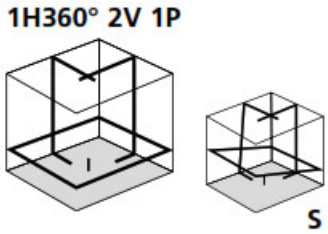
Laserliner X2-Laser Automatic Levelling Instruments Instruction Manual

Laserliner®

X2-Laser
Instruction Manual



Completely read through the operating instructions, the „Warranty and Additional Information“ booklet as well as the latest information under the internet link at the end of these instructions. Follow the instructions they contain. This document must be kept in a safe place and if the laser device is passed on, this document must be passed on with it.

Contents

Function / Application

Green cross-line laser with horizontal laser circle and two vertical lines
– Exact horizontal and vertical alignment of objects
– Time-saving automatic alignment
– Easy alignment of slopes
– Visual signals indicate when the device is outside its self-leveling range
– Integrated hand-held receiver mode for outdoor applications
– Simple horizontal and vertical mounting on drywall construction profiles
– Long battery operating time thanks to the powerful lithium-ion rechargeable battery

General safety instructions

– The device must only be used in accordance with its intended purpose and within the scope of the specifications.
– The measuring tools and accessories are not toys. Keep out of reach of children.
– Modifications or changes to the device are not permitted, this will otherwise invalidate the approval and safety specifications.
– Do not expose the device to mechanical stress, extreme temperatures, moisture or significant vibration.
– The device must no longer be used if one or more of its functions fail or the battery charge is weak.

Safety instructions

Using class 2 lasers

Laser radiation!
Do not stare into the beam!
Class 2 laser
< 1 mW · 515 / 650 nm
EN 60825-1:2014/AC:2017

– Attention: Do not look into the direct or reflected beam.
– Do not point the laser beam towards persons.
– If a person‘s eyes are exposed to class 2 laser radiation, they should shut their eyes and immediately move away from the beam.
– Under no circumstances should optical instruments (magnifying glass, microscope, binoculars) be used to look at the laser beam or reflections.
– Do not use the laser at eye level (1.40 … 1.90 m)
– Reflective, specular or shiny surfaces must be covered whilst laser devices are in operation.
– In public areas shield off the laser beam with barriers and partitions wherever possible and identify the laser area with warning signs.

Safety instructions

Dealing with electromagnetic radiation
– The measuring device complies with electromagnetic compatibility regulations and limits in accordance with the EMC Directive 2014/30/EU.
– Local operating restrictions – for example, in hospitals, aircraft, petrol stations or in the vicinity of people with pacemakers – may apply. Electronic devices can potentially cause hazards or interference or be subject to hazards or interference.

When transporting, always switch off all lasers, secure the pendulum and push the slide switch (2) to the right.

Special product features

AUTOMATIC LEVEL

Automatic alignment of the device with a magnetically dampened pendulum system. The device is brought into the initial position and aligns itself autonomously.
Transport LOCK: The device is protected with a pendulum lock during transport.

lock

GRX READY

GRX-READY technology enables line lasers to be used even in unfavorable light conditions. The laser lines pulsate at a high frequency and this can be picked up by special laser receivers over long distances.

