

Tip Biosystems

Spectropod[®] User Manual V1.0.1

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No liability on Tip Biosystems Pte Ltd for actions related to use of product/services.

TRADEMARK

The trademark Spectropod[®] is property of Tip Biosystems Pte Ltd.

COMPANY INFORMATION

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Declaration of conformity for the Spectropod[®]

This is to certify that Spectropod[®] conforms to the requirement of the following directives:

2014/35/EU	Low Voltage Equipment Safety Directive
2004/108/EC	EMI/EMC Directive
IEC 60529	Protection Class IP20

Standards to which conformity is declared, where relevant, are as follows:

IEC/EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements.
EN61326-1:2012	Electromagnetic compatibility- generic emission standard electrical equipment for measurement, control and laboratory use.
IEC 62133 and UN38.3	Battery certification and transport test
FCC ID: <i>PVH0950</i>	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.
IEC62471	LEDs are tested against this standard and are classified accordingly.

Subject to change and approval at the time of launch of product.

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Introduction

Spectropod[®] Spectropod[®] is a micro-volume spectrophotometer supporting 230nm, 260nm and 280nm for nucleic acid (DNA, RNA, etc) and protein measurements. It works together with a smartphone or computing device using a dedicated application which connects via a Bluetooth[™] link for taking measurements and data-transfer. It is a mobile, simple to use UV/VIS spectrophotometer instrument. Sample is directly pipetted onto the measurement well of Spectropod[®], which is coupled to a detector for accurate and precise measurement.

Spectropod[®] device can measure in small sample volume (6 μ l), without any sample loss. Due to its small footprint, Spectropod[®] can conduct tests in a very small space setting such as a fume or cell culture hood.

All calculations for a measurement are performed by a mobile device through the Photopette[®] App. The App is designed for using different pre-programmed Application Types with a high degree of flexibility and accessibility.

Spectropod Model

508-SPUV – Spectropod[®]

Manual Guide

Overview This user guide describes how to operate the Spectropod® device.

User documentation The guides listed below are available with the Spectropod® device.

Guides
<i>Spectropod® User Manual V1.0.1 (this manual)</i>
<i>Spectropod® Brochure</i>

Text and keyboard Convention Text and keyboard conventions used in the *Spectropod® User Manual* are listed below.

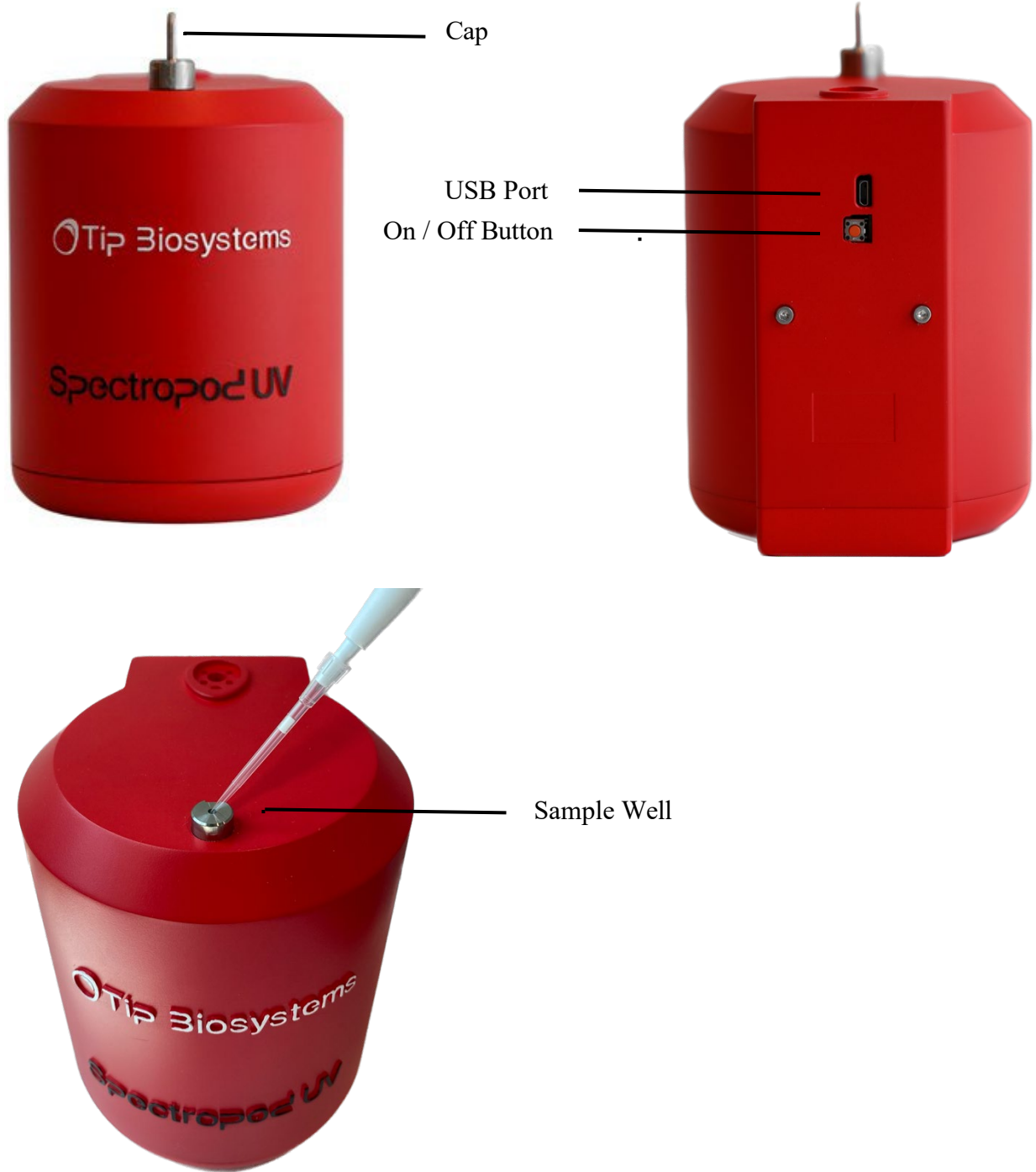
Convention	Use
Bold	Bold Text indicates user action. For example – click Run .
»	Right arrow symbol » indicates a menu choice and separates successive commands you execute or select from a drop-down or shortcut menu. For example: Select Settings » Measurement Types .

