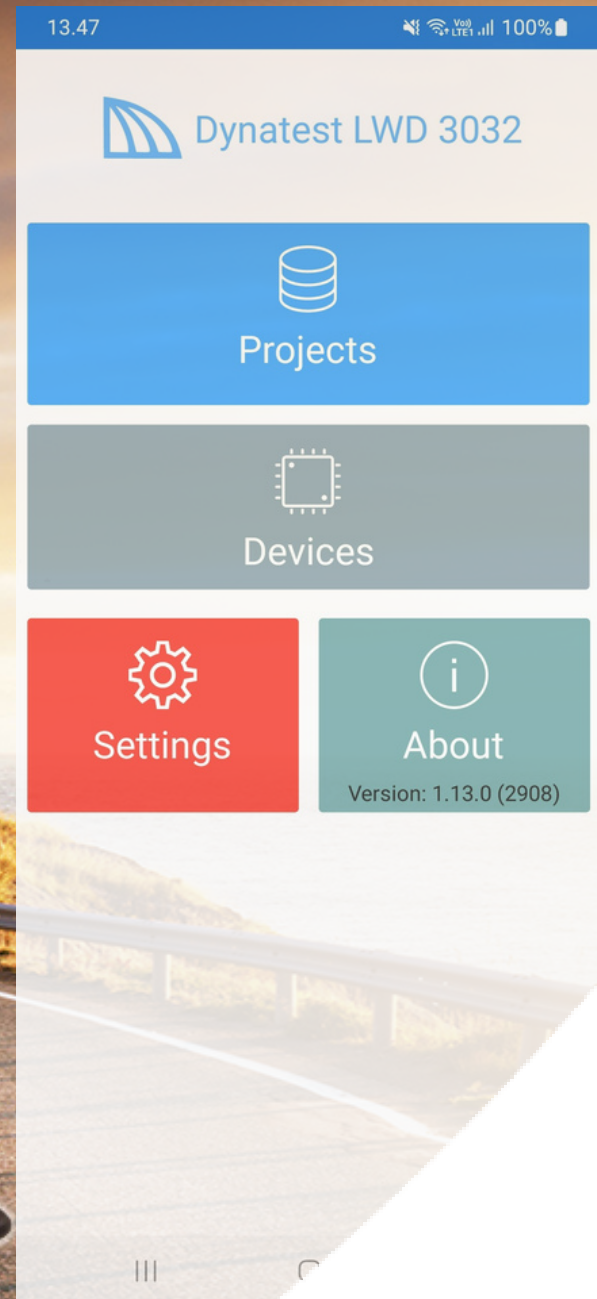
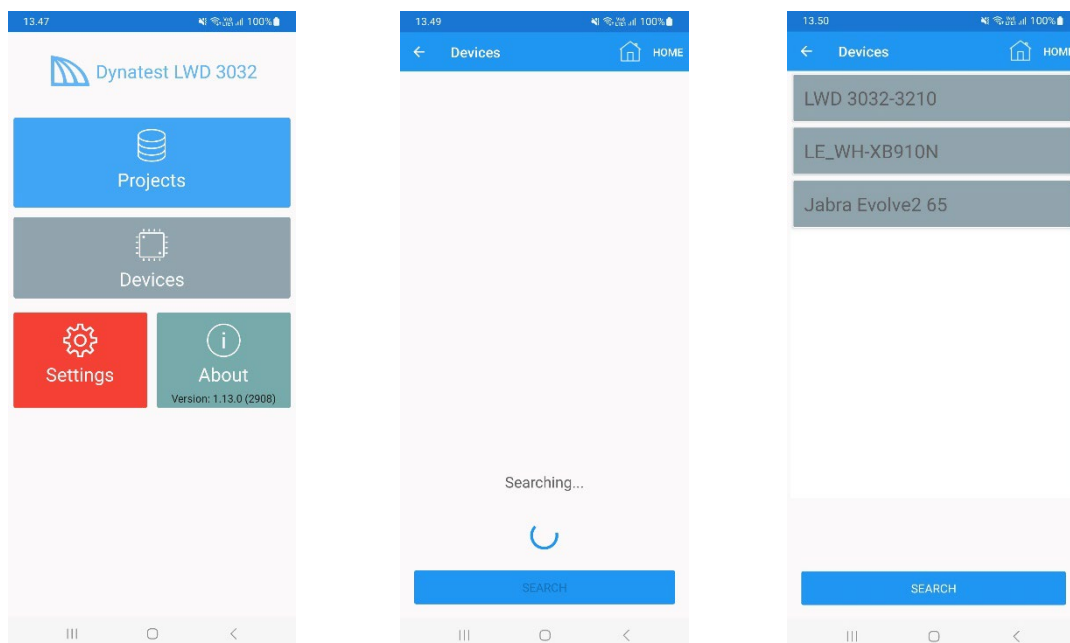


