Leica DISTO™ S910

The original laser distance meter

- when it has to be **right**

Leica Geosystems

Introduction

The safety instructions and the user manual should be read through carefully before the product is used for the first time.

The person responsible for the product must ensure that all users understand these directions and adhere to them.

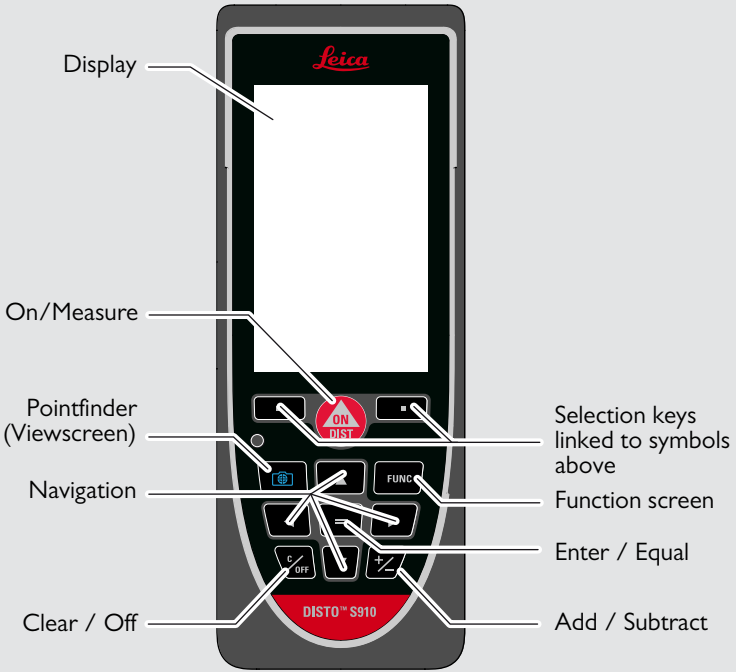
The symbols used have the following meanings:

WARNING
Indicates a potentially hazardous situation or an unintended use which, if not avoided, will result in death or serious injury.

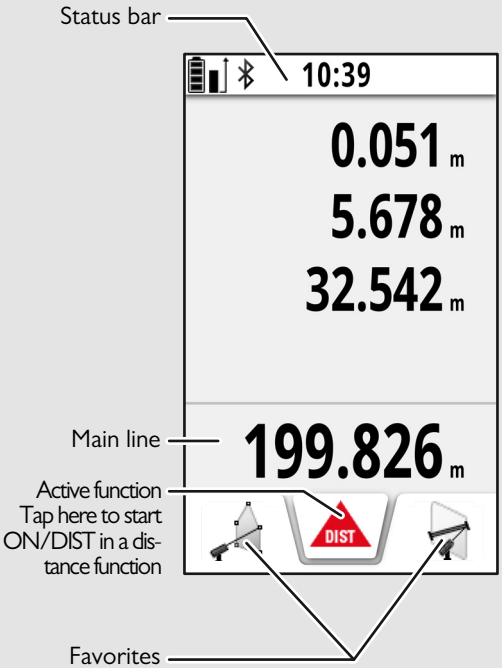
CAUTION
Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in minor injury and/or appreciable material, financial and environmental damage.

Important paragraphs which must be adhered to in practice as they enable the product to be used in a technically correct and efficient manner.

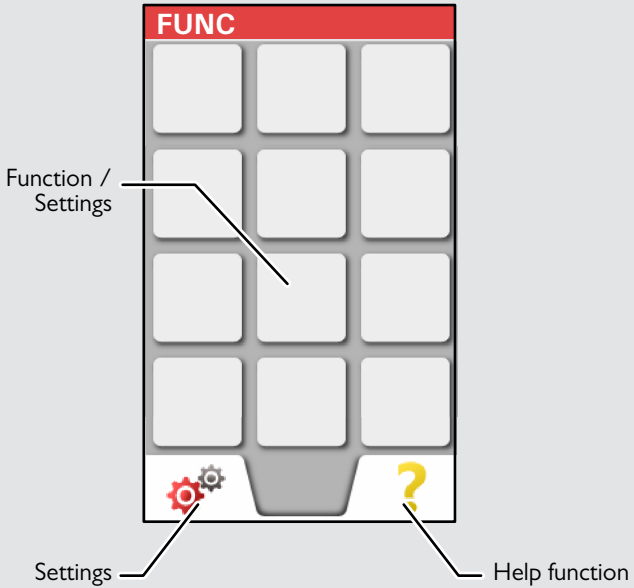
Overview



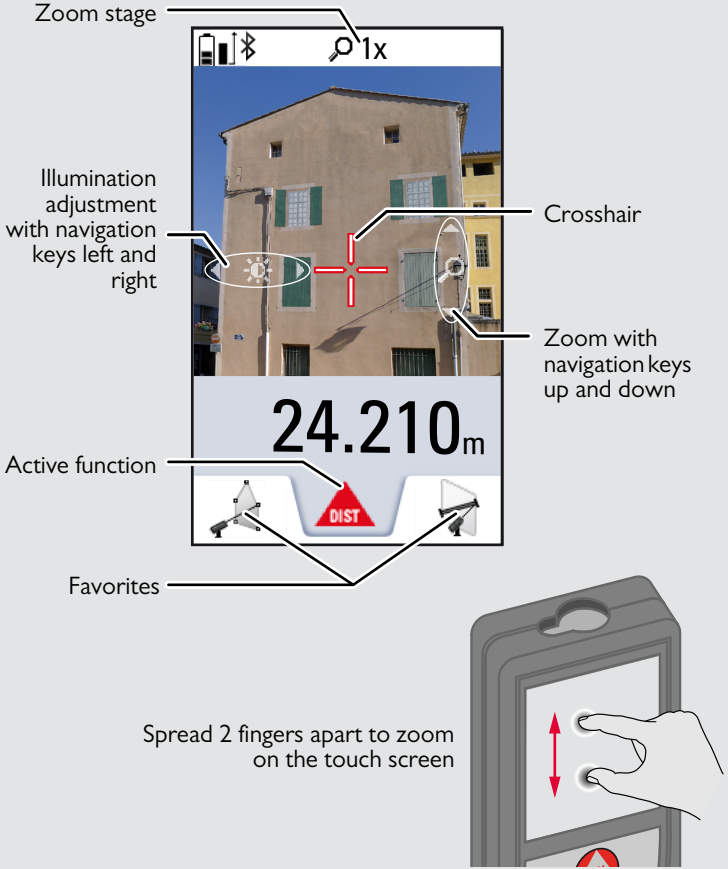
Basic measuring screen



Selection screen



Pointfinder (Viewscreen)



Icons on Status bar

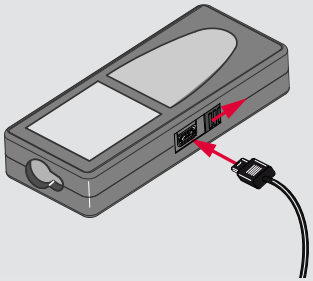
	Scroll up and down for further results
	Battery power
	Bluetooth® is switched on
	Bluetooth® connection established
	Device is not leveled
	Device is leveled
	Device was moved after leveling - affects measuring accuracy
	Offset is activated and subtracts the defined value from measured distance
	Offset is activated and adds the defined value from measured distance
	Device is measuring
	DISTO™ WLAN hotspot activated
	Other device connected to DISTO™ WLAN hotspot
	WLAN client mode activated
	DISTO™ connected as client to WLAN
	Zoom
	Measuring reference

Charging the Li-Ion battery via USB

Charge the battery before using it for the first time. Use the provided cable to charge the battery.

Plug the small end of the cable into the port of the device, and plug the end of the charger into an electrical socket. Select the appropriate connector for your country. The device cannot be used while it is charging.

The computer can also be used to charge the device, but this takes more time. If the device is connected to the computer via USB cable, you can download or delete the gallery. **It is not possible to upload any data.**



When you charge the battery, the following icons show the status:

Charging

Fully charged

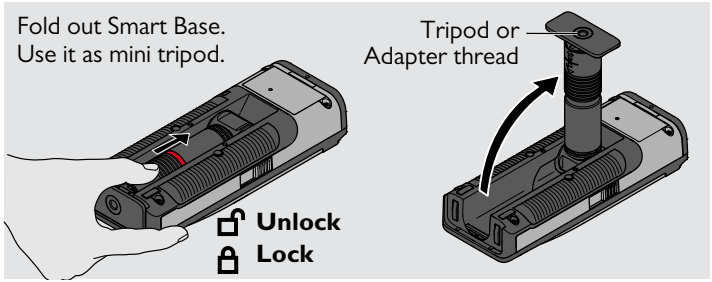
Charge batteries when battery symbol is flashing.
While charging, the device may heat up. This is normal and should not affect the device's lifespan or performance. If the battery gets hotter than 40°C / 104°F, the charger stops.
At a recommended storage temperature of -20°C to +30°C (-4°F to +86°F), batteries containing a 50% to 100% charge can be stored up to 1 year. After this storage period the batteries must be recharged.
To save energy, unplug the charger when not in use.

⚠ CAUTION

Connecting the charger improperly may cause serious damage to the device. Any damage caused by misuse is not covered by the warranty. Use only Leica-approved chargers, batteries, and cables. Unapproved chargers or cables can cause the battery to explode or damage the device.

If the device is connected to the computer via USB cable, you can download or delete the gallery. It is not possible to upload any data.

Using the Smart Base



Using the Smart Base Extension

Do not move or tilt the Smartbase during measuring.

We recommend the use of a tripod with the Leica FTA360-S adapter.

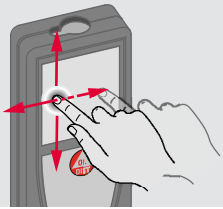
Using the Touch Screen

Use only fingers to use the touch screen.
Do not allow the touch screen to come into contact with other electrical devices.
Electrostatic discharges can cause the touch screen to malfunction.
Do not allow the touch screen to contact water. The touch screen may malfunction in humid conditions or when exposed to water.
To avoid damaging the touch screen, do not tap it with anything sharp or do not apply excessive pressure to it with your fingertips.

Tapping

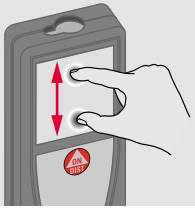
Tap on the display to open an on-screen button or to make a selection. Tapping on the icon in the middle of the bottom line activates the distance measurement or triggers the camera.

Dragging



Drag on the display to move to previous or to next screen in the galerie function.

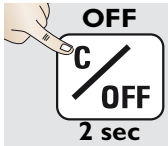
Pinching



Spread 2 fingers apart to zoom if pointfinder is activated.

Instead of using the touch screen, the normal keypad buttons can be used also.

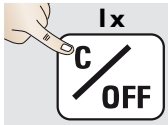
Switching ON/OFF



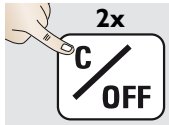
Device is turned OFF.

If no key is pressed for 180 sec, the device switches off automatically.

Clear



Undo last action.



Leave actual function, go to default operation mode.

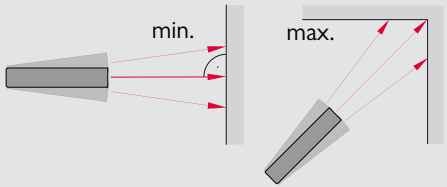
Message Codes

If the info icon appears with a number, observe the instructions in section "Message Codes".
Example:

Permanent / Minimum-Maximum measuring

1

2



Used to measure room diagonals (maximum values) or horizontal distance (minimum values)

The minimum and maximum distance measured is displayed (min, max.). The last value measured is displayed in the main line.

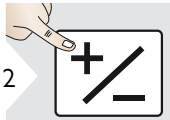
3

Stops permanent / minimum-maximum measuring.

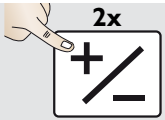
Add / Subtract

1

2

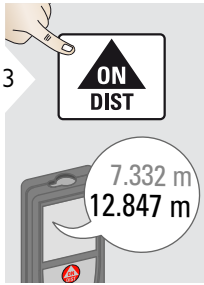


The next measurement is **added** to the previous one.

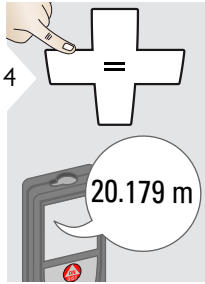


The next measurement is **subtracted** from the previous one.

3

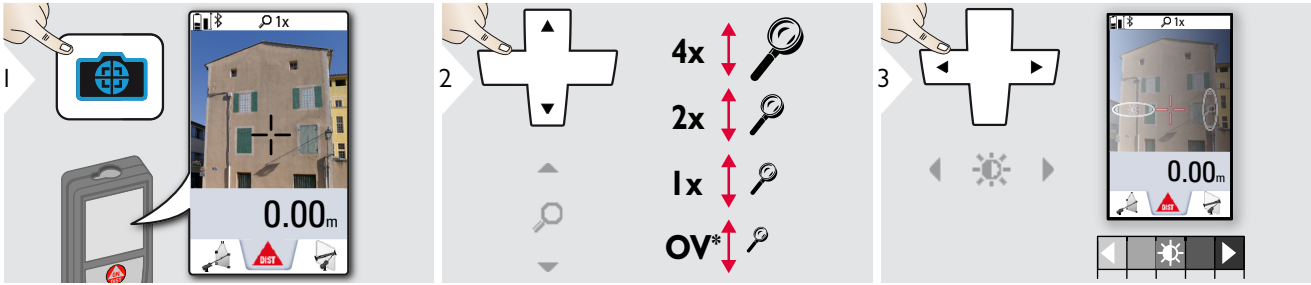


4



This process can be repeated as required. The same process can be used for adding or subtracting areas or volumes.

