

## Model 1101-XX-LP-YYYY-EXT

### Low Duty Cycle Pulsed QCL System

#### Specifications



Model 1101-XX-LP-YYYY-EXT quantum cascade laser system is a low duty cycle pulsed QCL system designed for bench top use. Pulse shaping and power conditioning electronics are enclosed inside along with the hermetically sealed package that includes optics for collimating the output laser beam. The system requires no adjustments in the field and is designed to be stable over long periods of time when operating in a stable temperature environment. Model 1101-XX-LP-YYYY-EXT pulsed QCL system provides a fixed laser pulse width and a fixed pulse repetition frequency with internal trigger or a variable pulse repetition rate triggered by user supplied TTL-level trigger pulses. The pulse width and the internally triggered pulse repetition rate are preset at the factory at user specified values. Additionally, an optional switch selectable four different pulse widths between 50 and 200 nsec can be provided. In both the internally triggered as well as the externally triggered mode, a synch pulse is available for synchronizing user electronics.

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|----------------------------------|---|
| <b>Peak optical power (YYYY)</b> | <ul style="list-style-type: none"><li>• &gt; 1 W (wavelength dependent)</li></ul>   |
| <b>Mode of operation</b>         | <ul style="list-style-type: none"><li>• Pulsed, internally triggered at 1 kHz to 100 kHz (user specified and set at the factory)</li><li>• Pulsed, externally triggered at rates up to 100 kHz</li></ul>  |
| <b>Output pulse width</b>        | <ul style="list-style-type: none"><li>• 50 nsec to 200 nsec (user specified and set at the factory)</li><li>• Optional selectable fixed pulse widths (up to four values of customer's choice between 50 and 200 nsec, set at factory)</li></ul> |

- Pulse rise/fall times** • ~5 nsec (< 5 nsec optional)
- External trigger** • TTL input (rising edge synchronization), 50  $\Omega$
- Sync output** • Available in internal and external trigger modes
- Wavelength (XX)** • ~4.6  $\mu\text{m}$ , 8.2  $\mu\text{m}$ , 9.5  $\mu\text{m}$ 
  - Other wavelengths between 4.5  $\mu\text{m}$  and 12  $\mu\text{m}$  may be custom ordered
- Beam Divergence** • 3 mrad vertical
  - 2 mrad horizontal
- Beam quality** • Excellent
- Output beam** • Nearly collimated with a lens internal to the QCL package
- QCL package** • Hermetically sealed for high reliability in all environments
- Laser head size** • 8.6" (L) x 6" (W) x 2.5" (T)
- Laser head weight** • 3.5 lbs
- Power supply** • 24 V dc external (included)

All specifications are for room temperature ambient operation.

