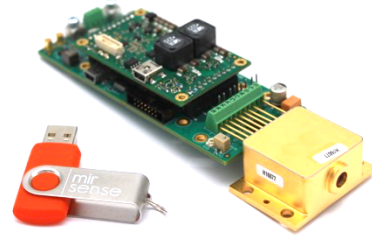




PowerMir with electronic board

Up to 500 mW Pulsed QCL

4 microns HHL with its driver



PowerMir product line is high power pulsed Quantum Cascade Laser based on proprietary technology, emitting in Mid-Infra-Red. It provides maximal average optical power up to 500 mWatts at 4 microns. This system (spec code: PW4000500HPCB) is made up of a QCL HHL-packed laser plugged to an OEM PCB board. Onboard software and Windows software are both provided. The HHL package includes the high-power laser mounted on a thermoelectric cooler and suitable optics to collimate the output of the laser. OEM driver electronic board is provided to offer plug and play solutions for easy integration. ITAR free MirSense technology exhibits outstanding performances in term of power and wall plug efficiency. This high-performance QCL assembly takes full advantage of MirSense's state of the art technologies.

Laser features

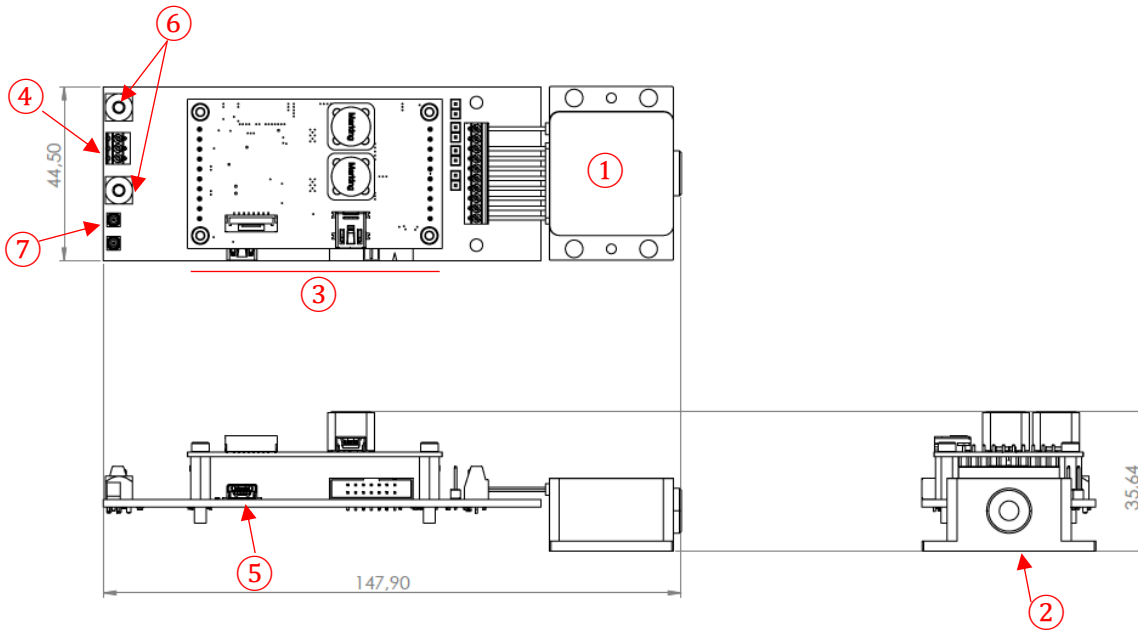
Maximum Average Optical Power	> 450 mW and < 500 mW
Mode of operation	Quasi-CW, high duty cycled pulsed
Central wavelength	4 μm +/- 0.1 μm
Pulse frequency	> 500 kHz
Divergence	Horizontal < 8 mrad (typically 6mrad) Vertical < 6 mrad (typically 4mrad)
Beam quality	TM00 Gaussian beam, $M^2 < 1.5$
Output beam dimension (window output)	2 mm x 3 mm
Polarization	Linear vertically polarized

