



Total Internal Reflection Fluorescence Accessories for Fluorometers



TIRF Flow System Accessory TA1004 for Fluorescence Spectrophotometers

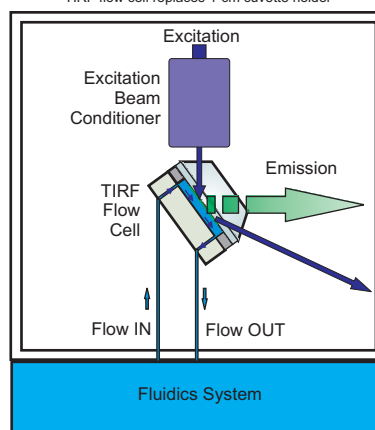
TIRF Labs offers TIRF Flow System TA1004 as an accessory assembled on a sample compartment insert of a fluorometer of your choice. We support virtually all fluorometers. TA1004 system is supplied as a factory aligned accessory, which replaces standard 1-cm cuvette holder. It takes no time to install/uninstall TA1004 system. TIRF employs the phenomena of total internal reflection, which provides sub-micron surface selectivity. Only fluorophores that are located at the surface or in close proximity (~200 nm) to the surface are excited and fluoresce. TIRF does not excite the bulk of solution, thus efficiently reduces the background, which allows for super-sensitive detection. TIRF has become a method of choice for single molecule studies. No other technique exists that can monitor fluorescence lifetime, polarization, anisotropy decay, quenching, resonance energy transfer (FRET), recovery after photobleaching (FRAP), and correlation spectroscopy (FCS) in real-time. TIRF flow system TA1004 can be driven by gravity flow, which is always by hand, or can be interfaced with our digital fluidics SmartFlow TF1005, which transforms your fluorometer into a computer-controlled TIRF biosensor instrument. Electrochemical, dielectrophoretic, and temperature control are available as options for TA1004 system. Chemically modified and bio-functionalized TIRF slides with reactive amine, epoxy, and other groups, biotinylated, and streptavidin-coated TIRF slides, and reagent kits for surface immobilization of biomolecules are available as consumables. TIRF Application Notes and PDF reprints of our customers who used TA1004 system for their studies are posted here: www.trf-labs.com/applications.html.

- Transform your fluorometer into a super-sensitive TIRF biosensor
- Install/uninstall TIRF accessory in less than one minute
- Analyze sub-microliter amounts of solutions using low-volume fluidics
- Employ TIRF in combination with electrochemical, dielectrophoretic, and temperature control

Supported Fluorescence Spectrophotometers:

Horiba-JY Fluorolog and Fluoromax
PTI, ISS, Varian Eclipse, SLM AB-2,
SLM 4800, 8100, Shimadzu, Hitachi,
and others...

Schematics of TIRF Accessory for Fluorometers
TIRF flow cell replaces 1-cm cuvette holder



TIRF Applications include:

Analysis of biomolecular interactions
Monitoring real-time kinetics
Determination of k-on and k-off rate constants
Studies of protein-protein, protein-DNA interactions, and DNA hybridization
Studies of surface supported membranes
Nanoengineering. Drug screening
Lead optimization. Bioassay development, and more ...

TIRF Microscopy
TIRF Spectroscopy
TIRF Electrochemistry



TIRF Labs
Total Internal Reflection Fluorescence

Fluorescence Illuminators



- UV, Visible, Near IR: LEDs, lasers, Xe- and Hg-arc lamp light sources
- Optical power: 10 mW - 3,000 mW
- LEDs: 350, 405, 455, 470, 505, 530, 627, 800, 830, 1270, 1300 nm
- Lasers 355, 375, 405, 450, 473, 532, 635, 650, 670, 805, 1064 nm
- Fiber-coupled and Free-beam. Optical adapters for microscopes
- Manually adjustable optical power 0-100%
- TTL, USB, Wi-Fi, BlueTooth com ports, embedded processors



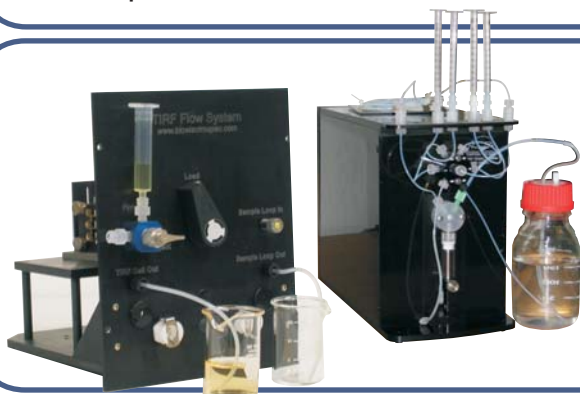
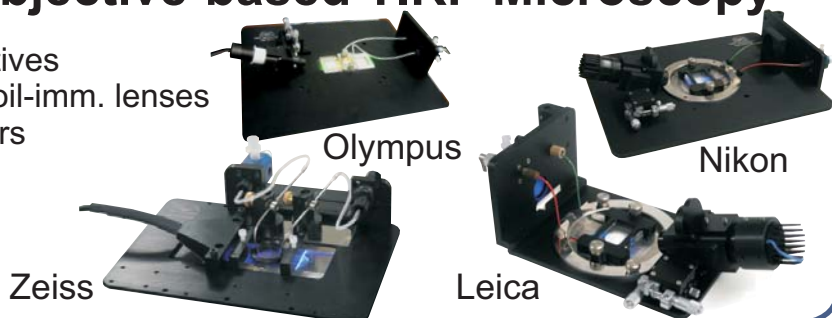
Turnkey Single Molecule Detection TIRF Microscopy System

Modular TIRF systems include:

- Fluorescence microscope
- Ig-, p-, or/and o-TIRF microscopy flow systems
- Low light EM CCD camera
- Multi-color computer-controlled illuminator
- Computer-controlled fluidics system
- Potentiostat and/or wave-function generator
- Software for instrument control and data analysis

Lightguide-, Prism-, and Objective-based TIRF Microscopy

- Use YOUR microscope and YOUR objectives
- Ig- and p-TIRF work with dry, water-, and oil-imm. lenses
- Use Xenon lamp, LED, or laser illuminators
- Open perfusion or closed flow chambers
- Install/uninstall in less than one minute
- Optional electrochemical control and computer-controlled fluidics



TIRF Accessories for Fluorometers

- **TIRF Accessory** transforms your spectrofluorometer into a super-sensitive TIRF biosensor instrument
- Optional electrochemical, DEP and temperature control
- **SmartFlow** Fluidic System allows to run unattended TIRF experiments, measure sensograms to derive k_{on} and k_{off}
- Novel microfluidics allows for handling nanoliter volumes



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