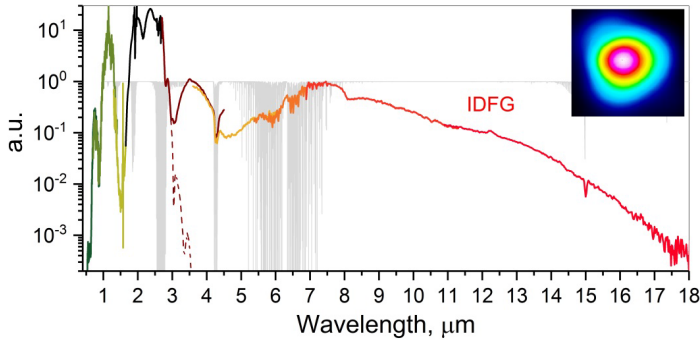


# CLPF-2500-SC IDFG SERIES

## Femtosecond Ultrabroadband Vis-to-IR Source



Typical Emission Spectra



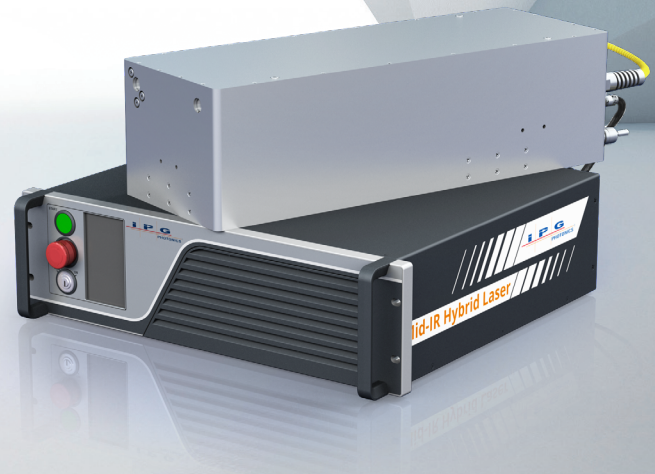
### FEATURES

- ▶ High Spatial Coherence
- ▶ High Brightness
- ▶ Beam Quality  $M^2 < 1.5$
- ▶ TEM<sub>00</sub>
- ▶ Power and Energy Amplifiers
- ▶ DFG Wavelength Extension
- ▶ High Optical Power (up to):
  - Near-IR – 0.2 W
  - MIR – 4 W
  - LWIR – 10 mW
- ▶ Fully Stabilized Frequency Comb Option



### APPLICATIONS

- ▶ FTIR Spectroscopy
- ▶ Dual Comb Spectroscopy
- ▶ Multi-photon Imaging
- ▶ Metrology
- ▶ Biomedical Applications
- ▶ High-harmonic Generation
- ▶ Mid-IR Frequency Combs
- ▶ Supercontinuum Generation



IPG Photonics introduces an important addition to the family of middle-IR femtosecond lasers. NEW CLPF oscillators/amplifiers in combination with the supercontinuum spectral extension module (**CLPF-2500-SC Series**) provide access to the whole Vis-to-IR spectral range (400 nm to 18  $\mu\text{m}$ ) with record-breaking Watt-level average power.

As an option, CLPF-2500-SC series can be converted to CLPF-2500-FC optical frequency comb with the addition of pulse repetition frequency and carrier envelope offset frequency stabilization (complete kit available). Optical lock to a stabilized 1064 nm laser and automated pulse repetition frequency tuning are offered as options for dual comb spectroscopy applications.

Please discuss your needs with an IPG Photonics representative.

# CLPF-2500-SC IDFG SERIES

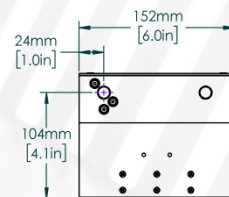
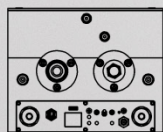
## Femtosecond Ultrabroadband Vis-to-IR Source

| Optical Characteristics         | CLPF-2500-FC IDFG |
|---------------------------------|-------------------|
| Central Wavelength, nm          | 2500              |
| Spectral Bandwidth (-20 dB), nm | 13000             |
| Average Power, W                | 2                 |
| Pulse Energy, nJ                | 25                |
| Repetition Rate*, MHz           | 80                |
| Typ. Pulse Duration, fs         | 24                |
| Long Term Power Stability**, %  | 1                 |
| Polarization                    | Linear, >100:1    |
| Output Beam Mode, M2            | ≤1.5              |
| Beam Diameter (FW, 1/e2), mm    | 1.5 ±0.5          |
| Beam Divergence, mrad           | <0.5              |
| Warm up Time, min               | 15-60             |

\* Custom repetition rates are available upon request.  
 \*\* After 1 hour warm up, over 2 hours, ambient T ±2°C

### General Characteristics

|   |                                     |
|---|-------------------------------------|
| Integrated Pump Laser                   | IPG Photonics Erbium CW Fiber Laser |
| Pump Laser Dimensions (W × D × H), mm   | 448 × 403 × 132                     |
| Optical Head Dimensions (W × D × H), mm | 152 × 433 × 122                     |
| Supply Voltage 50-60 Hz, VAC            | 110-240                             |
| Power Consumption, W                    | 200 Typ.                            |



[www.ipgphotonics.com](http://www.ipgphotonics.com)

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MAX. AVERAGE OUTPUT POWER: 40 W  
 MAX. PEAK OUTPUT POWER: 1 GW  
 PULSE DURATION: 30 fs  
 PULSE REPETITION RATE: <500 kHz  
 WAVELENGTH RANGE: 2000-2700 nm

**DANGER - INVISIBLE LASER**  
 RADIATION AVOID EYE OR SKIN  
 EXPOSURE TO DIRECT OR  
 SCATTERED RADIATION  
 CLASS 4 LASER PRODUCT

IEC 60825-1:2014