OEM driver features

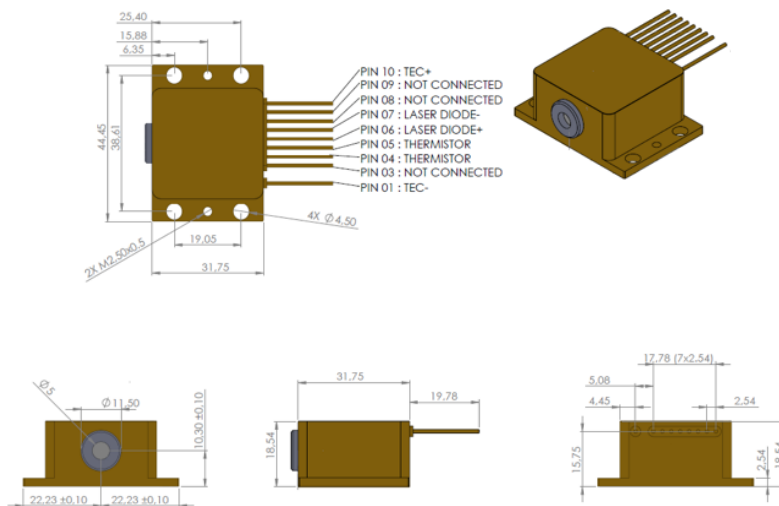
Functionalities	Laser safety, Laser driver (ON/OFF), Laser temperature and TEC control, frequency modulation, external TTL
Physical interface	USB, RS485
Protocol	MODBUS
Input power	24V DC
Dimension	4.45cm x 11cm x 2.5cm
Weight	190 g (HHL 70g and PCB 120g)
Operational temp.	-20°C to +30°C @ base plate. This working environmental temperature must in any case be above dew point to avoid water condensation

Drawings

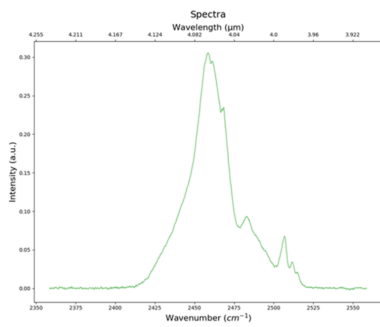
All dimensions are in mm



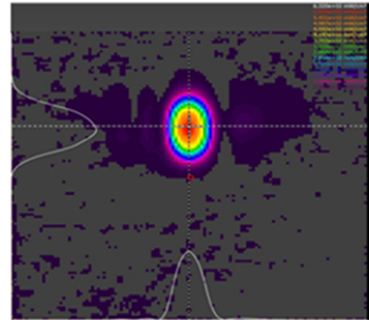
①	HHL-packaged QCL laser
②	Base plate
③	Stacked board for thermal management (it is factory-configured).
④	RS485 connector for MODBUS communication protocols
⑤	USB connector for connection to a PC with Windows software
⑥	Power connector (24V DC)
⑦	Trig-In connector (TTL external signal)



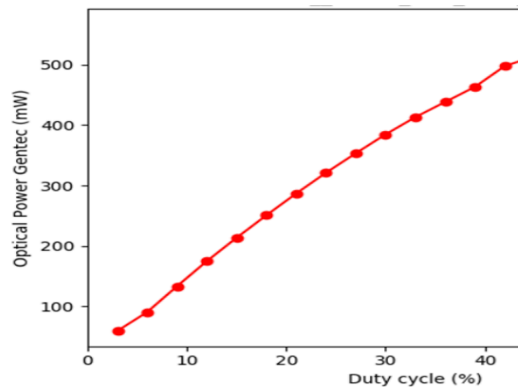
Typical characteristics of the laser



Typical spectrum



Typical beam quality



Typical average optical power of the laser as a function of the laser duty cycle with a pulsewidth of 900ns and a base plate temperature of +20°C

Options

- Customized packaging upon request
- Pulsewidth variation