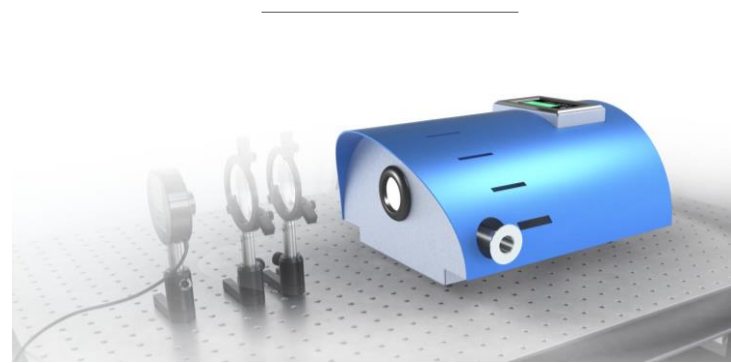
- ✓ GATE IN: Slave input for THz cameras
- ✓ GATE OUT: Elec. chopper signal to lock-in
- ✓ LASER IN: Direct connection to the QCL chip
- ✓ Remote control over USB

Cryogen-free:

- ✓ Integrated Stirling engine
- ✓ Operating temperature: 40 K

Compact:

- ✓ Tabletop device
- ✓ Weight : 10 Kg



Specifications	TC1000
Optical data	
Frequency bands	Up to 6 in the range 2-5 THz
Wavelengths	From 150 to 60 μm
Average output power	> 1mW
Spectrum	Multimode or single-mode
Output beam	$\sim 35^\circ$ FWHM
Operating data	
Cooling system	Stirling engine (cryogen free)
Vacuum required	$\sim 10^{-2}$ mbar
Operating temperature	40K-60 K user set.
Dimension and weight	
Height	250 mm
Width	460 mm
Length	500 mm
Weight	<10 Kg
Options	
Beam	✓
6 band auto-collimator	✓