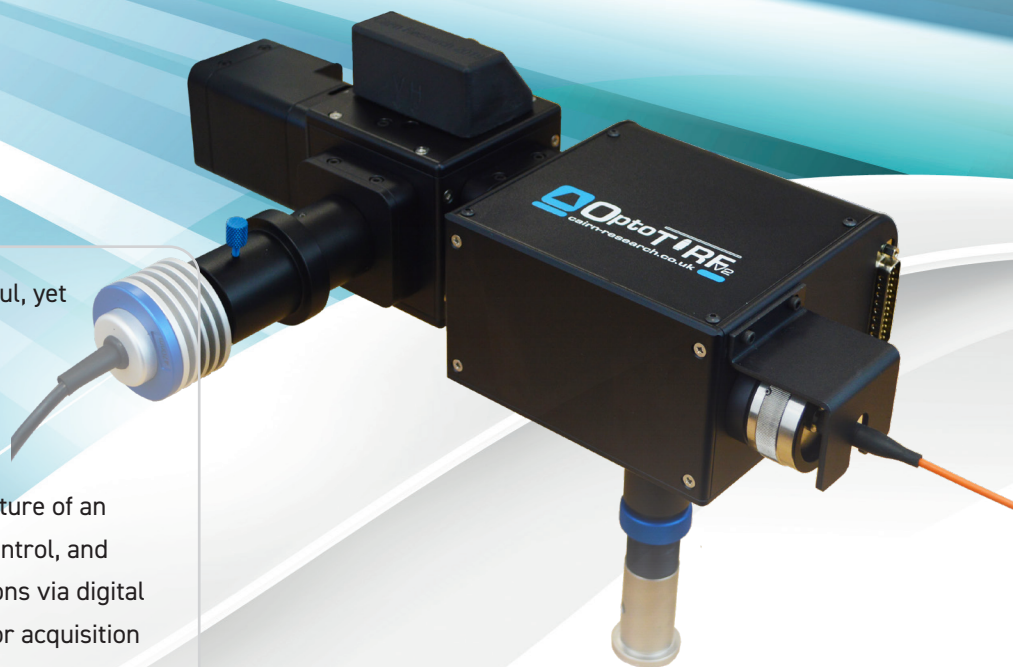


# OPTOTIRF V2

DATASHEET

## Affordable Motorised Total Internal Reflection Fluorescence and Widefield Illumination

The OptoTIRF V2 is a compact and powerful, yet inexpensive, stepper-motor-controlled TIRF illuminator designed to fit onto any research-grade inverted microscope. It allows a single or multimode laser spot to be focussed anywhere in the back-aperture of an objective lens with joystick or software control, and simple storage and recall of preset positions via digital or COM interface. This makes it suitable for acquisition protocols involving TIRF and / or oblique illumination at a range of penetrations depths and wavelengths. Although it lacks the fast scanning functionality of the Gataca iLAS (which we are also proud to distribute), the 360 degree stepper-motor-control does allow the user to illuminate from multiple points during an experiment, making it straightforward to tweak the illumination to the sample and minimise fringes or shading gradients. Field uniformity is further enhanced by a dither function that helps to avoid the artefacts associated with point TIRF. Flexibility is enhanced by a motorised bypass port, for widefield illumination using LEDs or a liquid light guide, or, for the addition of a second TIRF module for truly simultaneous dual-colour imaging.

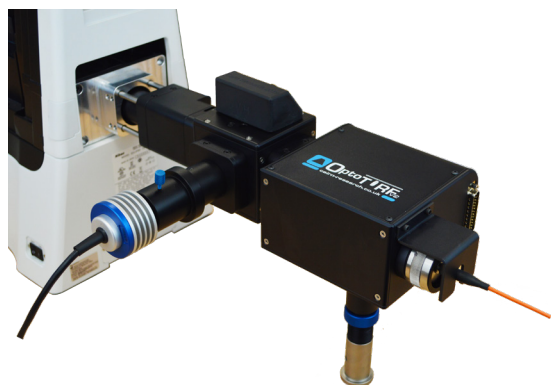


### APPLICATIONS

- Single molecule localisation & tracking
- Kinetic studies of single molecule interactions (i.e. ligand binding, protein: protein and protein: DNA interactions)
- Kinetic studies of proteins (i.e. actin filaments & microtubules)
- Super-resolution techniques (i.e. PALM/STORM) for subdiffraction localisation of single molecules
- Low-cost, open source EasySTORM

