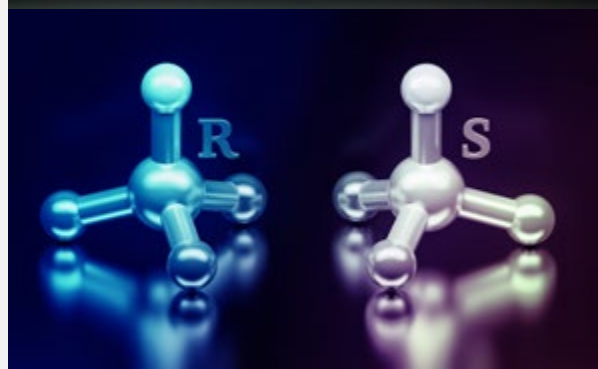
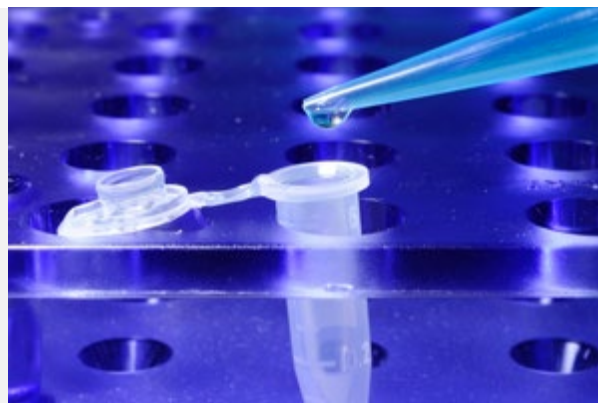


SPECTROMETERS



EKOTM

High-throughput
microplate reader



EKKO™ The world's first Circular Dichroism Microplate Reader

BioLogic and Hinds Instruments have joined forces to introduce the world's first high-throughput microplate reader for circular dichroism measurement.

EKKO™ is a vital R&D tool for pharmaceutical and biotech companies or any academic institution needing to accelerate or optimize catalytic/asymmetric syntheses, quickly and efficiently.

The instrument offers an alternative to chromatography for chiral screening by increasing throughput by a factor of 10-100, **equivalent to 96 readings in less than 2 minutes**, compared to 1-5 minutes per measurement with HPLC!

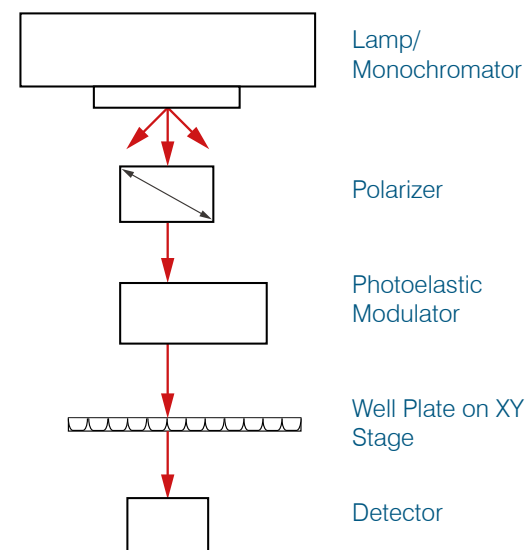
EKKO™ significantly reduces running costs and unlike HPLC does not require solvent elutions, making it more environmentally friendly.

A compact, robust device, EKKO™ is significantly more efficient for screening applications than standard CD/autosampler combinations and fits on any standard lab bench without the need for ancillary accessories.

High-Throughput CD Screening is now a reality!

In a late stage research project or QA/QC lab, the CD Microplate Reader dramatically increases sample throughput when CD analysis is required. Users can expect throughput **ten to one hundred times higher** with EKKO™ without losing any data quality when compared to typical CD systems.

By eliminating the need to transfer samples to individual cuvettes, with cleaning steps, the amount of time spent handling samples is reduced drastically. As a result, the EKKO™ can analyze **96 samples at a single wavelength in less than 2 minutes**.