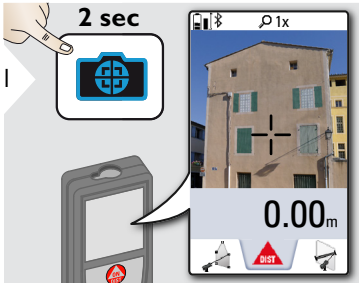
Pointfinder (Viewscreen)



This is a great help for outdoor measuring. The integrated pointfinder (viewscreen) shows the target on the display. The device measures in the middle of the cross hair, even if the laser dot is not visible.
Parallax errors occur when the pointfinder camera is used on close targets, with the effect that the laser appears displaced in the crosshair. In this case the error is automatically corrected with a shift of the crosshair.

* OV = Overview

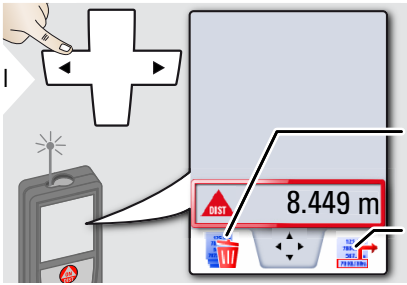
Screenshot



Screenshot photo is saved in gallery.

Memory

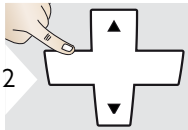
1



Delete memory.

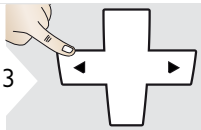
Take over value for further actions.

2



Use Up/Down navigation keys to show more detailed results of the specific measurement.

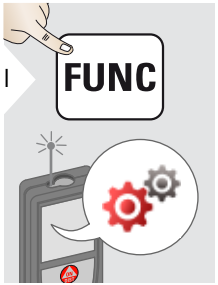
3

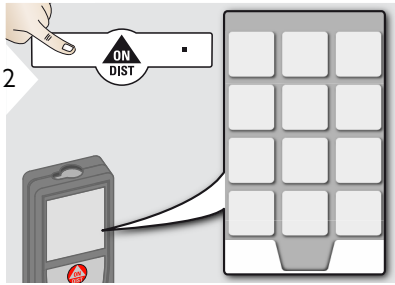


Use Left/Right navigation keys to switch between measurements.

Pointfinder needs to be switched off.

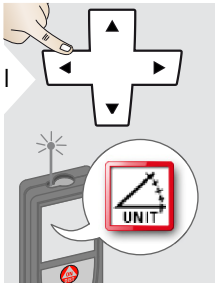
Overview

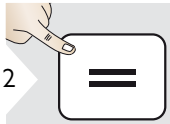


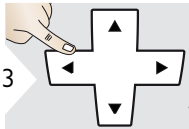


	Tilt units
	Move Alert
	WLAN / Bluetooth®
	Digital level
	Keypad lock
	Illumination
	Tilt calibration
	Favorites
	Compass adjustment
	Touch screen
	Date and Time
	Distance units
	Offset
	Reset
	Information/Software Update
	Beep

Tilt units

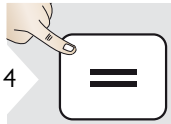






Switch between the following units:

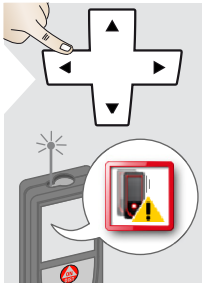
360.0°	0.00 %
± 180.0°	0.0 mm/m
± 90.0°	0.00 in/ft



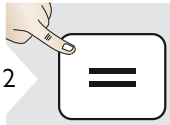
Confirm setting.

Exit settings.

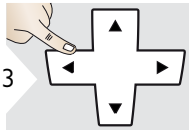
Move Alert of Levelling

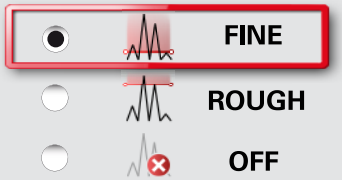


2



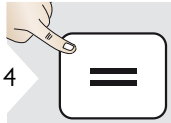
3





Choose the sensitivity of the levelling, which is needed for some measuring functions.
FINE means, that the levelling of the device is sensitive to any small vibrations.
Choose ROUGH when working in harsh construction environment with many shocks and vibrations. In this case the accuracy is decreased in correlation with the movements.

4



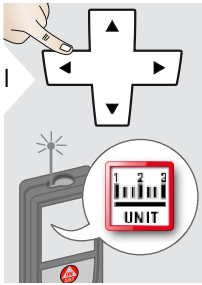
Confirm setting.

5

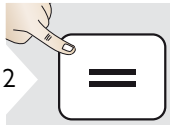
Exit settings.

Distance units

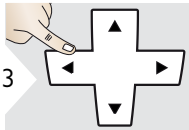
1



2



3



Switch between the following units:

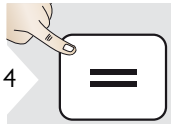
Art. No. 805080:

0.00 m	0.00 ft
0.000 m	0.00 in
0.0000 m	0 in 1/32
0.0 mm	0'00" 1/32

US-Model Art. No. 808183:

0.00 m	0 in 1/16
0.000 m	0'00" 1/16
0.0000 m	0 in 1/8
0.0 mm	0'00" 1/8
0.00 ft	0 in 1/4
0.00 in	0'00" 1/4
0 in 1/32	0.000 yd
0'00" 1/32	

4



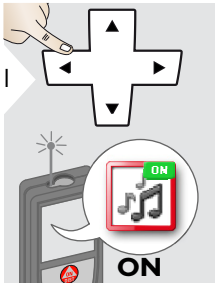
Confirm setting.

5

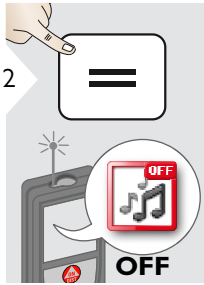
Exit settings.

Beep ON/OFF

1

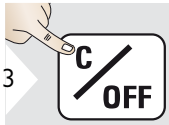


2



To switch ON, repeat procedure.

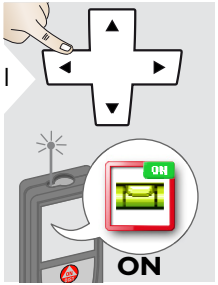
3



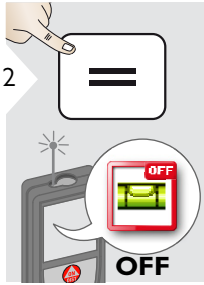
Exit settings.

Digital level ON/OFF

1



2



To switch ON, repeat procedure.

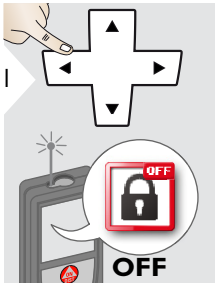
3

Exit settings.

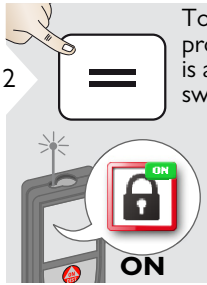
The digital level is displayed in the status bar.

De-/Activate keylock

1

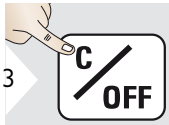


2



To deactivate, repeat procedure. The keylock is active if device is switched off.

3

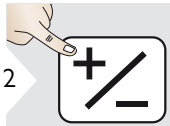


Exit settings.

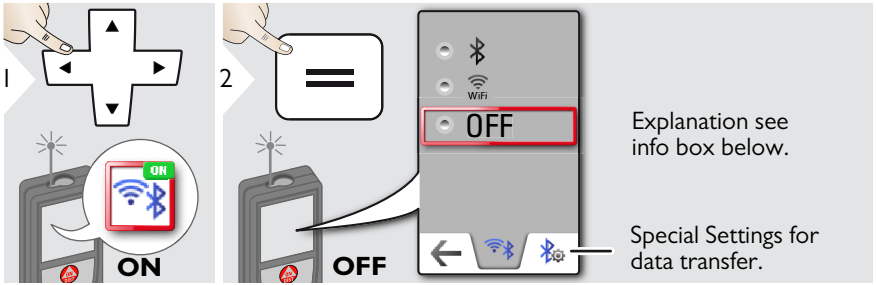
Switch on with keylock

1

2



Bluetooth® /WLAN



Explanation see info box below.

Special Settings for data transfer.

3

C OFF

Exit settings.

Bluetooth®/WLAN is switched on and black Bluetooth®/WLAN icon is displayed in status bar. If connection is established the color of the icon changes to blue.

Special Bluetooth® Settings

Figure Mode: Use this mode if the data needs to be transferred in figures, e.g. working with spread sheets. Ft/in fractional is converted into ft/in decimal. An additional press on the Bluetooth® Settings Icon allows further adjustments for data transfer.

Device is connected. Favorites disappear and two softkeys appear:

Allows the arrow keys to move the cursor on your computer.

sends the value of the main line to the computer.

Text Mode: Use this mode if the data needs to be transferred as text, e.g. working with word processing programs.

Device is connected. Favorites disappear and two softkeys appear:

Allows the arrow keys to move the cursor on your computer.

sends the value of the main line to the computer.

App Mode: Use this mode to transfer the data using an App. Special properties: ENCRYPTED is the default setting. In case of trouble with data transfer, select mode UNENCRYPTED.

Special WLAN Settings

Available WLAN network can be choosen with the possibility to enter a password. Recommended for GIS applications.

WLAN: DISTO™ acts as hotspot. Data transfer unsecured or secured with serial number as password. Recommended for standard use.

Bluetooth® data transfer

Connect the device with your smart phone, tablet, laptop,… The actual measurement is transferred automatically if Bluetooth® connection is established. To transfer a result from the main line, press =. Bluetooth® switches off as soon as the laser distance meter is switched off.

The efficient and innovative Bluetooth® Smart module (with the new Bluetooth® standard V4.0) works together with all Bluetooth® Smart Ready devices. All other Bluetooth® devices do not support the energy saving Bluetooth® Smart Module, which is integrated in the device.

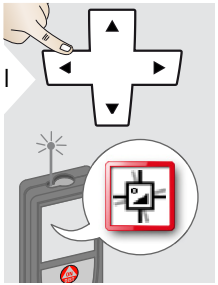
We provide no warranty for free DISTO™ software and offer no support for it. We accept no liability whatsoever arising from the use of the free software and we are not obliged to provide corrections nor to develop upgrades. A wide range of commercial software can be found on our homepage. Apps for Android® or Mac iOS can be found in special internet shops.
For more details, see our homepage.

WLAN data transfer

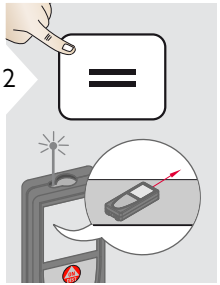
Only data from the function Point Data transmission can be transferred with WLAN. A corresponding program is needed to receive the data, e.g. DISTO™ transfer.
For more details, see our homepage.

Calibration of tilt sensor (Tilt Calibration)

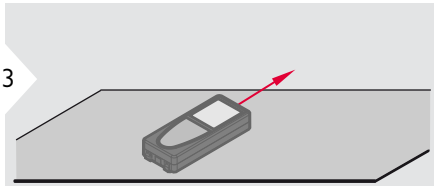
1



2

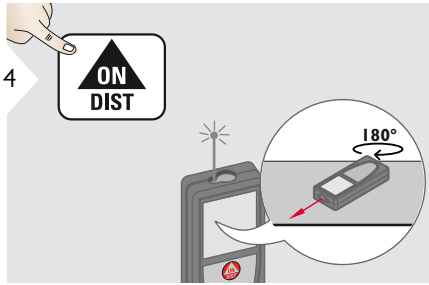


3

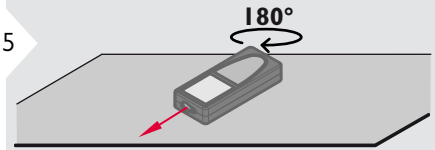


Place device on absolutely flat surface.

4



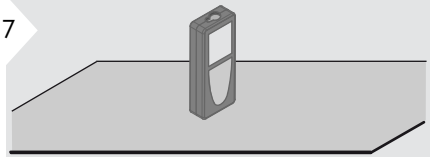
5



Turn the device horizontally by 180° and place it again on absolutely flat surface.

6

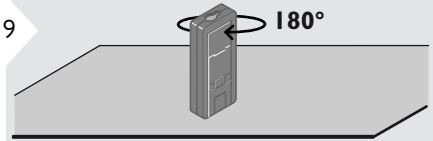
7



Place device on absolutely flat surface.

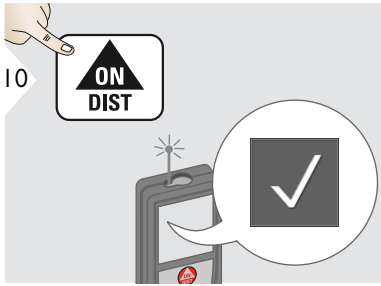
8

9



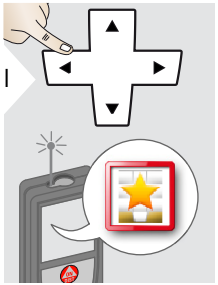
Turn the device horizontally by 180° and place it again on absolutely flat surface.

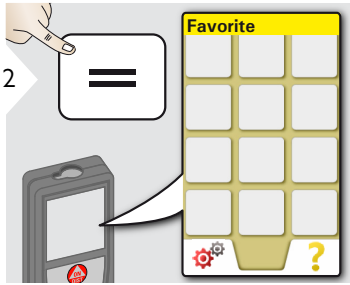
10

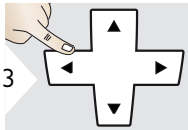


After 2 sec the device goes back to the basic mode.

Personalized favorites







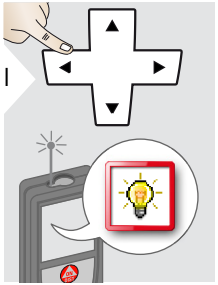
Select favorite function.

