

# Leica DISTO™ D510

The original laser distance meter



- when it has to be **right**

**Leica**  
Geosystems

|   |           |
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## 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.

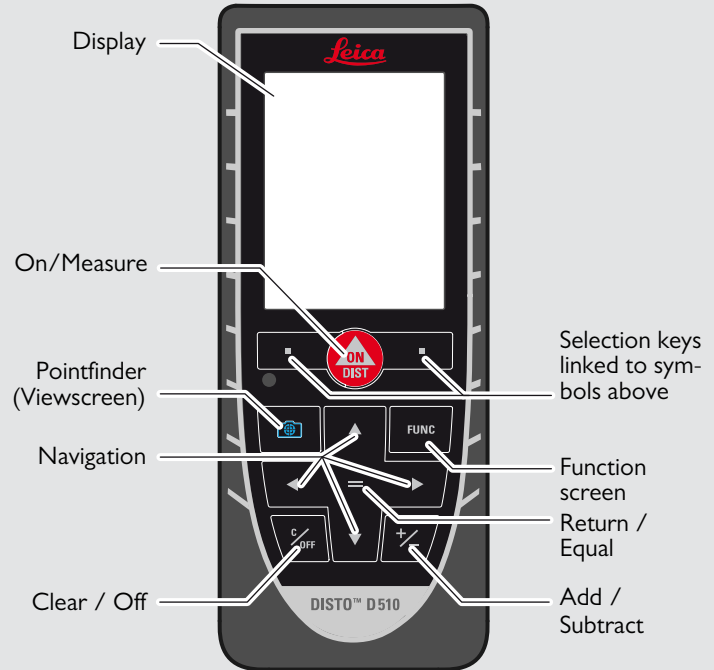
The symbols used have the following meanings:

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

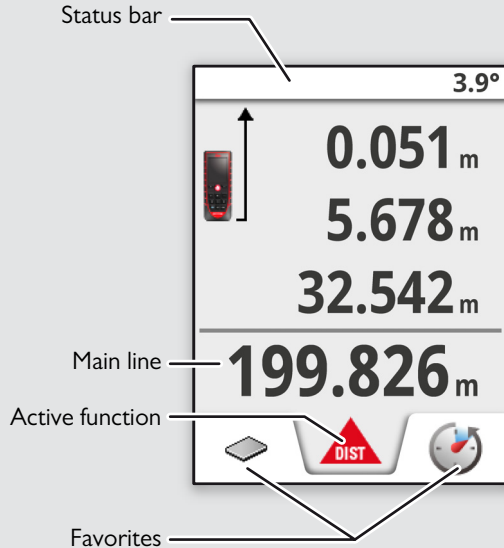
 **CAUTION**  
Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in minor injury and/or appreciable material, financial and environmental damage.

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

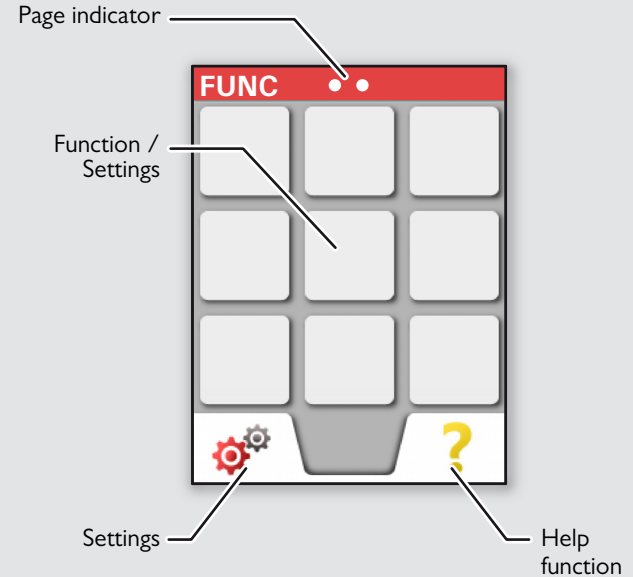
## Overview



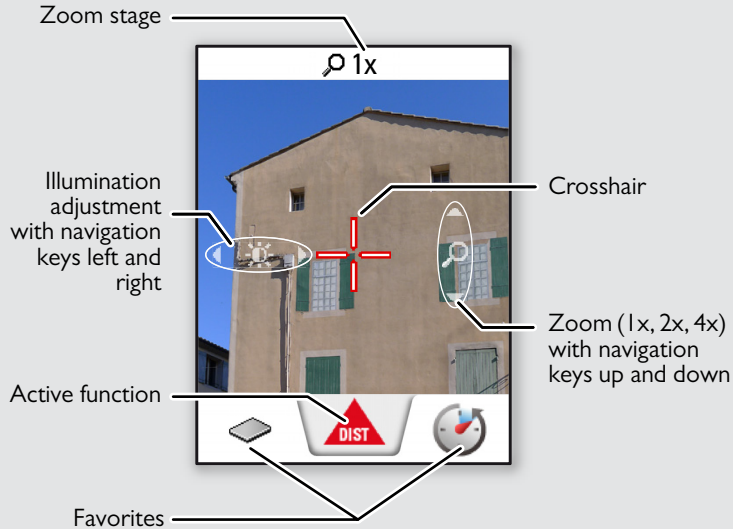
## Basic measuring screen



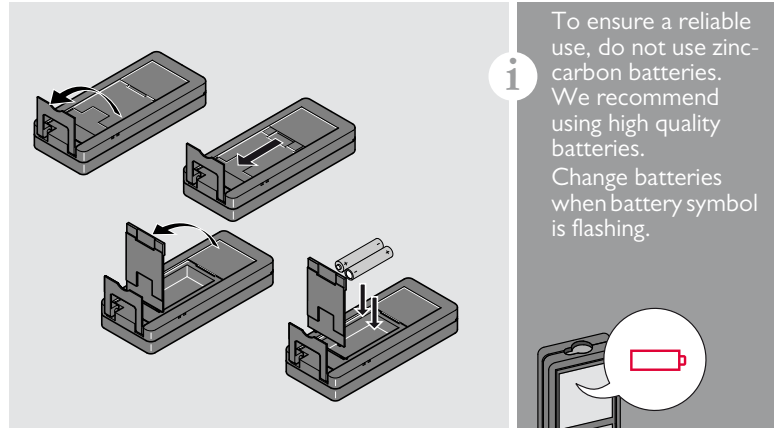
## Selection screen



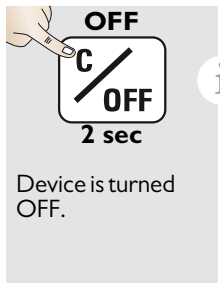
## Pointfinder (Viewscreen)



## Insert batteries



Switching ON/OFF



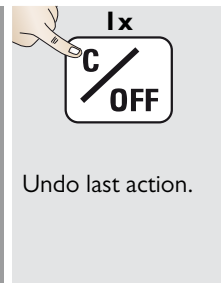
**ON**  
ON DIST

**OFF**  
C / OFF  
2 sec

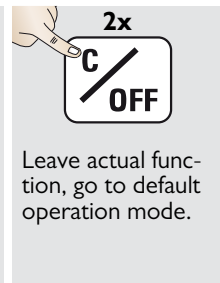
**i** If no key is pressed for 180 sec, the device switches off automatically.

Device is turned OFF.

Clear



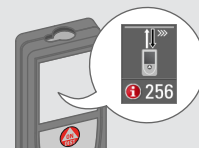
Undo last action.



