Leica DISTO™ D2

The original laser distance meter

- when it has to be **right**

Leica Geosystems

Overview

The Leica DISTO™ is a laser distance meter operating with a class 2 laser. See chapter Technical data for scope of use.

1	Display
2	ON/ Measure
3	Add
4	Functions
5	Measuring reference
6	Clear/ OFF
7	Memory/ Timer
8	Bluetooth® Smart
9	Subtract

Technical data

General	
Accuracy with favourable conditions *	1.5 mm / 1/16" ***
Accuracy with unfavourable conditions **	3 mm / 1/8" ***
Range with favourable conditions *	0.05 - 100m / 0.16 - 330ft ***
Range with unfavourable conditions **	0.05 - 60m / 0.16 - 200ft ***
Smallest unit displayed	0.1 mm / 1/32 in
X-Range Power Technology	yes
Laser class	2
Laser type	635 nm, <1 mW
ø laser point | at distances	6 /30 /60 mm | 10/ 50/ 100 m
Protection class	IP54 (dust- and splash water protected)
Auto. laser switch off	after 90 s
Auto. power switch off	after 180 s
Bluetooth® Smart	Bluetooth® v4.0
Range of Bluetooth® Smart	<10m
Battery durability (2 x AAA)	up to 10000 measurements
Dimension (H x D x W)	116 x 44 x 26 mm | 4.57 x 1.73 x 1.02 in
Weight (with batteries)	100 g/ 3.53 oz
Temperature range Storage | Operation	-25 to 70°C/ -13 to 158°F | -10 to 50°C/ 14 to 122°F

* 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 5 m with a confidence level of 95%.
With favourable conditions the tolerance may deteriorate by 0.10 mm/m for distances above 5 m.
With unfavourable conditions the tolerance may deteriorate by 0.15 mm/m for distances above 5 m.

Technical data

Functions	
Distance measuring	yes
Min/Max measuring	yes
Permanent measuring	yes
Stake out	yes
Addition/Subtraction	yes
Area	yes
Volume	yes
Painter function (area with partial measurem.)	yes
Pythagoras	2-point, 3-point
Memory	10 results
Beep	yes
Illuminated display	yes
Automatic multifunctional endpiece	yes
Bluetooth® Smart	yes

Introduction

The safety instructions (see 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

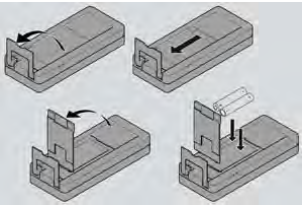
Indicates a potentially hazardous situation or an unintended use which, if not avoided, may result in minor injury and/or appreciable material, financial and environmental damage.

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

Instrument Set-up

Insert batteries

To ensure a reliable use, we recommend using high quality Alkaline batteries. Change batteries when battery symbol is flashing.



Instrument Set-up

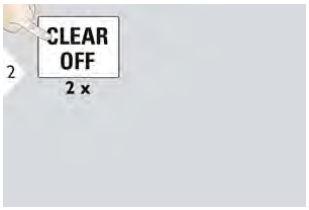
Switching ON/OFF

Device is turned OFF.

Instrument Set-up

Clear

Undo last action.

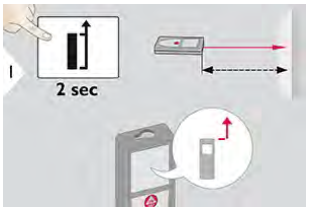


Leave actual function, go to default operation mode.

Message Codes

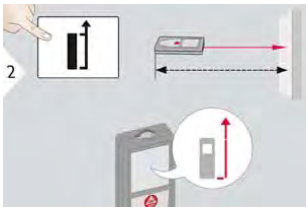
If the message "i" appears with a number, observe the instructions in Message Codes section. Example:

Adjusting measuring reference



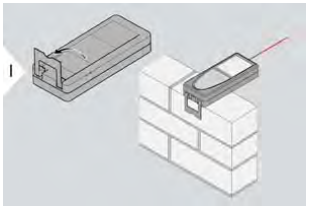
Distance is measured from the front of the device.

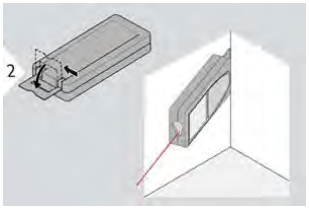
Press button 2 sec and reference from front is set permanently.



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

Multifunctional endpiece

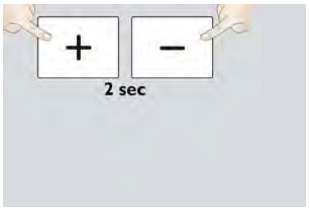




The orientation of the endpiece is automatically detected and the zero point is adjusted accordingly.

Instrument Set-up

Unit setting

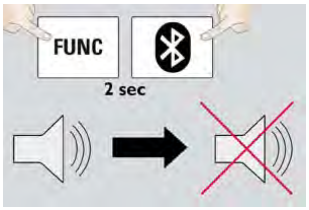


0.000 m
0.00 ft
0.0000 m
0'00" 1/32
0.000 in
0 in 1/32

Press both keys simultaneousley.