# How to use The Dynatest LWD App Guide



## Scanning your device



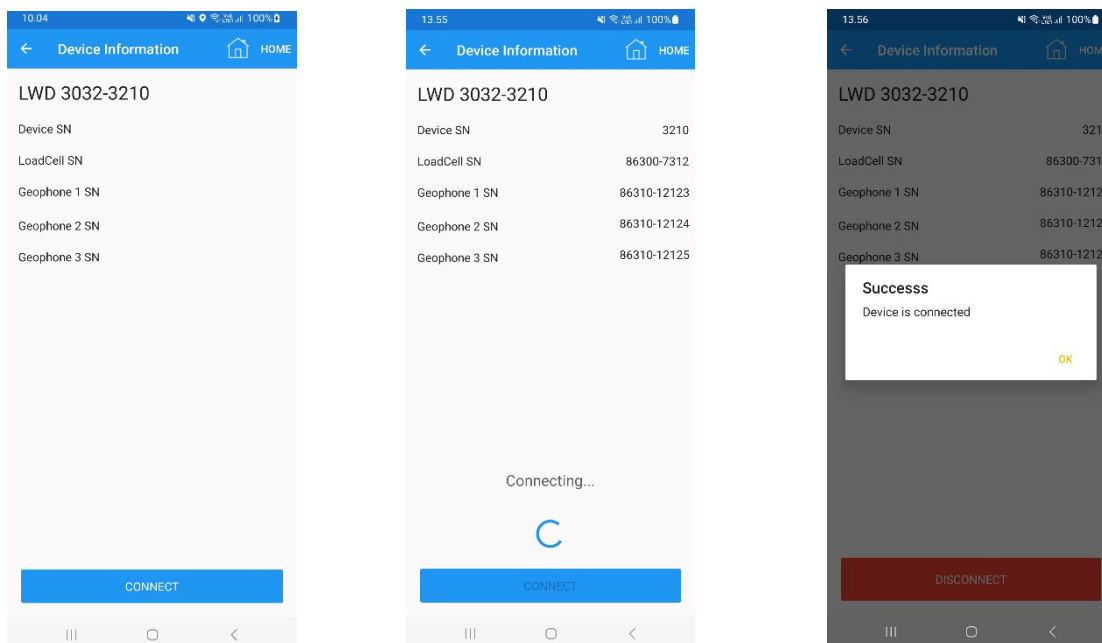
Tap “Devices” to start scanning.

After scanning (about 10 seconds) a list of found devices will appear.

The list will contain all Bluetooth devices in the area, and LWD devices will appear at the top of the list.

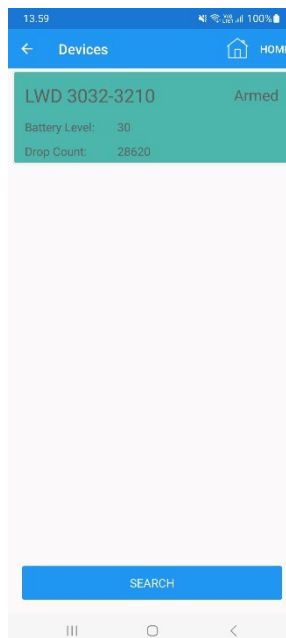
Tap the desired device to continue or tap “SEARCH” to re-scan.

## Connecting your device



Tap “CONNECT” to start connecting to your device.  
If successful, the screen will show serial numbers of the device and sensors and display a confirmation.

Tap OK to see the status of the device:

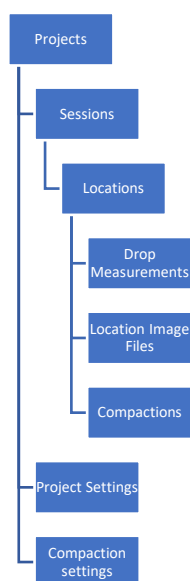


## Using the Data Collection Software

In the LWD mobile app all the collected data is organized at the top level into projects. Projects serve the function of separating the collected data into different Database files. The Application works on only one active project at a time and all options connected to Export or Settings are related to the currently active project or active user.

