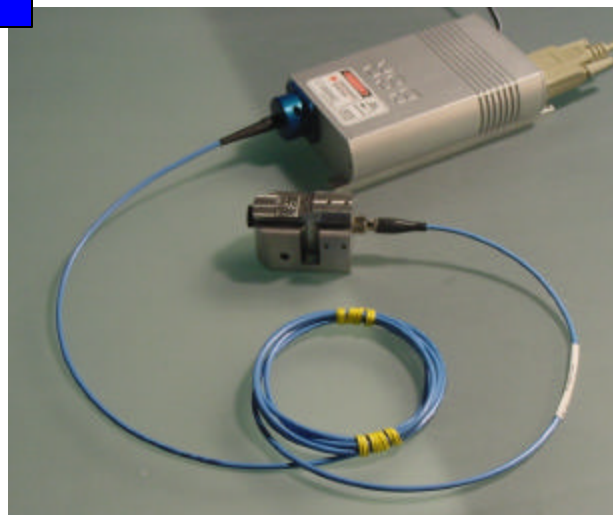


# FiberTec 488™

## 488nm Fiber-Coupled Laser Module 20mW variable power output With Integrated Drive, Stabilization & Control Electronics



### Performance

The Blue Sky Research FiberTEC 488™ laser features a high output power 488nm frequency-doubled laser coupled into polarization-maintaining fiber. The module includes a unique tap/collimator on the fiber output that delivers exceptional beam quality and provides feedback for power stability. The FiberTEC488™ also includes a thermoelectric cooler (TEC) and integrated drive, control, monitor, and protection electronics in a compact 145mm x 81mm x 34mm package. Standard performance features include variable power control, sleep mode, automatic power stability, a high pump current alarm, and 5V DC operation.

The FiberTEC 488™ laser module offers distinct advantages over traditional Argon 488nm laser sources. Fiber coupling optimizes beam-pointing stability, improves optical beam quality to a near perfect Gaussian ( $M^2 < 1.15$ ), and provides the flexibility of remote laser beam delivery. The FiberTEC 488™ utilizes solid state, energy efficient components and requires less than 3W of operating power at 25° C. No external power conditioning, fans or external cooling systems are required. A DB9 port allows users to remotely operate and control the laser.

### Features

- \* Variable power, from 1 to 20mW
- \* Drive and sleep mode electronics
- \* 3W power consumption, Typical
- \* No fans or external coolers required
- \* 20mW of Fiber Coupled 488nm power
- \* APC circuit for stability <2%
- \* Less than 0.3 % Optical Noise
- \* 0.7mm beam Tap/Collimator Included

### Applications

- \* Printing
- \* Flow Cytometry
- \* Inspection & Metrology
- \* DNA sequencing
- \* Basic R&D
- \* Confocal Microscopy

#### Contact Information:

BLUE Sky Research \* 1537 Centre Pointe Drive \* Milpitas, CA 95035 \* (408) 941-6068 \* FAX (408) 941 - 6069  
[www.blueskyresearch.com](http://www.blueskyresearch.com) \* email: Sales @blueskyresearch.com

# FiberTEC 488™

## Product Specifications\*

### Optical Characteristics

Parameter	Specification
Wavelength (center)	488 +/- 0.3 nm
FWHM	< 0.15 nm
Output Power (including tap/collimator)	22mW typ., 10, 15 or 20mW min.
Noise (RMS), 20Hz – 2 MHz, 20mW	< 0.3%
Noise (RMS), 20Hz-20 MHz, 20mW	<1%
Power Stability (2 hrs, +/-3C, Rated Pwr)	< 2.0%
Power Stability (15-35C, Rated Pwr)	<5.0%
Power Variability	20% to Full Power
Spectral Blocking	> 50 dB @ 500nm