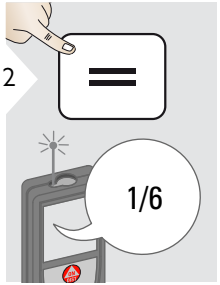
Press selection key left or right. Function is set as favorite above the corresponding selection key.

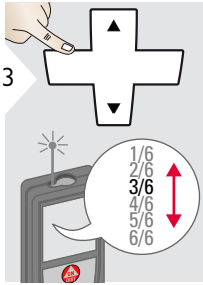
Select your favorite functions for quick access.

Short cut:
Press 2 sec on a selection-key in the measuring mode. Select your favorite function and press again short on the corresponding selection key.

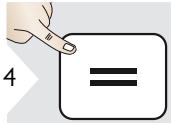
Illumination







Select brightness.

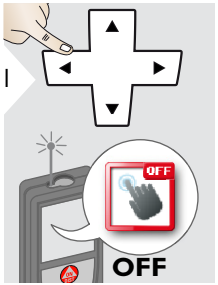


Confirm setting.

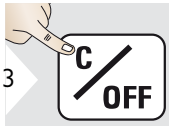
Exit settings.

To save power reduce brightness if not necessary.

Touch Screen ON/OFF

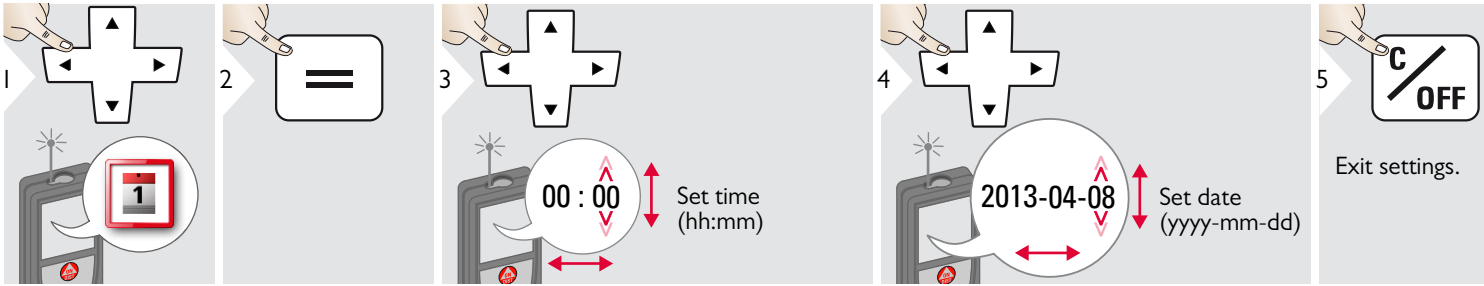


To deactivate, repeat procedure.



Exit settings.

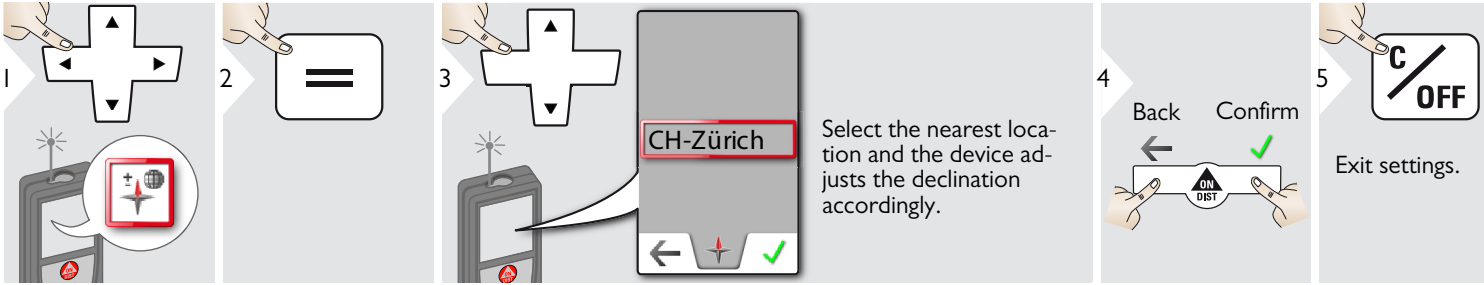
Date and Time



Compass Adjustment

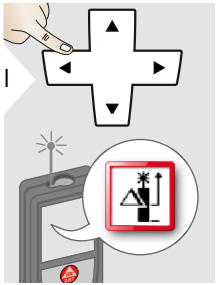
Adjusting the magnetic declination

Depending on your geographic location, the angle of declination may vary from other locations, as the geographic and magnetic poles are aligned. However, if the reference location is not selected, the difference in declination between the poles can differ greatly. For best results, select the nearest geographic reference point using the steps below.

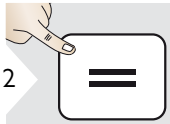


Offset

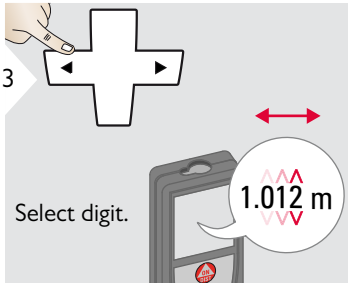
1



2

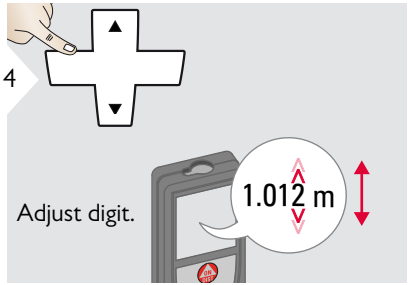


3



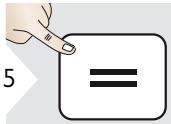
Select digit.

4



Adjust digit.

5



Approve value.

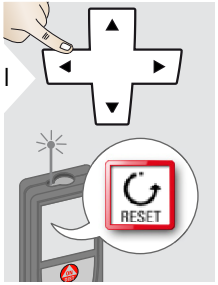
6

Exit settings.

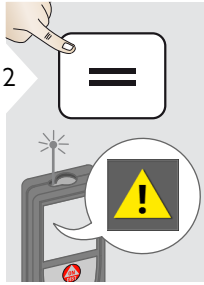
An offset adds or subtracts a specified value automatically to or from all measurements. This function allows tolerances to be taken into account. The offset icon is displayed.

Reset

1



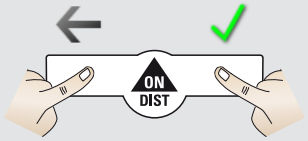
2



3

Second confirmation with selection keys:

Refuse: Confirm:



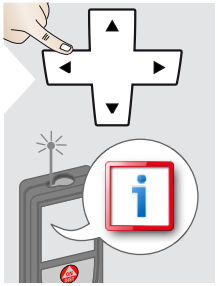
4

Exit settings.

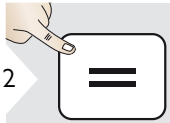
Reset returns the instrument to the factory settings. All customized settings and memories are lost.

A HARDWARE-RESET is done by pressing 15 sec on ON/DIST key.

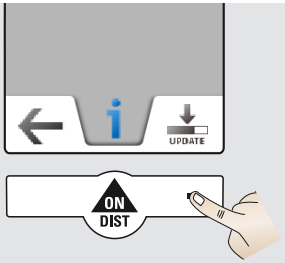
Information/Software Update



2



3

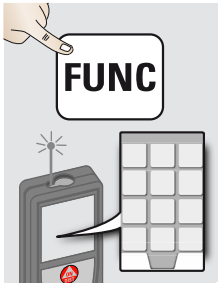


4 Connect the device with USB to your computer.

5 Software updates with correspondent instructions can be found on our homepage www.disto.com.

Make sure that you use always the newest software version.

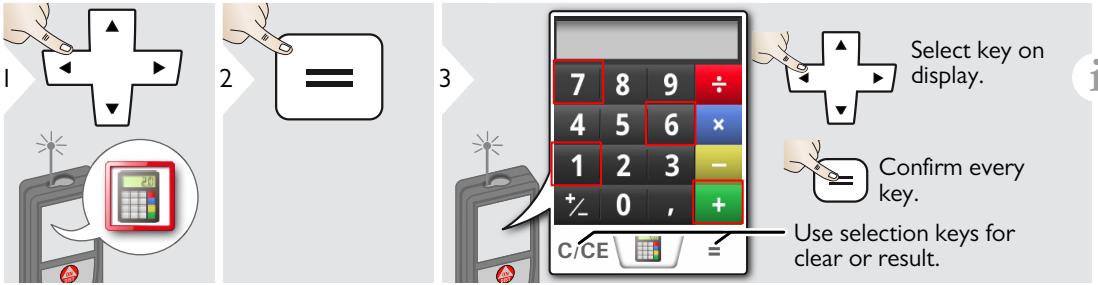
Overview



	Calculator
	Smart Horizontal Mode
	Smart Angle measurement
	DXF Folder
	Level
	Single Distance measurement
	Point to point measurements
	DXF data capture
	Photo
	Volume
	Smart Area measurement
	WLAN data transmission
	Gallery
	Area

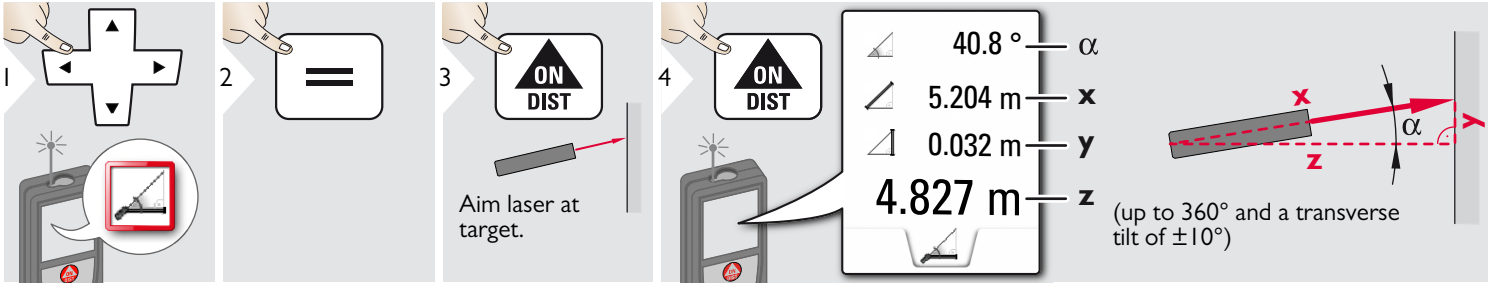
	Measuring on sloped objects
	Width
	Timer
	Triangular area
	Height-profile Measurement
	Diameter
	Adjusting measuring reference
	Pythagoras (2-point)
	Height Tracking
	Area from Photo
	Compass
	Pythagoras (3-point)
	Trapezium
	Stake out

Calculator

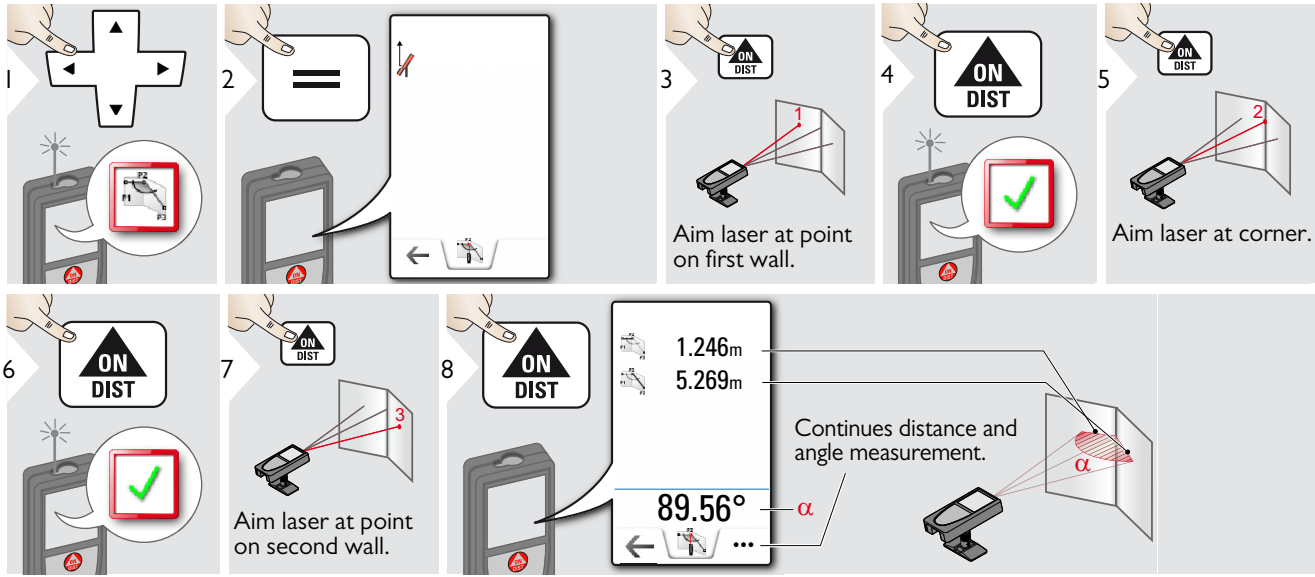


The measurement result from the main line is taken over to the calculator and can be used for further calculations.
Ft/in fractions are converted into ft/in decimal.
To take over a result from the calculator in the basic mode press DIST before leaving the calculator function.