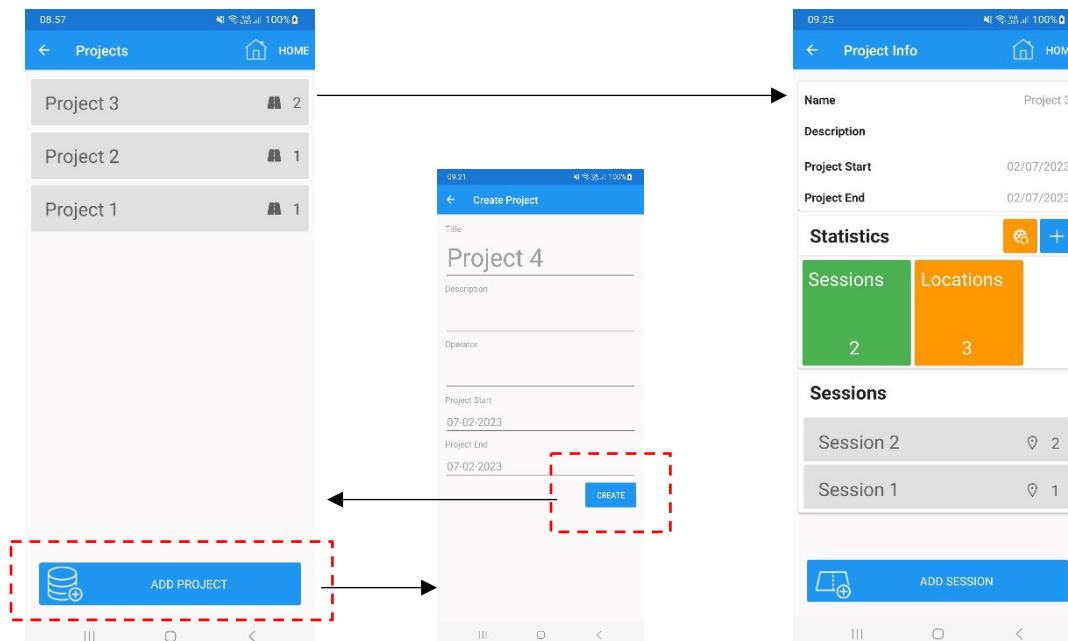
Each project is organized into several data Collection Sessions. Sessions are used to organize the locations where drop measurements must be performed. Each Session contains location definitions of where measurements have been performed. Each location definition is associated with a GPS as well as other meta data which categorizes the real-world position. Image files can also be associated with the location to provide a world reference of the test conditions.

For each location, you can have as many Drop measurements as needed. Each measurement stores the calculated results but also raw data from the sensors. In an event where measurements have been performed with not properly calibrated device it would be possible to apply the correct calibration and adjust the measurements (please contact us, in these situations).



At present, it is not possible to move Drop measurements from one location to another or a location from one session to another, so selecting the correct location and session definition is important.

## Create a Project



From the Main screen, tap "Projects".

### Projects screen:

A list of projects (if any) is shown.

- Tap "ADD PROJECT" to create a new project.
- Tap an existing project to view the Project Info screen.
- Touch-and-hold an existing project in the list to Export, Edit or Delete it.

### Create Project screen:

Edit the project information (for instance the Title) as you please.

- Tap "CREATE" to save the project and return to the Projects screen.