User attention words Two user attention words appear in *Spectropod® User Manual* documentation. Each word implies a particular level of observation or action as described below.

NOTES: Provides information that may be of interest or help but is not critical to the use of the product.

IMPORTANT! Provides information that is necessary for proper instrument operation, accurate installation, or safe use of a chemical.

Device Operation



Accessories

Standard Accessories – Connecting Cable



The provided USB cable is meant for charging the Spectropod® Device. Spectropod® can be charged by connecting to a standard USB port capable of providing a current of 300 mA and above. A standard USB smartphone charger or a USB port on a computer/laptop is capable to supply such current.

Standard Accessories – Standard Solutions

Depending on the application type and product subscription, your Spectropod® may arrive together with standard solutions to be used for quality control and maintenance purposes. **NOTES:** Proper storage and handling procedures should be followed while handling and storage of standard solution. Expired or poorly stored standard solutions should not be used for testing or quality assurance purposes.

IMPORTANT! Please read the Material Safety Data Sheet carefully prior to using this product.

Connectivity

Bluetooth

Spectropod® connects to smart devices using Bluetooth™ BLE 4.0 Android™ apps.

Spectropod® Technical Specification

Device Specification

Interface/Connectivity	Bluetooth® BLE 4.0
Technology	Handheld fixed-wavelengths LED spectrophotometer with Ambient Light Compensation System
Measurement Time	Within 2 seconds per measured wavelength.
Warm up time	None
Lifetime (light-source)	More than 500,000 measurements per wavelength

Spectropod® UV

Wavelengths:

230 nm; Accuracy = ± 2 nm; Photometric Range = 0.00 A ~ 3.00 A
 260 nm; Accuracy = ± 2 nm; Photometric Range = 0.00 A ~ 3.00 A
 280 nm; Accuracy = ± 2 nm; Photometric Range = 0.00 A ~ 3.00 A

Photometric Precision	± 0.03 A at 1 A
Photometric Resolution	0.01 A
Power Rating	Battery Model: UR18650F-TBS
Power Rating	Battery Model: UR18650F-TBS Battery Type: Lithium Ion Battery Rating: DC 5 V (Charging), DC 3.7 V (Internally Powered), 2500 mAh 25,000 measurements and/or 6 days standby on a single charge Auto power-saver mode when not in use
Dimensions and Weight	Fits within 202 mm x 47 mm x 42 mm; Weight = 160 g approx. Easy Sterilization with Ethanol wipes.
Sterilization and Cleaning	Water and dust resistant housing. Resistant to mild acids and solvents.

Environmental Specification

Recommended Operating Condition	22 °C at 30% RH
Operating Temperature range	0 to 50 °C at 70% RH (non-condensing)
Operating Humidity range	30 to 80% RH (non-condensing)
Storage/Transport Temperature/ Humidity range	-20 to 50 °C at 30 to 80% RH (non-condensing)

Features and specifications are subject to change without notice.

Setup

Safety Information

Before commencing installation of the unit, please familiarise yourself with setup and operating procedures highlighted in this product guide. It is highly recommended that you go through all the warning labels and symbols on your instrument and their meaning. Please read the complete user manual prior to use.

Do not open the device as this can expose the operator to UV radiations and may damage delicate fiber optics.

IMPORTANT!

Do not use damaged cables, accessories, and another peripheral with your Spectropod®.