### Beam Characteristics

Parameter	Specification
Beam Diameter (At exit aperture, 1/e <sup>2</sup> )	0.7 mm typical
Circularity	0.95 - 1.05
Bore site Accuracy of collimator	+/- 5 mrad
Beam Divergence	< 1 mrad
Polarization	100:1, vertical to tap/collimator
M2 Value	<1.15
Beam Pointing Stability (8hrs, 25° C)	< 10 µrad
Beam Pointing Stability vs. Temp	< 5 µrad/°C

### Electrical Specifications

Parameter	Specification
Input Voltage	5Vdc (+/- 10%)
Power Consumption	≤ 3W (At 25° C), 15W max

### Environmental Specifications

Parameter	Specification
Storage Temperature	-20° C to + 60° C
Operating Temperature	10° C to 40° C
Operating Humidity Range	90 % (Non-Condensing)

### Mechanical Specifications

Parameter	Specification
FTEC488 Laser Head	145mm x 81mm x 34mm
Tap/Collimator Unit	55mm x 35mm x 34mm
APC Controller Box	102mm x 73mm x 62mm

\* Unless noted, performance is tested with tap/collimator and the automatic power control circuit.

Contact Information:

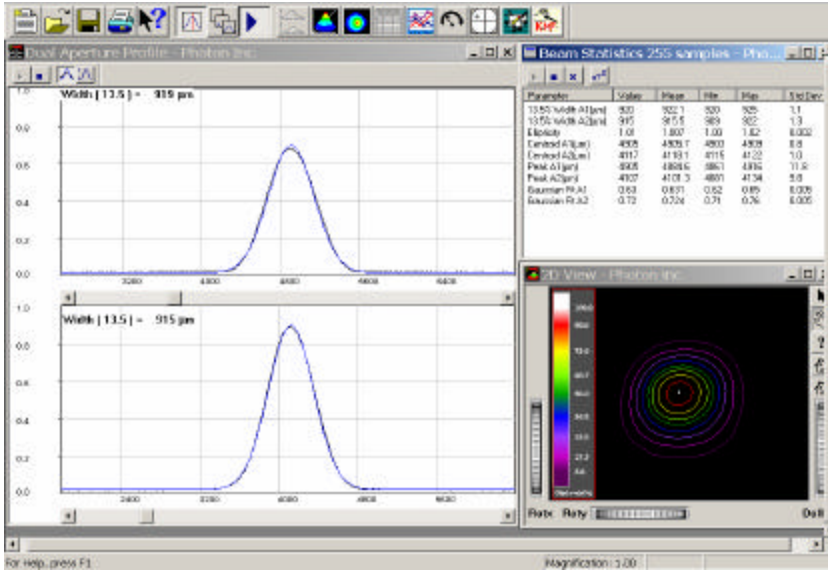
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FiberTEC 488™ Rev. 12/04