### Project Info screen:

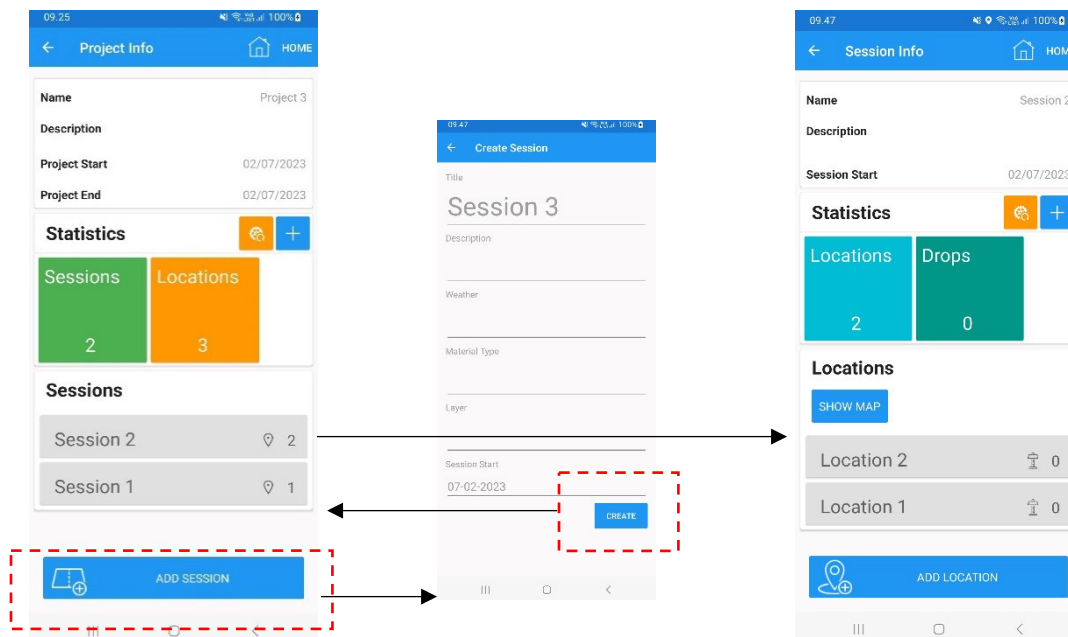
Statistics (Pro License only) and a list of related sessions are shown.

- Tap "ADD SESSION" to create a new session (see 6.2).
- Touch-and-hold an existing session in the list to Edit or Delete it.

The main menu of the application can be accessed by tapping the Home icon on the top bar.



## Create a Session



From the Project Info screen, tap “ADD SESSION”.

### Create Session screen:

Edit the session information (for instance the Title) as you please.

- Tap “CREATE” to save the session and return to the Project Info screen.

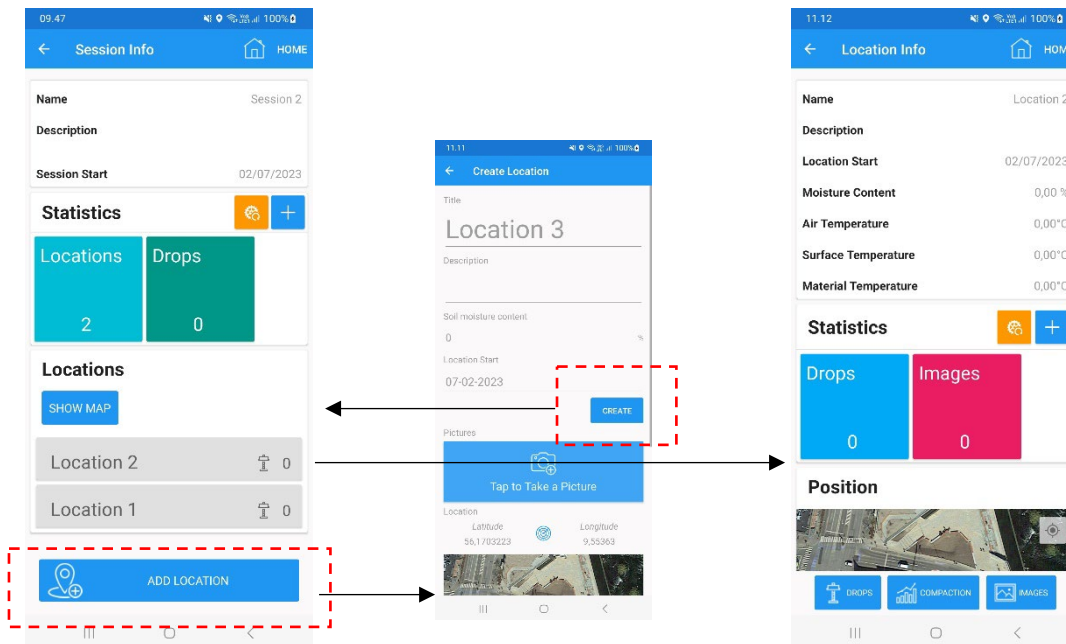
### Session Info screen:

Statistics (Pro License only) and a list of related locations are shown.