Do not expose Spectropod® to strong magnetic, electrical fields, water, chemicals or any type of liquid as heavy rain or moisture.

Do not put the device into fire, as it may swell or explode (battery). Do not store or use near any type of heat source, especially temperature above 60 °C or in an explosive atmosphere.

The device should be switched-off during transportation. The on/off button must be protected during transportation from turning on itself caused by shock or vibration.

Do not spill any biological samples on instrument components. If a spill occurs, disinfect the instrument immediately following the laboratory protocols and the cleaning instruction of the instrument.

Unpacking, Installation and Positioning

Check the contents of the package against the delivery note. If any shortages are discovered, inform your supplier immediately.

Inspect the instrument for any signs of damage caused in transit. If any damage is discovered, inform your supplier immediately.

Ensure your installation site conforms to the environmental conditions for safe operation: indoor use or outdoor environment.

NOTE: Do not expose your Spectropod® near liquids, chemicals, rain, moisture or dusty environments.


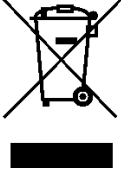

If the device is subjected to extreme temperature changes, it may be necessary to allow the instrument to equilibrate. Turn the device off and then on again once thermal equilibrium has been established (~2-3 hours).

Avoid direct sunlight as it may bleach parts of the instrument and can cause damage to plastic parts.

Please contact the original supplier immediately if technical or sample handling difficulties are experienced.

NOTE: The instruments and the accessories warranty will be void if this equipment is used in a manner not specified, or in environmental condition not suitable for safe operation. It may also adversely influence the working of the system.

Safety Labels

Symbols	Name	Description
	Read Manual before use	Users should read the user manual before use of the device so as to be aware of the precautions and proper handling of the device.
	Do not dispose in bin	Electronics are not to be disposed of in the bin, this could harm the environment. Devices are to be disposed properly into electronic recycling bins at designated locations.
	Caution sign	To alert users to the relevant safety labels on the device.

Safety labels are subjected to addition and change without any notice.

Servicing Instruction

There is no servicing required for Spectropod® devices. Refer to the user manual before use and full demo and training will be done upon delivery of devices.

Risk that might affect service personnel May get exposed to UV light from the device

Protective measures for above risk Proper service training and necessary safety labels

Verification of safe state Not required

Spectropod – Photopette Application

The Spectropod® operates with Photopette application, which is available and pre-installed on the tablet supplied in the packaging together with Spectropod and accessories.

Platform and compatibility	<ol style="list-style-type: none"> 1. Android phone and tablets with minimum Android 4.3
NOTES:	<ul style="list-style-type: none"> • Photopette® Application can be downloaded through App Store®. • Subsequently, users can start using the Application for their measurements.

The device can only run using the Tip Biosystems application. It is not compatible with other applications.

Measurement data is stored locally in the smart-devices' database and can be exported to .csv file format. It is highly recommended to frequently backup the data from the Photopette application.

Sample Measurement Workflow

1. Switch on Spectropod.
2. Start the Spectropod app; enable Bluetooth.
3. Under “Device” connect with Spectropod.
4. Under “Measurement type” select “Wavelength Type” or “Application Type”. Use a vortexer to mix your sample to achieve a homogeneous sample.
5. Press “START MEASUREMENT”.
6. Add 6uL of blank sol/blank buffer/distilled water into a sample vial by using micropipette. make sure there's no bubble.
7. Press “AUTO ZERO” on the app or press the top button on the Spectropod device.
8. Pipette out any blank/distilled water residues from sample vial, wipe sample cap by using kimwipe to avoid contamination. add 6uL of sample into the vial by using micropipette.
9. Press “MEASUREMENT” and the absorbance values or concentrations will be shown directly on the screen.
10. Repeat the steps for next sample

NOTE: Do not overfill the sample vial. This is to prevent samples from seeping in from the top of the sample vial.

NOTE: Check the chemical compatibility chart for the compatibility of the sample solvent or solution you are using. The information is available in the annexure of this manual and on the technical information of the website. Please contact us at support@tipbiosystems.com if the solvent of your sample is not listed on the chart.

Sample Handling Tips

- It is important to mix or vortex every sample right before measurement, if needed, to ensure homogeneity.
- The minimum volume that can be used for sample measurement is 6 µl and can be reused if it is inserted into the tip cavity using a micropipette.
- In most cases, a laboratory clean wipe is sufficient to clean the device.
- Please avoid touching the tip of the device.

Battery Operation

The device runs on rechargeable lithium-ion batteries. The batteries can be operated for approximately 12 hours within a normal usage i.e., 20-30 measurements per hour. The device has a charging indicator LED at the top button. The charging indicator will change to green once it is fully charged. When the battery gets low there will be an alert on the application to charge. Once it is below 10% there will be a beeping sound. At this status, it is still possible to use the device for another hour. However, it is recommended to charge the battery at this status. If the battery is not charged there will be a second warning message when the battery is empty and several beeping sounds before the instrument is automatically shut down within 10 seconds.