### KEY BENEFITS

- Compact modular system for easy integration with other modalities onto any inverted microscope base
- Motorised movement of illumination spot for optimised point TIRF oblique illumination
- Joystick or software control – simple COM commands or digital control will work with any imaging software
- Motorised widefield bypass mode
- Accommodates singlemode or (small) multimode fibre input for use with Cairn or third-party laser sources
- Integrated variable field stop with X\_Y alignment
- Simple optical path suitable for adaptation for custom requirements
- Affordable upgrade for existing frames or laser sources
- Modular collimator allows quick and easy optimisation for field flatness or power density



# ILLUMINATION SYSTEMS

## INTENSITY, STABILITY AND FLEXIBILITY

DATASHEET



### MultiLine LaserBank

Modular and versatile laser launch system allows for use of up to six solid-state lasers from multiple manufacturers. Ideal for TIRF, spinning disk confocal, FRAP and optogenetic applications or any combination of these with multiple outlets via single or multi-mode fibres. Provides the convenience of a custom, turnkey system.



### TriLine Laser Bank

The TriLine shares much of the modularity and flexibility of the MultiLine, but in a simpler and more compact package (up to 3 lasers). The design offers the flexibility to configure output ports via single or multi-mode fibres (or free space on request) for TIRF, FRAP, photolysis, spinning disk confocal, optogenetics and other research applications.



### Aura Pro

Easy to use and affordable LED transmitted light source for phase imaging on a variety of inverted microscopes. Supports PhL, Ph1 and Ph2 phase objectives, or can be used as a standard brightfield transmitted light source. Triggerable, with an extended working distance ideal for use with micromanipulators.



### OptoLED

The OptoLED is our flagship system for LED illumination. Dual channel LED controller with ultra-high stability and "instantaneous" (sub-microsecond) vibration-free TTL switching and analogue intensity modulation.



### MonoLED

Compact and affordable single LED white light illuminator for brightfield, phase contrast or DIC imaging, available with a wide range of microscope adapters. Convenient for any application requiring a simple LED illuminator.



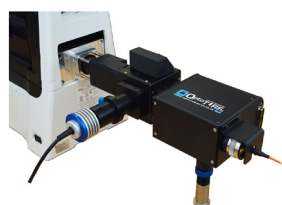
### OptoScan

The only monochromator that provides submillisecond control of both centre wavelength and bandwidth. Provides unmatched versatility for fluorescence measurements, photometry and optical scanning. A lab workhorse!



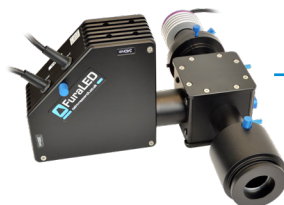
### MultiPort Illumination Couplings

Easily and efficiently couples multiple light sources (light guide, laser or LED) into a single epi-illumination path. Well suited for optogenetics, photolysis and photoactivation. Can include independent field stops or pinholes.



### OptoTIRF V2

The OptoTIRF is a compact and powerful, yet inexpensive, motorised TIRF illuminator designed to fit onto any research-grade inverted microscope. It gives the researcher intuitive and dynamic access to the entire back aperture of the objective with joystick or software control and simple storage and recall of preset positions



### FuraLED

Compact and optimised LED illuminator for 340nm / 380nm ratiometric Fura-2 fluorescence imaging with integrated filters. Fast switching with photodiode feedback stability when used in conjunction with our OptoLED dual channel LED controller. Couples to a variety of upright / inverted microscopes or macroscopes.