

Frequently Asked Questions (FAQs)

Leica DISTO™ X4

- **What does it mean when I attempt a measurement, but the unit shows a number on the display versus my measured value?**

This is a message code. The numbers are displayed if a successful measurement could not be performed. The user itself can correct the measuring situation to achieve a measurement. Below you can find the spread sheet from the manual with the corrections:

No.	Cause	Correction
156	Transverse tilt greater than 10°	Hold the instrument without any transverse tilt
162	Calibration error	Make sure, the device is placed on an absolutely horizontal and flat surface. Repeat the calibration procedure. If the error still occurs, contact your dealer.
204	Calculation error	Perform measurement again.
240	Data transfer error	Connect device and repeat procedure
252	Temperature too high	Let device cool down.
253	Temperature too low	Warm device up.
255	Received signal too weak, measuring time too long	Change target surface (e.g. white paper).
256	Received signal too high	Change target surface (e.g. white paper).
257	Too much background light	Shadow target area.
258	Measurement outside of measuring range	Correct range.
260	Laser beam interrupted	Repeat measurement.
301	Device was moved, levelling not valid any more	Perform levelling again. Measuring with invalid levelling is possible, but it affects the accuracy.
303	Error with Leica DST 360 adapter	Repeat measurement

Other error messages not listed here may indicate a problem with the device. In such a case, please take the following measures:

- Switching the device off and on again
- Insert new batteries (please use quality batteries of known brand)
- RESET the device in the settings. Please note that all data on the device will be deleted. So save the data in advance if necessary.
- Repeat procedure
- If the message appears during a measurement, select a good target at close range with little ambient light and repeat the measurement. If a measurement is possible, please check whether the previously performed measurement is at the edge of the device specification.

If the message also appears repeatedly after these measures, please contact your dealer.

- **How can I get one extra year of warranty for the Leica DISTO™ X4?**

Our standard warranty of 2 years can be extended by one additional year if you register your device on our website www.disto.com within eight weeks of the purchase date. If the product is not registered, a two-year warranty applies.

- **Which batteries should I use for the Leica DISTO™ X4?**

In general you can use any alkaline battery or any rechargeable batteries (2xAA). Lithium batteries or NiMH rechargeable batteries allow more than twice as many measurements as with regular Alkaline batteries.

- **Can I use the Leica DISTO™ X4 with rechargeable batteries?**

Yes, it is possible to use with standard rechargeable batteries. The more powerful the charger system is, the longer you can measure with the DISTO™. We offer a powerful charger system, which is ideal to use with DISTO™: Leica universal quick charger with 2 Micro AA NiMH batteries. For more information, please check our accessories.

- **What does ISO 16331-1 tested mean?**

When products and services meet our expectations, we tend to take this for granted and be unaware of the role of standards. However, when standards are absent, we soon notice. We care when products turn out to be of poor quality or are unreliable or dangerous. An ISO Standard ensures consistent quality and reliability for a product.

The range and accuracy of laser distance meters depend greatly on lighting conditions and the reflective properties of the target object. For Leica Geosystems it is important that the performance of the device is maintained not only in the test laboratory but even more so on everyday site tasks. Therefore, we have worked with external experts to develop a global standard to test and specify laser distance meters and allow comparisons between devices of different manufacturers. Instruments tested in accordance with ISO 16331-1 achieve their promises. Further information can be found on our website: www.disto.com.

- **What accessories are recommended for the Leica DISTO™ X4?**

Leica Tripod TRI 70, TRI 100, TRI 120, TRI 200

For measuring longer distances we highly recommend the use of a tripod. A tripod enables to aim precisely on targets even for longer distances. We also recommend using the tripod together with the Leica FTA360 adapter or Leica DST 360 adapter for best results.

Leica TRI 70

This is a compact tripod with lower working height. It is 45 cm long (folded) and therefore very compact.

Leica TRI 100

This tripod additionally has a tripod head and a larger working height.

Leica TRI 120

This tripod is very compact but sturdy and has twist locks for the legs.

Leica TRI 200

This is a compact construction tripod with a ¼ "screw for fixing DISTO™ adapters or for use with line lasers. This tripod provides highest stability.

Leica DST 360 adapter

This clever adapter with fine drive enables P2P measurements and transforms the DISTO™ X3 into a DISTO™ measuring station or with the DISTO™ Plan App even into a high-quality planning tool. When used with the Leica DST 360, the reference changeover in DISTO™ is automatic.

Leica FTA 360 adapter

To achieve higher accuracy, we are offering the tripod adapter Leica FTA 360 with fine adjustment for convenient and accurate aiming. This adapter is designed to be used as a tripod head (TRI 70, TRI 100, TRI 120 and TRI 200) or can simply be placed on a flat ground.