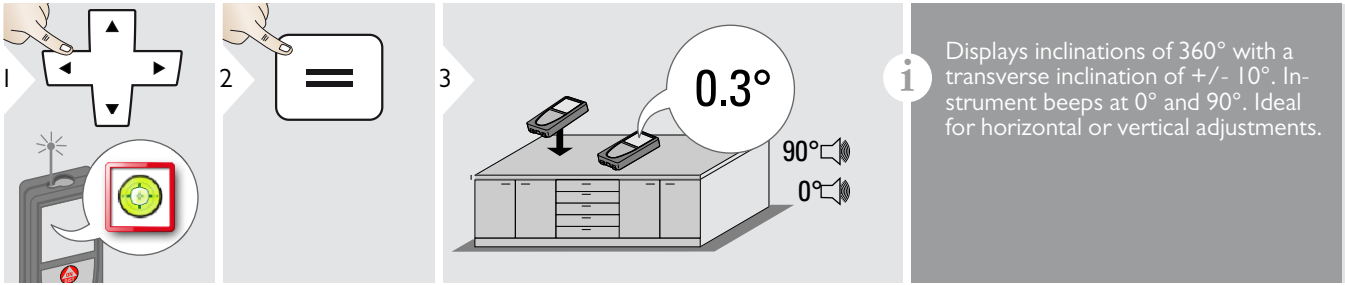
Smart Horizontal Mode



Smart Angle measurement

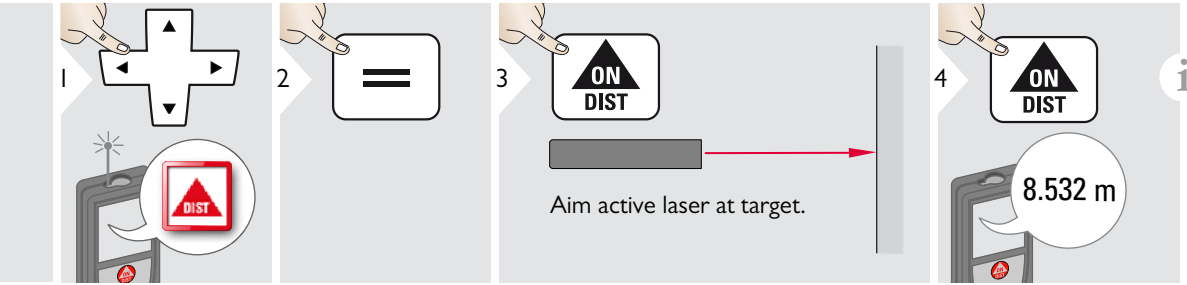


Level



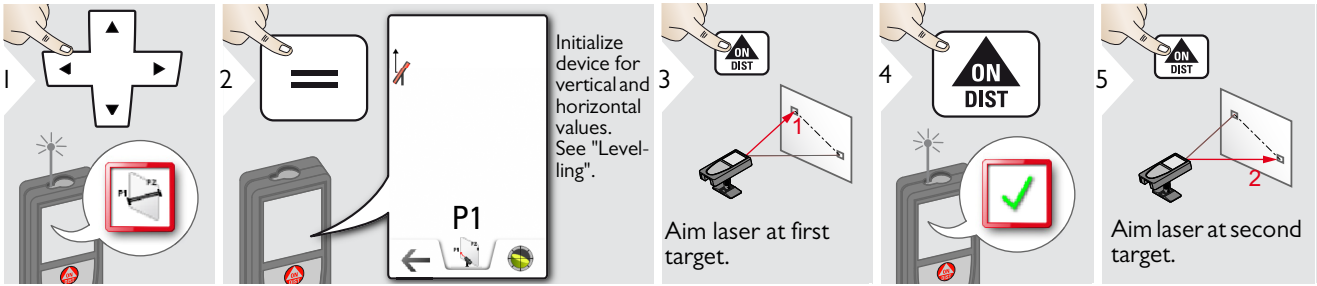
Displays inclinations of 360° with a transverse inclination of +/- 10°. Instrument beeps at 0° and 90°. Ideal for horizontal or vertical adjustments.

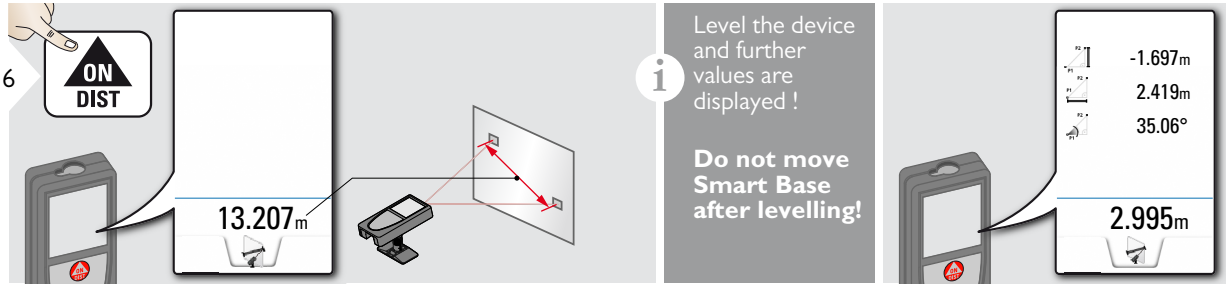
Measuring single distance



Target surfaces:
Measuring errors can occur when measuring to colourless liquids, glass, styrofoam or semi-permeable surfaces or when aiming at high gloss surfaces. Against dark surfaces the measuring time increases.

Point to point measurements



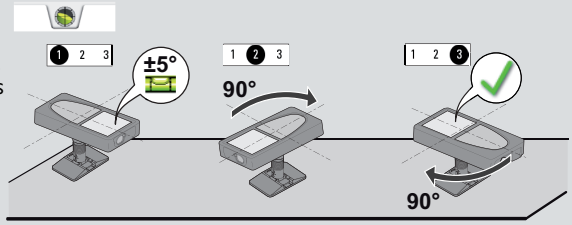


Levelling

Level the device to get more measuring data.

Do not move device after levelling.

For levelling, Smart Base has to be folded out and device needs to be in an inclination range of +/-5°.



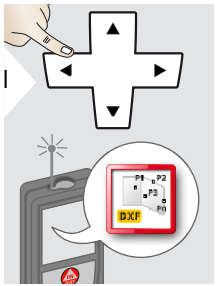
Rotate the device two times clockwise 90°. Follow the instructions on the display. Levelling is finished when OK icon appears on the display.

Check status line:

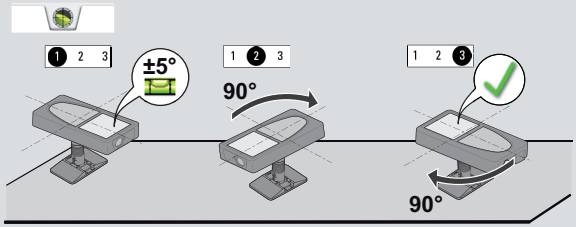
- indicates proper levelling
- indicates insufficient levelling
- indicates that smart base was tilted and can affect measuring accuracy

DXF data capture

1



2 Levelling is mandatory! For levelling, Smart Base has to be folded out and device needs to be in an inclination range of +/-5°.



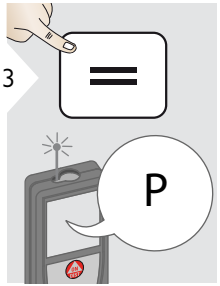
Do not move device after levelling!

Rotate the device two times clockwise 90°. Follow the instructions on the display. Levelling is finished when OK icon appears on the display.

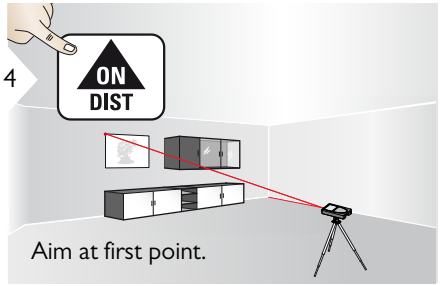
Check status line:

- indicates proper levelling
- indicates insufficient levelling
- indicates that smart base was tilted and can affect measuring accuracy

3

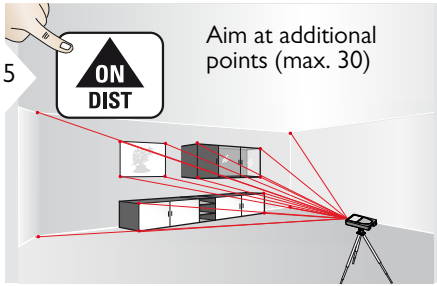


4



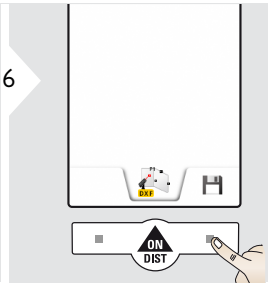
Aim at first point.

5



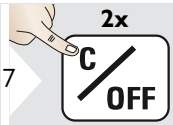
Aim at additional points (max. 30)

6



Stops DXF capture and saves data.

7



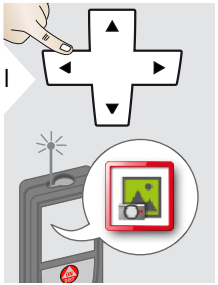
Leave actual function, go to default operation mode.

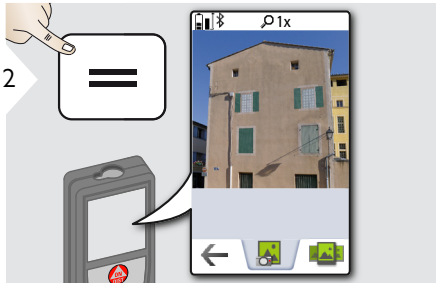
Max. 20 DXF files can be generated (with 30 measuring points/photos each).

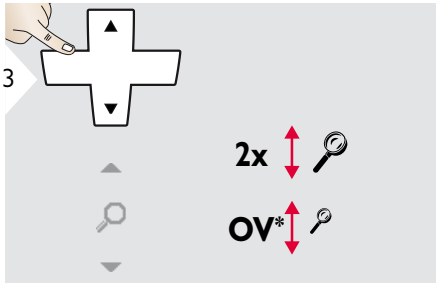
If pointfinder is switched on, the corresponding photos are saved with a resolution of 300 x 400 dpi.

Do not forget to save your data!

Photo







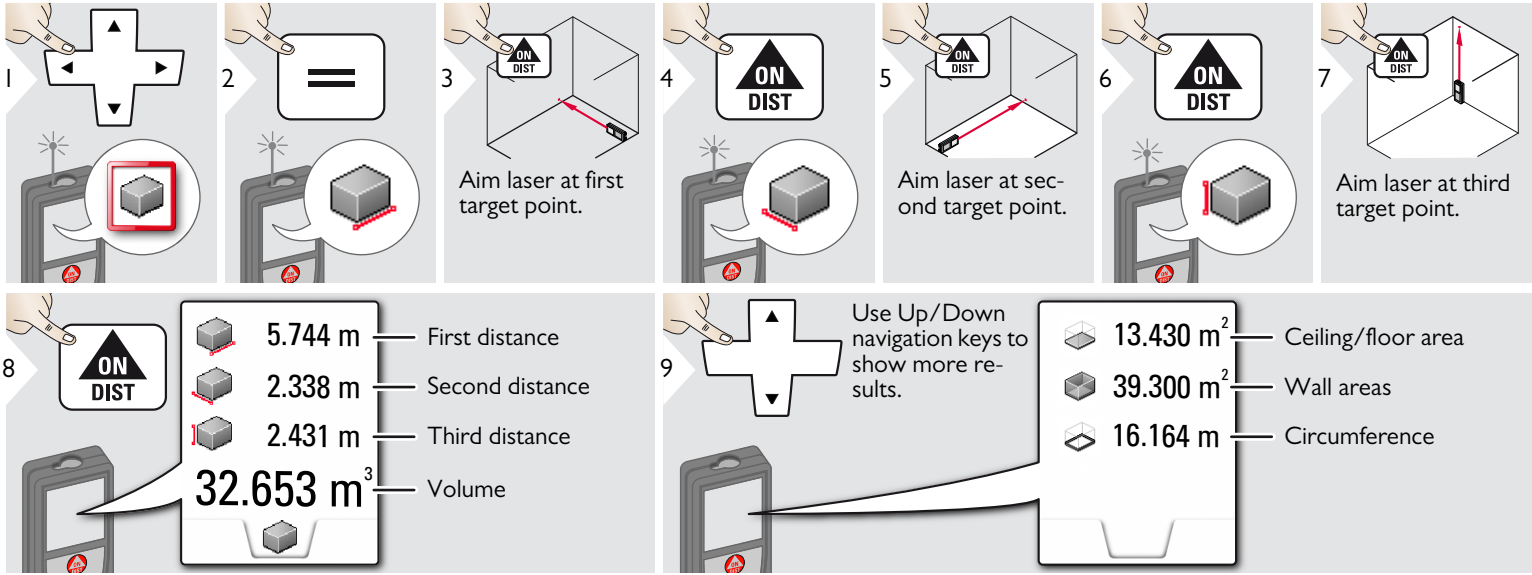
Take photo.

Exit.