- Tap “SHOW MAP” to see the positions of all related locations.
- Tap “ADD LOCATION” to create a new location (see 6.3).
- Tap an existing location to view the Location Info screen.
- Touch-and-hold an existing location in the list to Edit or Delete it.

The main menu of the application can be accessed by tapping the Home icon on the top bar.

## Create a Location



From the Session Info screen, tap “ADD LOCATION”.

### Create Location screen:

Edit the location information (for instance the Title) as you please.

- Tap “Tap to Take a Picture” if you like to add a picture.  
Pictures can also be added/removed later.
- Tap “CREATE” to save the location and return to the Session Info screen.

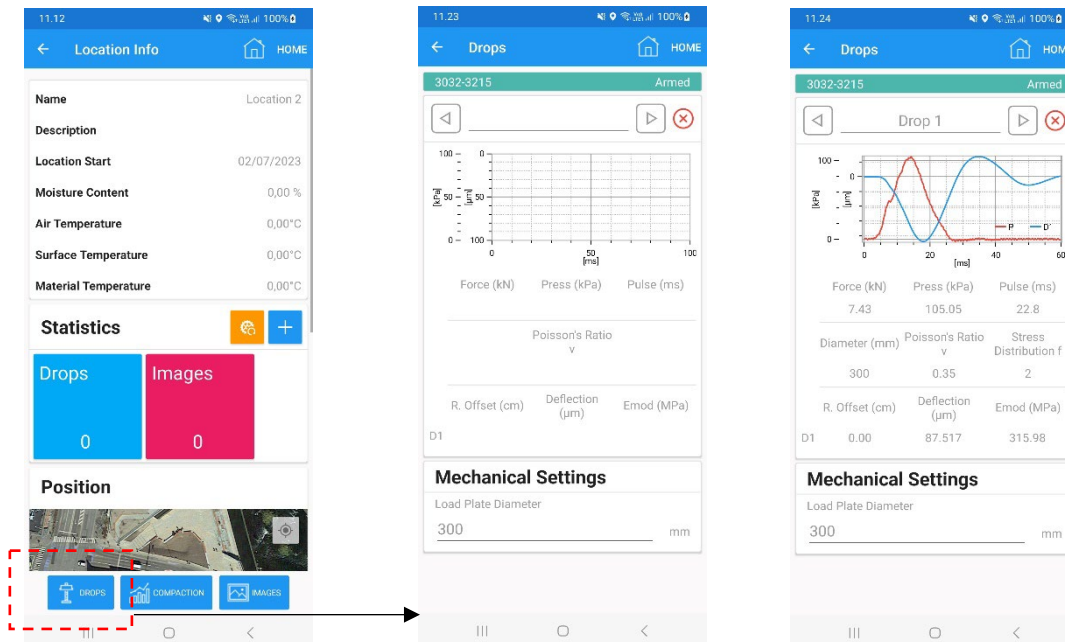
### Location Info screen:

Location info, statistics (Pro License only) and a Map showing the position of the location are shown.

- Tap “DROPS” to go to the Drops screen.
- Tap “COMPACTION” (Pro license only) to go to the Compaction screen.
- Tap “IMAGES” to go to the Images screen.

The main menu of the application can be accessed by tapping the Home icon on the top bar.

## Drops



From the Location Info screen, tap “DROPS” or “COMPACTION”.

The Drops screen will contain device status at the top. Make sure the status is “Armed” before performing the drop.

When ready, do a drop and check that the measurement is shown.

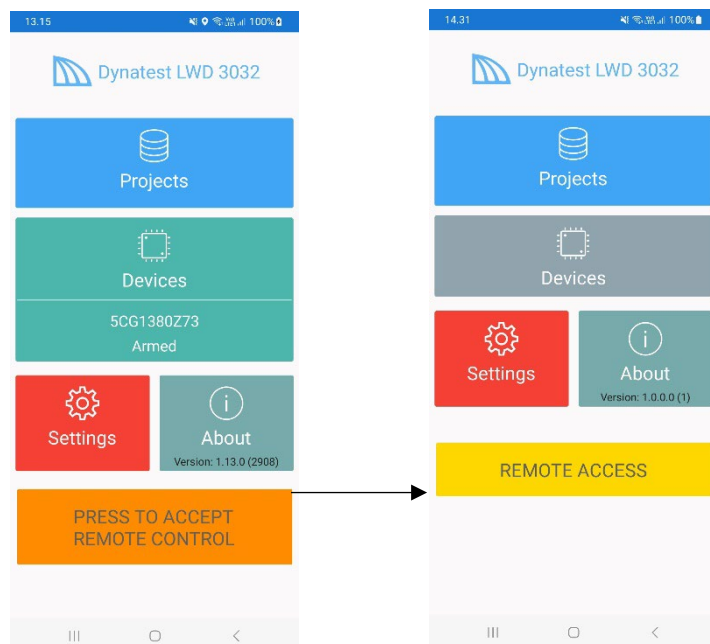
Multiple drops can be performed, just make sure that the device status is “Armed” before each drop.

