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LabSTAF

Single Turnover Active Fluorometer

A new generation of instruments for the autonomous assessment of phytoplankton primary productivity

LabSTAF is a state-of-the-art benchtop instrument for the interrogation of phytoplankton photophysiology and assessment of primary productivity. Using Chelsea's Single Turnover Active Fluorometry (STAF) technology, LabSTAF is capable of precise measurements even under extreme oligotrophic conditions.

The instrument can be operated in flow-through or discrete sampling modes and enables highly automated generation of Fluorescence Light Curves (FLCs). The incorporation of seven excitation wavebands enables the generation of a Photochemical Excitation Profile (PEP) for highly automated spectral correction.

A High-Biomass option is also available which extends the dynamic range by a factor of ten.

Key features

- **Optimised sample chamber** - Temperature control. Rapid screening of multiple samples.
- **Wavebands that deliver** - Dual Waveband Measurement (DWM). LED wavebands generate Photochemical Excitation Profile (PEP).
- **High sensitivity, low error rates** - Measurement under oligotrophic conditions. Correction for baseline fluorescence.
- **Real time data and enhanced export** - Real time data. Extract data from a single file or across multiple files
- **Compact and robust portable unit** - Ideal for deployment on research vessels and outdoor locations

Applications

- Direct measurement of photosynthetic rates for the assessment of PhytoPP
- Acquisition of STAF data at high resolution for ground-truthing of satellite-based models
- Rapid photophysiological screening of phytoplankton samples using scintillation vials
- Tracking the development of algal blooms and changes in community structure
- Continuous underway measurements on research vessels and ships of convenience
- Real-time assessment of the impact of environmental change on photosynthesis

Get in touch to find out more **T** +44 1252 872288 **E** sales@forcys.com **W** chelsea.co.uk

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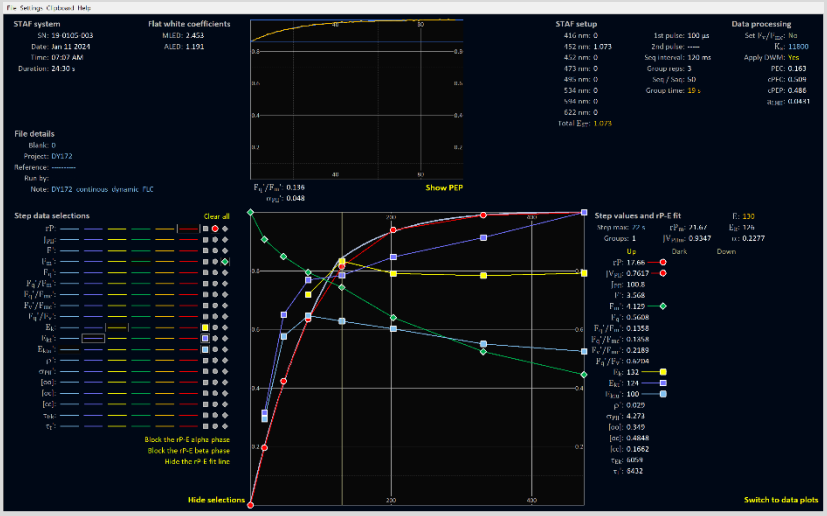
RunSTAF Software Features

- Dynamic FLC function makes it easy to ensure saturation is reached
- Time of day function allows different FLC and STAF protocols to be set throughout the diurnal cycle
- The Auto FLC function can be customised to run between 7 and 20 light steps with automated spacing or manual override of E values
- Multi-sample feature un-der manual settings allows for rapid screening



LabSTAF	
Power requirements	140 - 400 mA at 24 V (3.4 and 9.7 W)
Dimensions (w x d x h)	429 x 328 x 236 mm
Mass (approximate)	8.1 kg
Excitation wavebands	Central wavelengths at: 416, 452 x 2, 473, 495, 534, 594, 622 nm
Actinic light source	Collimated output from 10 to >1600 µmol photons m-2 s-1
Detection limit (approximate)	Can resolve Fv with an amplitude equivalent to the fluorescence signal generated under 452 nm excitation by 0.001 mg m-3 of chlorophyll
IP rating	IP64 (protected from water spray from any direction)
LabSTAF Power Pack	
Power requirements	Mains (110 to 220 V AC)
Dimensions (w x d x h)	259 x 201 x 114 mm
IP rating when closed	IP64 (protected from water spray from any direction)
IP rating when in use	IP40 (protected against entry by tools but not protected against moisture)

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