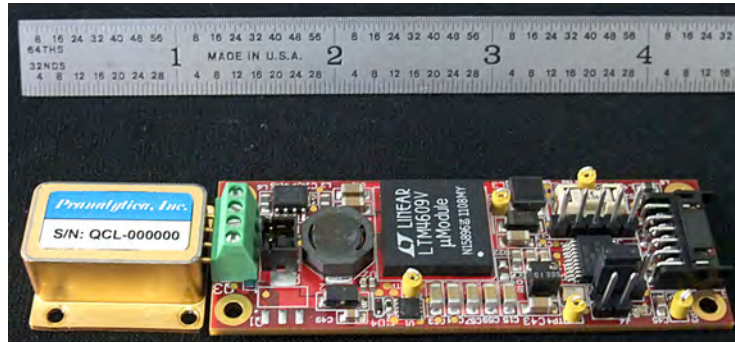




**Model 1101-XX-QCW-YYYY-UC-MicroPF**

**High Average Power Quasi-CW Quantum Cascade Laser Platform for OEM Applications**



Model 1101-XX-QCW-YYYY-UC-MicroPF quantum cascade laser (QCL) system is a high average power, pulsed source platform of infrared radiation for OEM applications in a miniature butterfly package and ultra small electronics driver board. At a wavelength of 4.6  $\mu\text{m}$ , the system produces in excess of 2 W of average power and at a wavelength of 4.0  $\mu\text{m}$ , the system produces in excess of 1 W of average power. Other wavelengths between 3.8  $\mu\text{m}$  and 12  $\mu\text{m}$  are also available. The passively cooled system is designed for OEM applications for incorporation into customers' platforms, and is virtually vibration-free. The system is self-contained and requires only an external DC power to operate. Pulse shaping and power conditioning electronics are on the PCB, with the hermetically sealed butterfly package that includes the QCL and related 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.



**1101-XX-QCW-YYYY-UC-MicroPF**

<b>Parameter</b>	<b>Specifications<sup>1</sup></b>
Average optical power (YYYY)	>3.0 W at 4.6 $\mu\text{m}$ , >2.0 W at 4.0 $\mu\text{m}$ , >1.2 W at 7.2 $\mu\text{m}$ , >1.0 W at 9.3 $\mu\text{m}$ and >2.0 W at 9.5 $\mu\text{m}$
Mode of operation	Quasi-CW, high duty cycle pulsed (factory-set)
Output	<ul style="list-style-type: none"><li>• Standard: ~ 200 ns – 500 ns pulses with ~ 1 MHz - 2.0 MHz repetition rate (~ 50% duty cycle)</li><li>• Optional (at extra cost): Variable pulse width from 20 ns to 200 ns; variable pulse repetition rate from 50 kHz to 2.5 MHz, variable duty cycle from 0.05 % to 50 %; variable pulse amplitude</li></ul>
Wavelength (XX)	<ul style="list-style-type: none"><li>• ~4.0 <math>\mu\text{m}</math>, ~4.6 <math>\mu\text{m}</math>, ~7.2 <math>\mu\text{m}</math>, ~8.5 <math>\mu\text{m}</math> and ~9.5 <math>\mu\text{m}</math></li><li>• Other wavelengths between 3.8 <math>\mu\text{m}</math> and 12 <math>\mu\text{m}</math> may be custom ordered</li></ul>
Beam Divergence	3 mrad vertical 3 mrad horizontal
Beam quality	Excellent (contact factory for details)
Output beam	Nearly collimated with a lens internal to the QCL package
QCL package	Hermetically sealed for high reliability in all environments
Platform size	4.25" (L) x 1" (W) x 0.5" (H)
Laser platform weight (including integrated electronics board)	50 g
Electrical requirements	12/24 V DC @ 1 A (model dependent)

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<sup>1</sup> All specifications are for room temperature ambient operation.