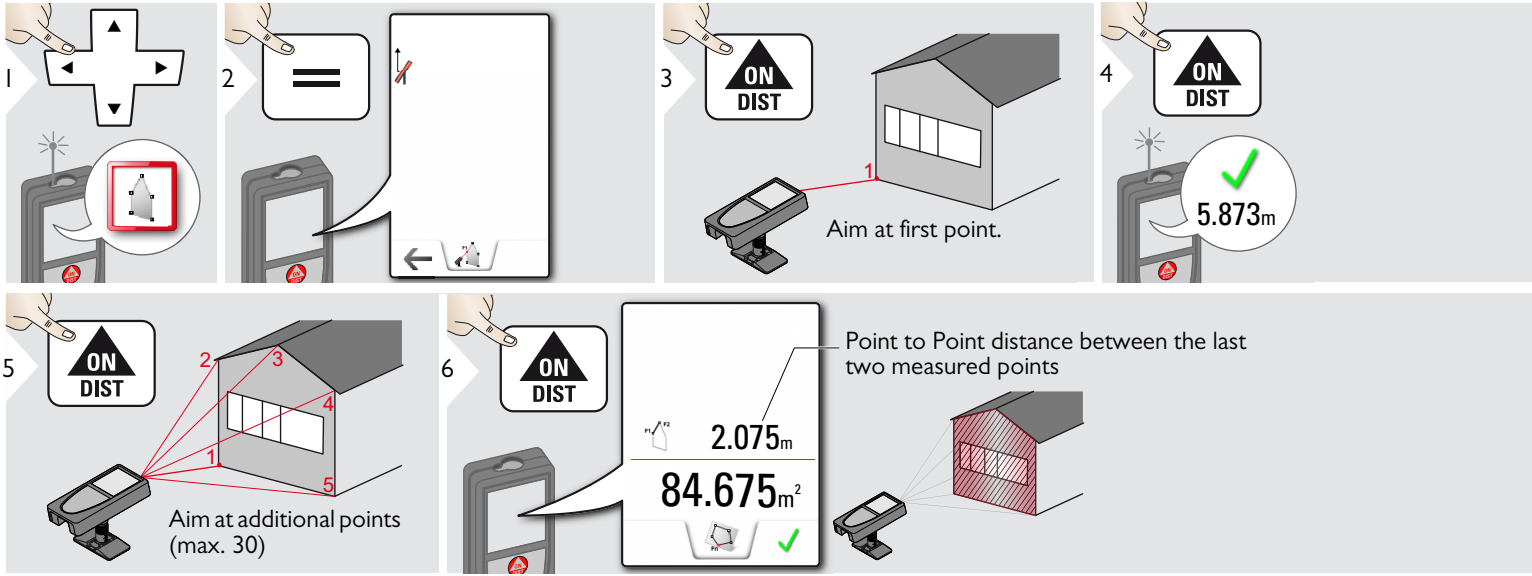
Tap on the camera icon in the middle of the bottom line to take a photo.
For screenshots, press camera key for 2 sec.

* OV = Overview

Volume

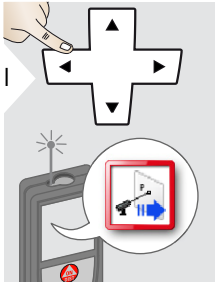

1
2
3
ON DIST
Aim laser at first target point.
4
ON DIST
5
ON DIST
Aim laser at second target point.
6
ON DIST
7
ON DIST
Aim laser at third target point.
8
ON DIST
5.744 m
First distance
2.338 m
Second distance
2.431 m
Third distance
32.653 m³
Volume
9
Use Up/Down navigation keys to show more results.
13.430 m²
Ceiling/floor area
39.300 m²
Wall areas
16.164 m
Circumference

Smart Area measurement

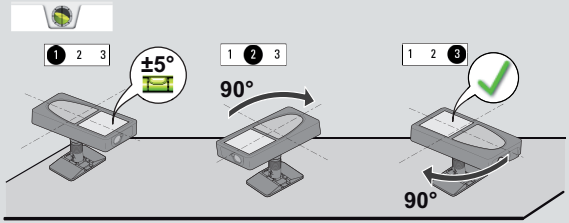


WLAN data transmission

1



2 For levelling, Smart Base has to be folded out and device needs to be in an inclination range of +/-5°.



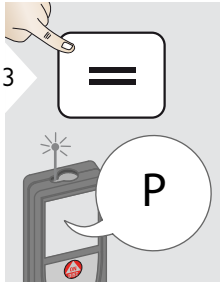
Do not move device after levelling!

Rotate the device two times clockwise 90°. Follow the instructions on the display. Levelling is finished when OK icon appears on the display.

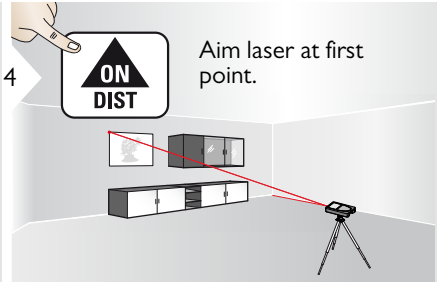
Check status line:

- indicates proper levelling
- indicates insufficient levelling
- indicates that smart base was tilted and can affect measuring accuracy

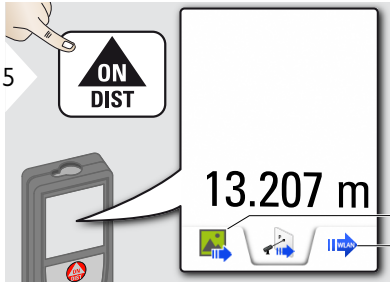
3



4 Aim laser at first point.



5

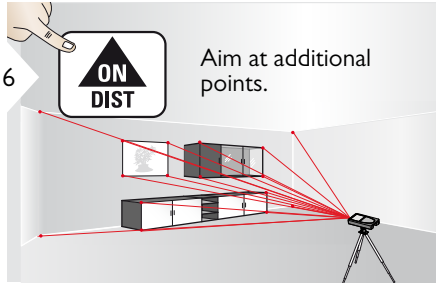


WLAN data transfer of point coordinates

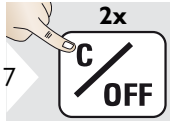
with pointfinder photo

without pointfinder photo

6 Aim at additional points.



7



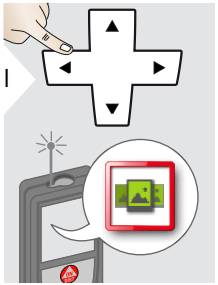
Leave actual function, go to default operation mode.

If smart base is folded out, device sends x,y,z coordinates of measured point. If smart base is not folded out, device sends only inclination and slope distance. If WLAN is switched off, the device requests to switch on WLAN.

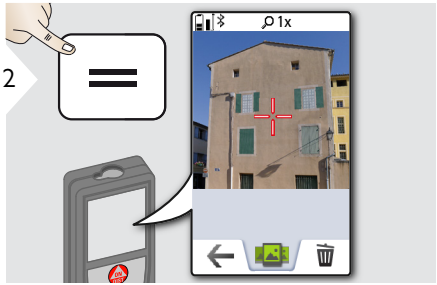
Data transfer works only with WLAN.

Gallery

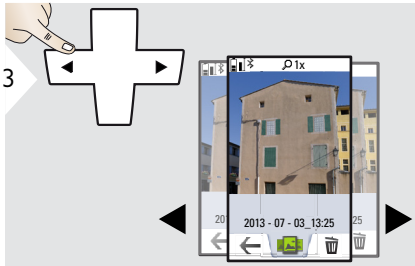
1



2



3

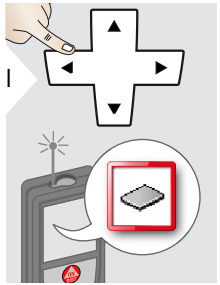


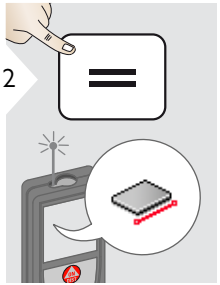
4

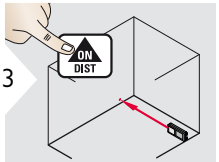
Exit.

If the device is connected to the computer via USB cable, you can download or delete the gallery. It is not possible to upload any data.

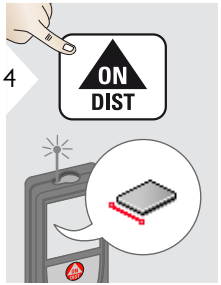
Area

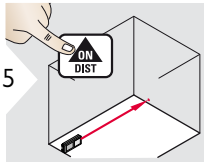




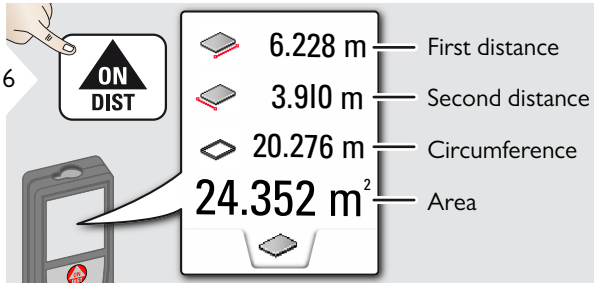


Aim laser at first target point.



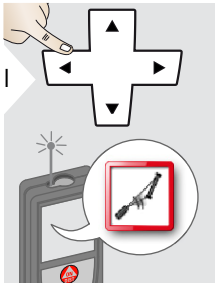


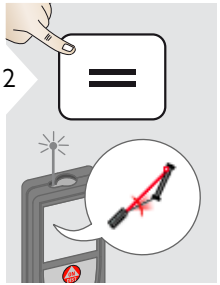
Aim laser at second target point.

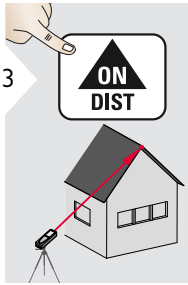


The result is shown in the main line and the measured value above.
Partial Measurements / Painter function: Press + or - before starting the first measurement. Measure and add or subtract distances. Finish with =. Measure 2nd length.

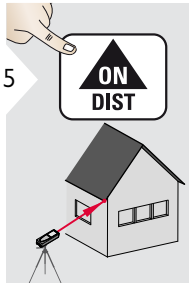
Sloped objects



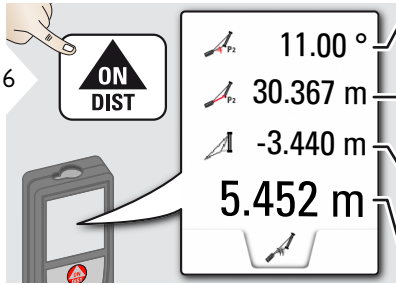




Aim laser at upper target point.



Aim laser at lower target point.



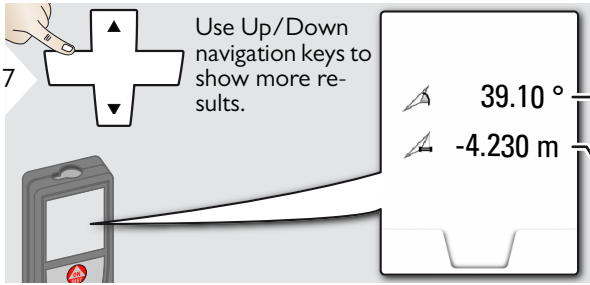
P2 angle

P2 distance

Vertical height between both points

Distance between both points

Use Up/Down navigation keys to show more results.



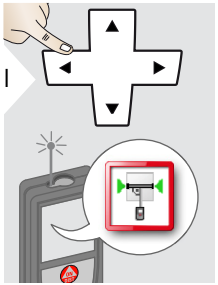
Included angle between both points

Horizontal distance between both points

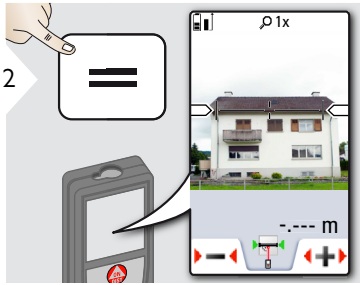
Indirect distance measuring between 2 points with additional results. Ideal for applications such as length and slope of roof, height of chimneys,…
It is important, that the instrument is positioned in the same vertical plane as the 2 measured points. The plane is defined of the line between the 2 points. This means, that the device on the tripod is only moved vertically and not turned horizontally to reach both points.

Width

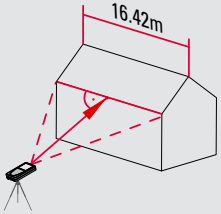
1



2

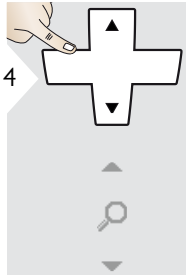


3 ON DIST



It is absolutely necessary to aim with the laser perpendicular to the object.

4

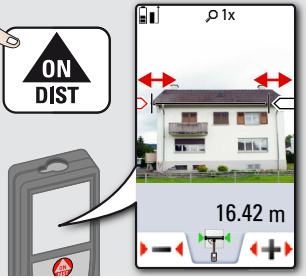


4x
2x
1x
OV*

If necessary, use the Zoom for precise aiming.

* OV = Overview

5 ON DIST

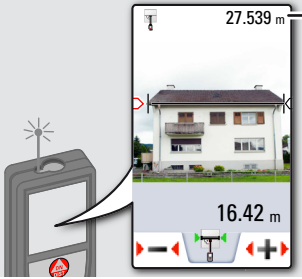


Select arrows with the cursor keys or by tapping on the display and adjust with softkeys. Corresponding width is calculated.

6

Confirm measurement.

7



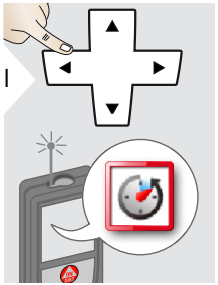
Distance to object

8 C/OFF

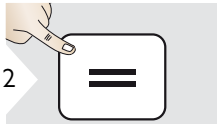
Exit.

Timer

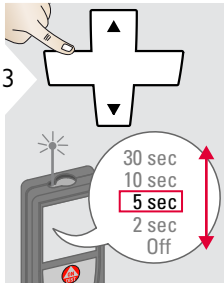
1



2

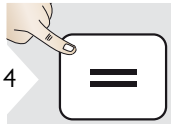


3



Select release time.