Green laser technology

PowerGreen ++ LASER

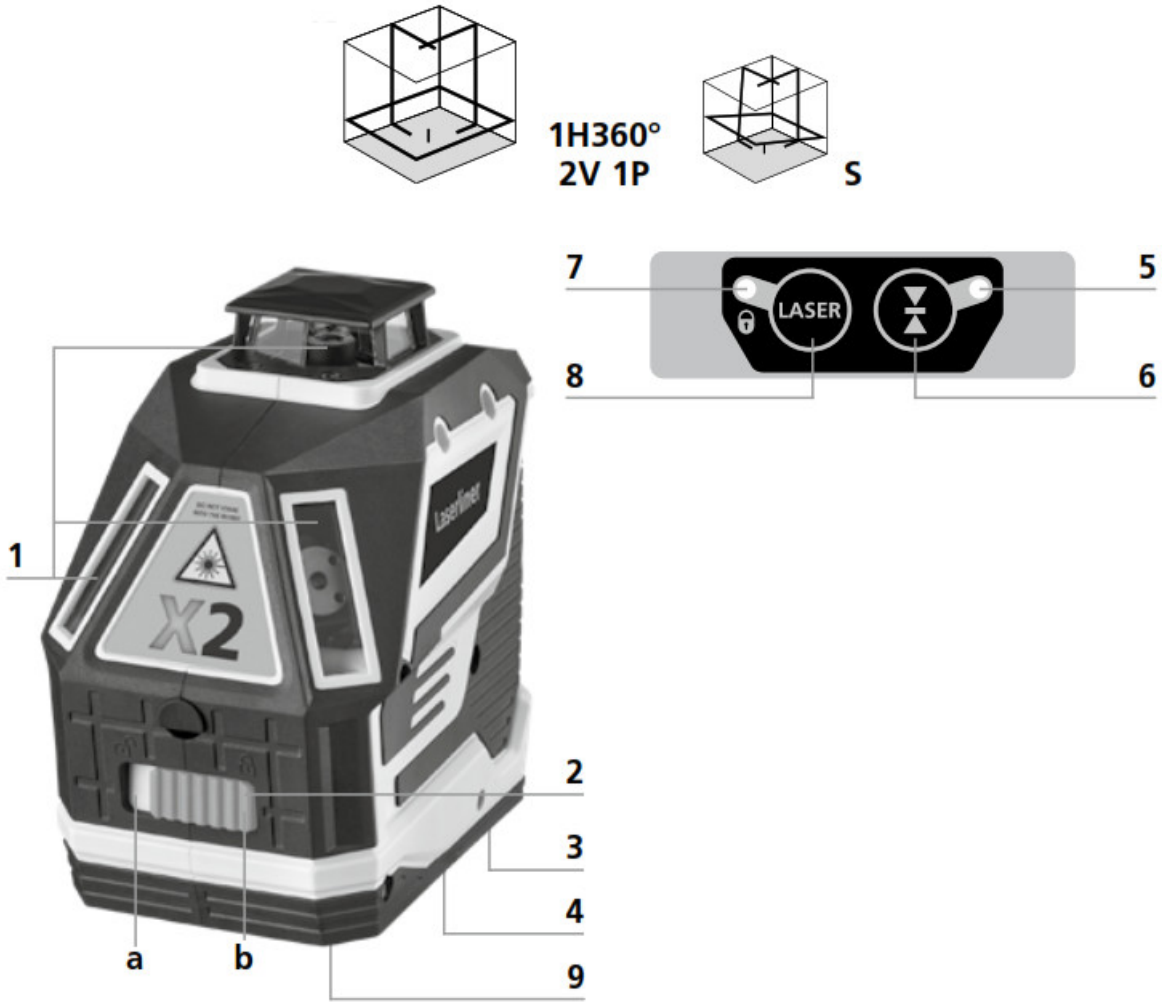
Devices with PowerGreen++ technology have extremely bright green laser diodes of the highest performance class that allow very good visibility of laser lines at great distances, on dark surfaces and in bright ambient lighting conditions.

6x

Approx. 6 times brighter than a typical red laser with 630 – 660 nm

Number and direction of the lasers

H = horizontal laser
V = vertical laser
P = plumb laser
S = slope function



1. Laser emitting window
2. Slide switch
   a ON
   b OFF / Slope mode / Transport lock
3. Rechargeable battery compartment (bottom)
4. 1/4”/5/8“-tripod threads (bottom)
5. LED hand receiver mode
6. Hand receiver mode
7. LED status indicator / Battery charge
8. Laser line selection button
9. Laser emitting window, the reference beam

Use of lithium-ion rechargeable battery

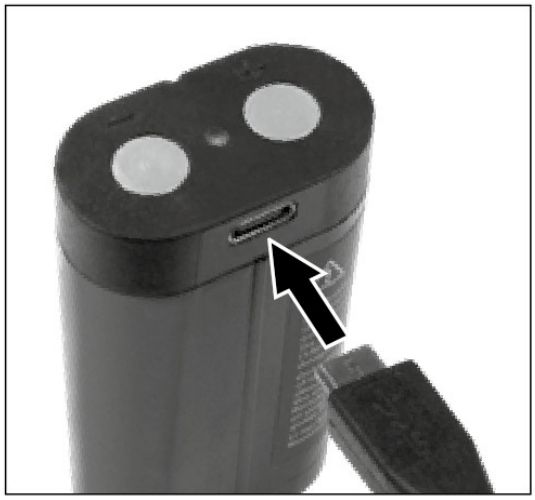
– The power supply unit is to be used in enclosed spaces only; do not expose to moisture or rain as this may result in the risk of electric shock. – Charge the device‘s battery completely prior to use.
– Connect the power supply unit to the mains and connect socket on the battery pack. Only use the power supply unit provided. Using a different power supply unit will invalidate the warranty.

