

## Introduction

The DeNovix® DS-11 FX Spectrophotometer/Fluorometer are compact, stand-alone instruments with intuitive, easy-to-use icon driven software. Preconfigured separate applications for each of the most commonly measured biomolecule types ensures that methods are optimized and simple to use.







This technical note will highlight some of the key features of the DS-11 FX software apps.

## Android OS

The Android™ operating system is today's most widely used platform for mobile devices including smartphones and tablets. The direct swiping, tapping, pinching and reverse pinching manipulations provide an immediate and fluid user interface.

The DeNovix DS-11 FX interface uses a customized Android™ OS which takes advantage of many of the touchscreen navigation features already familiar to many of today's researchers. In addition, the software uses standard Android icons such as the ones shown in the table below to eliminate the need for learning something unique to a new device.

**Table 1: Standard Android Icons**

Icon	Type	Icon	Type
	Edit		Select All
	Add		Help
	Delete		Overflow

## Nucleic Acids

To streamline the busy lab's workflow the three most common nucleic acid types (dsDNA, RNA and ssDNA) are measured launching distinct apps on the Home screen. The absorbance mode app icons are shown below. These apps use specific automatic sample type selections, saving time and reducing errors associated with using incorrect factors for concentration calculations.



dsDNA



RNA



ssDNA

## Proteins and Peptides

The absorbance Protein A280 app includes an easy feature to save and recall new protein types. This convenience combined with the instrument's ultra short pathlength capability enables measurements of protein samples with absorbance values of 500A (1 cm equivalent). No other spectrophotometer currently on the market can measure such highly concentrated proteins.



Protein A280



Peptides

The absorbance Peptide app may be used for low concentration peptides that do not contain aromatic amino acid residues.

Peptides with aromatic residues should be measured using the Protein A280 app.

## Labeled Nucleic Acids and Proteins

Microarray and Labeled Protein apps enable quick quality control measurements before running costly genomic and proteomic array experiments.



Microarray



Labeled Proteins

The DS-11 FX software includes 11 preconfigured dyes with the option to quickly add and save an unlimited number of additional dyes and fluorophores. This option ensures you will be able to take advantage of new dye technologies as they evolve.

## Colorimetrics

The Colorimetric app is designed for easy routine BCA, Bradford, Lowry and Pierce 660 nm assays. Standard curves may be saved and recalled for ease of use. New colorimetric assays are easily added using the User Method app.

## UV-Vis and Custom Methods

The DS-11 FX spectrophotometer can be used for more than nucleic acid and protein measurements! The simple UV-Vis app allows you to analyze samples with absorbance between 190 and 840 nm.



UV-Vis



Std Curve Methods



Formula Methods

The powerful Custom Std Curves and Custom Formula Methods apps have been designed as tools to create new standard curve and UV-Vis methods in the fewest possible steps. The custom formulas capability can save you the time associated with routine calculations.

## Kinetics and OD600

The DS-11 FX + combined microvolume/cuvette model software includes a Kinetics app that lets you take advantage of a built in heater with a 37°C to 45°C range for temperature controlled time vs absorbance measurements.

Both the microvolume and cuvette modes enable the OD 600 app to be used to measure microbial cell culture suspensions.



Kinetics



OD600

## Fluorescence Standard Curve Apps

The four apps listed below as well as a Custom Fluoro Standard Curves app are designed using a common intuitive standard curve architecture.



Fluoro dsDNA



Fluoro RNA



Fluoro ssDNA



Fluoro Protein

The biomolecule specific apps include preconfigured assays designed to accommodate commonly used commercially available nucleic acid and protein quantitation assays. Assays include multipoint assays such as Quant-it™, Quantifluor and Qubit™ options.

Users may add new assays within the molecule specific app or the Custom Fluoro Standard Curves app to meet their research needs.

In addition, standard curves and lists of standard curve concentration values may be saved and recalled for quick use.

## Basic Fluorometer

This app enables the DS-11 FX series of instruments to be used as a versatile fluorometer for applications such as dye QC checks and assay development.



Basic Fluorometer

The app is especially useful for fluorophores with significant Stoke shifts as it allows the user to excite a sample with one LED and get RFU results from multiple emission channels.

## Data and Data Connectivity

A search friendly Data app facilitates quick recall and review of all sample data. Flexible export format options enable users to rename report column names and select the information of interest.



Data



Connectivity

The instrument is WiFi and Ethernet compatible and enables data to be exported via E-mail, USB or saved to networked folders.

Sample data may be printed be to a networked printer and Dymo label printers. Label options include:

- 4x6 labels and 2.5 inch paper rolls are used to print screen captures and report results
- 1 x 0.5 inch labels are used to print sample names, sample concentrations, units and the date on labels suitable for microfuge tubes

## Accounts, Calculator and Timer

Password protected Accounts ensure the integrity of saved settings and methods.



Accounts



Calculator



Timer

The Calculator app includes scientific, oligo and dilution calculators in one convenient app while the Timer is a handy tool to monitor lab reaction and incubation times.

## Additional Apps

The Diagnostics app provides the confidence that the instrument is meeting performance specifications while the Updater app ensures you can stay up-to date with all the latest DS-11 FX software features.



Diagnostics



Updater

## Summary

The DS-11 FX software has been designed to take advantage of the full capabilities of DeNovix spectrophotometers and fluorometers. The intuitive user interface is an excellent complement to the sleek, modern instrument design and ensures that routine measurements are quick and efficient.

In summary, the DS-11 FX Spectrophotometer / Fluorometer provides the ease-of-use and the powerful options sought after by today's research labs.