Schematics of the microplate reader

Why Circular Dichroism?

Circular Dichroism (CD) exploits the differential absorption between the left and right circularly polarized light of a chiral molecule. CD spectroscopy is sensitive to the absolute configuration and conformation of chiral molecules and is therefore a highly effective technique for identifying enantiomers.

Why EKKO?

- High throughput screening for chiral and CD samples.
- 96 full spectra in less than 1 hour
- 96 single wavelength readings in 2 minutes
- Scans down to 185 nm
- ¼ of the footprint of a conventional CD spectrometer with an autosampler
- Ultra low N2 consumption (0.5l/min)
- Faster and less expensive than HPLC methods
- Faster and much easier than conventional CD designed for single sample analysis
- Enables reading thousands of ee values per hour

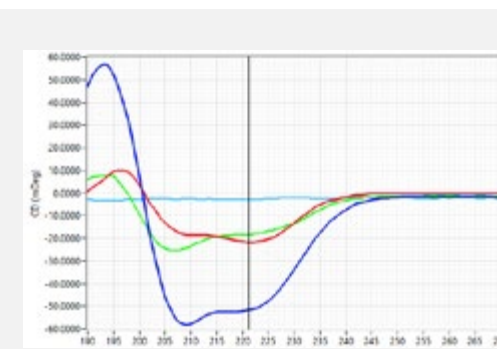
Enantiomeric determination

Optical purity analysis techniques are performed routinely using chromatographic instruments, but conventional HPLC is slow and expensive. Conventional CD works well, but analyzes one sample at a time. Throughput can be improved with an auto sampler to transfer from a well plate to the cuvette, but this is a slow and cumbersome process.

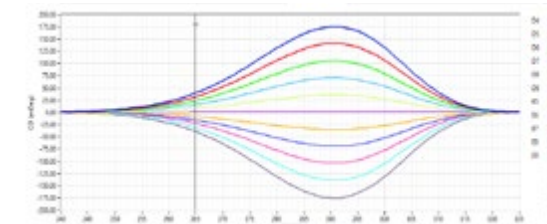
Faster identification of hits

The EKKO™ CD Microplate reader delivers the necessary speed for High Throughput Screening (HTS) in asymmetric synthesis and an **ultra-fast method of determining enantiomeric excess**.

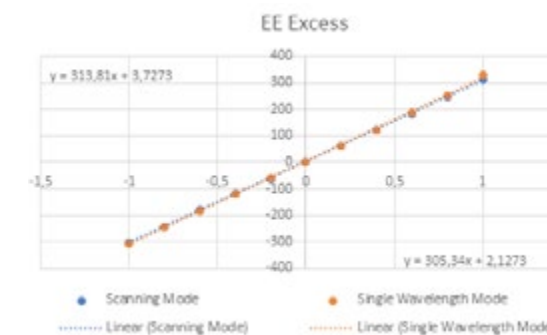
A complete microplate read in less than 2 minutes



Proteins spectra in far UV region



CD spectra of different enantiomeric mixtures of camphor sulfonic acid



Precision of measurements in both single wavelength and scanning modes

Structural studies and biotherapeutic development

Spectra can be recorded from 185 nm with a nitrogen flow of 0.5l/min, so high throughput screening on samples such as DNA, RNA, peptides and proteins is possible. At a measurement rate of just 1 data point per second, it is possible to run a full spectral scan of 96 wells in about an hour. This is hours to days faster than with a conventional CD.

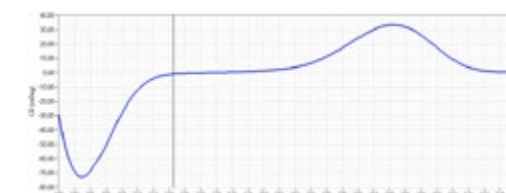
At least 10 times faster when compared with a conventional CD reader/autosampler combination!