The battery is a standard Lithium-ion battery with a lifespan of about 500 full charging cycles. Subsequently, the capacity and operation time of the battery may vary. A fully charged battery will self-discharge over a time of 30-40 days. After this time recharging of the battery is necessary. Charging time for an empty battery is 5 hours.

NOTE: If Spectropod shuts down during a measurement process, the data of the last measurement will be still retained in the dataset.

Application Usage Overview

Spectropod - Photopette Application

Main Features

Measurement Setting
Dataset page
Setting

NOTE:

Users should set **Measurement Setting** before starting measurements. The users can view their measurements by dataset names on the **Datasets page**. In the Datasets page, user can also rename datasets, delete datasets, and share datasets.

Users can test device performance, change languages (currently English, Chinese and German only) and read “About” in the **Settings page**.

The Spectropod® App has a set of pre-programmed applications according to the type of wavelengths present in the device. To select an Application type, go to the measurement type to see a list of Application types the user can use.

AUTO ZERO AND SAMPLE MEASUREMENT



Prior to any sample measurement at the start of a new method, an auto zero measurement of either water or the buffer of the samples is required to give the Spectropod a reference of what zero should be.

To initiate the scan of the sample, touch **MEASUREMENT**, the data will be stored in the Dataset until the method is exited at this time the user is able to share or delete the existing datasets.

Basic Operation

Error Dialogs

Error #	What does it mean?	What can I do?
A1, M1	The detected signal exceeds the saturation limit of the detector. This error may appear when measuring in very bright environments.	Move to a location with reduced ambient light or try to block ambient light before retaking the measurement.
A2, M2	Spectropod seems to experience some technical difficulties.	Restart the device and perform the Self-Test. If the problem is still present, please contact your local distributor for support.
A3	Spectropod automatically compensates for ambient light up to a certain threshold. Close to the threshold, accuracy of the auto-zero might be reduced as fewer data points are available for the compensation. You can still choose to continue your measurements.	Move to a location with reduced ambient light or try to block ambient light before retaking the measurement.
A4	Spectropod automatically compensates for ambient light up to a certain threshold. It seems there are fewer data points available for the compensation than usual. You can still choose to continue your measurements.	Please verify device performance via the Self-Test. If the error re-occurs, try changing to a location with reduced ambient light.

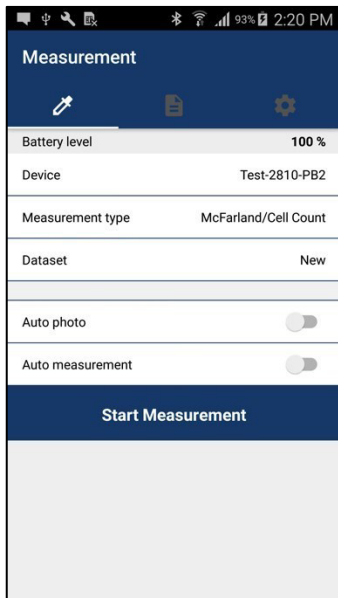
Measurement Setting

Users should set Measurement Setting before the measurement process. This allows the device to store the required settings for the measurements.

Measurement Settings:

- Selecting Device
- Selecting Measurement Type
- Selecting Dataset
- Auto Photo Capturing
- Auto Measurement
- Battery Level

Selecting Device



Before starting measurement, the most important thing to do is to connect with the Spectropod® device.

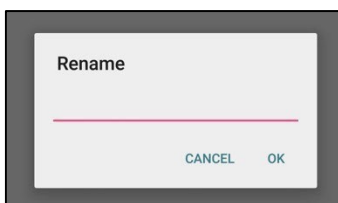
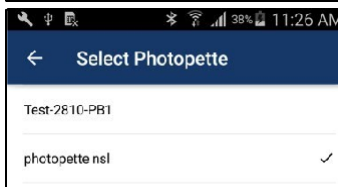
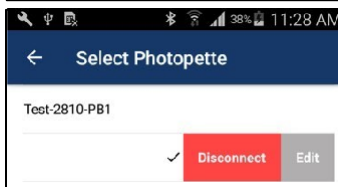
Users must **SWITCH ON** Bluetooth connection on their device in order to connect with the Spectropod® device.

1. Connecting with Spectropod® Device (Figure 4.1) from the Application:

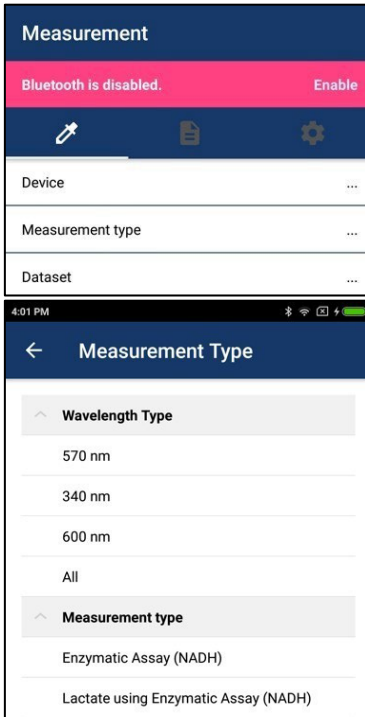
- a. Navigate to **Measurement Setting » Device**.
- b. Available Spectropod® devices are listed. Select the correct device from the list.
- c. If connection is successful, device will emit 3 beeping sounds and a tick mark will appear on the right side of the connected device name.

