

Photopette[®] *German Engineered*

Ultra Fast Handheld Spectrophotometer

- 
- **Handheld Smart Device**
 - **High Accuracy & Repeatability**
 - **<2 seconds per Measurement**
 - **No Cross-Contamination**
 - **25,000+ Measurement per Charge**

Introducing Photopette®

The Photopette® device is a fast, accurate and economically priced fixed wavelengths handheld spectrophotometer universally used in life-sciences, environmental surveillance, food & beverages and chemical industry to measure concentrations in liquid samples. The Photopette® personal photometer offers the convenience, performance and seamless integration with cloud, web and mobile computing expected from contemporary devices and applications, saving users precious sample and time, whilst still producing precise and accurate results.

The device enables users to dramatically improve the workflow and increase productivity through speed and portability.



One Click One Result One Second

Key Features

High Speed

- Ultra-fast measurements (less than 2 seconds for each measurement)
- Immediate sampling, no device warm up required
- Intuitive exportation of results via email
- Instant on-spot quantification of nucleic acids, proteins, cells density and many more

Optical System

- Patented optical system
- Measurement precision ± 0.02 AU
- >500,000 measurements per wavelength
- Low energy consumption (25,000+ measurements per charge)
- No maintenance or lamp change required

Simple and Safe

- Handheld with small footprint
- Ergonomic
- Disposable CuveTip® (no cross-contamination)
- No transfer or transport of sample
- Fast and simple to use, no training required

Advanced Software Application

- Geo tagging, photo, notes, date and time embedded in data file
- Real-Time data sharing
- Send measurement data instantly or link to cloud storage
- Automatic software and firmware updates

ULTRAFAST

Measure & Share in 4 Steps



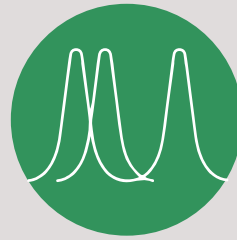
Select

Choose your Application or Wavelength



Measure

Perform Qualitative & Quantitative Measurement using Photometry



Analyse

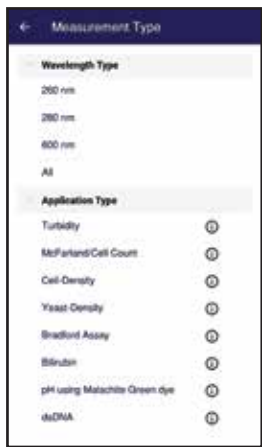
Observe Protein, DNA, RNA, Cell-Count and more....



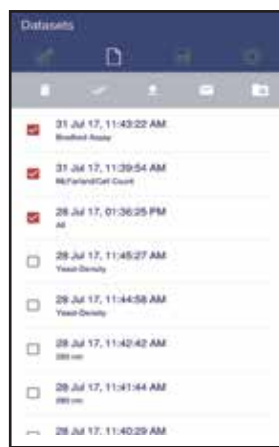
Share

Share your Results with Ease to other Devices or People in Real-Time

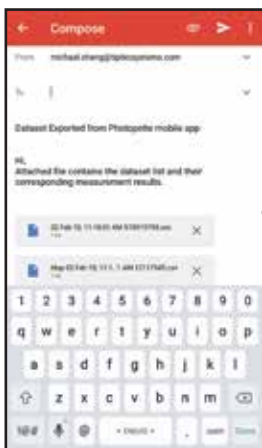
Advanced Software Application



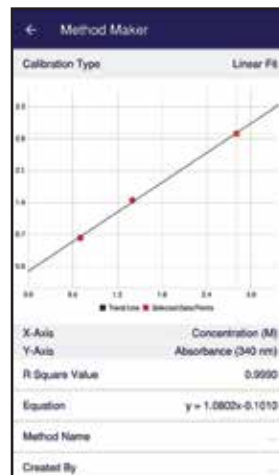
Inbuilt applications selectable by user



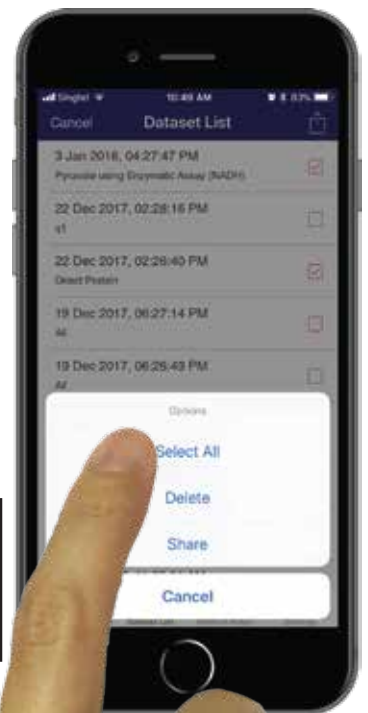
Automatic Time Stamp, Geotag, Photo and Notes