Target Plate

For measurement especially outdoors and in very bright conditions it is very helpful to use a target plate. We offer different versions in our accessory range.

- **Measuring with tripod – is there anything to consider?**
The measuring reference must be adjusted to the tripod thread. Press the reference key and change the measuring reference to tripod. After switching off the device goes back to the standard setting (rear of device).
- **How can I increase the measuring accuracy using the Leica DISTO™ X4?**
Make sure you are using a stable supporting area respectively use a tripod (ideally TRI 70, TRI 100, TRI 120 or TRI 200) together with the Leica FTA 360 adapter or Leica DST 360 adapter. Trigger measurements remotely from the Leica DISTO™ Plan app or use the timer function in the Leica DISTO™.
- **How can I activate the keypad lock?**
To activate the keypad lock, choose in the settings the lock icon and turn the keypad log on.
- **How can I deactivate the keypad lock?**
To deactivate the keypad lock, press the ON/DIST key and afterwards (within 2 Sec.) the equal key. Now the keypad lock is deactivated and the device is switched on.
- **What exactly is the painter function and how does it work?**
The painter function calculates the sum of several individual wall surfaces with a common height. Select the area function in the FUNC menu. Press plus- or minus key and measure the first wall length, measure the next wall length just by pressing DIST again. To subtract a wall length press minus key before measuring. Repeat the procedure, until you have measured all wall lengths. Then press the equal key. The distance is automatically calculated.
2nd measurement: Measure the wall height. The result displays automatically the wall areas, which you have selected.
- **Can the historical storage memory of 20 values in the device be erased?**
Yes, the memory in the device can be erased by pressing the delete button when in the memory. All memory values will be deleted.
- **Can I enter a value that is constantly added / subtracted to my measured value? (Offset)**
Yes, in the “Settings” you can go to the “Offset Icon” and enter a value that will constantly be added / subtracted from your measured distance value. If an offset value is entered, you will see the adequate symbol - a red triangle - in the status bar.

-> If you want to set the offset value back to zero, enter the setting “Offset” and reset it.
- **How do I know if the device is still measuring?**
When using measuring in any function, you will see a clock icon on the top of the display. The clock stays in the display until the measurement is finished. Please do not move the device before!
- **Is it possible to obtain detailed information about the measurements taken?**
Yes, it is possible to obtain detailed information in the Leica DISTO™ X4. If detail information is available this will be indicated with 2 small arrows up- and downwards in the centre of the status bar in the display. You can now navigate with the arrow key down / up between the available measurements.
- **What is measured with the height tracking in the Leica DISTO™ X4?**
The height tracking displays an indirect height. The combination of inclination and distance measuring to the wall opens the possibility for such an indirect calculation. It is a useful function if the height cannot be measured directly or if several height points on the same vertical line need to be measured.

- **How can I program my favourite (mostly used functions) on the self-programmable keys?**
Choose in the settings the favourites icon. An overview with all functions appears on the display. Choose the preferred function with the navigation keys, press equal to select your favourite function and press then the left or right top key where you want to have the favourite behind. The favourite is now saved.

- **What units of tilts are integrated into the Leica DISTO™ X4?**
You can set the Leica DISTO™ X4 to use different tilt units. Select in the settings “Units inclination” and choose between ° and %.

-> The level function in the right hand top corner of the display is always set to 0.0° and cannot be changed into a different unit for tilts.

- **What is the angular range of the tilt sensor in the Leica DISTO™ X4?**
The integrated tilt sensor in the Leica DISTO™ X4 functions in the range 360° and at a transverse tilt of $\pm 10^\circ$.

If the device is held at > $\pm 10^\circ$ transversely, the info code “i156” appears in the display and indicates that the device is tilted too much.

- **How accurate is the tilt sensor in the Leica DISTO™ X4?**
The accuracy of the tilt sensor in the device is $\pm 0.2^\circ$ to the housing of the device. To the laser beam the maximum deviation can be up to $\pm 0.2^\circ$. This applies at room temperature (20° C - 30° C). At any other temperatures the maximum deviation increases by $\pm 0.1^\circ$.

- **Can the tilt sensor of a Leica DISTO™ X4 be calibrated by the user?**
You can recalibrate the zero level of the integrated tilt sensor. In the settings choose the icon for calibration. When you select calibration, you will be guided through the process.