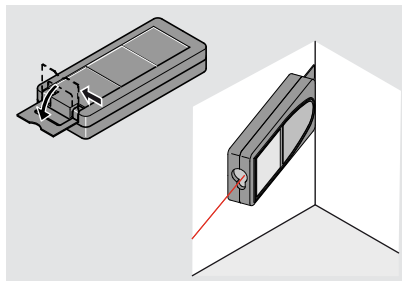
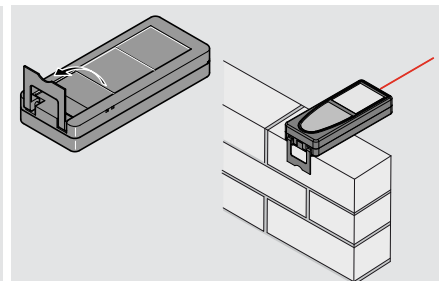
Leave actual function, go to default operation mode.

Message Codes

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

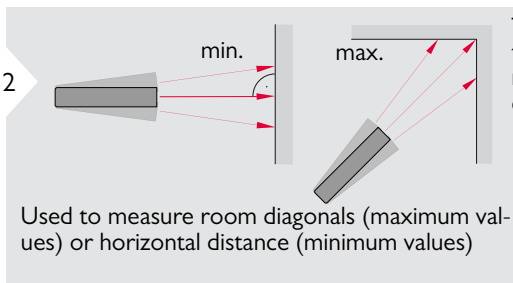


Multifunctional endpiece

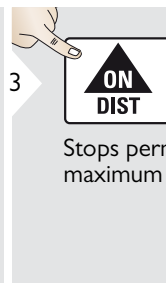


**i** The orientation of the endpiece is automatically detected and the zero point is accordingly adjusted.

Permanent / Minimum-Maximum measuring



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



Stops permanent / minimum-maximum measuring.

## Add / Subtract

1 **ON DIST**  
7.332 m

2 **+ / -**  
The next measurement is **added** to the previous one.

3 **2x**  
**+ / -**  
The next measurement is **subtracted** from the previous one.  
7.332 m  
12.847 m

4 **+**  
20.179 m

**i**

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

## Pointfinder (Viewscreen)

1 **Pointfinder**  
1x

2 **+**  
4x  
2x  
1x

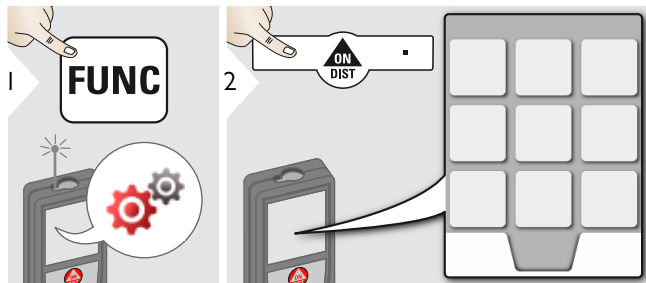
3 **+**  
1x

4 **Pointfinder**  
Exit pointfinder (viewscreen).

**i**

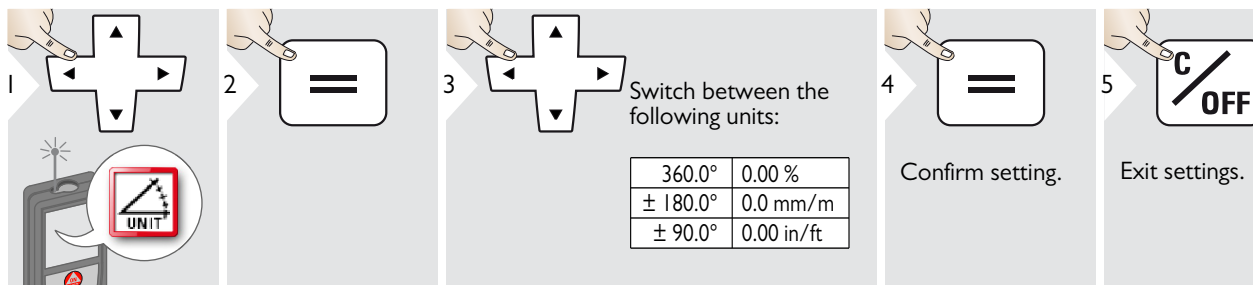
This is a great help for outdoor measuring. The integrated pointfinder (viewscreen) shows the target on the display. The device measures in the middle of the cross hair, even if the laser dot is not visible. Parallax errors occur when the pointfinder camera is used on close targets, with the effect that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

Overview



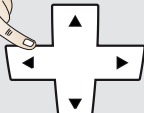

|  |                  |
|--|------------------|
|  | Tilt units       |
|  | Distance units   |
|  | Beep             |
|  | Digital level    |
|  | Keypad lock      |
|  | Bluetooth®       |
|  | Tilt calibration |
|  | Favorites        |
|  | Illumination     |
|  | Offset           |
|  | Reset            |
|  | Information      |

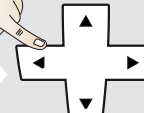
Tilt units







**Distance units**

1  2 



3  Switch between the following units:


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

4  Confirm setting.

5  Exit settings.

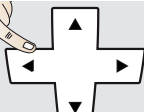

**Beep ON/OFF**


1  2 

3  Exit settings.

To switch ON, repeat procedure.

**Digital level ON/OFF**

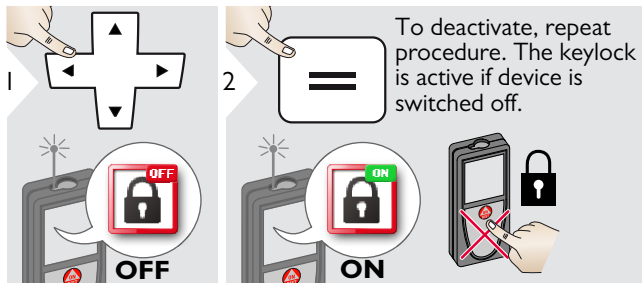
1  2 

3  Exit settings.

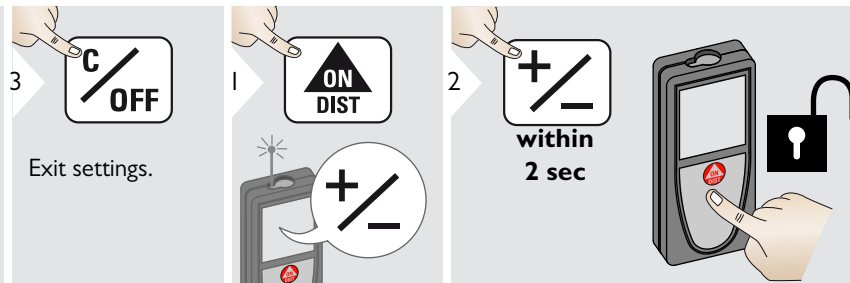
To switch ON, repeat procedure.

**i** The digital level is displayed in the status bar.

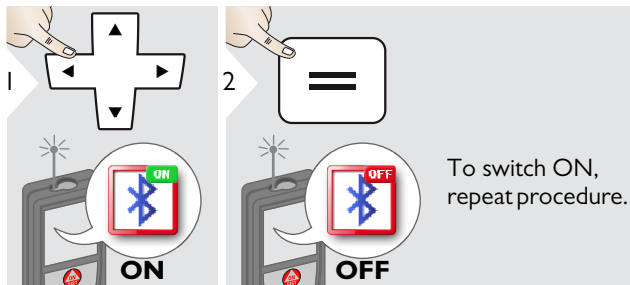
## De-/Activate keylock



## Switch on with keylock



## De-/Activate Bluetooth® Smart



**i** Default mode: Bluetooth® is switched on. Bluetooth® icon in status line is displayed if device is connected with Bluetooth®.