Forward data via email or data storage in cloud



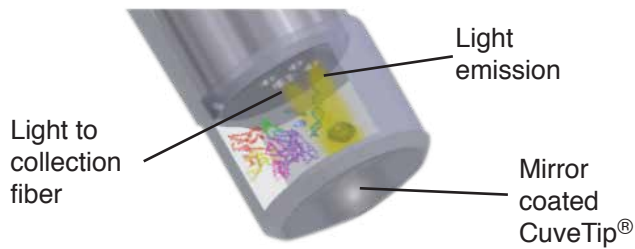
Method Maker function for User defined Calibrations



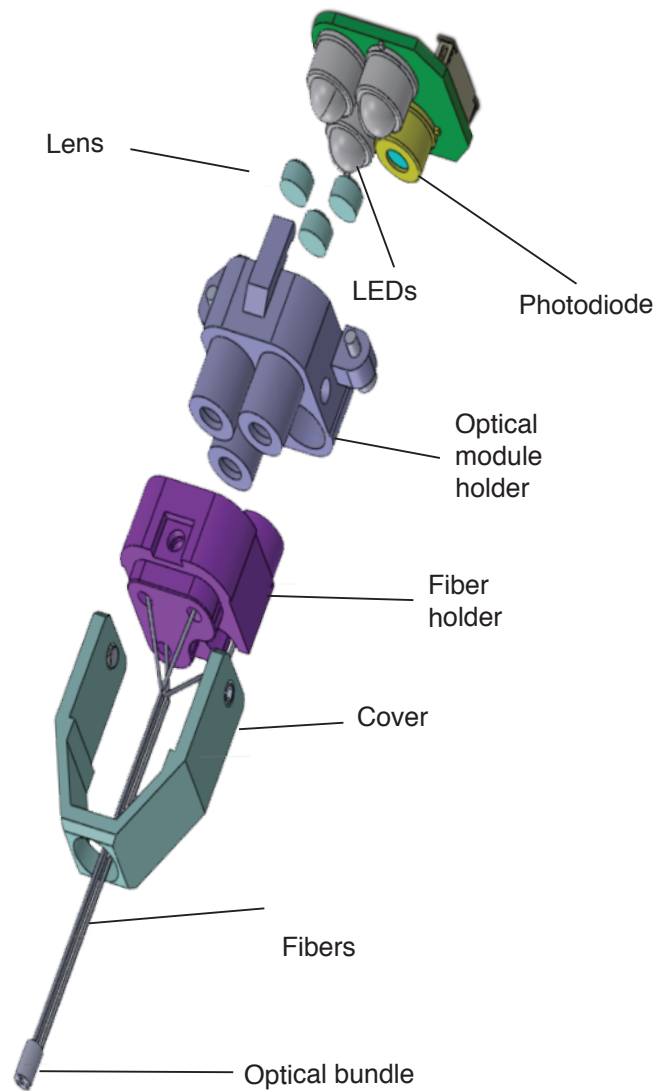
Optical System

The Photopette® optical system is a multicomponent, ultra fast handheld device that integrates a photodiode detector with light emitting diodes (LEDs). It also has an in-built “environmental light correction” and can be used in the lab environment and outdoor without shielding environmental light from the sample.

Within the Photopette®, a light emission fiber transmits light from the LEDs to the CuveTip® and a light collection fiber collects light from the CuveTip® to the detector.