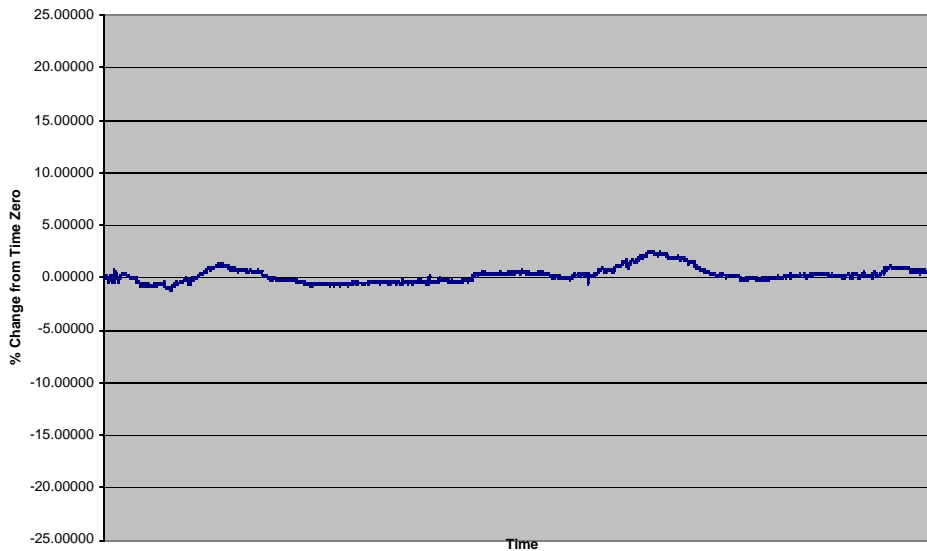
# FiberTEC 488™

## TYPICAL BEAM PROFILE



## TYPICAL POWER STABILITY

Power Stability vs. Time FTEC488  
Pk-Pk < 4% for 48 Hours



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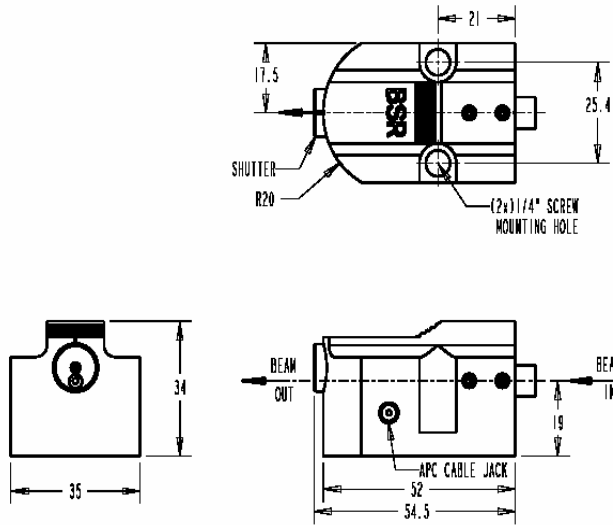
FiberTEC 488™ Rev. 12/04