**i**

Switch on Bluetooth® Smart in Settings.

Connect the device with your smart phone, pad, laptop,...

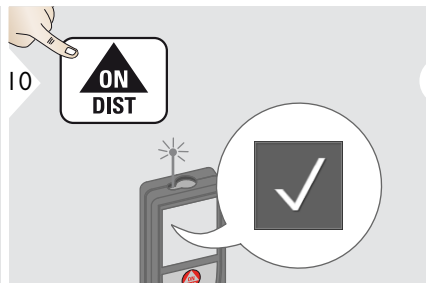
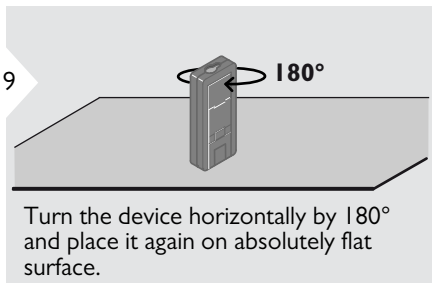
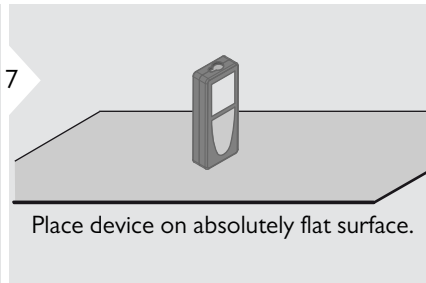
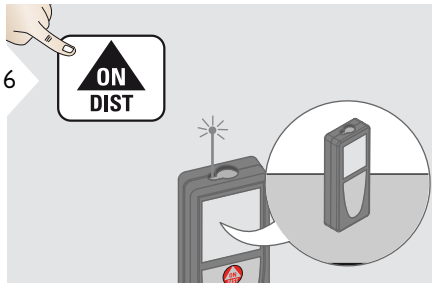
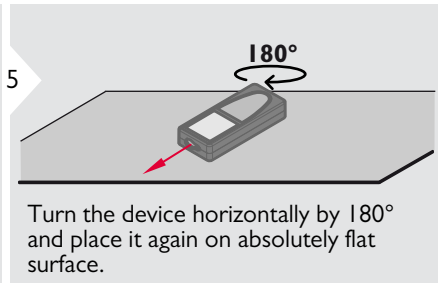
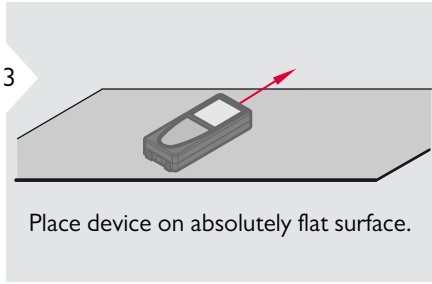
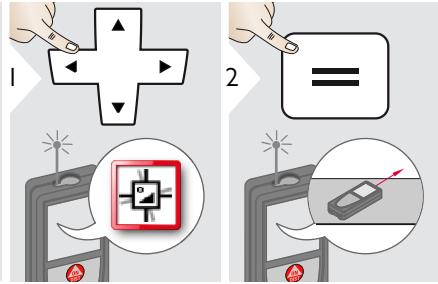
The actual measurement is transferred automatically if Bluetooth® connection is established. To transfer a result from the main line, press =. Bluetooth® switches off as soon as the laser distance meter is switched off.

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.

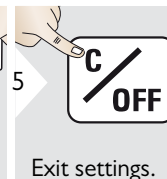
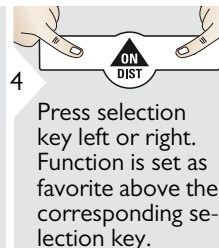
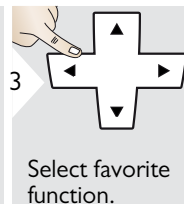
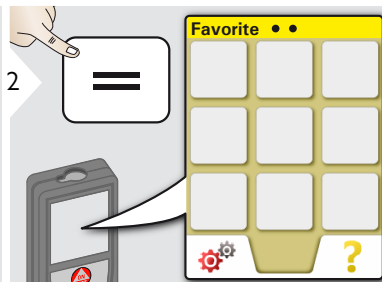
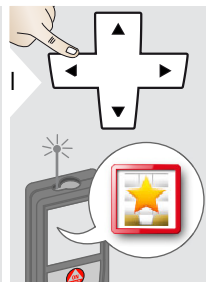
For more details, see our homepage.

Calibration of tilt sensor (Tilt Calibration)



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

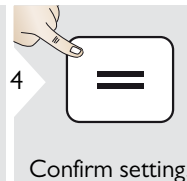
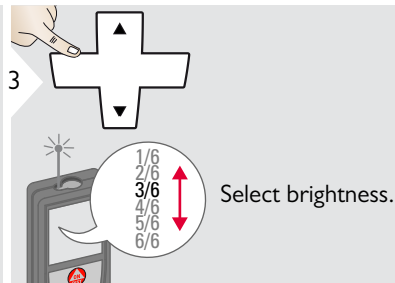
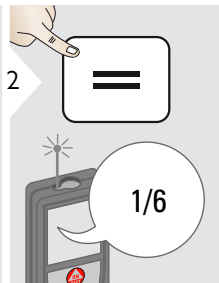
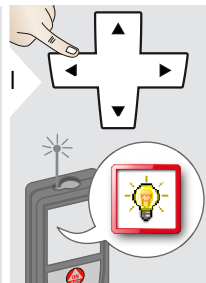
Personalized favorites



Select your favorite functions for quick access.

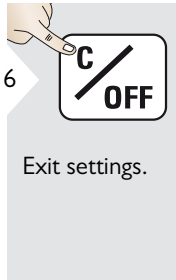
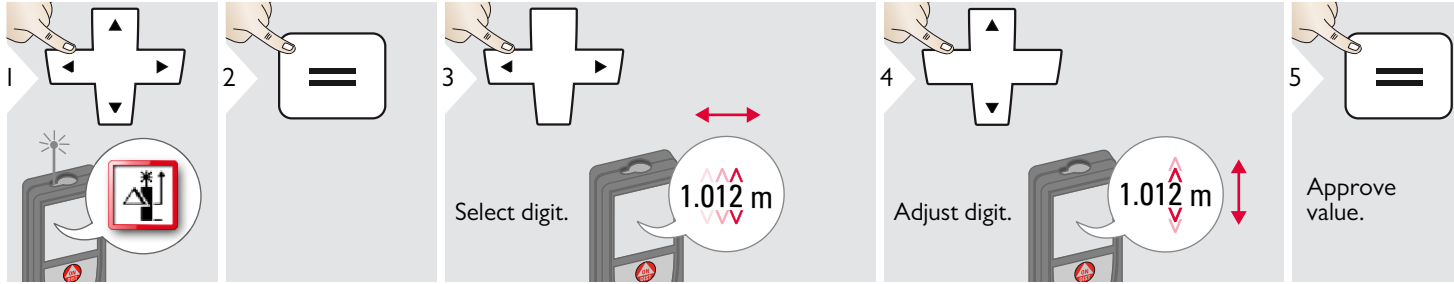
Short cut: Press 2 sec on a selection-key in the measuring mode.

