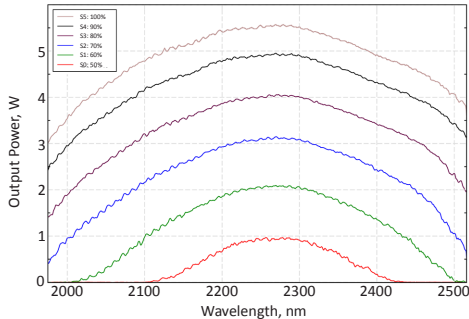
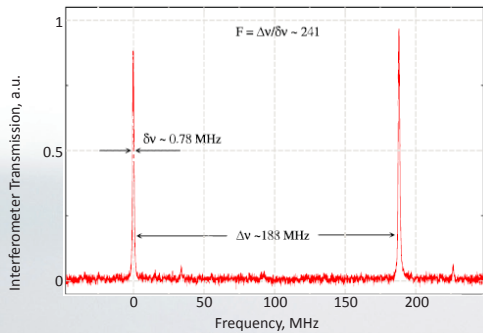


CL-SF & CLT-SF SERIES

Single-frequency Cr:ZnSe/S Lasers

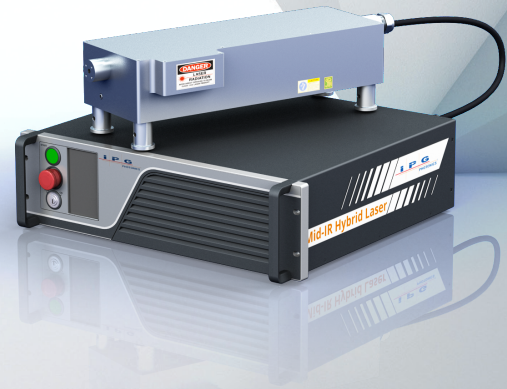


Output Power vs. Wavelength for Different Levels of Pump Power



Interferogram of CLT-SF Radiation Using High Resolution Ring Interferometer

Tuning Range 1.9-3.0 μm
Output Power up to >5 W



FEATURES

- ▶ Single Longitudinal Mode
- ▶ Tunable Wavelengths within 1.9 -2.6 μm
- ▶ Narrow Linewidth Operation
- ▶ Output Power up to 5 W
- ▶ Tunable Wavelength Range* up to 500 nm
- ▶ TEM₀₀ Output Beam Quality *
with a single set of optics



APPLICATIONS

- ▶ High Resolution Spectroscopy
- ▶ Free Space Communications
- ▶ Environmental Monitoring
- ▶ THz Generation by
Difference Frequency Mixing
- ▶ Mid-IR OPO Pump Source
- ▶ Frequency Comb Generation

IPG Photonics offers **single-frequency Cr:ZnSe/S** continuous wave Mid-IR lasers. These lasers are offered as either fixed wavelength CL-SF or tunable CLT-SF models. The tunable range is between 1.9-2.6 μm with a custom selected central wavelength. The lasers feature a linewidth range of <1 MHz and TEM₀₀ beam mode quality. The SF series Mid-IR lasers provide up to 5 W of output power. These lasers are pumped by IPG's efficient and reliable erbium (1.6 μm) or thulium (1.9 μm) CW fiber lasers. Single-frequency Cr:ZnSe/S lasers are used in scientific and R&D applications such as high resolution spectroscopy, OPO pumping and free space communications.

CL-SF & CLT-SF SERIES

Single-frequency Cr:ZnSe/S Lasers

Optical Characteristics	CL-SF	CLT-SF
Mode of Operation	CW	
Central Wavelength Tuning Range*, nm	Customer Selected in 1.9-3.0 μm	Tunable in 1.9-2.6 μm
Spectral Bandwidth, MHz	0.5-10, Typ. <1	
Output Power**, W	0.2-5, Typ. 3	
Polarization	Linear, Horizontal >100:1	
Beam Quality, M^2	<1.2, Typ. <1.1	
Beam Diameter*** (FW, $1/e^2$), mm	3 \pm 0.5	
Beam Divergence, mrad	0.2-0.5, Typ. 0.3	
Warm up Time, min	15 from Standby, 60 from Cold Start	

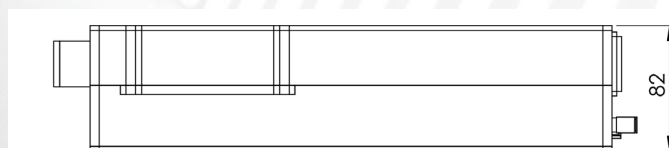
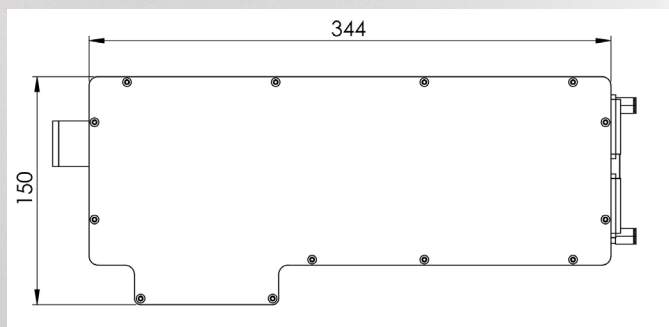
* 500 nm continuous tuning with a single set of optics. Wavelength tuning range depends on central wavelength. Rapid tuning option available.

** Custom output powers are available upon request.

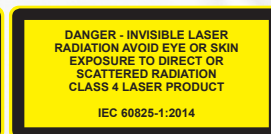
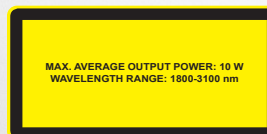
*** Beam diameter and beam divergence may be adjusted to meet customer specifications.

General Characteristics

Pump Laser	IPG Photonics ELR or TLR CW Fiber Laser
Pump Laser Dimensions (W x D x H), mm	448 x 403 x 132
Optical Head Dimensions (W x D x H), mm	150 x 345 x 87
Supply Voltage 50-60 Hz, VAC	165 x 505 x 122
Supply Voltage 50-60 Hz, VAC	110-240
Power Consumption, W	200 Typ.



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