Please follow this procedure to recalibrate:

- 1) Lay the unit down on a flat surface. The side with the type label should be down on the table.
- 2) Carry out the first measurement by pressing “ON/DIST” key on a level surface. The device confirms the measurement.
- 3) Turn the device horizontally by 180° and place it again on absolutely flat surface with the type label side down.
- 4) Carry out the second measurement by pressing “ON/DIST” key on a level surface. The device confirms the measurement.
- 5) Pick the unit up and then place it the laser facing up on an absolutely flat surface.
- 6) Carry out the third measurement by pressing “ON/DIST” key on a level surface. The device confirms the measurement.
- 7) Keeping the laser up on the flat surface, rotate the device horizontally by 180° while keeping it in the same location on the flat surface.
- 8) Carry out the fourth measurement by pressing “ON/DIST” key on a level surface. The device confirms the measurement.
- 9) After 2 Sec. the device goes back to the basic mode and you have completed the calibration procedure.

Please note: The calibration process can be proceeded by placing the unit with the lens up or down to the surface. A better accuracy in the calibration procedure is achieved having the back of the unit down on the surface and the lens up.

- **What is the measuring accuracy when using the direct horizontal measuring function?**

For example, if a distance of 10 m is measured at an angle of 10°, the error on uncertainty on measurement on the direct horizontal distance (fd) is 3 mm.

-> in order to have best results with the direct horizontal distance measurements, considering the deviation of the tilt sensor, use the Leica DISTO™ X4 as flat as possible.

The horizontal distance error (fd) and the height error (fh) can be calculated as follows:

fd = horizontal distance error

fh = error in height

d = measured distance

a = angle at which the distance is measured

fa = possible angular error

$$fd = d * \cos(a) - d * \cos(a + fa)$$

$$fh = d * \sin(a) - d * \sin(a + fa)$$

Further information and a table of measuring accuracies you can find online in the FAQ under “Measuring Accuracy”.

- **How many zoom levels does the Leica DISTO™ X4 have?**

The integrated digital Pointfinder in the device has 1x, 2x and 4x zoom. You can see in the middle of the status bar of the screen, which zoom level you have selected. To change from one zoom level to the next one you must press the “magnifier key”.

- **Can I take photos with the Leica DISTO™ X4?**

No, the intention of the digital Pointfinder is to allow the user to precisely target and measure distant objects in bright sunlight. The camera live picture is always on when the laser is on.

- **Can the brightness in the digital Pointfinder be adjusted?**

No.

- **Why is the laser dot on short distances not centred to the crosshair respectively jumps from the middle of the screen to the laser dot?**

Since the laser exit is not in the same axis as the camera there will be the so-called parallax error. This means that on short distances the laser deviates from the crosshair on the display. The Leica DISTO™ X4 uses a software which detects the laser dot and corrects the crosshair on the display accordingly. This also works in conditions with strong ambient light where the laser dot is not visible to the naked eye and ensures the user is measuring to the laser dot independently to any parallax error.

- **What Bluetooth® technology is integrated in the Leica DISTO™ X4?**

The Leica DISTO™ X4 has Bluetooth® SMART (also called low energy) integrated. The device is working with smartphones or tablets that have Bluetooth® 4.0 integrated or are Smart Ready. Also, it is required that its operating system is supporting this Bluetooth® standard which is the case for iOS, Android 4.3 or newer, Windows 8.

- **I am having problems to get my Leica DISTO™ connected via Bluetooth® to my mobile device.**

It will help to delete pairing data from all devices to establish a brand-new connection. Please delete pairing data from your mobile device in its Bluetooth® settings. Afterwards you can delete connection data on your Leica DISTO™. Select Reset in the settings menu to execute this.

- **Is it possible to update the software on my Leica DISTO™ X4 device?**
Yes, the Leica DISTO™ Plan app on your mobile device will tell you when a new software update is available. You can update your Leica DISTO™ X4 and even your Leica DST 360 adapter via Bluetooth® when connected to our app. It is recommended to use your Leica DISTO™ always with the latest software version.

- **Can I send measurement data from a Leica DISTO™ X4 to Apple mobile devices?**
Yes, with the Leica DISTO™ X4 it is possible to communicate with Apple mobile devices. Send measurement data to iPhone (iPhone 5 or younger), iPad3, iPad 4, iPad mini, iPod touch (Gen. 5). (--> Bluetooth® 4.0).

It is possible to use Leica DISTO™ supporting apps from the app store or to connect the Leica DISTO™ in the Bluetooth® manager as a keyboard device where you can send the measurement data to the cursor position in any app. The corresponding modes in the Leica DISTO™ device are set automatically. In the Bluetooth® settings menu you can select navigation on or off to navigate in a calculation spread sheet or if you want to transfer the units or not.