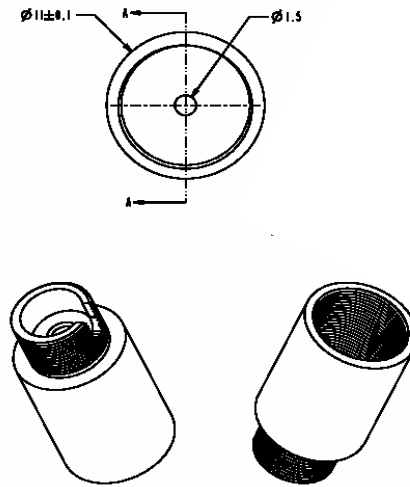


# FiberTEC 488™

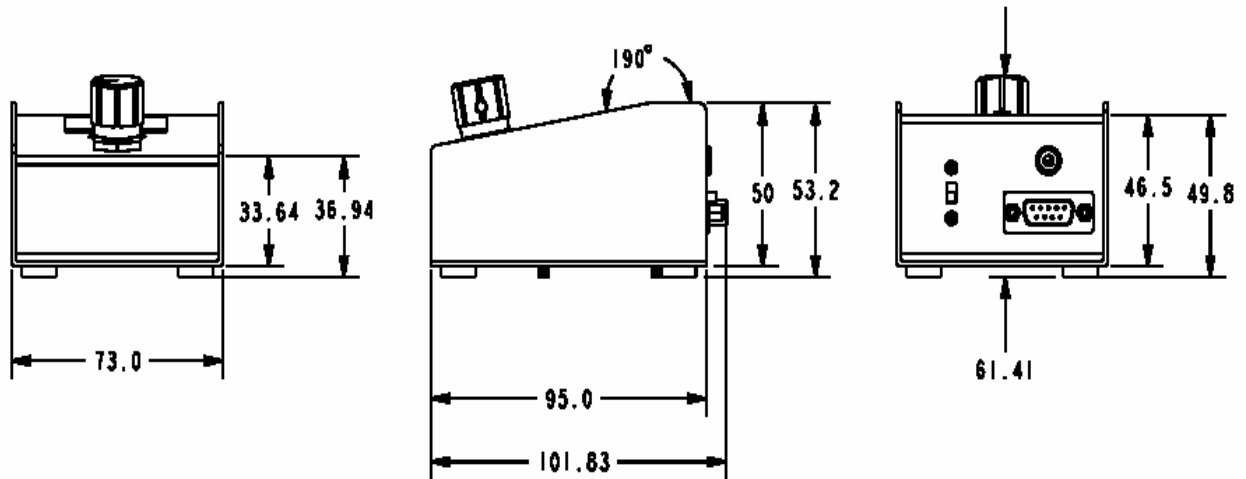
## Tap/Collimator Unit



## Fiber Collimator (Length=20.5mm)



## APC Controller Box



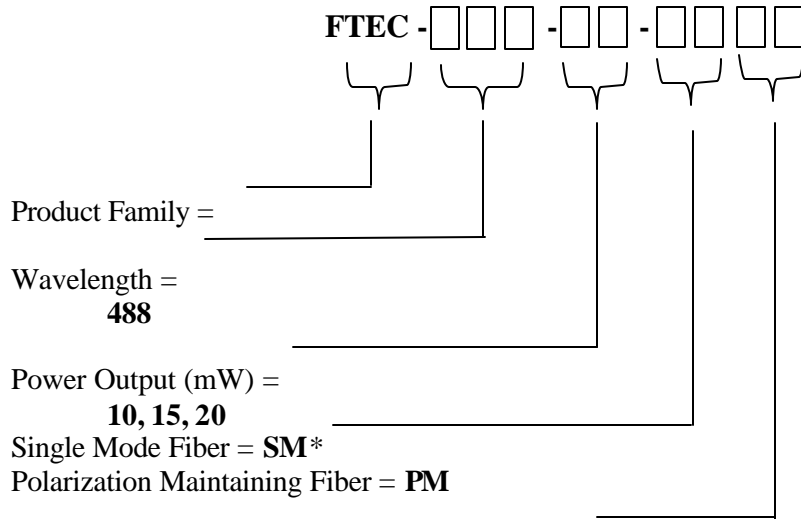
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# FiberTEC 488™

## ORDERING INFORMATION



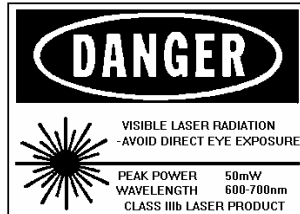
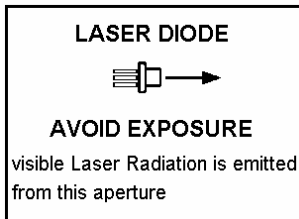
**00** = Standard Package includes Laser Head, and Tap/Collimator Unit  
**CP** = Collimator Package includes Laser Head and Cylindrical Fiber Collimator only  
**NC** = No collimator, FC/PC connector on the fiber

### OPTIONS:

**CB-APC** = Controller Box for Automatic Power Control  
**CB – FR0** = Controller Box for Free-Run Mode (Only for “CP” and “NC” models)

Example: FTEC-488-20-PM00 is a FiberTEC, 488nm, 20mW output power, polarization maintaining fiber, and the tap/collimator unit.

\* SMF is not available with the Standard Package



This component does not comply with the Federal Regulations (21 CFR Subchapter1) as administered by the Center for Devices and Radiological health. Purchaser acknowledges that his/her products must comply with these regulations before they can be sold to a customer. The output light from laser diodes is harmful to a human body even if it is invisible. Avoid looking at the output light of a FTEC488 directly, or even indirectly through a lens during operation. Observance of operation should be through a TV camera or related equipment. Refer to IEC 825-1 and 21 CFR 1040.10-1040.11 as a radiation safety standard for laser products. Blue Sky Research follows a policy of continuous improvement. Specifications are subject to change without notice.

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