Precise, reliable, efficient. And cheaper to run

EKKO's™ precision stems from the positioning of the XY stage. Depending on the volume of solution in the wells, the effective light path can be easily and precisely determined using known CD spectroscopy chemical standards. Well-to-well reproducibility is within the standard precision criteria of CD spectroscopy and absorbance can also be recorded simultaneously.

EKKO™ dramatically reduces operating costs by minimizing measurement time and operator time. It also saves lab space with a footprint one quarter the size of conventional CD readers with an auto-sampler.

A 9000-hour lifetime light source reduces operating costs further, by limiting instrument downtime. Operating costs are further reduced through the very low N2 flow rate required. **At the recommended rate, a standard N2 tank will last 9 times longer than it does with a conventional CD.**

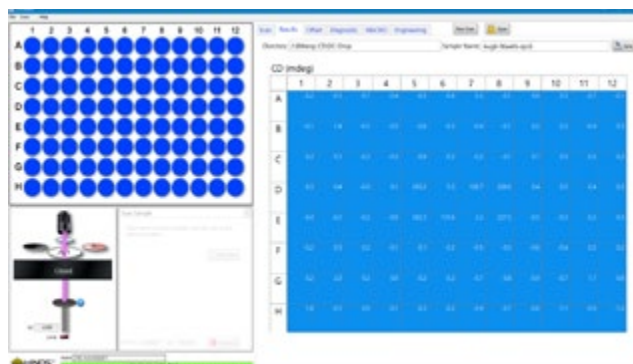
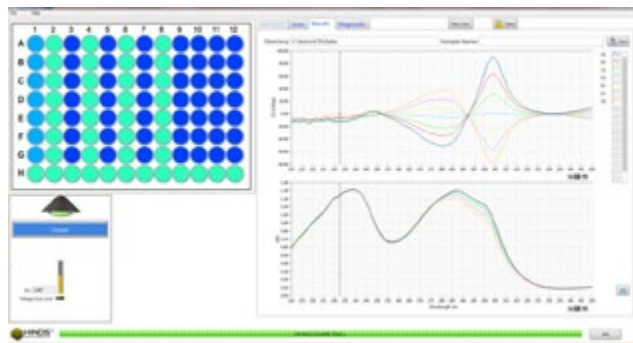


Camphor sulfonic acid full spectrum

Software

Software is included with the EKKO™ CD Microplate Reader. Intuitive menus and a user-friendly interface enable users to get up and running in a few minutes. Spectra can be easily selected in the well plate matrix for data visualization. A visual well-plate matrix allows the selection of blanks and sample wells for easy programming of experiments.

CD values or enantiomeric excess in each well can also be read quickly and then exported as a text file for external processing.



Specifications

High Throughout Screening

Detection mode	Circular Dichroism and Absorbance
Measurement mode	Single Wavelength
	Spectrum
Microplate format	96 well plates (384 optional)
Reading time	< 2 minutes (96 wells, single wavelength mode)
	< 1 hour (96 wells, full spectral range)
Minimum volume per well	45 µl (96 well plate format)

General

Dimensions	70 x 50 x 60 cm (H x W x L)
Weight	94 kg
Communication ⁽¹⁾	USB
Software	Included
Power	200 W ; 110-220 V ; 50/60 Hz

CD Specification

Wavelength range	185-880 nm
Monochromator	Dual gratings
Wavelength accuracy	±0.1 nm
Stray Light	5 ppm (200 nm)
rms noise	±0.08 mdeg (200 nm, 8 s integration time)
	±0.02 mdeg (500 nm, 8 s integration time)
CD range	± 1000 mdeg
Bandwidth	2 nm
Absorbance precision	0.01 AU
Light Source lifetime	> 9000 h typical
N2 purge ⁽²⁾	0.5 l/min
Temperature	Room temperature

Notes :

(1) A configured PC can be included

(2) Connection to an N2 generator or cylinder is required at all times.

www.biologic.net

**Shaping the future.
Together.**