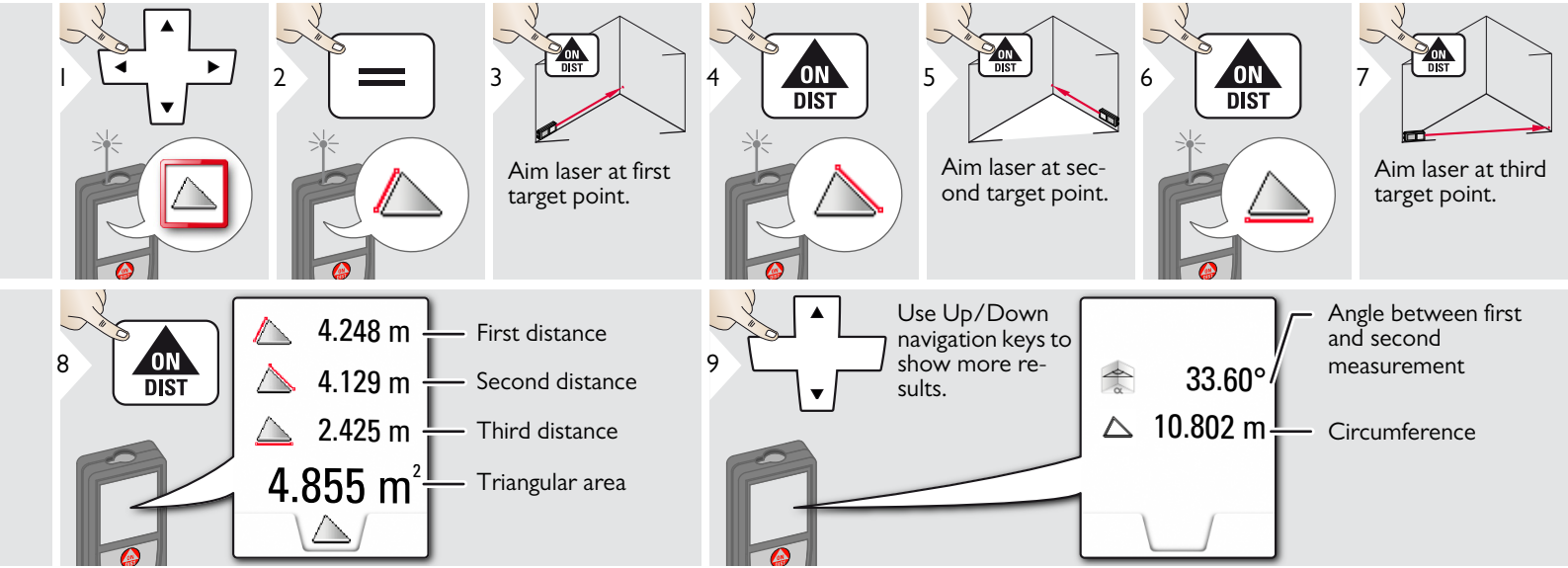
4



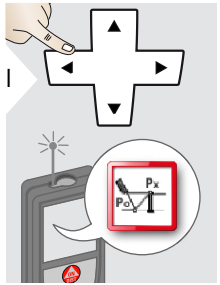
Confirm setting.

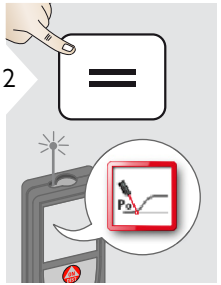
The self release starts if ON/Measure key is pressed.

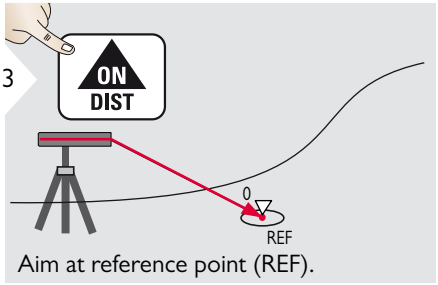
Triangular area



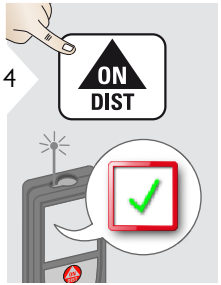
Height-profile measurement

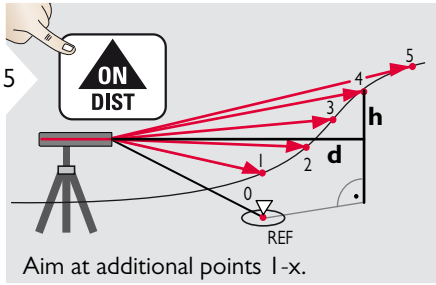




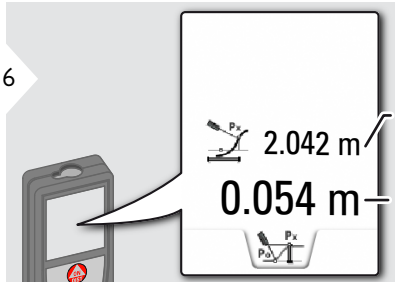


Aim at reference point (REF).



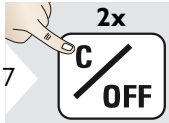


Aim at additional points 1-x.



d Horizontal distance to device

h Height difference to reference point (REF).

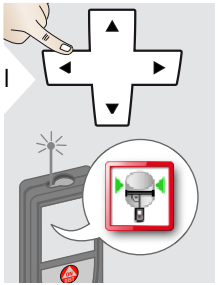


Exit function.

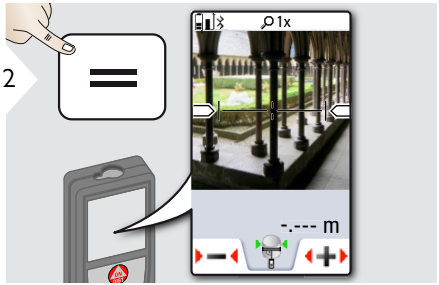
Ideal for measuring of height differences to a reference point. Can be also used to measure profiles and terrain sections. After measuring the reference point, the horizontal distance and height is displayed for each following point.

Diameter

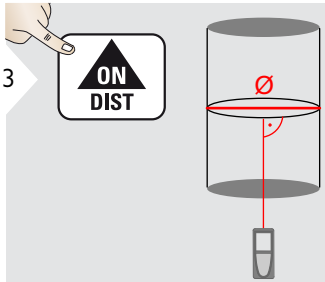
1



2

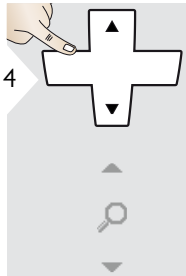


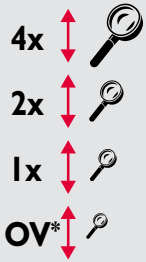
3



Aim laser perpendicular to the middle of the round object.

4

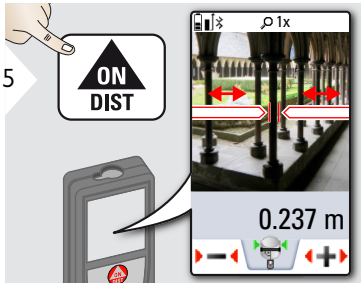




If necessary, use the Zoom for precise aiming.

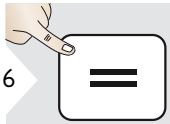
* OV = Overview

5



Select arrows with the cursor keys or by tapping on the display and adjust with softkeys. Corresponding diameter is calculated.

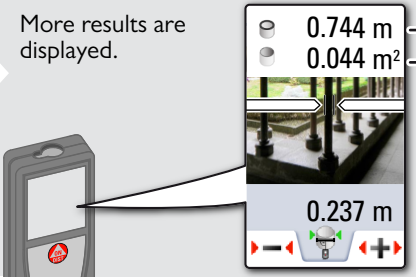
6



Confirm measurement.

7

More results are displayed.



Circumference

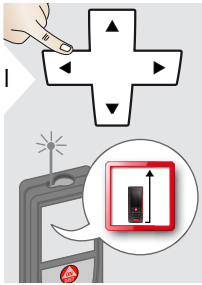
Circular area

8

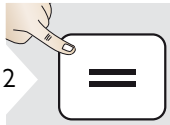
Exit.

Adjusting measuring reference

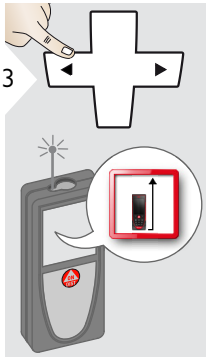
1



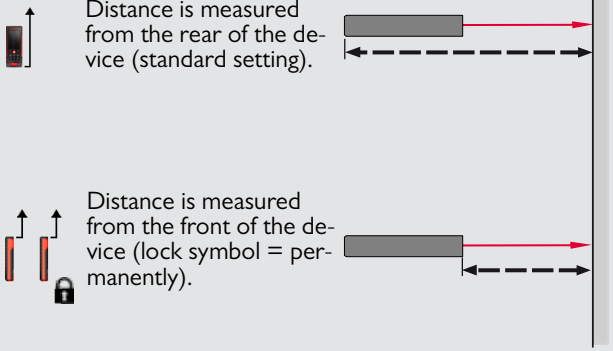
2



3

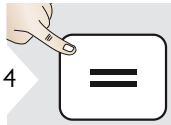


Distance is measured from the rear of the device (standard setting).



Distance is measured from the front of the device (lock symbol = permanently).

4



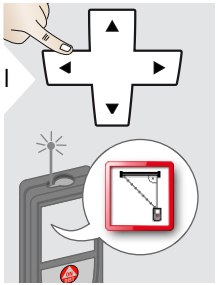
Confirm setting.

If device is switched off, reference goes back to standard setting (rear of the device).

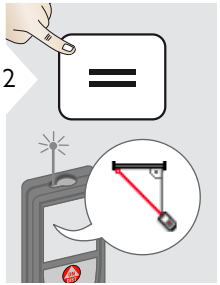
The orientation of the Smart Base is automatically detected and the zero point is accordingly adjusted.

Pythagoras (2-point)

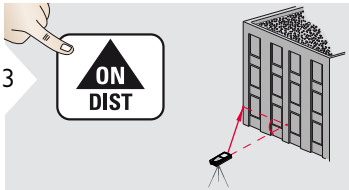
1



2



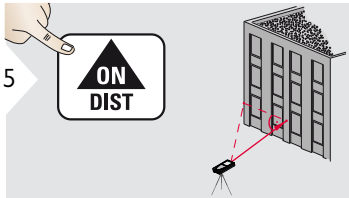
3



Aim laser at first target.

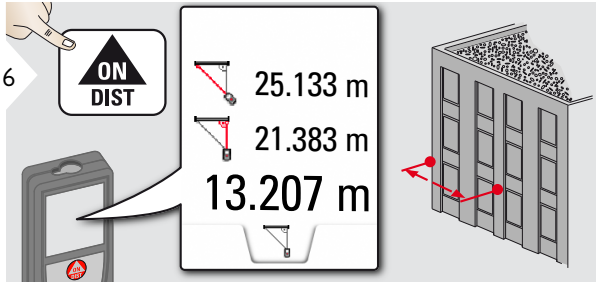
4

5



Aim laser at second target.

6

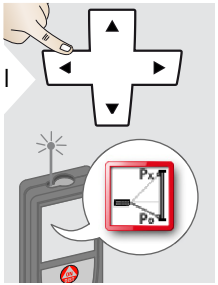


The result is shown in the main line.
Pressing the measuring key for 2 sec in the function activates automatically Minimum or Maximum measurement.

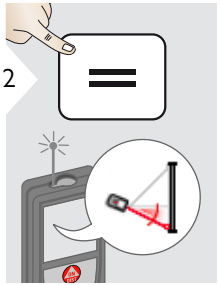
We recommend to use the pythagoras only for indirect horizontal measuring.
For height measuring (vertical) it is more precise to use a function with the inclination measuring.

Height tracking

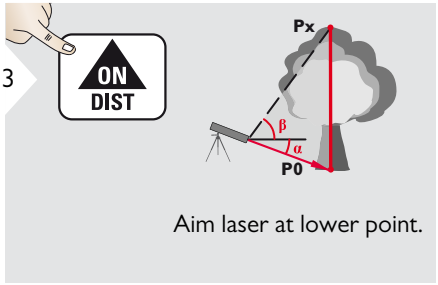
1



2



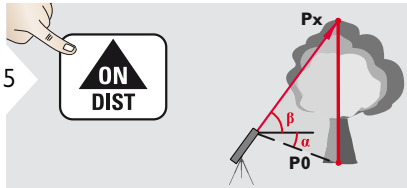
3



Aim laser at lower point.

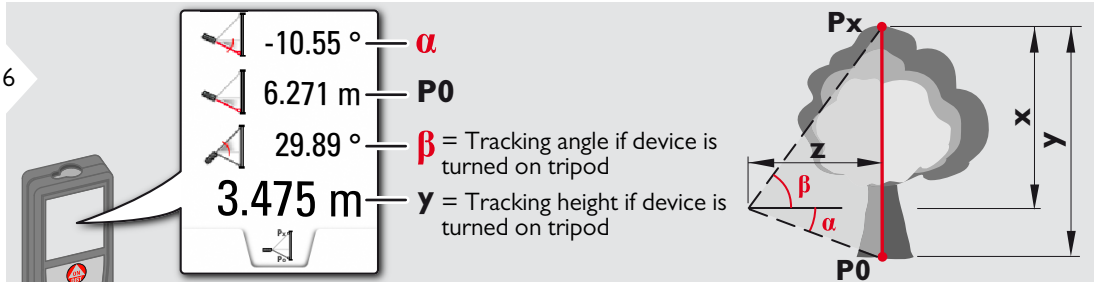
4

5



Aim laser at upper points and angle/ height tracking starts automatically.

