

**Pranalytica High Power Laser System Model 1101-46-EGC
External Grating Cavity CW/RT High Power QCL System**

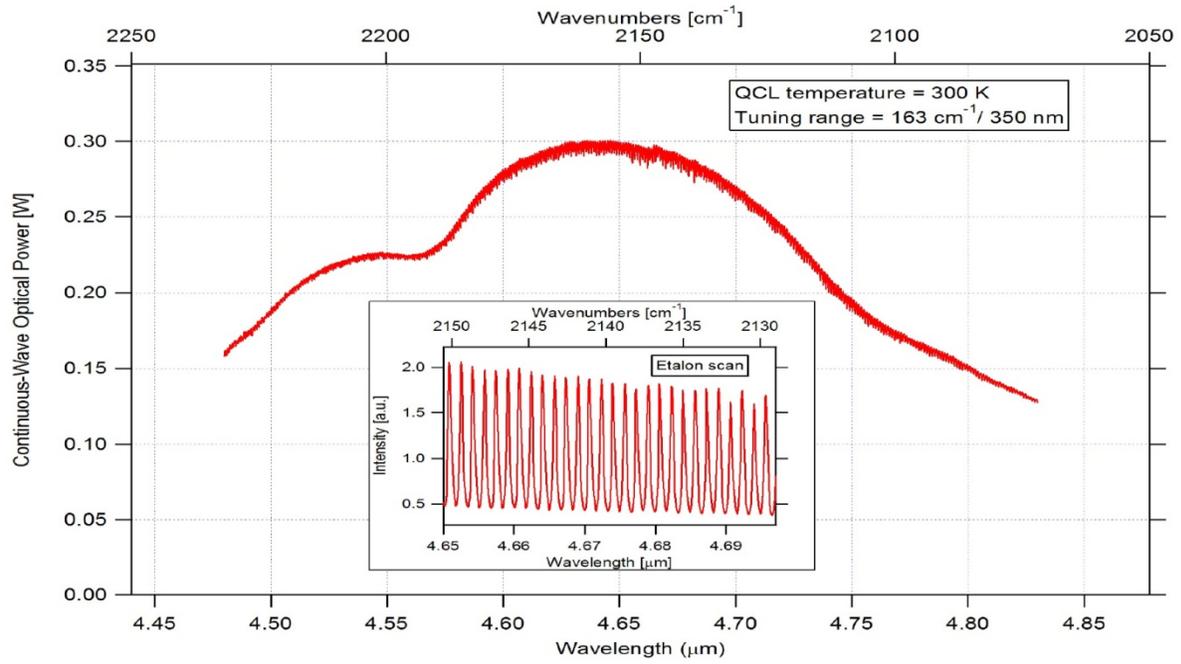
The Model 1101-46-EGC laser is a wavelength tunable external grating cavity quantum cascade laser, its thermoelectric cooler and collimating optics are located in the laser head that is sealed for trouble free operation in real environments. Model 1101-46-EGC is available as a complete system consisting of the laser head and matched power supply, ready to be turned on at the customer's location.

Packaged quantum cascade laser (laser head)

Operation	<ul style="list-style-type: none">• CW operation with the laser head at room temperature
Wavelength	<ul style="list-style-type: none">• Centered at ~ 4.6 μm
Output spectrum	<ul style="list-style-type: none">• Coarse tunable using the external grating control drive over ± 150 nm centered at ~ 4.6 μm• Fine tuning with frequency control of better than 40 MHz
Power output	<ul style="list-style-type: none">• Single frequency tunable power ≥ 200 mW over the entire tuning range; Maximum power > 300 mW at the center of the tuning range
Output linewidth	<ul style="list-style-type: none">• < 40 MHz when operated in CW mode
Output beam	<ul style="list-style-type: none">• Nearly collimated
Output beam quality	<ul style="list-style-type: none">• Nearly diffraction limited (please call for details)
CW operation	<ul style="list-style-type: none">• Model 1101-46-EGC is operated in true CW mode by applying +5V DC to the input connector (front panel)
Physical details	<ul style="list-style-type: none">• Size: 25 cm (W), 17 cm (H), 35 cm (D)• Weight: 10 kg

Laser controller

Laser supply	<ul style="list-style-type: none">• Provides the necessary laser drive current for the quantum cascade laser (factory adjusted to deliver the specified laser output power)
Temperature control	<ul style="list-style-type: none">• Provides the necessary drive current for the associated thermoelectric coolers (factory adjusted to provide the needed cooling at the optimum operating point)
Wavelength control	<ul style="list-style-type: none">• Using proprietary algorithms, provides all necessary internal signals for precisely setting and maintaining the desired wavelength• Front panel control of wavelength selection• Optional computer control of wavelength selection via USB
Modulation	<ul style="list-style-type: none">• Front panel input connector for modulation of the laser output from 1 kHz to 100 kHz (TTL input), limited by the power supply. The quantum cascade laser can be modulated at rates up to 1 GHz with special power supply.
Protection	<ul style="list-style-type: none">• Laser power supply is equipped with multiple levels of protection for trouble free operation of the QCL• Power supply has a 5 second startup delay time• Laser is activated by a separate switch
Physical details	<ul style="list-style-type: none">• Size: 28 cm (W), 18 cm (H), 37 cm (D)• Weight: 10 kg
Electrical details	<ul style="list-style-type: none">• 110/220 V, 4 A (max)• Optional modification available for operation from a single 28V DC source with somewhat lower power consumption



Tuning characteristics of Model 1101-46-EGC quantum cascade laser