- Tap the arrow buttons to scroll through the drops.
- Tap the red X to delete a drop.

The main menu of the application can be accessed by tapping the Home icon on the top bar.



## Remote Control



It is possible to remote control the App from a PC, enabling download of projects.

This will require:

- The PC Software: "Dynatest LwdRemoteControl".
- The Phone and the PC must be on the same wireless network.
- The App must be in Main screen.

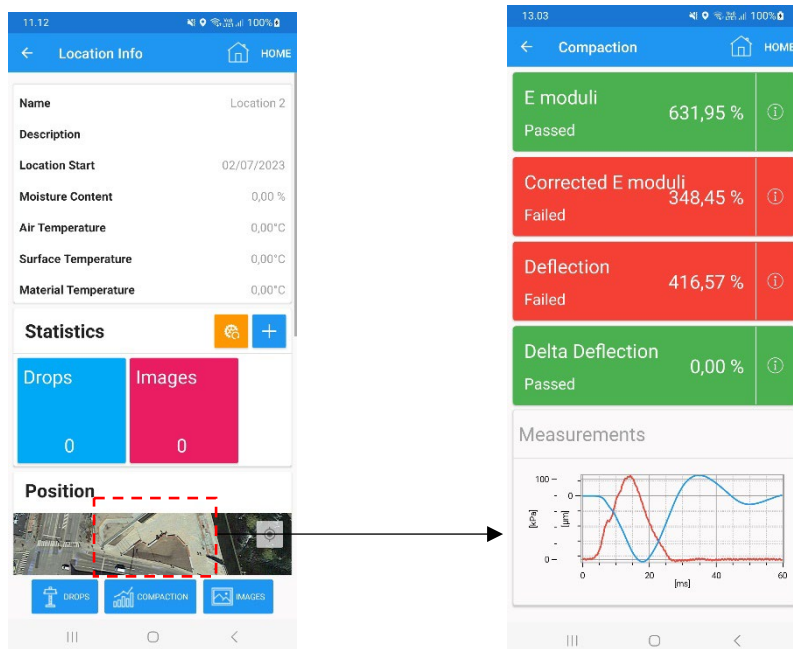
When the Phone enters the same wireless network as the (running) PC software, a confirmation request will appear on the Phone.

If the user accepts (taps the orange button), the App will connect to the PC, and the PC user is allowed to download any project from the phone.

Note: If "Auto Accept Remote Control" is ticked under General Settings, the phone will automatically accept remote control.

If the user leaves Main screen on the phone, the connection is closed.

## Compaction



Compaction will only be available to Pro License users.

The compaction tab will display the compaction calculations provided two conditions are met. That in the settings of the application (in Compaction Settings) the user has chosen to perform compaction calculations (this is important since they can be disabled, so they need to be enabled before creating the location). And data is collected with a device with a pro license. The compaction calculation will be based on the drops collected so far (the drops will be selected based on the compaction criteria and not on the license, so compaction can consist of basic and prolicense drops), provided there is at least one drop that matches the user licenses. The user in settings can select how many drops should be used in the calculations, by default all drops will be used for all the calculations, but the Delta Deflection will use of course only the last two drops.

All compaction values are set from the Compaction Settings page upon the Location Creation. The user must remember to change his desired settings before the location he wants to test in is created.