Illumination



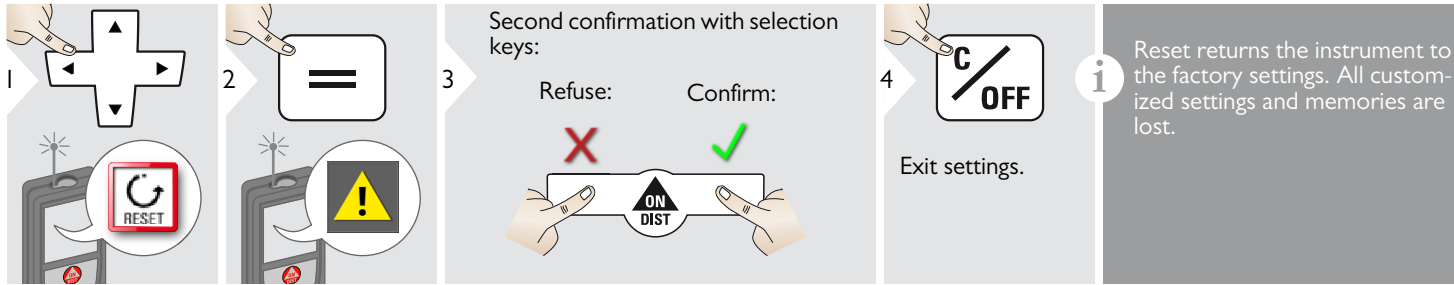
To save power reduce brightness if not necessary.

**Offset**



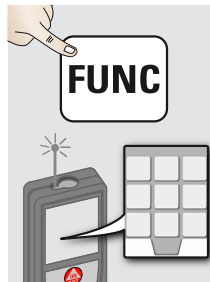
**i** An offset adds or subtracts a specified value automatically to or from all measurements. This function allows tolerances to be taken into account. The offset icon is displayed.

**Reset**



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

Overview



|  |                               |
|--|-------------------------------|
|  | Timer                         |
|  | Calculator                    |
|  | Adjusting measuring reference |
|  | Memory                        |
|  | Single Distance Measurement   |
|  | Smart Horizontal Mode         |

|  |                            |
|--|----------------------------|
|  | Inclination Tracking       |
|  | Area                       |
|  | Volume                     |
|  | Triangle area              |
|  | Long Range Mode            |
|  | Height-profile Measurement |

|  |                             |
|--|-----------------------------|
|  | Measuring on sloped objects |
|  | Height Tracking             |
|  | Trapezium                   |
|  | Stake out                   |
|  | Pythagoras 1                |
|  | Pythagoras 2                |

Timer

1

2

3 Select release time.

4 Confirm setting.

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

Calculator

1

2



3 Select key on display.



Confirm every key.



Use selection keys for clear or result.


**i** 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.

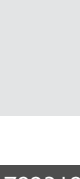
### Adjusting measuring reference/tripod

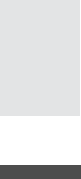
1  


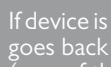
2  

3  

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

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

Distance is measured from the tripod thread permanently. 



4  



Confirm setting.


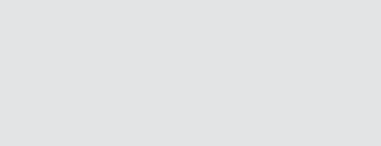
**i** If device is switched off, reference goes back to standard setting (rear of the device).

If you use an original Leica DISTO adapter, the reference does not need to be adapted to tripod thread!

### Memory

1  





2  

3  

Switch between measurements.

Delete memory.

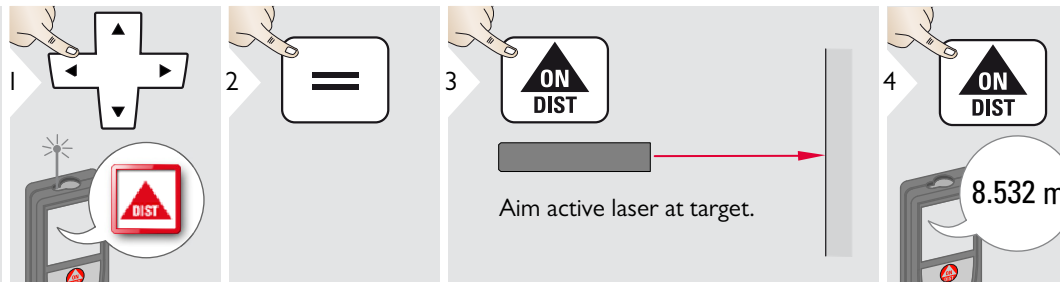
Take over value for further actions.

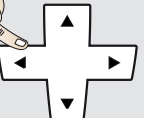
4   **i**  

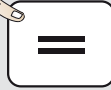
Use Up/Down navigation keys to show more detailed results of the specific measurement.


Short cut


### Measuring single distance



1 

2 

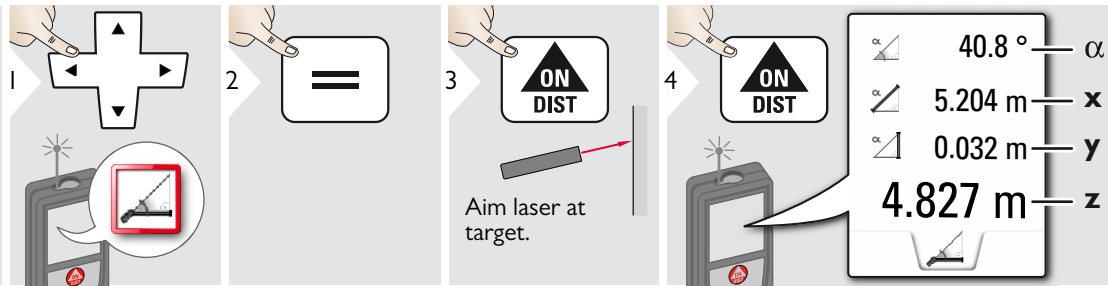
3  Aim active laser at target.

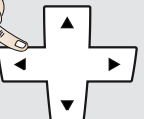
4  8.532 m

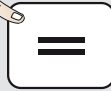
**i**


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.


### Smart Horizontal Mode

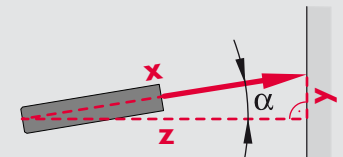


1 

2 

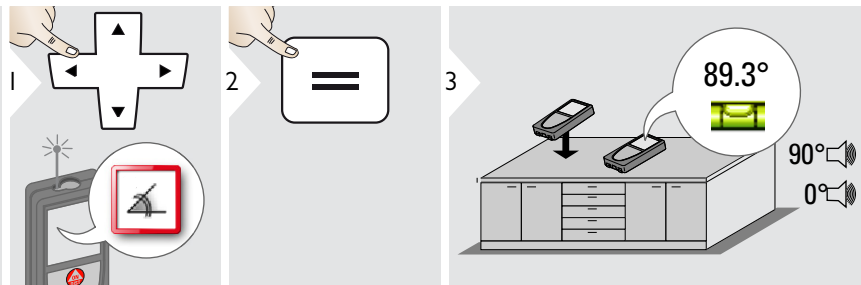
3  Aim laser at target.

