




Quick Guide - LTL-X Mark II Retroreflectometer

Getting Started

Height Adjustment

Before using LTL-X Mark II notice that the operating panel can be adjusted in height for ergonomic considerations. The height is adjusted by pressing the red knob on the front of the instrument and at the same time lifting the handle on the operating panel. Release the knob and continue lifting until the handle locks.

Measuring


Turn on the LTL-X Mark II by pressing and holding the ON/OFF button  until the display turns on. The instrument is now ready to take measurements. An exception is when the instrument is set to ask for user identification, **see User select**.

Calibrate the instrument if necessary, **see Calibration**.









Place the instrument on the road marking.

Press the big green OK-button  to take a measurement. A measurement will be finished in about 1 sec.


When the measurement is complete, the R_L value will be displayed. Data is automatically transferred to the data log. If there is a problem with the measurement a warning or an error icon will pop up (**see Warnings and Errors**) and an audible alarm will sound (if enabled, **see Sound**).

To printout the last measurement data, press the PRINT button .


Buttons

HELP		Presents a help text for the actual function. Another press on the button will open up a general help menu.	ON/OFF		Is used to turn the instrument ON or OFF. Press the button to turn on the instrument. Press 0 to 4 sec. to change to sleep mode. Press >4 sec. to turn off the instrument.
MENU		Selects the top level of the menu tree. Use UP and DOWN to scroll through the menu items. Press OK to select.	SMART		This button is user programmable to one of several functions, e.g. to clear the last measurement or select measurement type.
HOME		Will bring you back to measure display.	CALIBRATE		Starts the calibration wizard.
BACK		Is used to go backward one step in the menu.	PRINT		This button will print out the last measurement or selected parts of the log to the built-in printer.

User select

If a user icon  is shown in the top line of the display then from the measure display press ▲ and ◀ or ▶ buttons to mark the user icon. Press the OK button to enter the user select menu.

Series id select

From the measure display press ▲ to mark the Series id icon . Press the OK button to enter the Series Id select menu. To deactivate the Series id press MENU and select **SETTINGS/SERIED ID**. Now select **ACTIVATE** and use OK to change to *OFF*.



Calibration

There are two kinds of calibrations procedures:

- Calibration (red field calibration unit)
- Verification (black reference calibration unit).

Please refer to the manual for an explanation of these two procedures and when to perform them.


During daily use only a quick *calibration* has to be done. There is no need with LTL-X Mark II to make a *Zero calibration* as was the case with the predecessor LTL-X. The apparatus will guide you through the procedure.


Calibration procedure

Before a calibration make sure that the calibration unit and front window are clean.


Calibration using the red field calibration unit:

- Mount the calibration unit underneath at the front of the instrument with the white ceramic on the calibration unit facing the tower of the instrument. It is important that the pins on the side of the unit fit into the slots in the LTL-X Mark II structure.

Press the  button and then the OK button. Check and if necessary correct the calibration value shown in the display so it matches the value written on label on the calibration unit. Press the OK button to start the calibration.

The calibration procedure is now done. Remove the calibration unit and store it properly. Press  to return to the measurement display.


Miscellaneous



The measure display can at all times be shown by pressing 

Reset Log: Press the MENU button  and select **LOG/CLEAR DATA/ALL**.

Date and Time: Press the MENU button and select **SETTINGS/DATE & TIME/SET TIME/DATE**. Select wanted value and use **▲** and **▼** to set the time and date. Accept the setting by pressing the green OK button. Alternatively **SYNC TO GPS** can be selected to auto set the time. Remember also to set correct time zone.

Power Save: Press the MENU button and select **SETTINGS/POWER**. Select **AUTO SLEEP** or **AUTO OFF** and use **▲** or **▼** to edit the auto turn off / sleep time. Accept the setting by pressing the green OK button.

Sound: Press the MENU button  and select **SETTINGS/SOUND**. **SELECT KEY CLICK** or **SOUNDS** to set the individual sound levels for key click and miscellaneous system sounds. Use **▲** or **▼** buttons to set the levels. Accept the setting by pressing the OK button. Activate the **BEEP** sound to inform when the measurement has been taken

Warnings and Errors: An error icon  or warning icon  will be displayed in the top line of the display if a problem is detected when a measurement is taken. Press **▲** to get a description of the most severe error or warning. Now press the OK button to display a total list of errors or warnings.