2. Renaming Spectropod® Photopette Device:

- a. Users can rename Spectropod devices by swiping the device name view.
- b. By right-swiping the device name view, the **Edit** button and **Disconnect** button will appear. (The **Disconnect** button is only available for connected devices).
- c. Click the **Edit** button and fill in the proper name at the **Rename** dialog box.
- d. Click **OK** and the user will see the device name has been changed.
- e. For subsequent connections, the user can see a personalized name on their device. This will help in identifying and differentiating multiple devices.



Selecting Measurement Types



In Measurement Setting » Measurement Type

Select Option

-Wavelength Type

-Application Type

NOTES:

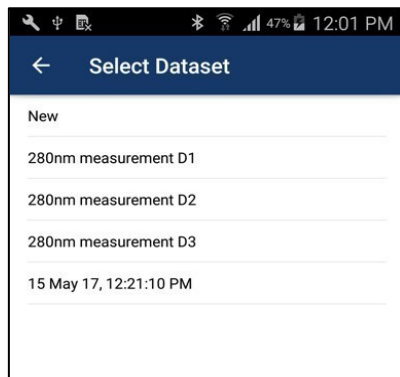
If a user chooses one application type, one or more wavelengths corresponding to this application type will be measured.

For instance,

If the user chooses ssDNA, 260 nm and 280 nm wavelengths will be measured.

According to the Measurement type that the user chooses, selectable datasets will be different.

Selecting Datasets



To store measurement information, the user needs to select a dataset first.

Select Measurement Setting » Dataset

Select Option

- New

- Existing Datasets

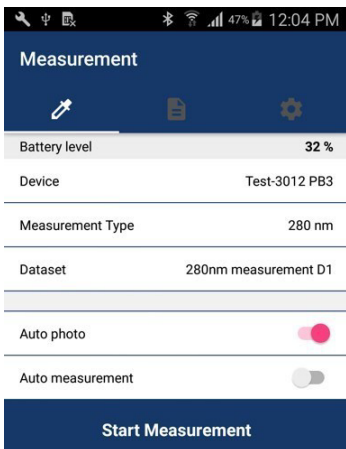
NOTES:

If a user select **New Dataset**, new dataset will be created to save measurement information.

If a user selects one of the existing dataset, information will be appended on information of selected dataset.

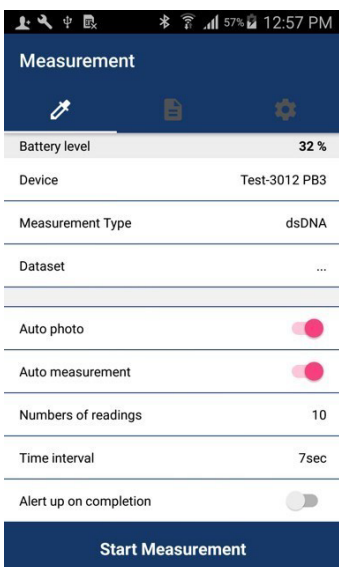
Users can see existing datasets with same measurement type that user chooses.

Auto Photo Capturing



If a user would like to automatically capture a photo on measurement time, **Auto photo** should be enabled.

Auto Measurement



If user would like to automatically measure, please enable **Measurement Setting » Auto measurement (Figure 4.3)**

Users can see 3 additional settings by enabling Auto measurement.

1. Numbers of Reading
2. Time Interval
3. Alert me when done

NOTES: Please choose an appropriate time interval depending on the number of wavelengths to be measured and Auto photo.

$$\text{Time Interval} = \text{No of wavelength} * 2 + \text{Auto Photo}$$

For instance, if the user chooses dsDNA, 260 nm and 280 nm will be measured. So, the time interval is 4sec. If auto photo is On, application will need 3 more sec to take photo automatically. So, the final time interval needed is 7 sec.

Battery Level

Please check the battery level often. If battery is lower than 40%, please recharge in order to ensure proper measurement.

Using Trigger Button on Spectropod Device

Activating Trigger Button

Instructions

1. Click once in Setting to start measurement
2. Click for auto zero and you can hear a beep sound of the measurement event.
3. Click for warning/dialog dismissal.
4. Click for final measurement.
5. Users can view Transmittance and Absorbance values on the measurement screen.
6. For additional measurement, click once again.

