BLOCK engineering

LaserTune™

Widely Tunable Mid-IR Laser Source

Key Features

- Industry-leading gap-free tuning range
  - $\lambda \approx 5.4 - 12.8\ \mu m$ ($\Delta\nu > 1050\ cm^{-1}$)
  - Configurable with up to 4 internal laser modules
- Fastest tuning (settling time <15 msec)
- Excellent beam pointing stability
- Single-box fully-integrated solution
- Flexible user-friendly interface

Smallest Widely Tunable QCL System

Flexible and User-Friendly Interface

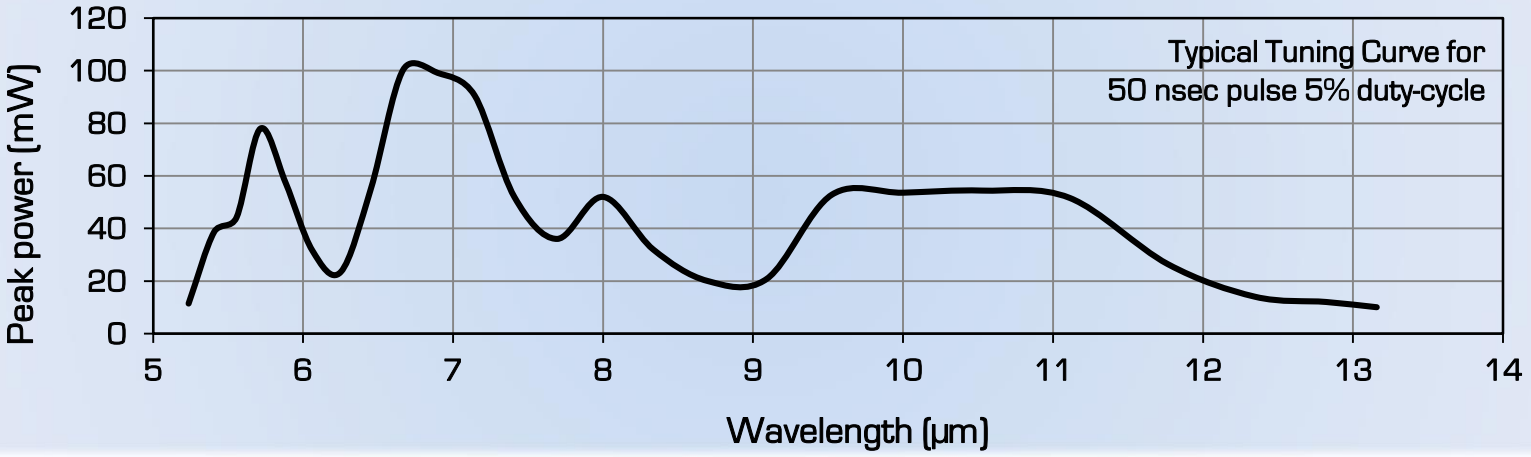
Internal Modes

- Manual Control
- Programmable Step Tune
- Programmable Sweep Tune
- Arbitrary Step Tune

Settings

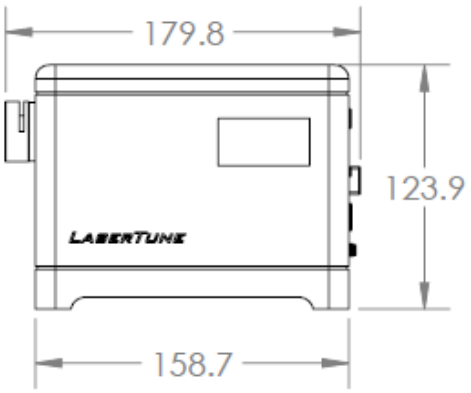
- Pulse Parameters
  - Width and period
- Triggering Selection
  - Internal and external trigger
  - External pulse control

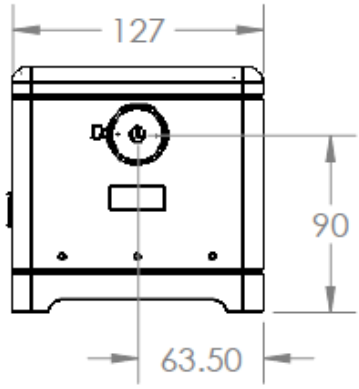
Industry-Leading Gap-Free Tuning Range

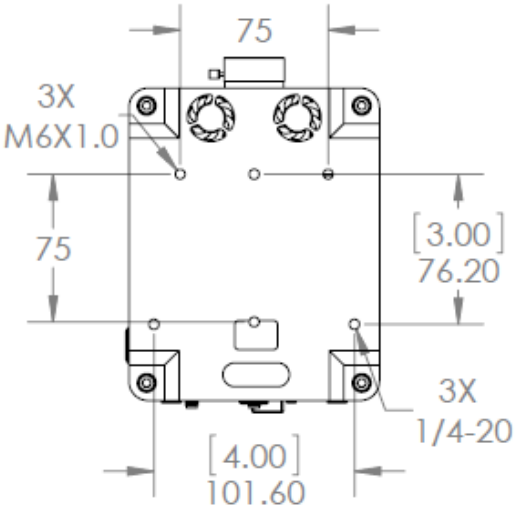


LASERTUNE™

Mechanical Interface & Dimensions







All dimensions in mm [inches]

Tunable Mid-IR Laser Source Specifications

Gap-Free Tuning Range	$\lambda \approx 5.4 - 12.8\ \mu m$ ($\Delta\nu > 1050\ cm^{-1}$) (typical) (system can be configured with up to 4 tuners)
Spectral Linewidth	$2\ cm^{-1}$ (typical)
Spectral Accuracy / Repeatability	$< 2\ cm^{-1}$ / $< 0.5\ cm^{-1}$ (typical)*
Maximum Peak Power	150 mW (typical for 4 tuners, see tuning curve)
Average Power	0.5 – 10 mW typical at 5% duty-cycle
Power Stability	< 10% pulse-to-pulse (typical)
Pulse Width	30 – 300 nsec ▫ continuously variable with External Pulse Control ▫ 10-ns-resolution with Int. & Ext. Triggering
Pulse Repetition Frequency	Up to 3 MHz
Maximum Duty Cycle (DC)	2.5 – 15% (depending on pulse width, period, & tuner)
Beam Quality	Single spatial mode
Beam Diameter	2 x 4 mm, collimated output
Beam Divergence	< 5 mrad
Pointing Stability	< 1 mrad over 99% of tuning range
Polarization	Vertically polarized, 100:1 extinction
Tuning Modes	Move Tune – manual control at one wavelength Step Tune – programmable linear steps Sweep Tune – variable sweep speed
Step Tune Speed	$100\ cm^{-1}$ step in <15 msec
Sweep Tune Speed	Linear sweep up to $15\ cm^{-1}$/msec
Computer Control	Ethernet; HTML/SOAP interface
Synchronous Pulse Control	Trigger input – with Sync-Out and adjustable offset Trigger output – for laser pulse & wavelength tune Digital input for pulse control – directly controls rising & falling edges * *
Dimensions	Approx. 6.25 × 5 × 4.9 inches → Volume = 2.6 liters
Weight	2 kg (4.5 lbs)
Cooling	Active cooling via fans
Temperature Range (Operating / Storage)	10 to 30 °C / -10 to 70 °C
Electrical Power	100 – 240 Volts (50/60 Hz) 2.5 Amp

* At 25°C with temperature stabilization
* * For HDMI support contact factory

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