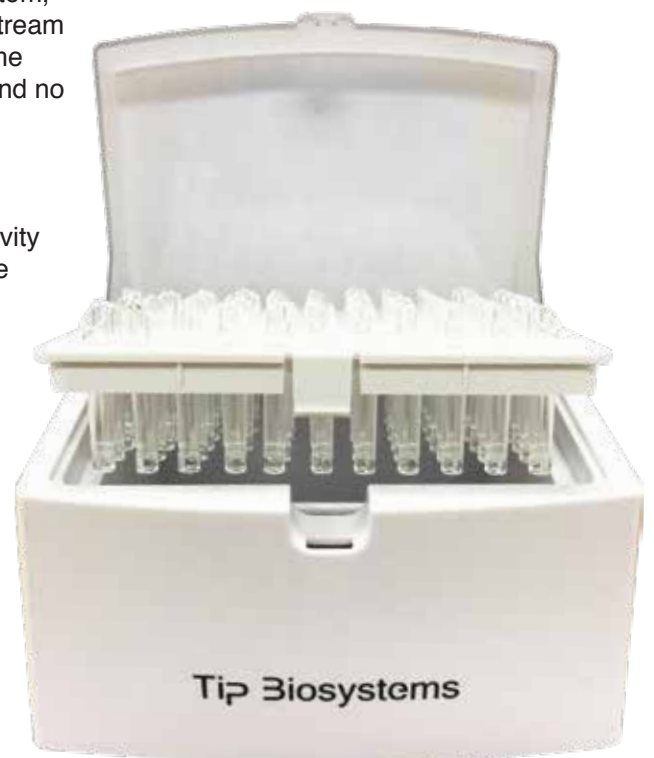
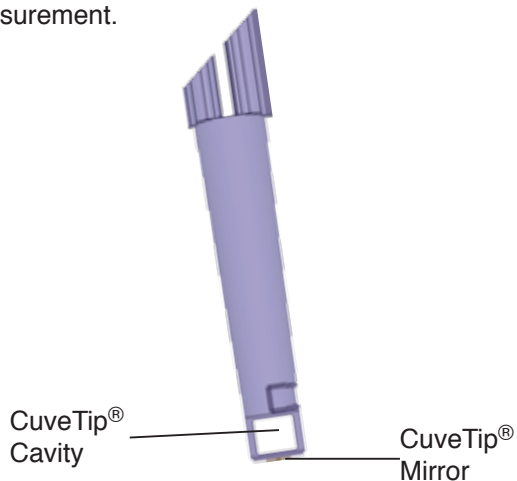
The injection moulded CuveTip® is coated with a mirror coating to reflect the light back through the sample. The curvature of this mirror surface, located at the very end of the measurement tip, is optimized to reflect most of the light back into the collecting optical fiber through which the signal is transmitted to the photodiode detector.



CuveTip®

A dual-purpose disposable reflective tip was designed to act as a sample holder and a light-reflecting system, which is in stark contrast to the operation of mainstream spectrophotometers and photometers. Small volume analytes may be measured with low sample loss and no sample transfer using this proprietary CuveTip®.

A minimum volume of 40 μl is required to fill the cavity of the CuveTip®. This volume is recovered after the measurement.



Applications

The Photopette® is a high performance portable handheld Spectrophotometer for fast and demanding applications

Cell Culture

- Allow fast measurement in the cell culture hood
- Absolute quantification of cell density through calibration curve
- Mammalian, bacterial or yeast cell count
- Cell viability test using Resazurin dye
- Enzymatic assays for metabolites

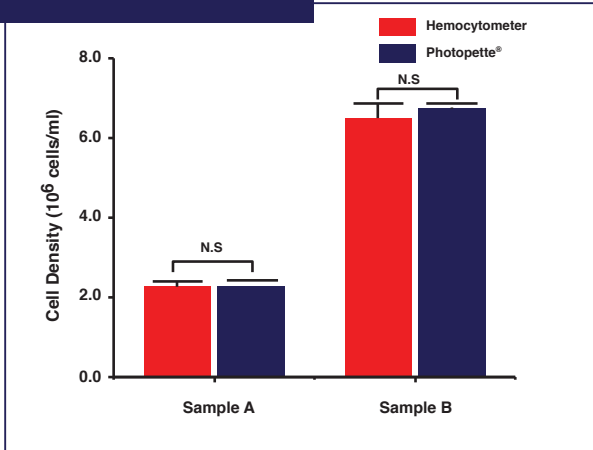
Nucleic Acid and Protein Quantification

- DNA, RNA and Oligo concentration determination
- Bradford Assay
- Direct protein concentration

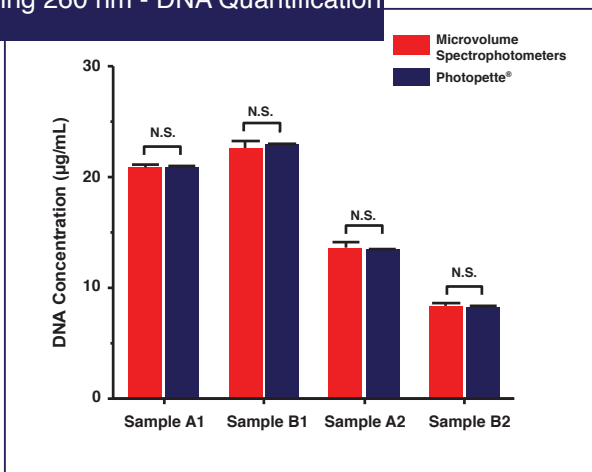
Enzymatic Assays

- NAD/NADH based enzymatic assays
- Lactate, pyruvate, glucose & alcohol, and more