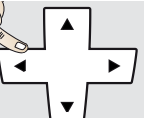
4   $40.8^\circ$  —  $\alpha$   
 $5.204$  m —  $x$   
 $0.032$  m —  $y$   
 $4.827$  m —  $z$





(up to  $360^\circ$  and a transverse tilt of  $\pm 10^\circ$ )


### Inclination tracking




1 

2 

3  89.3°

90° 

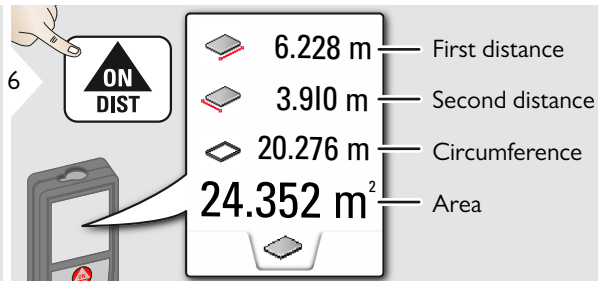
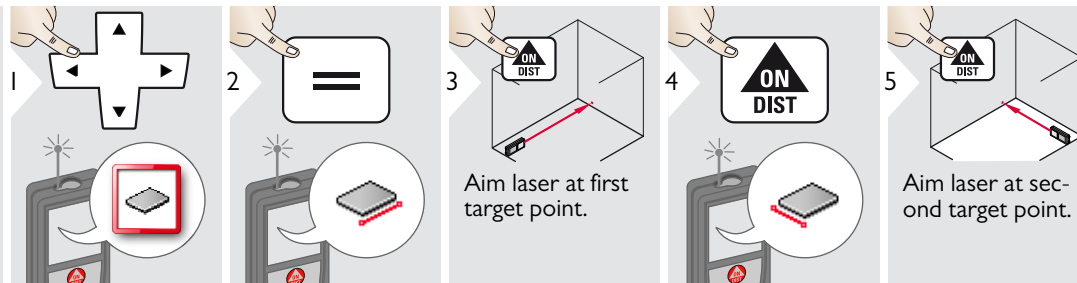
0° 

**i**

Inclination is permanently displayed. Instrument beeps at  $0^\circ$  and  $90^\circ$ . Ideal for horizontal or vertical adjustments.

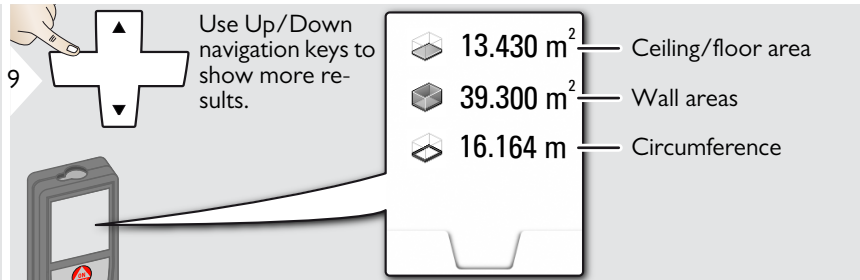
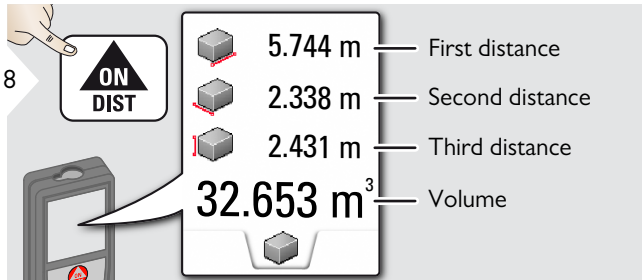
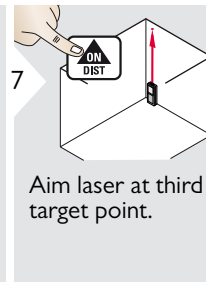
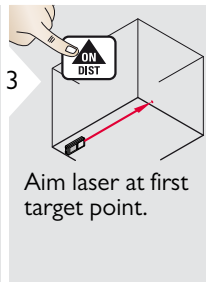
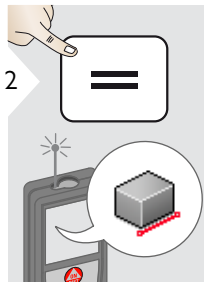
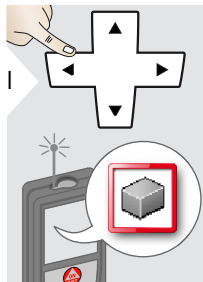


◆ Area

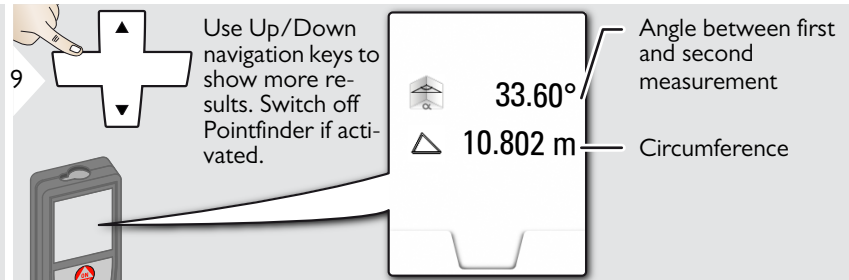
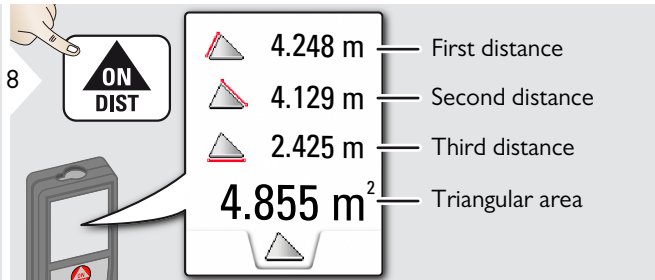
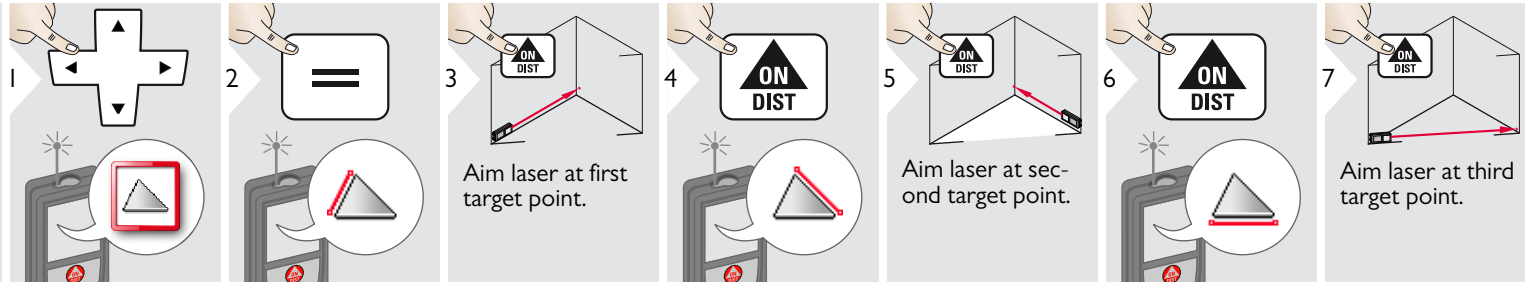


**i** The result is shown in the main line and the measured value above.  
 Partial Measurements / Painter function:  
 Press + or - before starting the first measurement. Measure and add or subtract distances. Finish with =. Measure 2nd length.