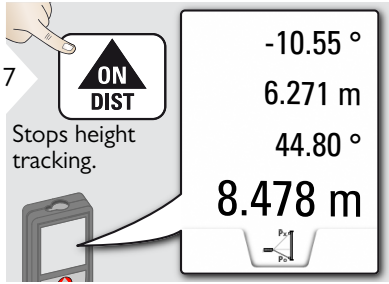
6



β = Tracking angle if device is turned on tripod

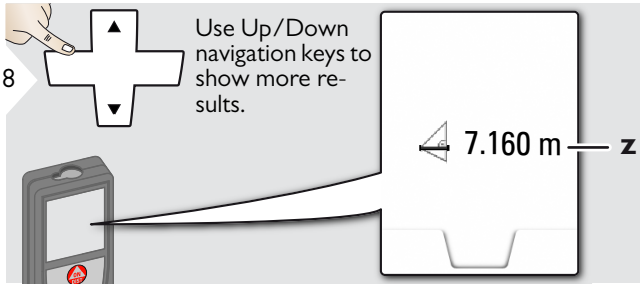
y = Tracking height if device is turned on tripod

7



Stops height tracking.

8

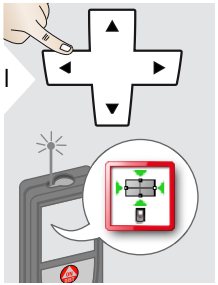


Use Up/Down navigation keys to show more results.

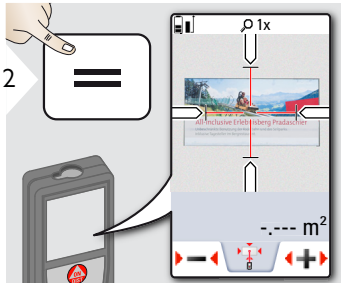
Heights of buildings or trees without suitable reflective points can be determined. At the bottom point, distance and tilt is measured - which needs a reflective laser target. The upper point can be targeted with the pointfinder / crosshair and does not need a reflective laser target as only the inclination is measured.

Area from Photo

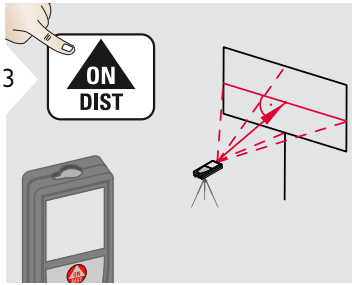
1



2

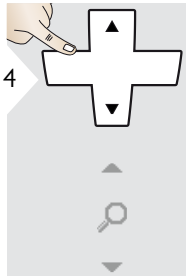


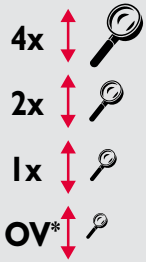
3



Aim perpendicular to the horizontal center line of the area. This area must be perfectly flat on the vertical plane.

4

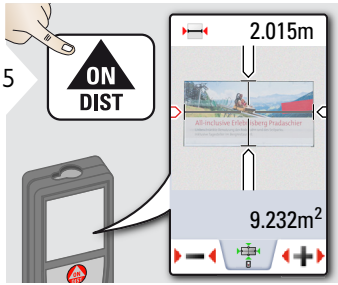




If necessary, use the Zoom for precise aiming.

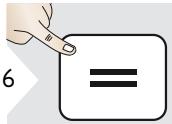
* OV = Overview

5



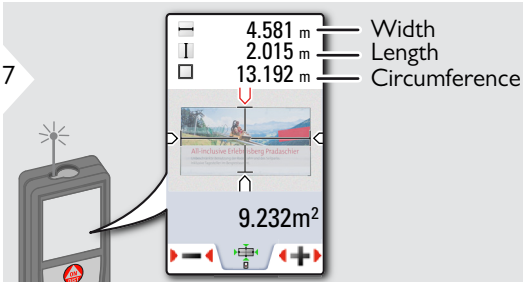
Select arrows with the cursor keys or by tapping on the display and adjust with softkeys. Corresponding area is calculated.

6



Confirm measurement.

7

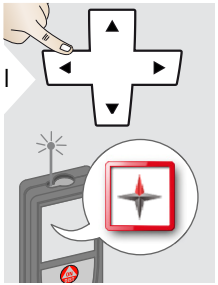


8

Exit.

Compass

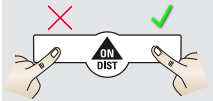
1



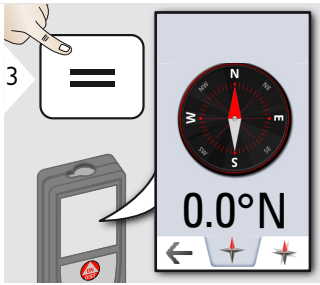
2

Calibrate Compass?

Refuse Confirm



3



The arrow always points to true north.

4

Exit.

At the following places the compass probably does not work correctly:

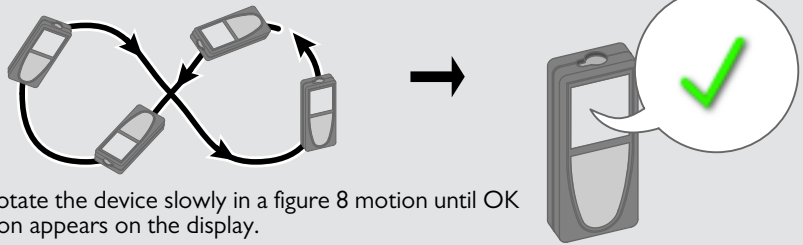
- Inside of buildings
- Close to high voltage lines (e.g. on train platforms)
- Close to magnets, metal objects or electrical household appliances

If an error message occurs, the device is tilted too much (>20° over the front / > 10° sidewise).

Keep the device away from any magnet!

Calibration of Compass:

The compass has to be calibrated before every first measurement after switching on the device.

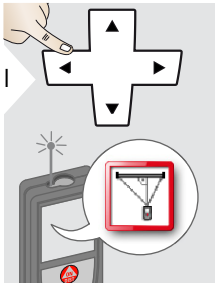


Rotate the device slowly in a figure 8 motion until OK icon appears on the display.

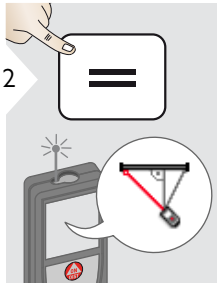
After 2 sec the device goes back to the compass mode.

Pythagoras (3-point)

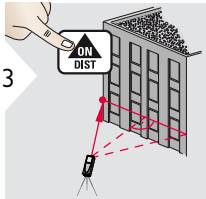
1



2



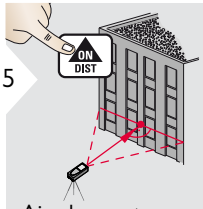
3



Aim laser at first target.

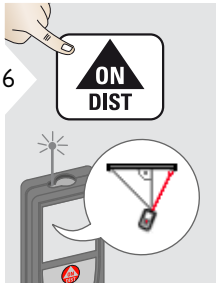
4

5

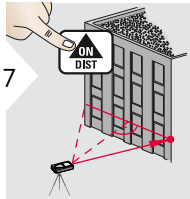


Aim laser at second target.

6

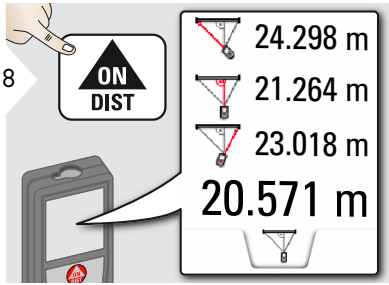


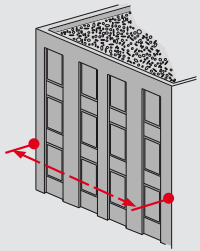
7



Aim laser at third target.

8

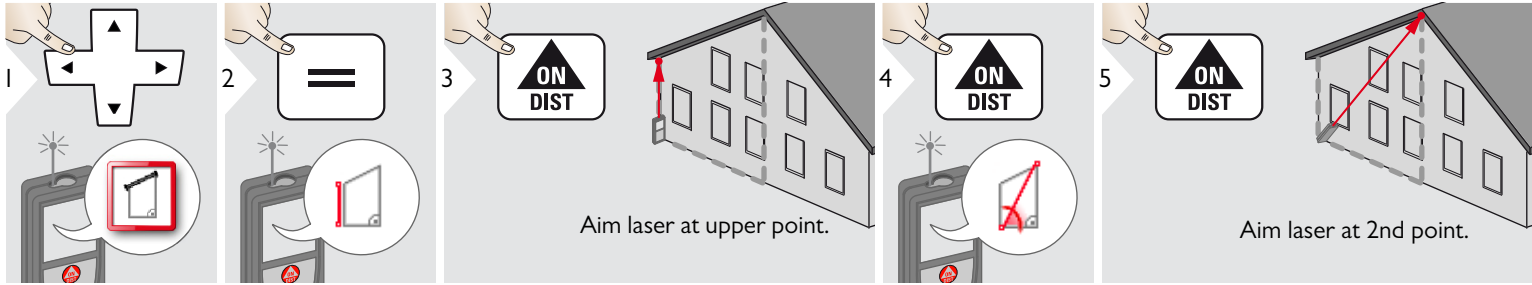


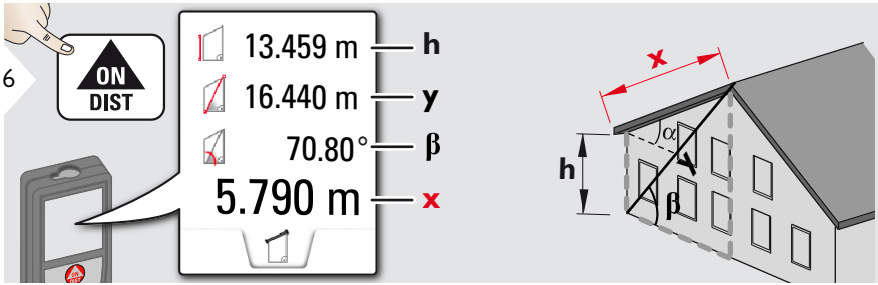


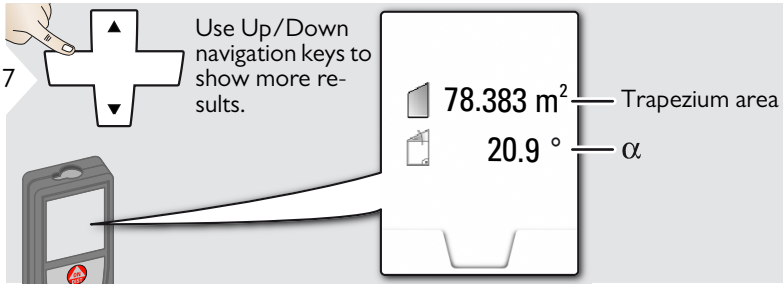
The result is shown in the main line.
Pressing the measuring key for 2 sec in the function activates automatically Minimum or Maximum measurement.

We recommend to use the pythagoras only for indirect horizontal measuring.
For height measuring (vertical) it is more precise to use a function with inclination measurement.

Trapezium

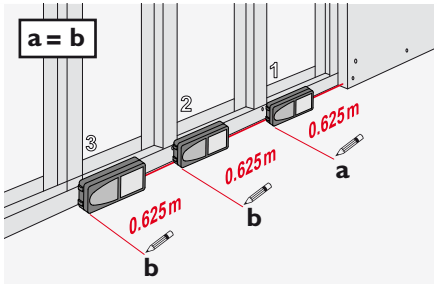

1
2
3
ON
DIST
Aim laser at upper point.
4
ON
DIST
5
ON
DIST
Aim laser at 2nd point.

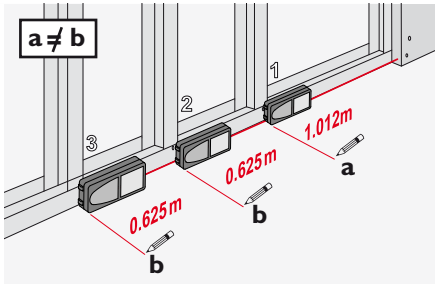

6
ON
DIST
13.459 m
h
16.440 m
y
70.80°
β
5.790 m
x
x
h
α
β

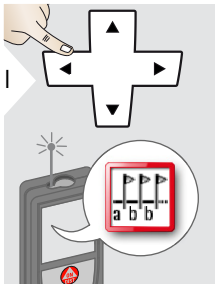

7
Use Up/Down navigation keys to show more results.
78.383 m²
Trapezium area
20.9 °
α

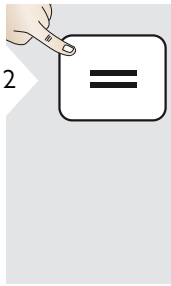
Stake out

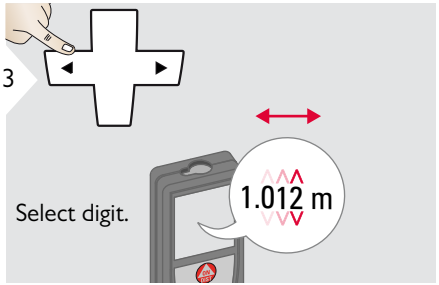
Two different distances (a and b) can be entered to mark off defined measured lengths.

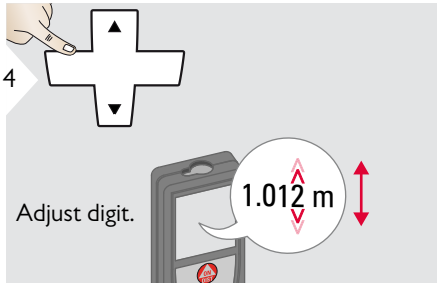


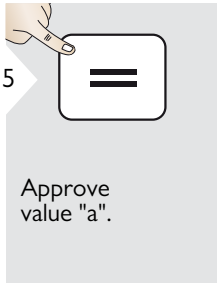


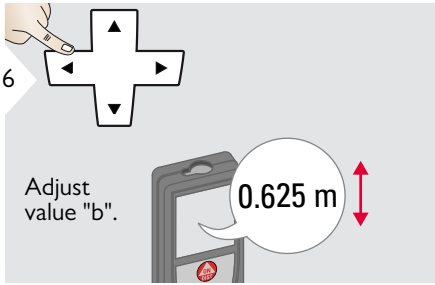


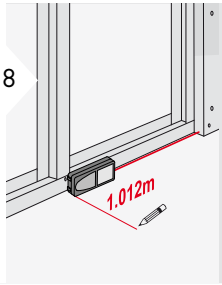






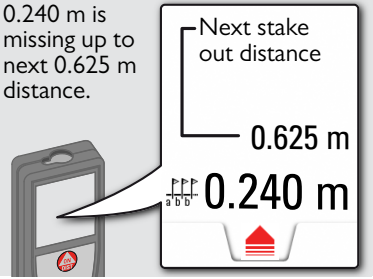






Move device slowly along the stake-out line. The distance to the next stake out point is displayed.