– The LED on the battery pack lights up red while the battery is charging. When the LED changes to green, charging is complete.
– The status indicator (7) flashes if the battery charge is low until the device shuts down to protect the battery.

The battery may only be charged with the battery charger provided and used only in this laser device. Any other use may cause injury or fire.

Make sure there are no conductive objects in the vicinity of the battery contacts. Short-circuiting of these contacts can cause burn injuries or fire.

Do not open the rechargeable battery. This could cause short circuits.

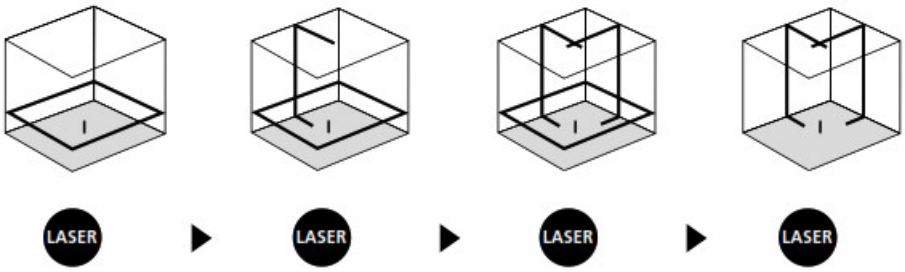


Power supply

To insert the lithium-ion rechargeable battery
Open the battery compartment and insert the lithium-ion battery as illustrated (contacts first).

Horizontal and vertical leveling

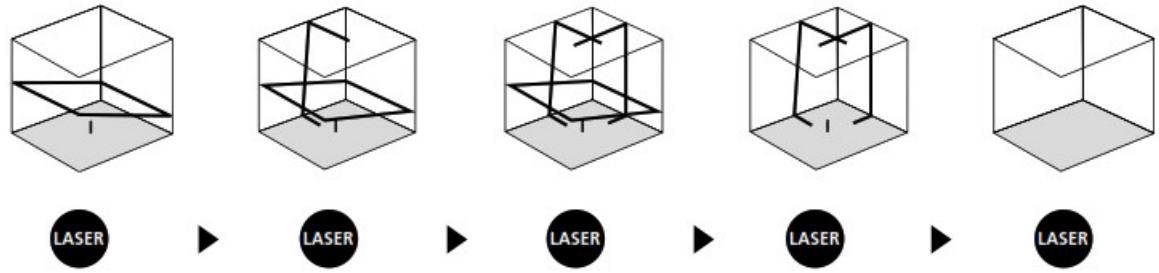
Release the transport restraint, push the slide switch (2) to the left.
The horizontal laser line appears. The laser lines can be switched individually with the selection button.



The transport restraint must be released for horizontal and vertical leveling. The laser lines flash when the device is outside the automatic leveling range of 3°. Position the device such that it is within the leveling range.