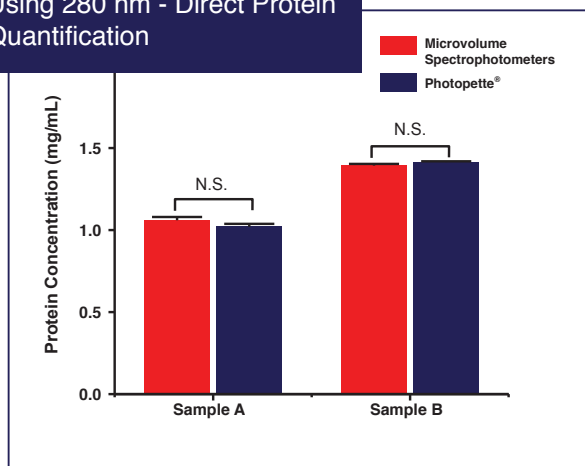
Using 600 nm - Cell Density



Using 260 nm - DNA Quantification



Using 280 nm - Direct Protein Quantification



* Shi-Hao Li, Abhinav Jain, Timo Tscharrnke, Tobias Arnold, and Dieter W. Trau (2018). Hand-Held Photometer for Instant On-Spot Quantification of Nucleic Acids, Proteins, and Cells. Journal of Analytical Chemistry, 90(4), 2564–2569.

Designed for:

The Photopette® is the ideal instruments for quick measurements at the lab bench, in the cell culture hood or out in the plant or on the field.

- Academic teaching laboratories (life science)
- Cell culture or tissue culture
- DNA and Protein quantification
- Beer, wine and spirits
- Farming and livestock
- Outdoor water and chemical analysis
- In Process QC testing

(Photopette® is for research use only – not approved for human or veterinary clinical diagnostics)



Outdoor



In Sterile Environment



In Brewery

Product available:



Model	Photopette® Cell	Photopette® Turbidity	Photopette® Custom / OEM
Wavelengths	340 nm, 570 nm, 600 nm	570 nm, 860 nm	Custom Wavelengths
iOS and Andriod Apps	Yes	Yes	Yes
Ergonomic	Yes	Yes	Yes
Photo, Notes, Timing, GPS Embedding	Yes	Yes	Yes
Weight	160 g		
Language	English, German and Chinese		
Applications	<ul style="list-style-type: none"> - Enzymatic Assays - Cell Viability Assays - Cell Density 	<ul style="list-style-type: none"> - Compatible to USEPA 180.1 and ISO 7027 	<ul style="list-style-type: none"> - Custom Applications

Instrument Type	Fixed wavelengths handheld spectrophotometer with ambient light compensation
Wavelength Accuracy	±2 nm
Measurement Precision & Accuracy	better than ±0.020 AU
Photometric range	0.000 AU ~ 3.000 AU
Measurement time	Within 2 seconds per measured wavelength
Warm up time	None
Lifetime (light-source)	>500,000 measurements per wavelength
Operation and handling	<ul style="list-style-type: none"> • Easy sterilization with ethanol wipes • Water and dust resistant housing • Resistant to mild acids and solvents
Operating conditions	<ul style="list-style-type: none"> • Recommended: 18~25 °C at 30% RH • Maximum: 5~45 °C at 80% RH (non-condensing) • (25,000 measurements and / or 6 days standby on a single charge) • Auto power save mode
Storage conditions	-20 to 50 °C (max) and up to 80% RH (non-condensing)
Disposable	Standard CuveTip® ; UV CuveTip® <input type="checkbox"/> Sterile *optional
CuveTip® chemical compatibility	Aqueous solutions, dilute acids and bases, alcohols, vegetable oils, blood serum, cell culture media, etc
Power supply	Internal 2500 mAh battery with microUSB charging socket
Dimensions and weight	Fits within 202 mm x 47 mm x 42 mm; Weight = 160 g approx
Supported languages (App)	English, German and Chinese
Certification	CE and FCC by TÜV SÜD Singapore



Photopette® App is now available at



Ordering Information

500008-PC	Photopette® Cell Kit supplied with Photopette® device (supports 340 nm, 570 nm & 600 nm), Photopette® stand holder, CuveTip® Box, CuveTip® Ejector Box, 88 disposable CuveTips®, USB connection cable and quick start guide
500008-PT	Photopette® Turbidity Kit supplied with Photopette® device (570 nm & 860 nm), Photopette® stand holder, CuveTip® Box, CuveTip® Ejector Box, 88 disposable CuveTips®, USB connection cable and quick start guide
500010-6BX-STAN	Standard Disposable CuveTips® - 6 x racks per Carton
500010-12BX-STAN	Bulk Standard Disposable CuveTips® - 12 x racks per Carton



Represented by



All the information within this brochure was correct at the time of printing. Tip Biosystems reserves the right to make changes to their products to improve their performance or appearance.

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