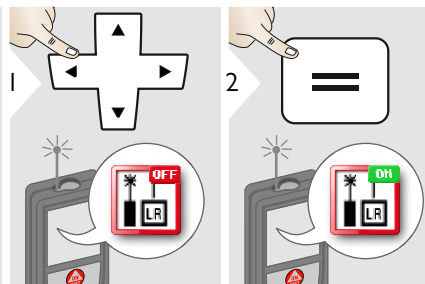
**Volume**



**▲ Triangular area**

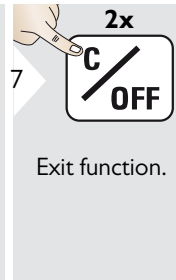
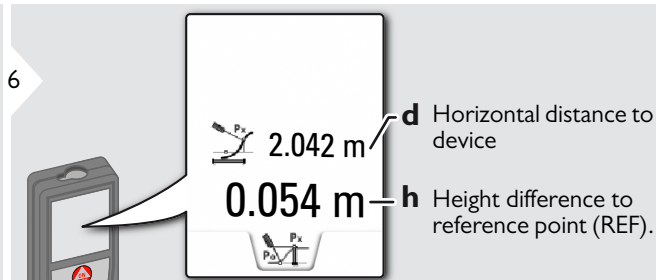
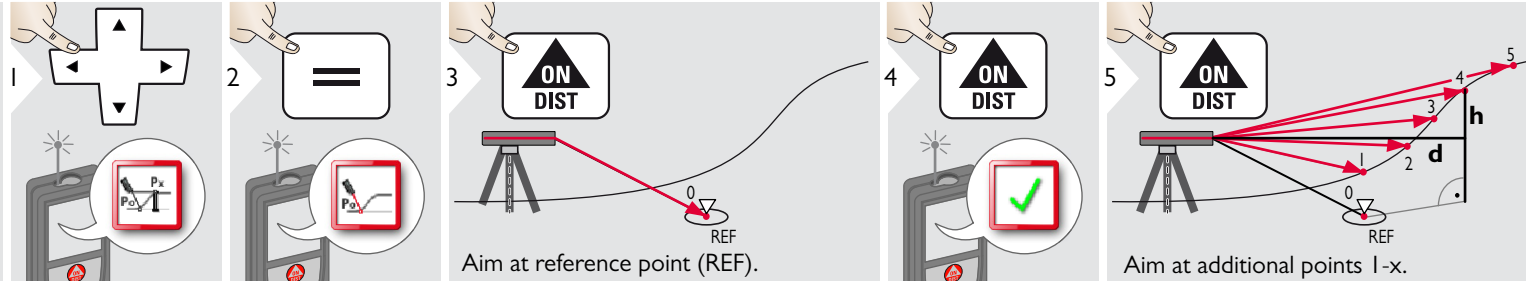


**LR Long range mode**



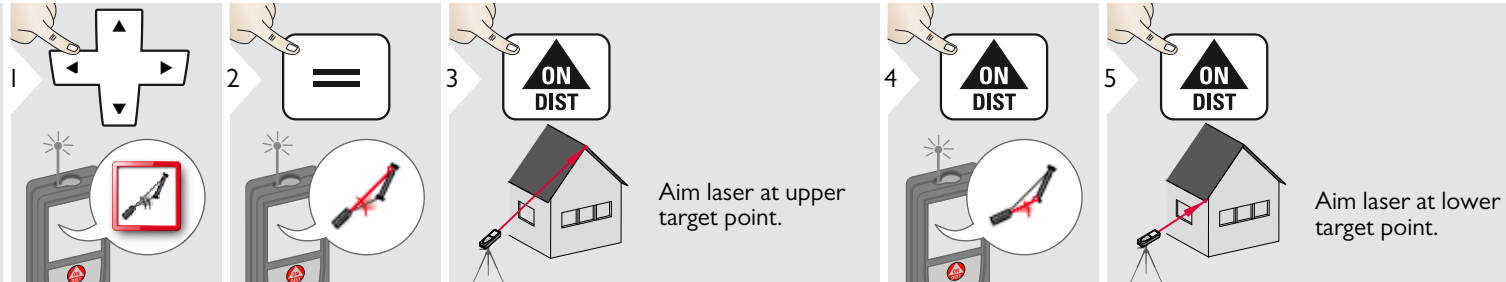
**i** The long range mode allows measuring of difficult targets in unfavorable conditions e.g. bright ambient light or bad target reflectivity. The measuring time is increased. An icon in the status line shows if the function is active.


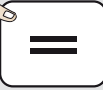
 Height-profile measurement

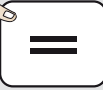




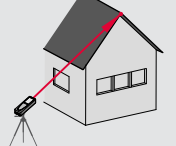
**i** Ideal for measuring of height differences to a reference point. Can be also used to measure profiles and terrain sections. After measuring the reference point, the horizontal distance and height is displayed for each following point.



 Sloped objects


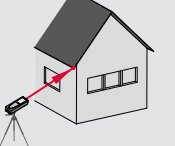


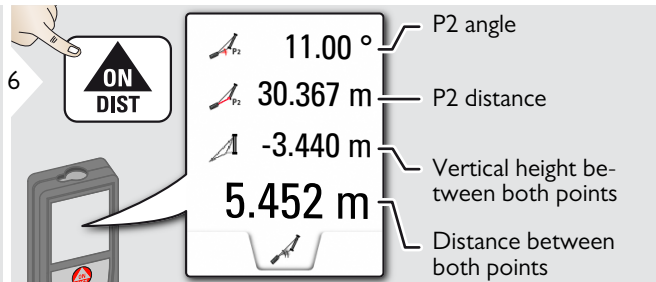
1  



2  





3   Aim laser at upper target point.

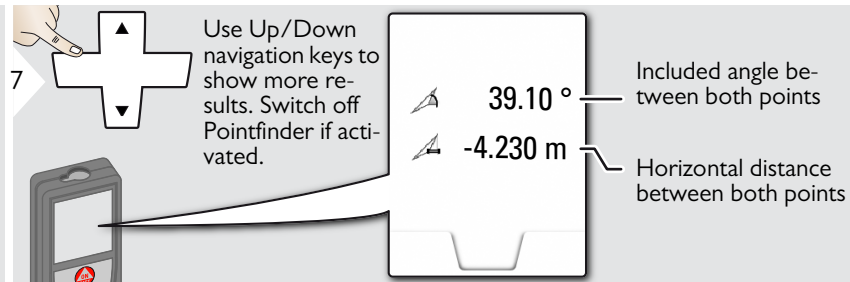
4  

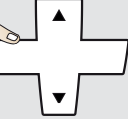
5   Aim laser at lower target point.





6  

|   |          |                                     |
|---|----------|-------------------------------------|
|  | 11.00 °  | P2 angle                            |
|  | 30.367 m | P2 distance                         |
|  | -3.440 m | Vertical height between both points |
|  | 5.452 m  | Distance between both points        |



7  Use Up/Down navigation keys to show more results. Switch off Pointfinder if activated.

|   |          |   |
|---|----------|---|
|  | 39.10 °  | Included angle between both points      |
|  | -4.230 m | Horizontal distance between both points |

1

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.

Height tracking

1 2 3 4 5

$P_x$   
 $P_0$

$\beta$   
 $\alpha$

Aim laser at lower point.