0.240 m is missing up to next 0.625 m distance.



When approaching a stake out point to less than 0.1 m the instrument starts to beep. The function can be stopped by pressing the CLEAR/OFF button.

Distance measurement	(ISO 163331-1)
Accuracy with favourable conditions *	± 1.0 mm / 0.04 in ***
Accuracy with unfavourable conditions **	± 2.0 mm / 0.08 in ***
Range with favourable conditions *	0.05m - 300 m / 0.16 - 1000 ft
Range with unfavourable condition **	0.05m - 150m (0.16 – 492 ft)
Smallest unit displayed	0.1 mm / 1/32 in
X-Range Power Technology™	yes
Ø laser point at distances	6 /30 / 60 mm (10 / 50 / 100 m)
Tilt measurement	
Measuring tolerance to laser beam ****	-0.1° / +0.2°
Measuring tolerance to housing ******	± 0.1°
Range	360°
Smart Base	
Working range vertical sensor	-40° to 80°
Accuracy vertical sensor	up to +/- 0.1°
Working range horizontal sensor	360°
Accuracy horizontal sensor	up to +/- 0.1°
Tolerance P2P function at distances (combination of sensors and distance measuring)	approx. : +/- 2 mm / 2 m +/- 5 mm / 5 m +/- 10 mm /10 m
Device levelling	
Levelling range	+/- 5°
Levelling accuracy	+/- 0.05°

General	
Laser class	2
Laser type	635 nm, < 1 mW
Protection class	IP54 (dust- and splash water protected)
Autom. laser switch off	after 90 s
Autom. power switch-off	after 180 s
Bluetooth® Smart	Bluetooth® v4.0
Bluetooth®: - Power - Frequency - Range	 0.47 mW 2402 - 2480 MHz <10 m
WLAN	yes
WLAN: - Power - Frequency - Range	 15.5 mW 2412 - 2472 MHz 10 m
Dimension (H x D x W)	61 x 32 x 164 mm 2.4 x 1.3 x 6.5 in
Weight	291 g /10.2 oz
Temperature range: - Storage - Operation - Charging	 -25 to 60 °C -13 to 140 °F -10 to 50 °C 14 to 122 °F -10 to 40 °C 14 to 104 °F
Digital data	
Resolution for photos	800 x 600 dpi
Resolution for screenshots	240 x 400 dpi
File format	JPG, DXF
Download	USB
Battery (Li-Ion)	
Rated voltage	3.7 V
Capacity	2.6 Ah
Measurements per battery charge	Approx. 4000
Charging time	Approx. 4 h
Output voltage	5.0 V
Charging current	1 A

* favourable conditions are: white and diffuse reflecting target (white painted wall), low background illumination and moderate temperatures.

** unfavourable conditions are: targets with lower or higher reflectivity or high background illumination or temperatures at the upper or lower end of the specified temperature range.

*** Tolerances apply from 0.05 m to 10 m with a confidence level of 95%. With favourable conditions the tolerance may deteriorate by 0.05 mm/m for distances between 10 m to 30 m, by 0.10 mm/m between 30 m and 100 m and by 0.20 mm/m for distances above 100 m.

With unfavourable conditions the tolerance may deteriorate by 0.10 mm/m for distances between 10 m to 30 m, by 0.20 mm/m between 30 m and 100 m and by 0.30 mm/m for distances above 100 m.

**** after user calibration. Additional angle related deviation of +/- 0.01° per degree up to +/-45° in each quadrant.

Applies at room temperature. For the whole operating temperature range the maximum deviation increases by +/-0.1°.

i At a recommended storage temperature of -20°C to +30°C (-4°F to +86°F), batteries containing a 50% to 100% charge can be stored up to 1 year. After this storage period the batteries must be recharged.

i For accurate indirect results, the use of a tripod is recommended. For accurate tilt measurements a transverse tilt should be avoided.

Functions	
Distance measuring	yes
Min/Max measuring	yes
Permanent measuring	yes
Stake-out	yes
Addition/Subtraction	yes
Area	yes
Triangle area	yes
Volume	yes
Trapezium	yes
Painter function (area with partial measurem.)	yes
Pythagoras	2-point, 3-point
Smart Horizontal Mode / Indirect height	yes
Height-profile measurement	yes
Level	yes
Sloped objects	yes
Height tracking	yes
Memory	yes
Beep	yes
Illuminated colour display	yes
Pointfinder (Viewscreen)	4x zoom, OV
Bluetooth® Smart	yes
Personalized Favorites	yes
Timer	yes
Calculator	yes
Photo/Screenshot	yes
Compass	yes
Gallery with USB download	yes
Diameter	yes
Width	yes
Area from Photo	yes
Smart Base	yes
Pointdata transmission	yes
Point to point function /distance	yes
Smart Angle	yes
Smart Area	yes
DXF Data capture	yes

If the message **Error** does not disappear after switching on the device repeatedly, contact the dealer.

If the message **InFo** appears with a number, press the Clear button and observe the following instructions:

No.	Cause	Correction
156	Transverse tilt greater than 10°	Hold the instrument without any transverse tilt.
162	Calibration mistake	Make sure, the device is placed on a absolutely horizontal and flat surface. Repeat the calibration procedure. If the mistake still occurs, contact your dealer.
204	Calculation error	Perform measurement again.
240	Data transfer error	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).
258	Measurement outside of measuring range	Correct range.
260	Laser beam interrupted	Repeat measurement.
300	Smart Base not folded out	Fold out Smart Base.
301	Device was moved, levelling not valid any more	Perform levelling again. Measuring with invalid levelling is possible, but it affects the accuracy.
302	«Point data transmission» is selected, but WLAN is off	Switch on WLAN.
340	WLAN: Data transfer error	Repeat procedure.
341	Authentication Error	Use correct password.

Care

- Clean the device with a damp, soft cloth.
- Never immerse the device in water.
- Never use aggressive cleaning agents or solvents.

International Limited Warranty

The Leica DISTO™ comes with a two year warranty from Leica Geosystems AG. To receive an additional year warranty, the product must be registered on our website at http://myworld.leica-geosystems.com within eight weeks of the purchase date.

If the product is not registered, our two year warranty applies.

More detailed information about the International Limited Warranty can be found on the internet at: www.leica-geosystems.com/international-warranty.

The person responsible for the instrument must ensure that all users understand these directions and adhere to them.

Areas of responsibility

Responsibilities of the manufacturer of the original equipment:

Leica Geosystems AG

Heinrich-Wild-Strasse

CH-9435 Heerbrugg

Internet: www.disto.com

The company above is responsible for supplying the product, including the User Manual in a completely safe condition.

The company above is not responsible for third party accessories.

Responsibilities of the person in charge of the instrument:

- To understand the safety instructions on the product and the instructions in the User Manual.
- To be familiar with local safety regulations relating to accident prevention.
- Always prevent access to the product by unauthorised personnel.

Permitted use

- Measuring distances
- Tilt measurement
- Data transfer with Bluetooth® / WLAN

Prohibited use

- Using the product without instruction
- Using outside the stated limits
- Deactivation of safety systems and removal of explanatory and hazard labels
- Opening of the equipment by using tools (screwdrivers, etc.)
- Carrying out modification or conversion of the product
- Use of accessories from other manufacturers without express approval
- Deliberate dazzling of third parties; also in the dark
- Inadequate safeguards at the surveying site (e.g. when measuring on roads, construction sites, etc.)
- Deliberate or irresponsible behaviour on scaffolding, when using ladders, when measuring near machines which are running or near parts of machines or installations which are unprotected
- Aiming directly in the sun

⚠ WARNING
Watch out for erroneous measurements if the instrument is defective or if it has been dropped or has been misused or modified. Carry out periodic test measurements.

Particularly after the instrument has been subject to abnormal use, and before, during and after important measurements.

⚠ CAUTION
Never attempt to repair the product yourself. In case of damage, contact a local dealer.

⚠ WARNING
Changes or modifications not expressly approved could void the user's authority to operate the equipment.

Limits of use

Refer to section "Technical data".

The device is designed for use in areas permanently habitable by humans. Do not use the product in explosion hazardous areas or in aggressive environments.

Disposal

⚠ CAUTION
Flat batteries must not be disposed of with household waste. Care for the environment and take them to the collection points provided in accordance with national or local regulations.

The product must not be disposed with household waste.

Dispose of the product appropriately in accordance with the national regulations in force in your country.

Adhere to the national and country specific regulations.

Product specific treatment and waste management can be downloaded from our homepage.

Electromagnetic Compatibility (EMC)

⚠ WARNING
The device conforms to the most stringent requirements of the relevant standards and regulations.

Yet, the possibility of causing interference in other devices cannot be totally excluded.

FCC statement (applicable in U.S.)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause interference and
- this device must accept any interference, including interference that may cause undesired operation of the device.

Déclaration FCC, applicable aux Etats-Unis

Ce produit a été testé et ses limites ont été jugées conformes à celles prescrites pour les dispositifs numériques de classe B, décrites dans le paragraphe 15 des règles FCC. Ces limites ont pour but de fournir une protection raisonnable contre des interférences nocives dans une installation résidentielle. Les appareils de ce type génèrent, utilisent et peuvent rayonner de hautes fréquences. Ils sont de ce fait susceptibles de perturber la réception radiophonique en cas d'installation non conforme aux instructions.

Même en cas de respect des instructions, l'absence d'interférences dans une installation particulière ne peut cependant être garantie. Si cet instrument perturbe la réception radiophonique ou télévisuelle, ce que l'on constate en éteignant puis en rallumant l'instrument, l'utilisateur peut tenter de corriger ces interférences en appliquant les mesures suivantes :

- Réorienter ou repositionner l'antenne de réception.
- Augmenter la distance entre l'instrument et le récepteur.
- Connecter l'instrument à un autre circuit que celui du récepteur.
- Consulter le revendeur ou un technicien expérimenté dans le domaine radio/TV.

Cet appareil est conforme à la section 15 des règlements FCC. Son fonctionnement est soumis aux deux conditions suivantes :

- cet appareil ne doit pas causer d'interférences nuisibles, et
- cet appareil doit accepter toute autre interférence reçue, y compris les interférences pouvant entraîner un fonctionnement non désiré.

Ce dispositif est conforme à la norme RSS-210 d'Industrie Canada. L'utilisation est sujette aux deux conditions suivantes :

- ce dispositif ne pas doit pas être la source d'interférences nuisibles, et
- ce dispositif doit accepter toutes les interférences, y compris les interférences pouvant induire des opérations non souhaitées.

Use of the product with Bluetooth®

⚠ WARNING

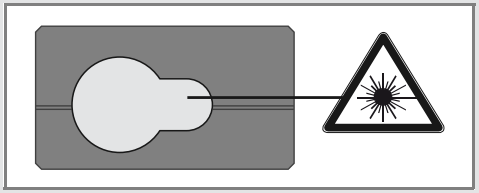
Electromagnetic radiation can cause disturbances in other equipment, in installations (e.g. medical ones such as pacemakers or hearing aids) and in aircraft. It can also affect humans and animals.

Precautions:

Athough this product conforms to the most stringent standards and regulations, the possibility of harm to people and animals cannot totally excluded.

- Do not use the product near petrol stations, chemical plants, in areas with a potentially explosive atmosphere and where blasting takes place.
- Do not use the product near medical equipment.
- Do not use the product in airplanes.
- Do not use the product near your body for extended periods.

Laser classification



The device produces visible laser beams, which are emitted from the instrument:

It is a Class 2 laser product in accordance with:

- IEC60825-1 : 2014 „Radiation safety of laser products“

Laser Class 2 products:

Do not stare into the laser beam or direct it towards other people unnecessarily. Eye protection is normally afforded by aversion responses including the blink reflex.

⚠ WARNING

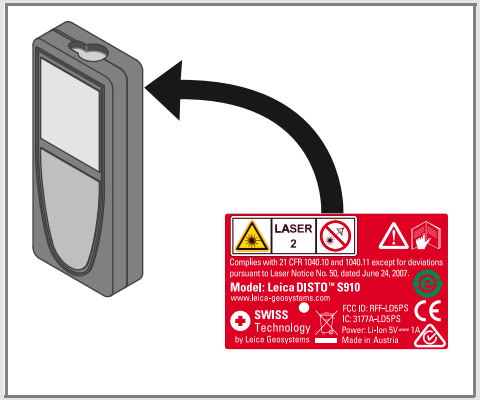
Looking directly into the beam with optical aids (e.g. binoculars, telescopes) can be hazardous.

⚠ CAUTION

Looking into the laser beam may be hazardous to the eyes.

Description	Value
Wavelength	620 - 690 nm
Maximum radiant output power for classification	0.95 mW
Pulse repetition frequency	320 MHz
Pulse duration	> 400 ps
Beam divergence	0.16 x 0.6 mrad

Labelling



Subject to change (drawings, descriptions and technical data) without prior notice.

Leica Geosystems AG, Heerbrugg, Switzerland has been certified as being equipped with a quality system which meets the International Standards of Quality Management and Quality Systems (ISO standard 9001) and Environmental Management Systems (ISO standard 14001).

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Leica Geosystems AG
CH-9435 Heerbrugg
(Switzerland)
www.disto.com

- when it has to be **right**

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