IMPORTANT: Please click and listen beep sound of recognition. Continuous clicking will result in many measurements.

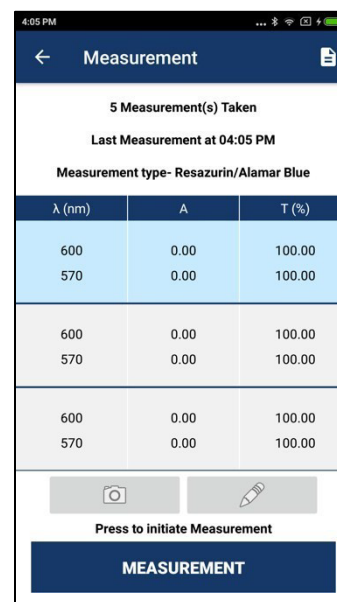
Measurement Screen

Measurement Screen Functions

1. Taking Photo
2. Adding Note
3. New Measurement
4. Cancel Auto Measurement
5. View Measurement Results

Components

1. Measurement Count
2. Last measurement time
3. Photo/Notes Button
4. Measurement/ Cancel Button
5. Measurement Result Table
6. Back Button
7. Dataset button



1. Taking Photo

Click **Photo**  and capture photo before measurement starts.

NOTE: If the users enables **Auto Photo** or **Auto Measurement** in Setting, the **Photo** button in the measurement screen will be disabled.

2. Adding Note

Click **Notes**  and add a note before measurement starts.

NOTE: If users enables **Auto Measurement** in Settings, **Notes** button in measurement screen will be disabled.

3. New Measurement

Users can repeat measurement manually by clicking Measurement after a measurement finished.

NOTE: If user enable **Auto Measurement** in Setting, **Measurement** button in measurement screen will not be seen.

4. Cancel Auto Measurement

Users can cancel auto measurement anytime by clicking **Cancel** on Measurement Screen.

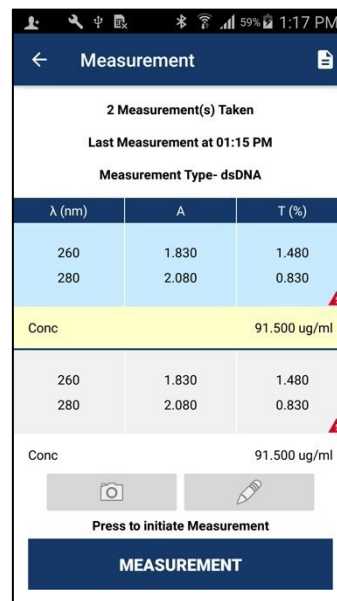
5. View Measurement Results

Transmittance and Absorbance results will be shown in every measurement.

Concentration results will be shown for some application type only.

Warning icon will be shown for measurement accuracy.

Click the Warning icon and check warning.



Datasets

All measurement results will be stored in a dataset.

Dataset Functions

1. View Dataset List
2. View Detail Measurement
3. Rename Dataset
4. Share/Delete Datasets

1. View Dataset List

Select **Datasets** from the navigation bar.

Datasets list that the user measured will be shown.

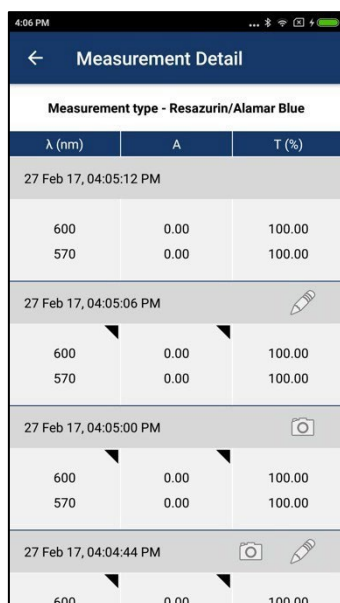
NOTE: Auto Dataset name is Measurement Time DD MMM YY, hh:mm:ss AM/PM.





2. View Measurement Details

Select **Datasets** details by clicking

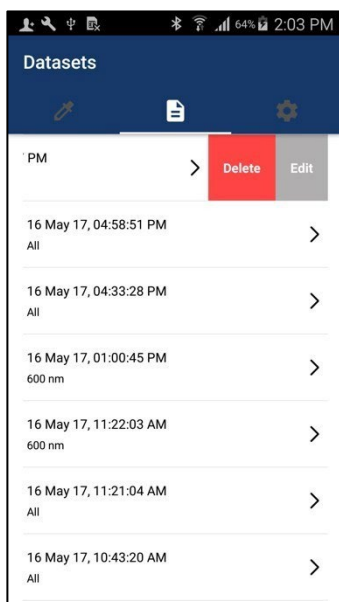
Measurement Detail Information:

- Measurement Date and Time
- Measurement Type
- Wavelength
- Absorbance value
- Transmittance
- Concentration (if available)
- Photo (Enable if photo is available)
- Notes (Enable if note is available)
- Warning (if available)