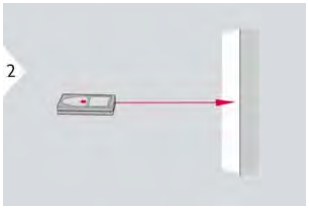
Switch between the following units:

Beep



Press both keys simultaneousley.

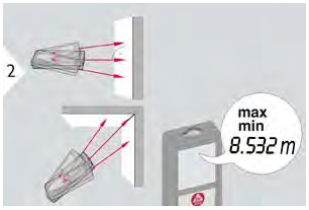
Measuring single distance



Aim active laser at target.

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

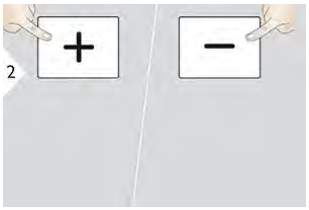
Permanent / Minimum-Maximum measuring



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.

Stops permanent / minimum-maximum measuring.

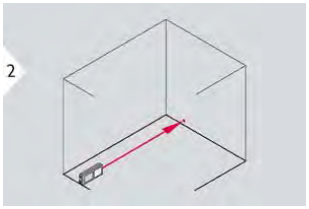
Add / Subtract



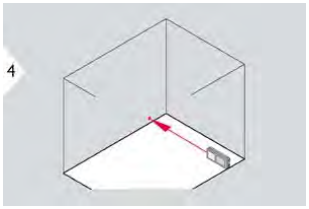
The next measurement is added to the previous one, respectively subtracted from the previous one.

The result is shown in the main line and the measured value above. This process can be repeated as required. The same process can be used for adding or subtracting areas or volumes. In this case press DIST to show the result.

Area



Aim laser at first target point.



Aim laser at second target point.

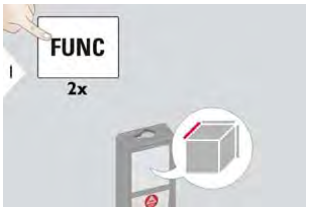
The result is shown in the main line and the measured value above. Painter function: Press + or - after starting the first measurement. Measure and add or subtract wall lengths. Measure

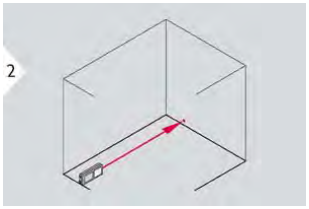
finally height for second length to get the wall area.

Circumference is displayed.

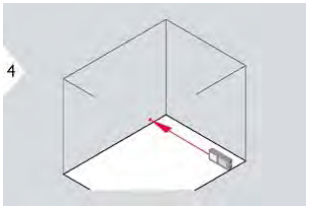
Operations

Volume

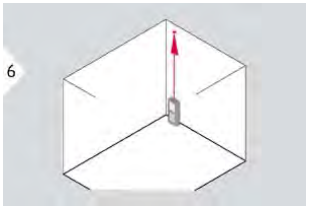




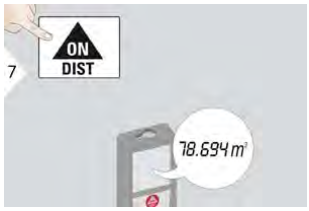
Aim laser at first target point.

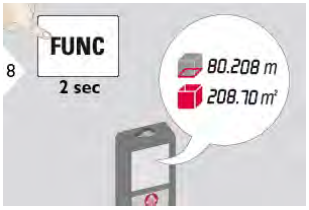


Aim laser at second target point.



Aim laser at third target point.

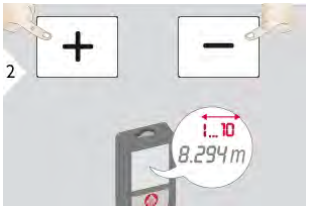




Circumference and wall area are displayed.

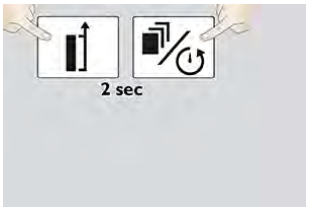
Memory (last 10 results)

Last 10 values are displayed.



Navigates through last 10 values.

Delete Memory



Press both keys simultaneousley.
Memory is completely deleted.

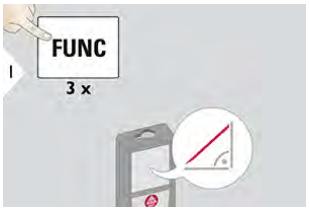
Timer (automatic release)

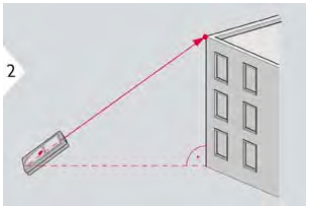
Adjust delay of automatic release (max. 60 sec, standard setting = 5 sec.).

Once the key is released with the laser activated, the remaining seconds until the result ist displayed in a countdown. The delayed release is recommended for precise aiming e.g. at long distances. It avoids shaking of the device when pressing the measurement key.