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

6 7

$-10.55^\circ$   $\alpha$   
 $6.271\text{ m}$   $P_0$   
 $29.89^\circ$   $\beta$  = Tracking angle if device is turned on tripod  
 $3.475\text{ m}$   $y$  = Tracking height if device is turned on tripod

$-10.55^\circ$   
 $6.271\text{ m}$   
 $44.80^\circ$   
 $8.478\text{ m}$

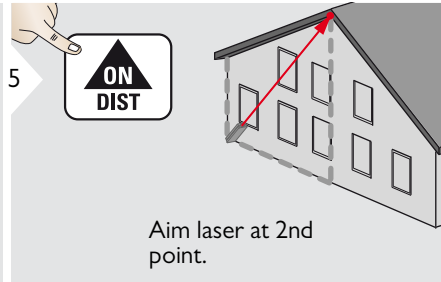
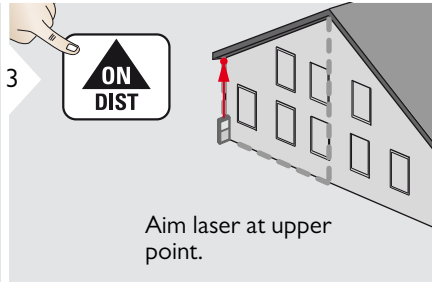
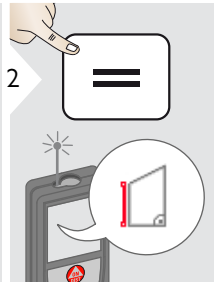
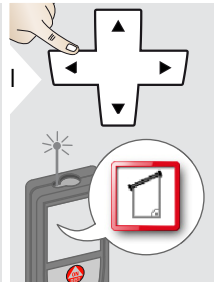
Stops height tracking.

8 Use Up/Down navigation keys to show more results. Switch off Pointfinder if activated.

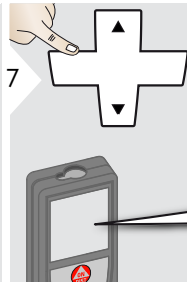
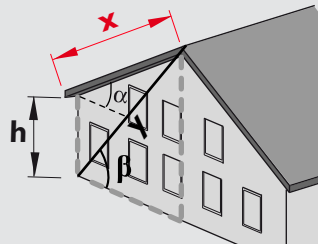
$7.160\text{ m}$   $z$

**i** 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.

Trapezium



|  |          |     |
|--|----------|-----|
|  | 13.459 m | — h |
|  | 16.440 m | — y |
|  | 70.80°   | — β |
|  | 5.790 m  | — x |



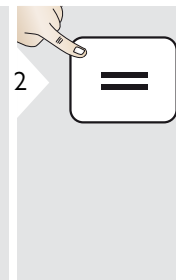
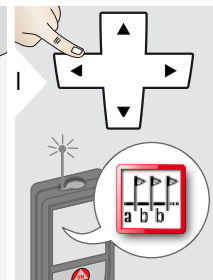
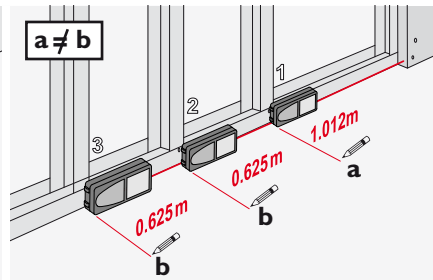
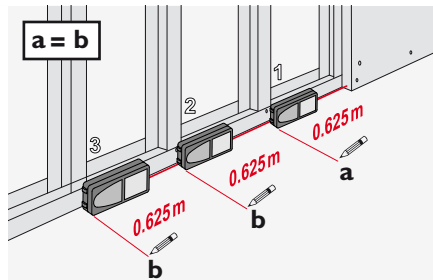
Use Up/Down navigation keys to show more results. Switch off Pointfinder if activated.

|  |                       |                  |
|--|-----------------------|------------------|
|  | 78.383 m <sup>2</sup> | — Trapezium area |
|  | 20.9°                 | — α              |

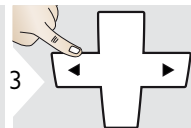
**Stake out**

1

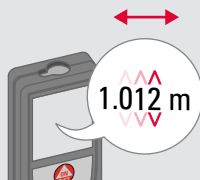
Two different distances (a and b) can be entered to mark off defined measured lengths.



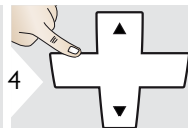
3



Select digit.



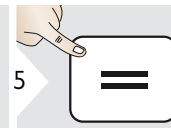
4



Adjust digit.

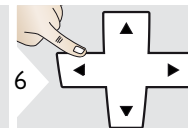


5



Approve value "a".

6



Adjust value "b".

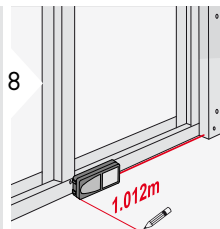


7



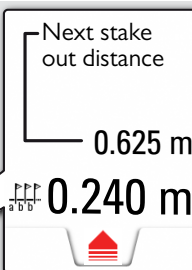
Approve value "b" and start measurement.

8



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.

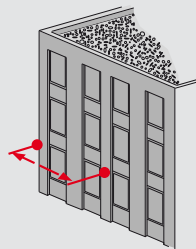
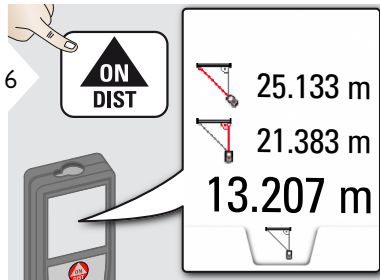
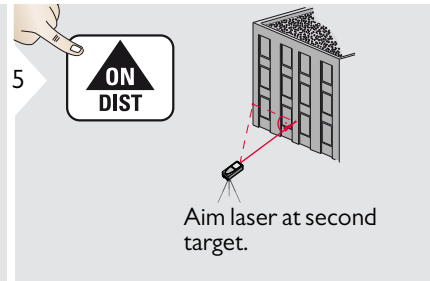
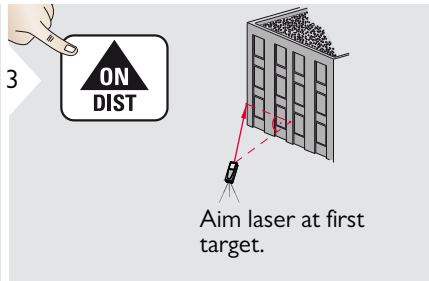
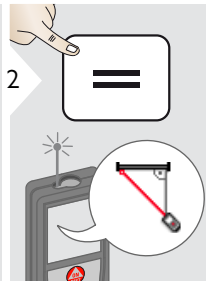
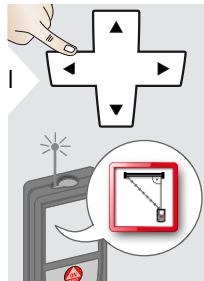


1

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.



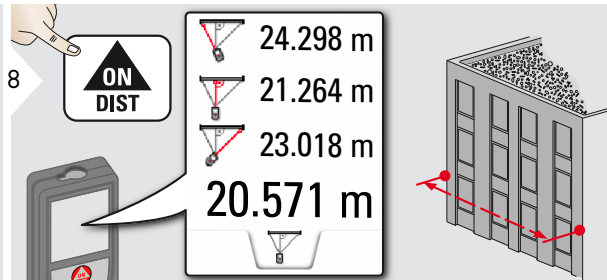
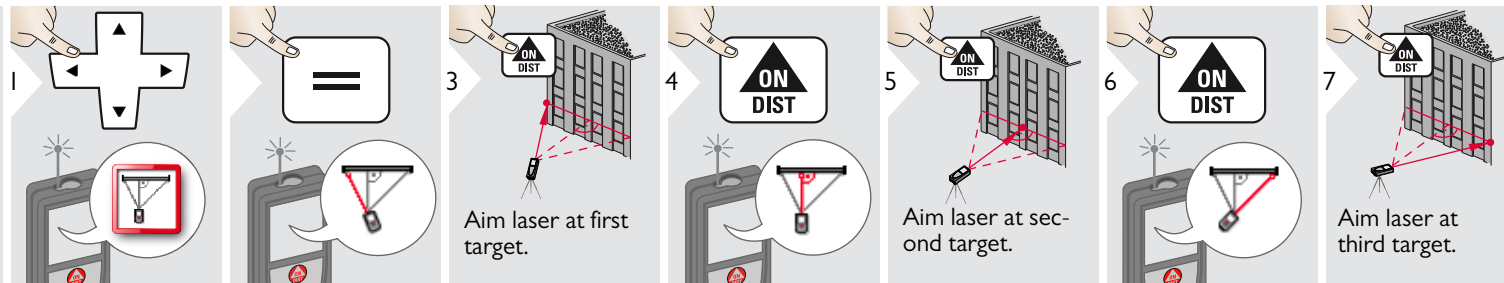
Pythagoras (2-point)



