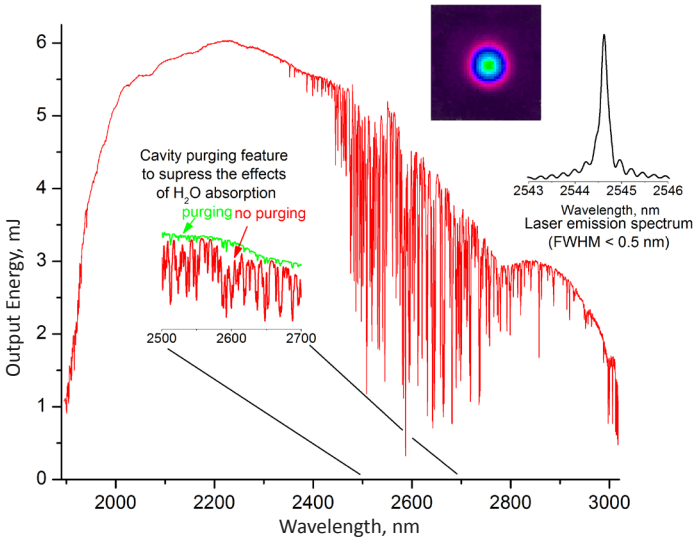
CL and CLT Series
Narrow-line Cr:ZnSe/S CW Lasers



Typical Tuning Curve of CLT-5 Laser

NEW PRODUCT

Fixed Frequency or Tunable
Air-cooled Optical Head

IPG Photonics offers CL and CLT Series Cr:ZnSe/S continuous wave Mid-IR fiber-bulk hybrid lasers. These lasers provide from 1 to 20 W average output power at a customer selected fixed wavelength (CL Series) or 0.2 to 10 W tunable output (CLT Series) in the range of 1.9 to 3.0 µm. CL and CLT lasers feature typical narrow linewidth of less than 0.5 nm. Standard and rapid tuning options are available. Rapidly tunable (swept) models allow scanning the entire tuning range with aquisition rate of up to 1000 spectra per second. These laser models are designed for characterizing broad spectral features such as absorption spectra of polymers.

These hybrid solid state lasers are pumped by IPG's efficient and reliable erbium or thulium CW fiber lasers. CL and CLT Series lasers are used in a range of applications including spectroscopy, Mid-IR OPO pumping, environmental monitoring, test and measurement, free space communications, industrial process control, medical applications and plastics materials processing.

Applications

- Spectroscopy
- OPO Pump Source
- Medical Applications
  - Skin Rejuvenation
  - Laser Scalpel
  - Dental Applications
- Environmental Monitoring
- Industrial Process Control
- Materials Processing
  - Plastic Cutting
  - Plastic Welding
  - Marking & Drilling

Features

- 1.9 - 3.0 µm Wavelength Range
- Record Output Power 20 W
- Rapid Tuning Option
- Fixed Frequency or Tunable
- Typical Narrow Linewidth < 0.5 nm
- TEM_{00} Output Beam Quality

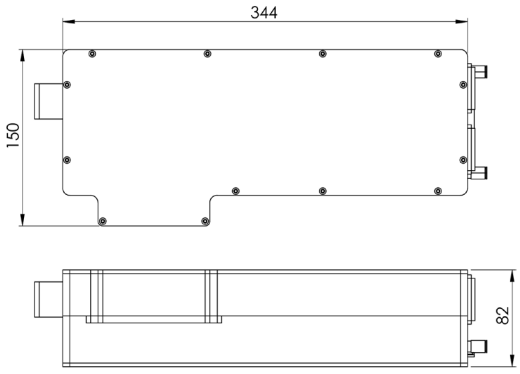
CL and CLT Series
Narrow-line Cr:ZnSe/S CW Lasers

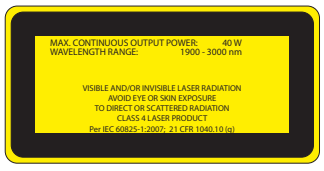
Optical Characteristics	CL	CLT
Mode of Operation	CW	
Central Wavelength, nm	customer selected in 1.9 - 3.0 μm range	tunable in 1.9 - 3.0 μm range
Spectral Linewidth, nm	0.1 - 2.0, typ. < 0.5	
Output Power*, W	1, 3, 5, 10, 15, 20	0.2, 0.5, 1, 3, 5, 10
Power Tunability, %	10 - 100	
Polarization	Random or Linear	Linear, Horizontal
Wave Tuning Option**	N/A	Standard or Rapid (swept) tuning mode
Beam Quality, M^2	< 1.2, typ. ≤ 1.1	
Beam Diameter** (FW, $1/e^2$), mm	1.5 ± 0.5	
Beam Divergence, mrad	0.1 - 1, typ, 0.5	
Warm up Time, min	5 from standby, 15 from cold start	

*Custom output powers are available upon request. Output power may be limited by wavelength selection.
**Beam diameter and beam divergence may be adjusted to meet customer specifications.

General Characteristics	
Pump Laser***	IPG Photonics ELR or TLR CW Fiber Laser
Pump Laser Dimensions (WxDxH), mm	448 x 403 x 132
Optical Head Dimensions (WxDxH), mm	150 x 344 x 82
Supply Voltage 50-60 Hz, VAC	110 - 240
Power Consumption, W	200 typ.

***Pump laser model depends on the combination of parameters





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