Measurement type - Resazurin/Alamar Blue		
λ (nm)	A	T (%)
27 Feb 17, 04:05:12 PM		
600	0.00	100.00
570	0.00	100.00
27 Feb 17, 04:05:06 PM 		
600	0.00	100.00
570	0.00	100.00
27 Feb 17, 04:05:00 PM 		
600	0.00	100.00
570	0.00	100.00
27 Feb 17, 04:04:44 PM  		
600	0.00	100.00

3. Rename Dataset



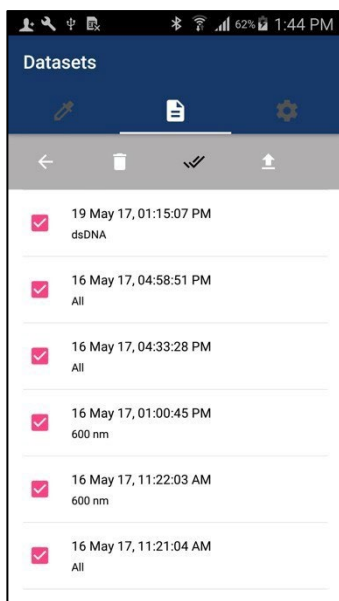
1. Users can rename the dataset by swiping a dataset view.
2. By right swiping a dataset view, **Delete** button and **Edit** button will appear.
3. Please click the **Edit** button and fill in the proper name at the “Rename” window.
4. Click **OK** and the user can see the change of the device name.

After the rename is completed, the user can see a customized dataset name. This will help in identifying and differentiating multiple datasets.

4. Share/ Delete datasets

User can share/delete datasets with 2 options:


1. Share/Delete All Datasets
2. Share/Delete two or more datasets



Android

1. Share/Delete All Datasets

Long press a dataset to appear toolbar

Click **Toolbar** » **Select All** 

For Share datasets, Click **Toolbar** » **Share** 

Two Share Options will appear:

1. Email 
2. Google Drive 

For Delete datasets, Click **Toolbar** » **Delete** 

2. Share/Delete one or more datasets

Long press a dataset to appear checkbox.

Select dataset item that should be deleted or shared.

Click **Toolbar** » **Share or Delete**

Selected datasets can be shared or deleted.

NOTE: Dataset CSV format file will be exported to google drive/email.

If the user would like to deselect all from **Select All**, just click **Deselect** on the top bar.

Setting

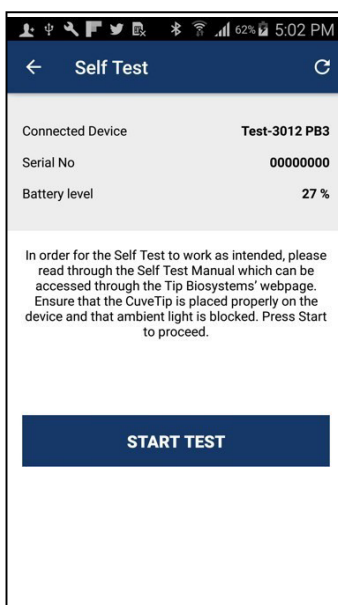
Setting page offers additional features that are not connected with the measurement process.

Setting

Users can perform 3 features in Setting.

1. Self-Test
2. Change Language
3. About

Self-Test



Self-Test allows users to test device performance by themselves. User can follow a step-by-step guideline that prompts the app and can get device condition as a final result.

The following information are shown default in Self-Test:

1. Connected Device Name
2. Serial Number
3. Battery Level

NOTE: Self-Test can only perform when app is connected

Change Language



Users can change 3 languages in Change Language.

1. English (Default)
2. Simplified Chinese
3. German

NOTE: By changing language, all text within the app will show according to the changed language.

About



1. App Version
2. Firmware Version
3. Date of Release
4. Legal Disclaimer
5. Limited Warranty
6. Copyright
7. Limitation of Liability

NOTE: Item 2. Firmware Version is only shown when the device is connected with the Photopette app.

To view Item 4,5,6,7 Select About » Read Legal Disclaimer

Documentation and Support

Obtaining Support

Technical support

For any technical questions, please contact us via email – support@tipbiosystems.com

Limited Product Warranty

Tip Biosystems Pte Ltd and/or its affiliate(s) warrant their products as set forth in the Tip Biosystems’ General Terms and Conditions found on Spectropod® Application About Page.

If you want to know more, please contact Tip Biosystems Pte Ltd at <http://www.tipbiosystems.com>

Spectropod[®] Application Examples

A full list of all applications can be found on the Tip Biosystems webpage at: www.tipbiosystems.com

Nucleic Acid - DNA/RNA

Measurement of DNA and RNA concentration and determination of DNA and RNA purity can be done by the measurement of absorbance at the wavelength of 260 nm and 280 nm.