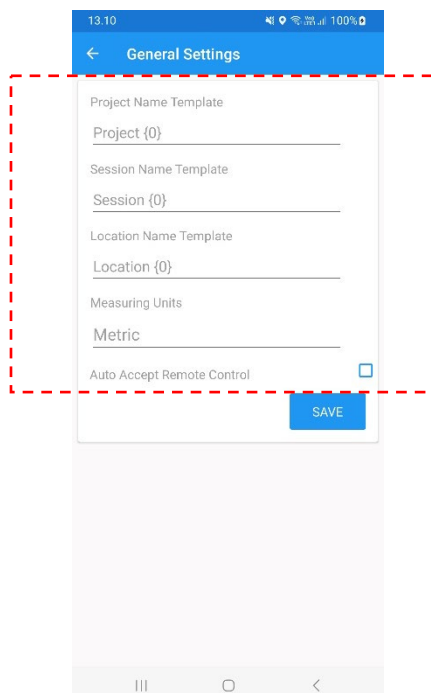
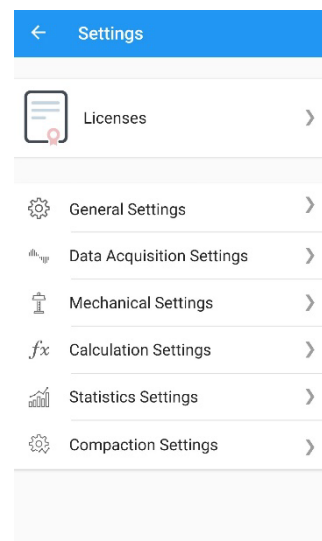
The main menu of the application can be accessed by tapping the Home icon on the top bar.

## Settings pages

In the Main Menu, in Settings the user will be able to set the settings as desired for data collection.

At the top of the screen, you can access the licenses currently in use (all the devices that have been at some point paired with the smartphone).

Under it you will have the links to the different settings pages: General, Data Acquisition, Mechanical and Calculation. As well as the Statistics and Compaction Settings pages which are only available for the LWD devices with a Pro License.



The General Settings page handles all default naming conventions in the app, so the user can predefine a name template for faster Project, Session, and Location creation. It also handles if the user wants to see the data in Metric or Imperial units.

The user can also enable Automatic Accept of Remote Control connections.

The Data Acquisition Settings page handles all sampling options such as pre-sample time, trigger level and the sample window.

← Mechanical Settings

Load Plate Diameter

300

mm

Number of Geophones

1

Radial Offset D1

0

cm

Radial Offset D2

30

cm

Radial Offset D3

60

cm

SAVE

← Calculation Settings

Field (half-space)

✓

Poisson's Ratio  $\nu$

0.35

Stress Distribution  $f$

2

i

Lab (Proctor mold)