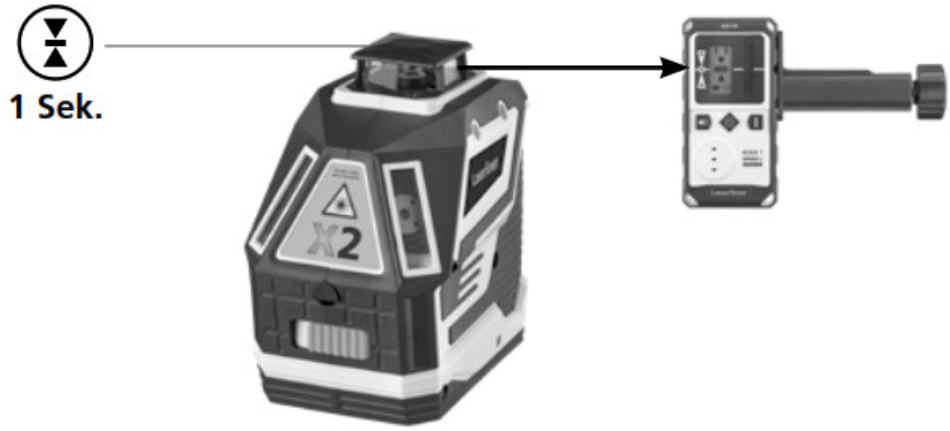
Slope mode

Do not release the transport restraint, push the slide switch (2) to the right. Select the laser using the selector button (8). Sloping planes and tilts can now be measured. In this mode, the laser lines no longer align automatically. This is signalised by the laser lines flashing.



Hand receiver mode

Optional: Working with the laser receiver GRX
Use an GRX laser receiver (optional) to carry out levelling at great distances or when the laser lines are no longer visible. To work with a laser receiver, switch the line laser to hand-held receiver mode by keeping button 6 (hand-held receiver mode on / off) pressed. The laser lines will now pulsate with high frequency, making the laser lines darker. The laser receiver can detect these pulsating laser lines.



Observe the laser receiver‘s operating instructions for line lasers.

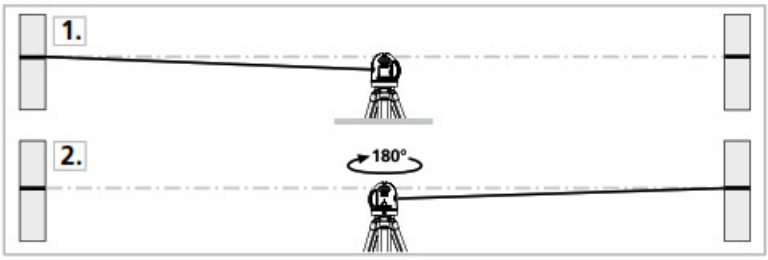
Due to the special optics required to generate a continuous 360° laser line, the underlying technology may cause differences in brightness in different areas of the line. This may lead to different ranges in hand receiver mode.

Preparing the calibration check
It is possible for you to check the calibration of the laser. To do this, position the device midway between 2 walls, which must be at least 5 metres apart.
Switch the device on (Laser cross ON). The best calibration results are achieved if the device is mounted on a tripod.

1. Mark point A1 on the wall.

2. Turn the device through 180° and mark point A2.

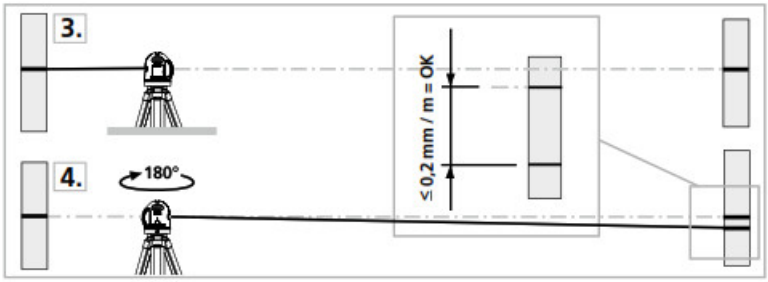
   You now have a horizontal reference between points A1 and A2.



Performing the calibration check

3. Position the device as near as possible to the wall at the height of point A1.
4. Turn the device through 180° and mark point A3.

   The difference between points A2 and A3 is the tolerance.



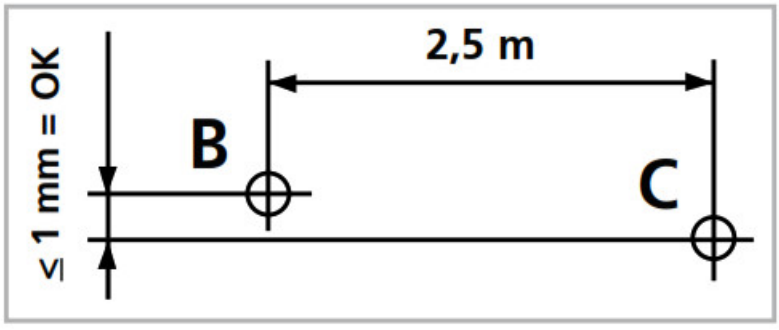
When A2 and A3 are more than 0.2 mm / m apart, an adjustment is necessary. Contact your authorised dealer or else the UMAREX-LASERLINER Service Department.