Calculations

Example:

A DNA sample has an absorbance reading of 0.4. The concentration is calculated as:
 $0.4 * 50 = 2 \mu\text{g/ml}$

Nucleic Acids	Concentration ($\mu\text{g/ml}$) per A_{260} Unit
dsDNA	50
ssDNA	33
ssRNA	40

Table 1: Calculations for nucleic acid concentration

Purity of	A_{260}/A_{280} Ratio
DNA	~ 1.8 (approximate value)
RNA	~ 2.0 (approximate value)

Table 2: Calculations for determination of nucleic acid purity

For purity check of nucleic acid, a ratio of A_{260}/A_{280} is used.

A ratio lower than 1.8 for DNA and a ratio lower than 2.0 for RNA indicates presence of contamination. However, the A_{260}/A_{280} ratio is only an indication of purity rather than a precise answer.

NOTE: Small changes of the pH of the solution will affect the 260/280 ratio. Acidic solution will under represent the 260/260 ratio (0.2-0.3) and basic solution will over represent the ratio.

NOTE: It is important to check for the pH of a sample measured on our instrument as acidic and basic solutions will vary the absorbance value.

Direct Protein

In the application, under the Measurement Type, select the Direct Protein.

Total protein concentration can be determined by the measurement of absorbance at 280 nm. This is a simple and quick way of quantification, and the protein sample is recoverable. Proteins absorb light at 280 nm, primarily the aromatic amino acids (tryptophan and tyrosine), and the disulfide bonds (S-S bonds) in the protein sequence. The amount of light absorbed by the protein is dependable on the chemical composition of the protein – the number and type of amino acids. Protein absorption is also affected by the protein structure. Therefore, conditions such as temperature, pH ionic strength, and presence of detergents can affect the absorption of the proteins.

Calculations

To compute the concentration of a purified protein solution, the formulas are given as:

1. A_{260}/A_{280} Ratio: To check for a pure protein, the A_{260}/A_{280} Ratio is approximately about 0.58.
2. To eliminate the presence of nucleic acids in the protein sample, the protein concentration can be estimated according to Warburg and Christian formula:

$$\text{Concentration (mg/ml)} = (1.55 \times A_{280}) - (0.76 \times A_{260})$$

3. For better calculation of proteins:

$$\text{Protein concentration (mg protein or peptide per ml)} = (A_{280} \times \text{DF} \times \text{MW}) / \epsilon$$

Where A_{280} is the absorbance of the solution at 280 nm in a 1-cm cell

DF is the dilution factor

MW is the molecular weight of the protein/peptide

ϵ is the molar extinction coefficient of each chromophore at 280 nm

Other Applications

Other applications are available as Application Notes for downloading at Tip Biosystems Pte Ltd webpage www.tipbiosystems.com. For applications not listed in this manual or at Tip Biosystems's webpage please contact our application specialist at support@tipbiosystems.com

Troubleshooting

The Spectropod – Photopette App has a self-test function under “Settings”. The Spectropod® calibration test is performed with the standard solutions provided in the package. If the instrument passes the self- calibration test, the application will reflect the outcome. If the device does not pass the test, an alert will appear on the application along with the message explaining the reason for the failed test along with the recommended solution.

If the Ok button is selected, the window is closed, and the home screen will be shown with an error message at the top. The error message is also shown on top of all other screens, and all performed measurements including the saved files of those measurements. If the self-calibration test fails, please contact the support@tipbiosystems.com.

Assistance

The assistance includes off-site support, report a problem, software maintenance and legal as function to help with any technical issues or questions that may arise with the Spectropod®.

Report Problem

The Application will send bug error reporting automatically to our Software Developer in case there is any problem or the application crashes. Other related problems can be emailed to the above email accordingly.

Maintenance

Download the software update file from Tip Biosystems main download page. Remember to save all data before updating the application. Please ensure that your mobile device has enough storage and is connected to Wi-Fi before commencing Application download.

Warranty

Tip Biosystems Pte Ltd guarantees that the product supplied has been thoroughly tested to ensure that it meets its published specification. The warranty included in the conditions of supply is valid for 12 months and is valid only if the product has been used according to the instructions provided. Tip Biosystems Pte Ltd or your supplier can accept no liability of loss or damage arising from the faulty or incorrect use of this product. Each device will come with a Certificate of Performance whereupon assembly.

Cleaning and General Care

Switch off the Spectropod[®] and disconnect the power cord prior to external cleaning. Use a soft wet cloth or dry microfiber cloth to clean all external surfaces. A mild liquid detergent may be used to remove stubborn marks.

The Spectropod device can be sterilized by ethanol solution applied with a wet cloth. Do not over apply.

Approved disinfectant solutions include: Apesin disinfection spray (Tana Chemi GmbH), Incidin Liquid & Incidin Foam (Ecolab), and Lysoformin Spezial (Lysoform Dr. Hans Roseman GmbH).

NOTE: Observe all necessary precautions if dealing with hazardous samples or solvents.