

▼ CHAPTERS

Laser Scanning
MicroscopyMicroscopy
ComponentsOCT Imaging
Systems

OCT Components

Adaptive Optics

▼ SECTIONS

Microscopy Stages

ScienceDesk

LEDs

Light Sources

Objectives/Scan
LensesDispersion
Compensating MirrorsFluorescence
Imaging Filters

Filter Cubes

Scanning Mirrors

PMT Modules

Microscope Adapters

Cuvette Holder

FiberPorts

Test Targets/Reticles

T-Scopes

Focus Blocks

Pinhole Wheel

TEC-Cooled, Benchtop, Fiber-Coupled Laser Diode Sources

The S3FC Series of Fiber-Coupled Laser Sources feature an integrated TEC element that is used to stabilize the temperature of a Fabry-Perot laser diode, which in turn stabilizes the output power and wavelength of the laser diode for a given drive current. The Fabry-Perot laser diode inside each unit is pigtailed to a single mode fiber that is terminated at an FC/PC bulkhead connector (wide 2.1 mm key compatible) on the front panel.

The back panel includes an input that allows the laser diode drive current to be controlled via an external voltage source and a remote interlock input. All of our fiber-pigtailed lasers utilize an angled fiber ferrule at the internal laser/fiber launch point to minimize reflections back into the laser diode, thereby increasing the stability of the laser diode's output.

Features

- Standard Available Wavelengths: 405, 473, and 488 nm
- Thermoelectric Temperature Stabilization
- Low Noise, Stable Output
- Adjustable Temperature Setpoint: 20 to 30 °C
- Adjustable Power (0 to Full Power)



S3FC405
Actively Stabilized
Power and Temperature

VISIBLE LASER RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3B LASER PRODUCT
400-800 nm <500 mW
IEC 60825-1 EDITION 1.2 2001-08

ITEM #	S3FC405	S3FC473	S3FC488
Center Wavelength	405 nm	473 nm	488 nm
Wavelength Range	395 – 415 nm	468 – 478 nm	483 – 488 nm
Output Power (Min)	>1 mW	>5 mW	>5 mW

Specifications

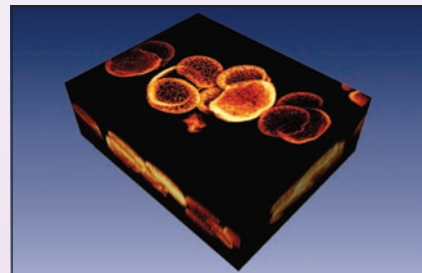
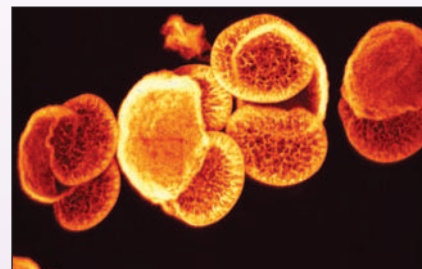
- **Power Stability**
15 min: ± 0.05 dB, 24 hrs: ± 0.1 dB
(After 1 hr Warm-Up at 25 ± 10 °C Ambient)
- **Display Accuracy (mW):** $\pm 10\%$ of Actual
- **TEC Stability*:** ± 0.005 °C
- **TEC Setpoint Accuracy:** ± 0.25 °C
- **TEC Adjustment Range:** 20 to 30 °C
- **Modulation Input**
0 – 5 V = 0 - Full Power, DC or Sine Wave Input Only
- **Modulation Bandwidth**
 - 5 kHz Full Depth of Modulation
 - 30 kHz Small Signal Modulation

*Variation from the setpoint temperature for a 1 °C change in ambient temperature

Due to the variation in pricing for these laser diodes, which changes frequently, please see www.thorlabs.com or call for current pricing.

Confocal Imaging at 405 nm

Below are pseudo-colored 2D projection and 3D confocal fluorescent images of pollen grains taken with the CLS Imaging System. Pollen grains were excited with 405 nm light, and the emission signal was selected using a dichroic mirror with a cutoff wavelength of 505 ± 15 nm. Stacks of optically sectioned images were recombined in post-processing to recreate 3D volume images of the grains.



(Image Size: 150 μ m x 110 μ m, Z-Scan Depth: 80 μ m)

Benchtop Laser Sources, SM Fiber

ITEM #	\$	£	€	RMB	DESCRIPTION**
S3FC405	CALL	CALL	CALL	CALL	FC/PC Fiber-Coupled Laser Source, 405 nm, 1 mW, Class 3B
S3FC473	CALL	CALL	CALL	CALL	FC/PC Fiber-Coupled Laser Source, 473 nm, 5 mW, Class 3
S3FC488	CALL	CALL	CALL	CALL	FC/PC Fiber-Coupled Laser Source, 488 nm, 5 mW, Class 3B

*Nominal wavelength, actual wavelength may vary by ± 15 nm

**Minimum power available at the output connector, the actual power may be greater