

## WIDELY TUNABLE MID-IR LASER SOURCE

### Key Features

- ▣ Industry-leading gap-free tuning range
  - $\lambda \approx 5.4 - 12.8 \mu\text{m}$  ( $\Delta\nu > 1050 \text{ cm}^{-1}$ )
  - 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

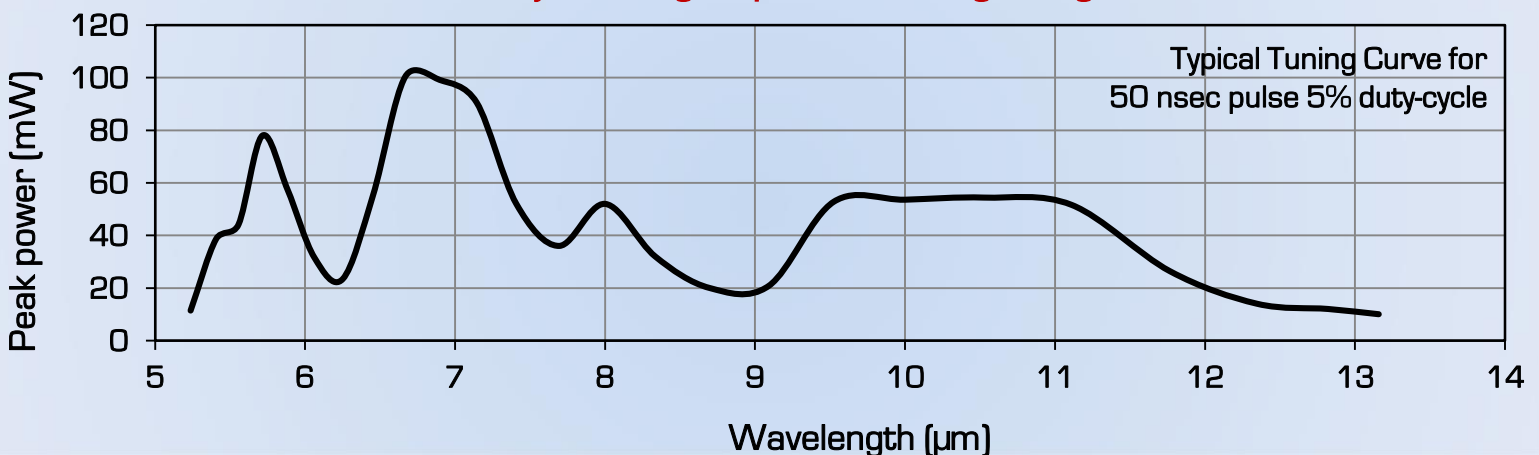
- ▣ Manual Control
- ▣ Programmable Step Tune
- ▣ Programmable Sweep Tune
- ▣ Arbitrary Step Tune



#### Settings

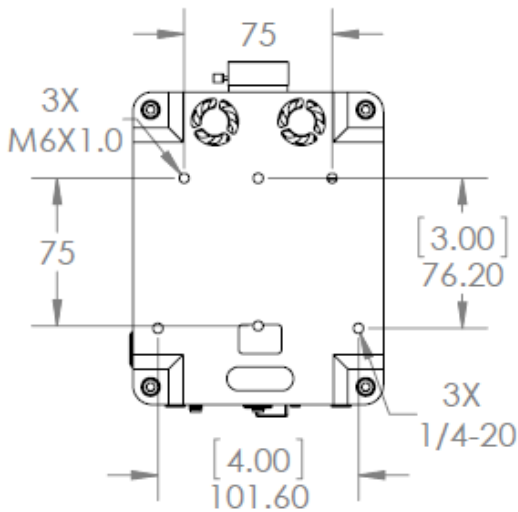
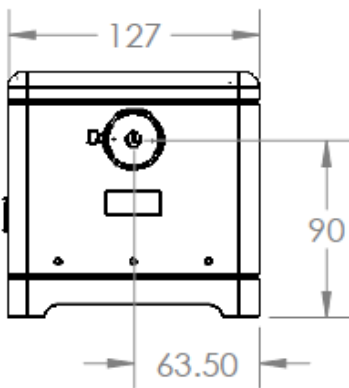
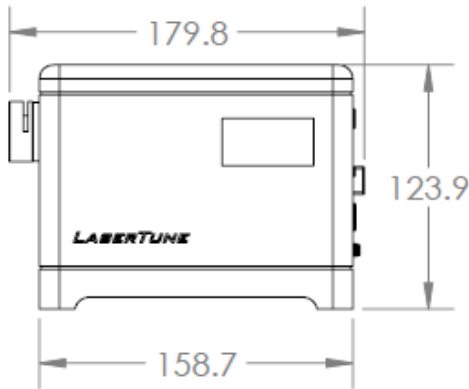
- ▣ Pulse Parameters
  - ▶ Width and period
- ▣ Triggering Selection
  - ▶ Internal and external trigger
  - ▶ External pulse control