✓

Poisson's Ratio  $\nu$

0.35

Mold Height  $H$

114.00

mm

SAVE

← Statistics Settings

Project Statistics

⚙️

+

Sessions Count

Value

Locations Count

Value

Session Statistics

⚙️

+

Locations Count

Value

Drops Count

Value

Location Statistics

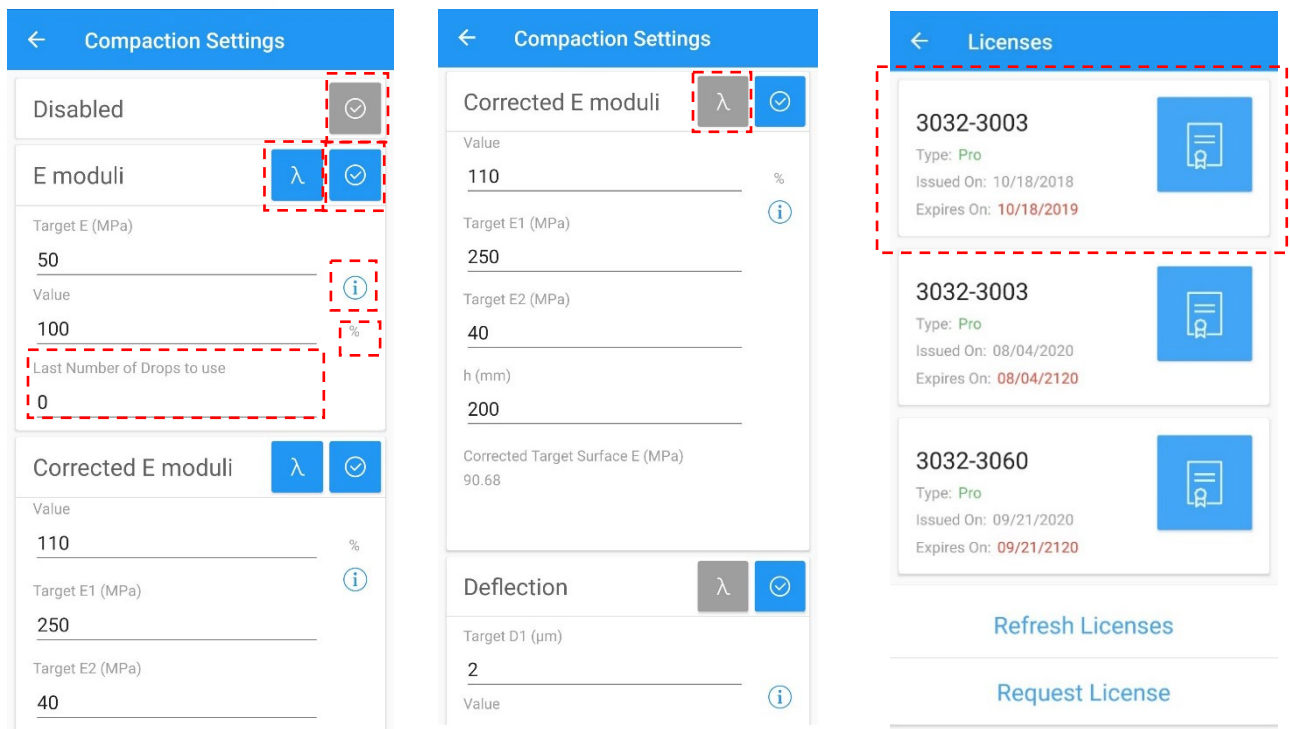
⚙️

+

Drops Count

Images Count

The Mechanics Settings page handles all the device measurement setup parameters such as number of geophones, the used plate radius and geophone placement. The Calculation Settings page allows the user to switch calculation methods between real world and lab tests. The user can also adjust the poison's ratio to increase the accuracy of the modelled representing of the deflections. If the LWD has a Pro License, the Statistics Settings page will be visible and then the user will be able to select what statistics should appear by default when a new Project, Session and Location are created.



The image displays three screenshots of the Dynatest application interface, illustrating the Compaction Settings and Licenses sections.

**Compaction Settings (Left Screenshot):** This screen shows various settings for compaction. The 'Disabled' option is selected, indicated by a checkmark icon. The 'E moduli' section includes a 'Target E (MPa)' of 50, a 'Value' of 100, and a 'Last Number of Drops to use' of 0. The 'Corrected E moduli' section shows a 'Value' of 110, a 'Target E1 (MPa)' of 250, and a 'Target E2 (MPa)' of 40. The 'Deflection' section shows a 'Target D1 (μm)' of 2. Red dashed boxes highlight the 'Disabled' option, the 'E moduli' section, and the 'Last Number of Drops to use' field.

**Compaction Settings (Middle Screenshot):** This screen shows the 'Corrected E moduli' section with a 'Value' of 110, a 'Target E1 (MPa)' of 250, and a 'Target E2 (MPa)' of 40. The 'Deflection' section shows a 'Target D1 (μm)' of 2. A red dashed box highlights the 'Corrected E moduli' section.

**Licenses (Right Screenshot):** This screen displays a list of licenses. The first license is '3032-3003', which is a 'Pro' license issued on 10/18/2018 and expires on 10/18/2019. The second license is '3032-3003', which is a 'Pro' license issued on 08/04/2020 and expires on 08/04/2120. The third license is '3032-3060', which is a 'Pro' license issued on 09/21/2020 and expires on 09/21/2120. A red dashed box highlights the first license. Below the list are buttons for 'Refresh Licenses' and 'Request License'.

The last Tab handles the Compaction settings. This is only available when using an LWD with a Pro license. The user can select the appropriate compaction method and compaction parameters, as well as the number of drops to use in the calculations. Each compaction can display the equation that will be applied on the measured drops. In the Corrected E moduli at the bottom the Corrected Target Surface E moduli is given, that way the user can see what the output value would be with the current inputs. Be aware that if the compaction calculations are disabled when creating the location, you will not get compaction calculations.

The application will automatically update the licenses when it is started. To see a complete list of the assigned licenses, simply navigate from the Main Menu, Settings and then Licenses.