

# AnaLight® 4D

*“A new insight into the analysis of biological surfaces”*



Building on the success of the **AnaLight®** “molecular microscope” product range, Farfield announce the new **AnaLight® 4D** scientific instrument, the latest generation of Farfield’s proprietary **Dual Polarisation Interferometer**. The key and unique benefit of the system is its ability to make meaningful and sensitive measurements of structural changes during molecular interactions in real time. It delivers the capability to measure absolute and dynamic changes in molecular size, fold-density, mass, conformation, orientation and order at sub-atomic resolution in a bench top package. The instrument is designed around the powerful **Resolver 4D** software engine, which monitors time-resolved conformational changes from methods scripted, executed and analysed automatically. Method development and data interpretation are accelerated with its inbuilt intelligence providing an intuitive step-by-step approach.

## Features

- Dynamic, high-sensitivity measurements of biomolecular size, mass, density and conformation**
- Unique Resolver 4D software engine for systems showing order or alignment (e.g. lipids & membranes)**
- Powerful characterisation of membrane formation and protein interaction**
- Correlation of peptide interactions with both lipid bilayers and liposomes**
- Flexible automatic or manual operation**
- New comprehensive Resolver 4D software suite**
- A range of fluidic / sample cell options**
- Proven protocols, increased research and discovery productivity**

## Key Applications in Biophysics and Surface Science

- Lipid bilayer formation and characterisation**
- Liposome or bilayer assay platform**
- Lipid – peptide/protein interactions**
- Dynamic biomolecular interaction and stability**
- Aggregation nucleation, oligomerisation and inhibition**
- Biocompatibility studies at the molecular level**

## The *AnaLight*<sup>®</sup> 4<sup>D</sup> offers new insights into lipid systems and protein interactions in lipid environments

### Key Features

- Flexible automatic / manual system for high productivity operation and method development
- Industry-standard vial and 96-well plate formats
- Small sample-volume capability (<50 µL)
- Range of flow-cell geometries
- Range of easily interchangeable fluidics options
- Remote internet operation for unattended use and diagnostics
- New **AnaChip**<sup>+</sup>™ compatible
- Comprehensive range of **AnaChip**™ surfaces
- A wide selection of pre-defined protocols and reagent **AnaKits**™ available
- Capability to run two experiments simultaneously
- Extended temperature range and fast temperature ramping

### New software features include:

Unique **Resolver 4<sup>D</sup>** software engine and user interface with enhanced capability for studying ordered systems such as lipid bilayers and membrane proteins

Pre-defined protocols for **AnaChips**™ and **AnaKits**™

Scripting, for consistent and transferable protocols

Script learning for intuitive method development

Automated data analysis to reduce interpretation time

Scheduling of operations, remote operation and diagnostics

Report generation, linked to the data analysis module

Upgradeable package on Windows™ operating system

### Instrument Specifications

- Measurement sensitivity:
 

Dimensional resolution	+/- 0.1 Å
Refractive Index	+/- 1 x 10 <sup>-7</sup> RI units
Mass	+/- 0.1 pg mm <sup>-2</sup>
- Dynamic Range 1.0 – 1.5 RI units
- Data Sampling Rate 10Hz (0.1 seconds)
- Birefringence range +/-0.1 RI units
- Temperature range 10-40°C (55°C optional)
- Fast thermal Ramping 3°C min<sup>-1</sup>



### Support:

The **AnaLight**<sup>®</sup> 4<sup>D</sup> is supported by a wide range of **AnaKits**™, **AnaChips**™, experimental protocols and technical documentation

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 illuminating the molecular world...