



# TLM-50/500-QCW

## Quasi-CW Thulium Fiber Laser



### Applications

- ▶ Scientific, Industrial and Medical Applications
- ▶ Welding of Transparent Polymers
- ▶ Mid-IR Solid State Laser Pumping
- ▶ Open and Endoscopic Surgery in Urology
- ▶ Lithotripsy and Percutaneous Urinary Lithotripsy
- ▶ General Surgery



### Features

- ▶ Wavelength 1.94  $\mu\text{m}$
- ▶ Maximum Peak Power 500 W
- ▶ Pulse Energy up to 5 J
- ▶ Pulse Duration 0.2-50 ms
- ▶ Maximum Average Power 50 W
- ▶ Single-mode or Multi-mode Beam Quality

**TLM-50/500-QCW** Thulium quasi-cw fiber lasers provide up to 5 mJ per millisecond pulses at 1.94  $\mu\text{m}$  wavelength at pulse repetition rates up to 2.5 kHz. Customer can select beam mode quality optimal for the application from single-mode to multi-mode. These compact energy efficient and reliable lasers are used in a diverse range of industrial, scientific and medical applications including laser pumping, welding of transparent polymers and a variety of surgical applications such as open, laparoscopic and endoscopic inclusion, excision, resection, ablation, vaporization, coagulation and hemostasis of soft tissue in urology, urinary lithotripsy and general surgery. Special models for integration into OEM medical equipment are available.

# TLM-50/500-QCW

## Quasi-CW Thulium Fiber Laser

### Optical Characteristics

Wavelength*, nm	1943; typ. 1880 min., 2100 max.
Emission Bandwidth FWHM, nm	<2
Mode of Operation	Pulsed/CW
Pulse Repetition Rate, kHz	Single Pulse to 2.5
Max. Average Power, W	50
Max. Peak Power, W	500
Max. Pulse Energy, J	5
Pulse Duration, ms	0.2-50
Power Tunability, %	10-100
Power Stability**, %	±1
Output Fiber Core	Single-mode or 50, 100, 200 μm diameter
Single-mode Beam Quality, M <sup>2</sup>	<1.05
Multi-mode Beam Parameter Product, mm × mrad	2.5 @ 50 μm, 5 @ 100 μm, 10 @ 200 μm

\* Other wavelengths in the specified range are available upon request.

\*\* Over 4 hours

### General Characteristics

Dimensions*** (W × D × H), mm	336 × 435 × 148
Weight, kg	<25
Cooling	Air-cooled
Supply Voltage, VDC	48
Power Consumption, W	700

\*\*\* Special TLM-QCW modules for medical integration and TLR-QCW rack-mounted units are available upon request. Please contact IPG for more details.

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MAX. AVERAGE OUTPUT POWER: 100 W  
 MAX. PEAK OUTPUT POWER: 1000 W  
 PULSE DURATION: 0.2-50 ms  
 PULSE REPETITION RATE: 0-2.5 kHz  
 WAVELENGTH RANGE: 1800-2200 nm

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

IEC 60825-1:2014

**The Power to Transform®**