### Industry-Leading Gap-Free Tuning Range



**Tunable Mid-IR Laser Source Specifications**

**Mechanical Interface & Dimensions**



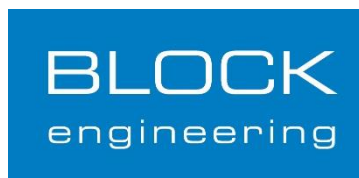
All dimensions in mm [inches]

<b>Gap-Free Tuning Range</b>	$\lambda \approx 5.4 - 12.8 \mu\text{m}$ ( $\Delta\nu > 1050 \text{ cm}^{-1}$ ) (typical) (system can be configured with up to 4 tuners)
<b>Spectral Linewidth</b>	2 $\text{cm}^{-1}$ (typical)
<b>Spectral Accuracy / Repeatability</b>	$< 2 \text{ cm}^{-1}$ / $< 0.5 \text{ cm}^{-1}$ (typical)*
<b>Maximum Peak Power</b>	Up to 150 mW depending on selected wavelength range **
<b>Average Power</b>	0.5 - 10 mW typical at 5% duty-cycle
<b>Power Stability</b>	$< 10\%$ pulse-to-pulse (typical)
<b>Pulse Width</b>	30 - 300 nsec <ul style="list-style-type: none"> <li>▫ continuously variable with External Pulse Control</li> <li>▫ 10-ns-resolution with Int. &amp; Ext. Triggering</li> </ul>
<b>Pulse Repetition Frequency</b>	Up to 3 MHz
<b>Maximum Duty Cycle (DC)</b>	2.5 - 15% (depending on pulse width, period, & tuner)
<b>Beam Quality</b>	Single spatial mode
<b>Beam Diameter</b>	2 x 4 mm, collimated output
<b>Beam Divergence</b>	$< 5 \text{ mrad}$
<b>Pointing Stability</b>	$< 1 \text{ mrad}$ over 99% of tuning range
<b>Polarization</b>	Vertically polarized, 100:1 extinction
<b>Tuning Modes</b>	Move Tune - manual control at one wavelength Step Tune - programmable linear steps Sweep Tune - variable sweep speed
<b>Step Tune Speed</b>	100 $\text{cm}^{-1}$ step in $< 15 \text{ msec}$
<b>Sweep Tune Speed</b>	Linear sweep up to 15 $\text{cm}^{-1}/\text{msec}$
<b>Computer Control</b>	Ethernet; HTML/SOAP interface
<b>Synchronous Pulse Control</b>	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
<b>Dimensions</b>	Approx. 6.25 x 5 x 4.9 inches → Volume = 2.6 liters
<b>Weight</b>	2 kg (4.5 lbs)
<b>Cooling</b>	Active cooling via fans
<b>Temperature Range (Operating / Storage)</b>	10 to 30 °C / -10 to 70 °C
<b>Electrical Power</b>	100 - 240 Volts (50/60 Hz) 2.5 Amp

\* At 25°C with temperature stabilization

\*\* Contact a sales representative to discuss power specifications in more detail.

Block Engineering  
 377 Simarano Drive  
 Marlborough, MA 01752



[www.blockeng.com](http://www.blockeng.com)

Main: 508.251.3100  
 Fax: 508.251.3171  
[info@blockeng.com](mailto:info@blockeng.com)