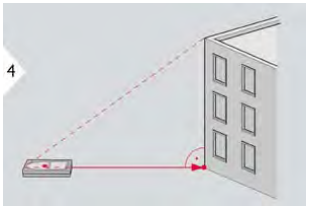
Operations

Pythagoras (2-point)

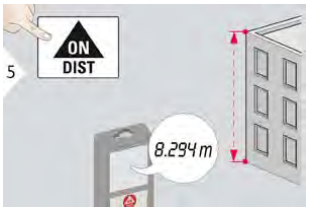




Aim laser at upper point.

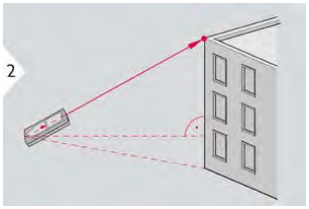


Aim laser rectangular at lower point.



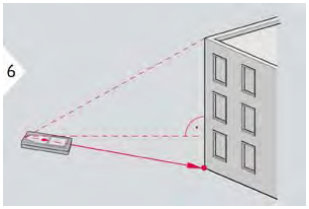
The result is shown in the main line and the measured distance above. Pressing the measuring key for 2 sec in the function activates automatically Minimum or Maximum measurement.

Pythagoras (3-point)

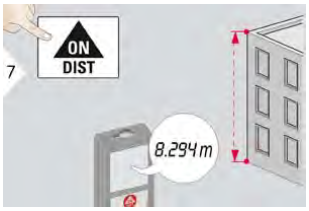


Aim laser at upper point.

Aim laser at rectangular point.



Aim laser at lower point.

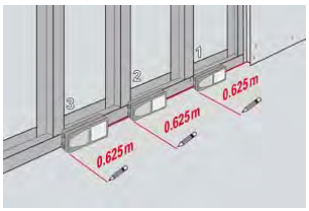


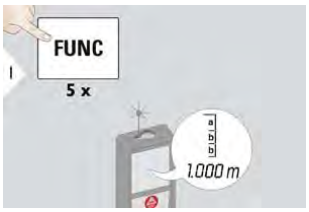
The result is shown in the main line and the measured distance above. Pressing the measuring key for 2 sec in the function activates automatically Minimum or

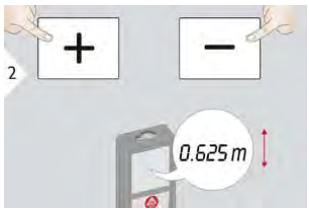
Maximum measurement.

Operations

Stake out

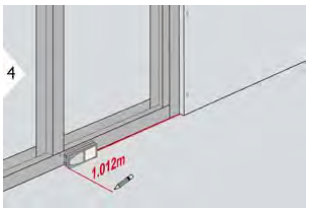






Adjust value.

Approve value and start measurement.



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

0.240m is missing up to next 0.625m distance.

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

Bluetooth® Smart

Deactivate/Activate Bluetooth®

Value from mainline is transferred

DISTO™ sketch. Use App for Bluetooth® data transfer.

Bluetooth® Smart is always active when the device is switched on. Connect the device with your smart-phone, tablet, laptop.. Measurement values will be transferred automatically right after a measurement. To transfer a result from the main line, press the Bluetooth® key. 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 iOS can be found in special internet shops. For more details, see our homepage.

Message Codes

No.	Cause	Correction
204	Calculation error	Perform measurement again.
220	Hardware error	Contact your dealer
240	Data transfer error	Connect device and repeat procedure
252	Temperature too high	Let device cool down.
253	Temperature too low	Warm device up.
255	Received signal too weak, measuring time too long	Change target surface (e.g. white paper).
256	Received signal too high	Change target surface (e.g. white paper) .
257	Too much background light	Shadow target area.

* If other message codes are displayed frequently even the instrument has been switched off and on, please contact your dealer.

Care

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

Safety instructions

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

Symbols used

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.

Safety instructions

Permitted use

- Measuring distances
- 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.)
- Use of accessories from other manufacturers without express approval
- Carrying out modification or conversion of the product
- 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.

Areas of responsibility

Responsibilities of the manufacturer of the original equipment:

Leica Geosystems AG
Heinrich-Wild-Strasse
CH-9435 Heerbrugg
Internet: www.leica-geosystems.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.

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

Japanese Radio Law Compliance

This device is granted pursuant to the Japanese Radio Law 電波法. This device should not be modified otherwise the granted designation number will become invalid.

FCC statement (applicable in U.S.)

This equipment has been tested and found to comply with the limits for a Class B digital instrument, 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 the 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 instrument complies with part 15 of the FCC rules. Operation is subjected to the following two conditions:

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

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

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

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:

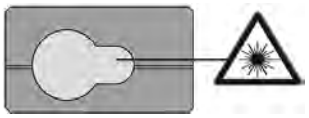
Although this product conforms to the most stringent standards and regulations, the possibility of harm to people and animals cannot be totally excluded.

- 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.

Wavelength
620 - 690 nm
Maximum radiant output power for classification
< 1 mW
Pulse duration
> 400 ps
Pulse repetition frequency
320 MHz
Beam divergence
0.16 x 0.6 mrad

Labelling

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