- **On my iOS device the keyboard is not showing up.**
When pressing the + or – key for 1 second the keyboard in the display of your iOS device will appear. When pressing one of those keys again for 1 second it will disappear again.
- **Can I send measurement data from a Leica DISTO™ X4 to Android devices?**
Yes, with the Leica DISTO™ X4 it is possible to communicate with Android devices. Its operating system must be 4.3 or higher. Send measurement data to Android devices that include Bluetooth 4.0. Used Apps should support the corresponding Bluetooth® standard (e.g. Leica DISTO™ Plan).
- **Can I send measurement data from a Leica DISTO™ X4 to Windows computers?**
Yes, with the Leica DISTO™ X4 it is possible to transfer data to Windows computers. The Leica DISTO™ X4 is “treated” as a keyboard. This mode is set automatically in the Leica DISTO™ device. You can then send the measurement data from the Leica DISTO™ to the cursor position in any program.

The Windows computer must have the operating system Windows 8.1 or higher and Bluetooth 4.0.

- **Can I send measurement data from a Leica DISTO™ X4 to Linux, Windows mobile, Windows RT or Blackberry's?**
No, this is not possible.
- **My software only supports comma as a decimal marker and not a dot. Can I change this on the Leica DISTO™ X4?**
Yes, this can be changed in the Bluetooth® settings menu. In the 2nd sub setting you can select if a dot or a comma is transferred.
- **I need to fill out a form in the Internet or a spreadsheet and it is required to jump to the next input box with a Tab or with Enter after each measurement. Can I change this on the Leica DISTO™ X4?**
Yes, this can be changed in the Bluetooth® settings menu. In the 4th sub setting you can select the termination when transferring a measurement.
- **It needs to use navigation keys to move in my spreadsheet to the required input box. Can I do this remotely from my Leica DISTO™ X4?**
Yes, this is possible. In the Bluetooth® settings menu you need to select navigation on. With the left selection key you can switch on and off the navigation function where you can use the arrow keys of the Leica DISTO™ for navigation.

- **Why can I select if the units are transferred or not?**

If you have chosen to transfer measurements with the units the result will be transferred as shown in the Leica DISTO™ display. This includes units or fractions for feet and inch. If you have chosen to transfer measurements without units numbers are transferred without any unit information. Values with fractions will be converted to the corresponding value with decimal. This makes further calculations like e.g. in Excel much easier.

- **Is it possible to transfer point data (coordinates) using Bluetooth® connection?**

No, via Bluetooth® it is only possible to transfer distances, areas, volume and inclinations.

- **Do I need a special software for the Leica DISTO™ data transfer?**

If the Leica DISTO™ is used in keyboard mode no special software is required. For all other cases of data transfer a specific software is needed. For Leica DISTO™ Leica Geosystems is providing Leica DISTO™ transfer which can be downloaded from our webpage.

- **Does Leica DISTO™ offer apps?**

Yes. Leica Geosystems offers an app Leica DISTO™ Plan. This app is available for iOS on the App store and for Android on Google play.

- **What is the measuring accuracy of Leica DISTO™ X4 in combination with the Leica DST 360 adapter?**

The Leica DST 360 adapter itself has a tolerance of up to $\pm 0.1^\circ$. In practical applications (typical accuracy) the deviation on 10 m measuring distance is about 10 mm, on 5 m it is 5 mm and on 3 m it is 3 mm. Depending on the measuring situation higher tolerances on shorter distances are possible.

- **Why is it a must to do levelling of the Leica DISTO™ X4 in combination with Leica DST 360 adapter for some of the functions?**

If using the function P2P distance with levelling, you will get additional results when measuring 2 arbitrary points (horizontal and vertical distance and the angle).

If measurement results should refer to a horizontal plane (e.g. in the functions Measure Plan, Measure Façade or Earthworks of the Leica DISTO™ Plan app) the instrument must be calibrated right before measuring. Doing this errors from slightly inclined measuring bases are automatically compensated. The range for this levelling is $\pm 5^\circ$.

- **Can I measure the area of a rounded room?**

The area of a rounded room cannot be measured exactly. Since the Leica DISTO™ X4 in combination with the Leica DST 360 adapter allows to measure areas with up to 30 corners a good result can be achieved by measuring several points along the arc.

- **Which area is measured when using the Smart Area Function?**

The area given by the measured points will be measured. So, if the area is inclined as it is e.g. on a roof of a building the real area will be measured.

- **Why do I have to calibrate my Leica DST 360 adapter with my Leica DISTO™ X4?**

Every adapter and device has got little manufacturing tolerances. To compensate these tolerances in every individual combination you need to calibrate it to get the best accuracy. Select the Leica DST 360 calibration in the settings menu and follow the instructions. To get optimal accuracy please aim very precisely and make sure the measured target is at least 8 m far away.