Checking the vertical line

Position the device about 5 m from a wall. Fix a plumb bob with a line of 2.5 m length on the wall, making sure that the bob can swing freely. Switch on the device and align the vertical laser to the plumb line. The precision is within the specified tolerance if the deviation between the laser line and the plumb line is not greater than ± 1 mm.

Checking the horizontal line

Position the device about 5 m from a wall and switch on the cross laser. Mark point B on the wall. Turn the laser cross approx. 2.5 m to the right and mark point C. Check whether the horizontal line from point C is level with point B to within ± 1 mm. Repeat the process by turning the laser to the left.



Regularly check the calibration before use, after transport and after extended periods of storage.

Calibration

The meter needs to be calibrated on a regular basis to ensure it produces accurate measurement results. We recommend carrying out calibration once a year.

Information on maintenance and care

Clean all components with a damp cloth and do not use cleaning agents, scouring agents and solvents. Remove the battery pack before storing for longer periods. Store the device in a clean and dry place.

Technical data

(Subject to technical changes without notice. 21W23)

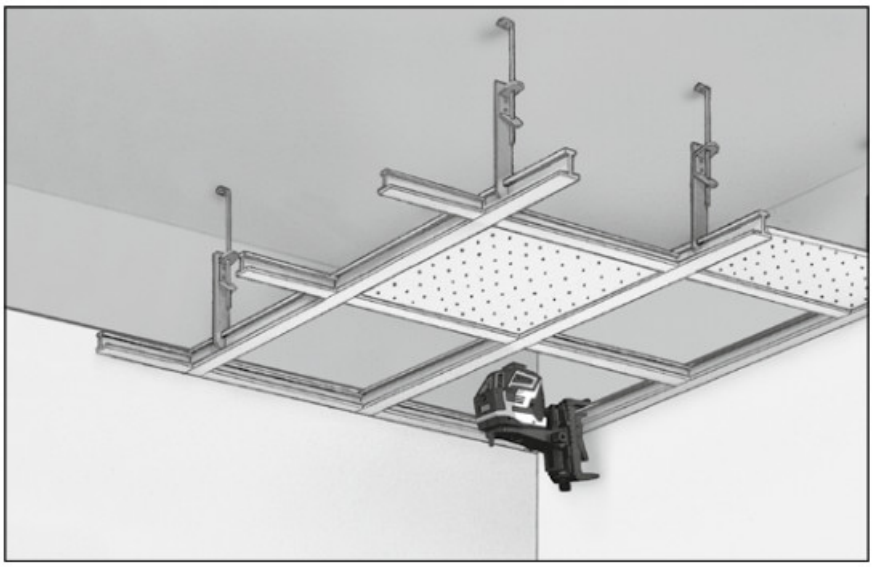
Self-levelling range	± 3°
Accuracy	± 0.2 mm / m
Levelling	auto
Visibility (typical)*	60 m
Working range with hand receiver (depends on how the technology affects the difference in brightness)	60 m
Laser wavelength	515 nm
Plumb laser wavelength	650 nm
Laser class	2 / < 1 mW (EN60825-1:2014/AC:2017)
Degree of protection	IP 54
Power supply	Li-ion battery pack 3.7 V / 5.2 Ah; Power supply 5 V/DC / 2000 mAh
Operating time	approx. 6 hours
Charging time	approx. 6 hours
Operating conditions	0°C … 50°C, max. humidity 80% rH, no condensation, max. working altitude 4000 m above sea level
Storage conditions -10°C … 70°C,	max. humidity 80% rH

* at up to 300 lux

EU directives and disposal

This device complies with all necessary standards for the free movement of goods within the EU. This product is an electric device and must be collected separately for disposal according to the European Directive on waste electrical and electronic equipment.

Further safety and supplementary notices at: **http://laserliner.com/info/?an=AJQ**



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Documents / Resources

	Laserliner X2-Laser Automatic Levelling Instruments [pdf] Instruction Manual X2-Laser, Automatic Levelling Instruments
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References