**i** 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.

**Pythagoras (3-point)**



**i** 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.

| Distance measurement                          |   |
|---|---|
| <b>Typical Measuring Tolerance*</b>           | ± 1.0 mm / ~1/16" ***                     |
| <b>Maximum Measuring Tolerance**</b>          | ± 2.0 mm / 0.08 in ***                    |
| <b>Typical Range*</b>                         | 200 m / 660 ft                            |
| <b>Range at unfavourable condition ****</b>   | 80 m / 260 ft                             |
| <b>Smallest unit displayed</b>                | 0.1 mm / 1/32 in                          |
| <b>Power Range Technology™</b>                | yes                                       |
| <b>Ø laser point at distances</b>             | 6 / 30 / 60 mm<br>(10 / 50 / 100 m)       |
| Tilt measurement                              |   |
| <b>Measuring tolerance to laser beam*****</b> | ± 0.2°                                    |
| <b>Measuring tolerance to housing*****</b>    | ± 0.2°                                    |
| <b>Range</b>                                  | 360°                                      |
| General                                       |   |
| <b>Laser class</b>                            | 2   |
| <b>Laser type</b>                             | 635 nm, < 1 mW                            |
| <b>Protection class</b>                       | IP65 (dust tight and jet water protected) |
| <b>Autom. laser switch off</b>                | after 90 s                                |
| <b>Autom. power switch-off</b>                | after 180 s                               |
| <b>Bluetooth® Smart</b>                       | Bluetooth v4.0                            |
| <b>Range of Bluetooth®</b>                    | 10 m                                      |
| <b>Battery durability (2 x AA)</b>            | up to 5000 measurements                   |
| <b>Dimension (H x D x W)</b>                  | 143 x 58 x 29 mm<br>5.6 x 2.28 x 1.14 in  |
| <b>Weight (with batteries)</b>                | 198 g / 6.37 oz                           |
| <b>Temperature range:</b>                     |   |
| - Storage                                     | -25 to 70 °C<br>-13 to 158 °F             |
| - Operation                                   | -10 to 50 °C<br>14 to 122 °F              |

\* applies for 100 % target reflectivity (white painted wall), low background illumination, 25 °C

\*\* applies for 10 to 100 % target reflectivity, high background illumination, - 10 °C to + 50 °C

\*\*\* Tolerances apply from 0.05 m to 10 m with a confidence level of 95%. The maximum tolerance may deteriorate to 0.1 mm/m between 10 m to 30 m, to 0.20 mm/m between 30 m to 100 m and to 0.30 mm/m for distances above 100 m

\*\*\*\* applies for 100 % target reflectivity, background illumination of approximately 30'000 lux

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

| Functions   |                  |
|---|------------------|
| <b>Distance measuring</b>                           | yes              |
| <b>Min/Max measuring</b>                            | yes              |
| <b>Permanent measuring</b>                          | yes              |
| <b>Stake-out</b>                                    | yes              |
| <b>Addition/Subtraction</b>                         | yes              |
| <b>Area</b>   | yes              |
| <b>Triangle area</b>                                | yes              |
| <b>Volume</b>                                       | yes              |
| <b>Trapezium</b>                                    | yes              |
| <b>Painter function (area with partial measur.)</b> | yes              |
| <b>Pythagoras</b>                                   | 2-point, 3-point |
| <b>Smart Horizontal Mode / Indirect height</b>      | yes              |
| <b>Height-profile measurement</b>                   | yes              |
| <b>Inclination tracking</b>                         | yes              |
| <b>Sloped objects</b>                               | yes              |
| <b>Height tracking</b>                              | yes              |
| <b>Memory</b>                                       | 30 displays      |
| <b>Beep</b>   | yes              |
| <b>Illuminated colour display</b>                   | yes              |
| <b>Multifunctional endpiece</b>                     | yes              |
| <b>Pointfinder (Viewscreen)</b>                     | 4xZoom           |
| <b>Digital Level</b>                                | yes              |
| <b>Bluetooth® Smart</b>                             | yes              |
| <b>Personalized Favorites</b>                       | yes              |
| <b>Timer</b>  | yes              |
| <b>Long Range Mode</b>                              | yes              |
| <b>Calculator</b>                                   | 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).  |
| 257 | Too much background light                         | Shadow target area.  |
| 258 | Measurement outside of measuring range            | Correct range.   |
| 260 | Laser beam interrupted                            | Repeat measurement.  |

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

## Warranty

### Lifetime Manufacturer's Warranty

Warranty coverage for the entire usage time of the product according to Leica Geosystems International Limited Warranty. Free of charge repair or replacement for all products that suffer defects as a result of faults in materials or manufacturing, for the entire life of the product.

### 3 Years no Cost

Guaranteed service should the product become defective and require servicing under normal conditions of use, as described in the user manual, at no additional charge.

To receive the "3 years no cost" period, the product must be registered at [www.leica-geosystems.com/registration](http://www.leica-geosystems.com/registration) within 8 weeks of the purchase date. If the product is not registered, a "2 years no cost" period applies.

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](http://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®

## 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

## Hazards in use

### 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.

## Use of the product with Bluetooth®

### WARNING

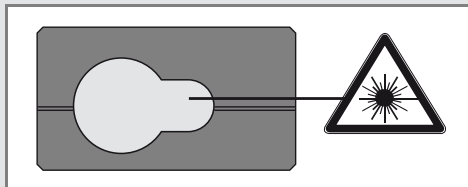
Electromagnetic radiation can cause disturbances in other equipment, in installations (e.g. medical ones such as pacemakers or hearing aids) and in aircraft. It can also affect humans and animals.

### Precautions:

Although this product conforms to the most stringent standards and regulations, the possibility of harm to people and animals cannot totally be 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

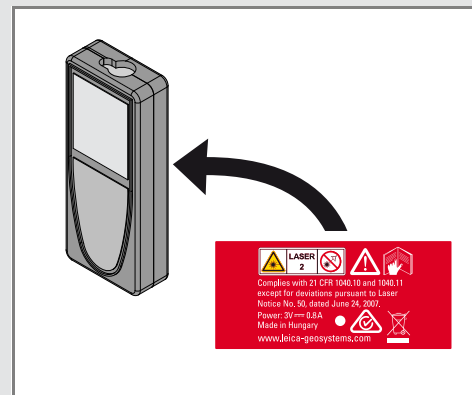
Looking directly into the beam with optical aids (e.g. binoculars, telescopes) can be hazardous.

### CAUTION

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

| Description                                     | Value           |
|---|-----------------|
| Wavelength                                      | 620 - 690 nm    |
| Maximum radiant output power for classification | < 1mW           |
| 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.



Impex Produkter AS  
Gamle Drammensvei 107  
1363 HØVIK  
Tel. 22 32 77 20  
info@impex.no  
www.impex.no

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

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Pat. No.: WO 9427164, WO 9818019, WO 0244754, WO 0216964,  
US 5949531, EP 1195617, US 7030969, US 8279421 B2,  
Patents pending

- when it has to be **right**

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