



## 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 digital fluidics SmartFlow TF1005, which transforms your fluorometer to 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. See TIRF Application Notes and request PDF reprints of our customers' articles who used TA1004 system for their studies.

- 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...



Computer-controlled fluidics SmartFlow TF1005

**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 ...