# TERACOMPONENTS

SATT NORD
Technology Transfer Office

## TeraHertz Laser Source

### Keywords

- TeraHertz THz
- Laser
- Nondestructive Testing
- Real-Time Imaging

### Intellectual Property

Patented

### Development Status

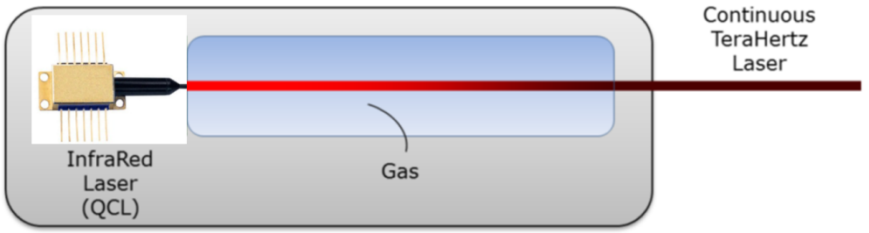
An on-going prototype will have an output power of 1mW @ 1THz.

### Partnership

Suppliers
Distributors
Clients
End Users

### Technology

**Prototype**



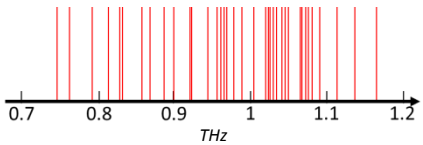

The laser is composed of an optoelectronic infrared quantum cascade laser (QCL) pump and a gas compartment. It emits a TeraHertz (THz) continuous wave (CW) beam tunable with discrete frequency values from **0.7 to 1.2 THz** and works at **room temperature**.

The Laser will work with no lethal high-voltage, no turn-on delay and no vacuum pump. It is "**plug-and-play**" and user-friendly.

### Benefits

- Room temperature and instant turn-on
- Output Power (CW) : 50µW @ 1 THz (1mW soon)
- Compact : 15x15x30 cm < 5kg
- Range : 0.7 to 1.2 THz (high resolution & real-time imaging) (1 – 5 THz in the future)
- Power Efficiency : 10 W input → 50µW output

*Example of available values*




### Applications

- Nondestructive testing and real-time imaging through materials (detection of defects or moisture in plastics, composites, ceramics, semi-conductors, cardboard, paper, wood, etc)
- Agribusiness (moisture & defects)
- Medical imaging
- Security (parcel imaging & weapon detection)
- Sensing (local oscillator) for THz Instruments & Radio Astronomy


contact

Business Developer
tech@sattnord.fr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SATT Nord
Immeuble Central gare - 25, avenue Charles St Venant - 59000 LILLE



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