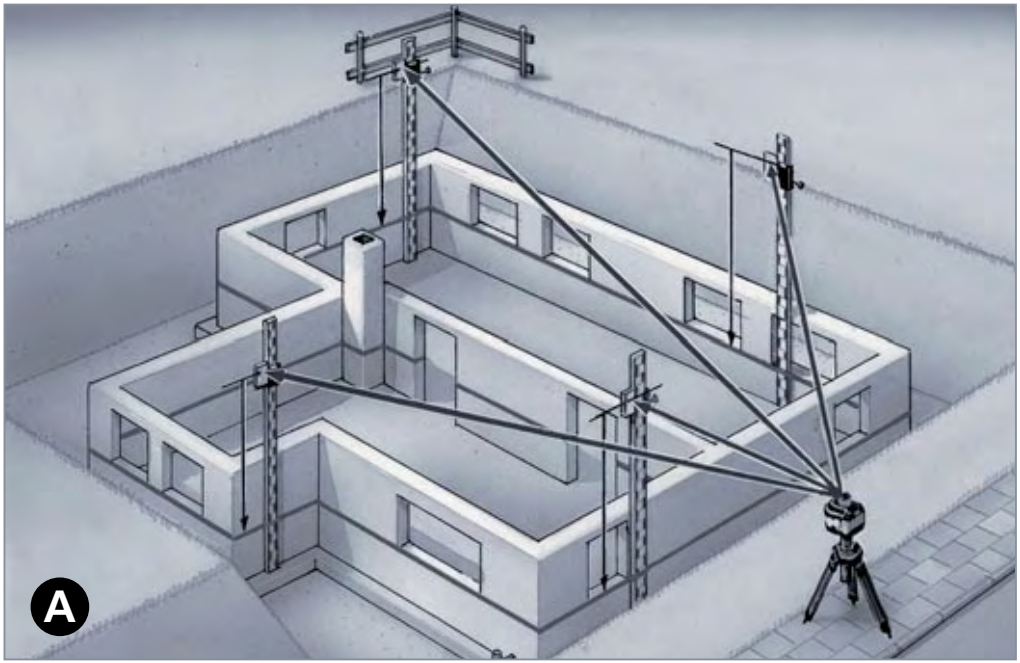
Revolution

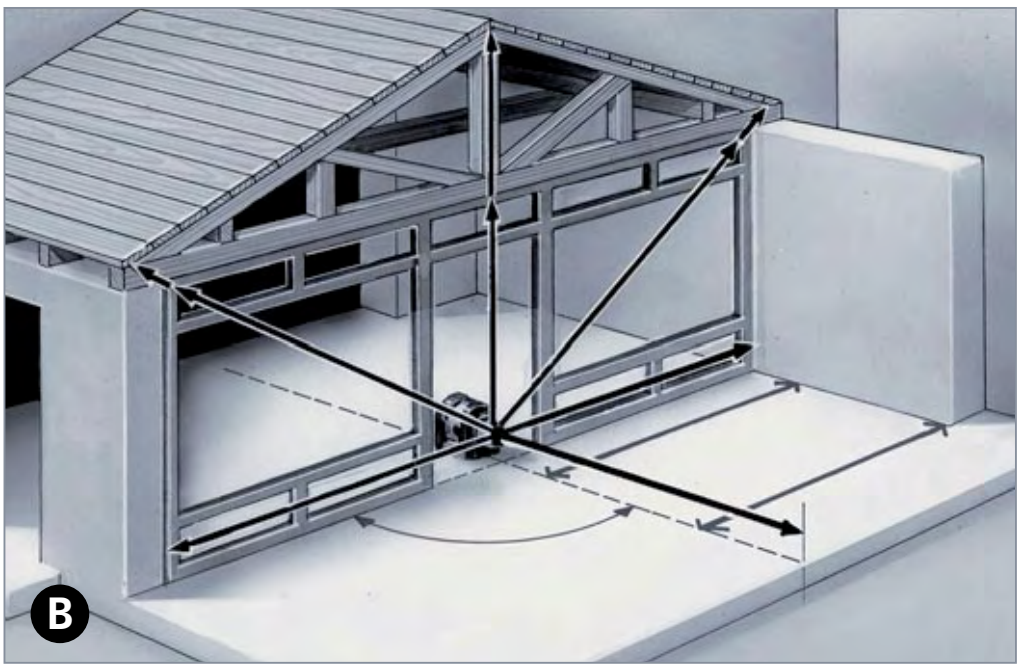
8.052.96.01.1 / Rev.0509

sensor AUTOMATIC

ADS Tilt

Laserliner®
Innovation in Tools


A


B

Latest generation fully automatic rotary laser of an extremely durable design

Electronic vials and positioning motors controlled by temperature-stable sensors for automatic alignment, 4° self-levelling range, precision 1 mm / 10 m. Maximum safety and reliability are ensured by the anti-drift system (ADS): the electronic system continuously monitors the measurement and switches the laser off if the device is disturbed by external factors. The device can be set up really quickly thanks to the anti-shake function, which enables the laser to be set to a required height by means of a crank tripod, for example. This function also means that the rotary laser can be used on vibrating surfaces and in windy conditions. In automatic mode, an axis can be manually set to a certain inclination using the single slope function. The reference beam allows partition walls to be aligned and a plumb line to be drawn. Dustproof and splash water-proof to IP 66.

General safety instructions

Caution: Prior to using the laser, you must read the safety instructions for laser class 3R thoroughly. Warning signs must not be removed from the laser measuring device! Do not look directly into the beam. Lasers must be kept out of reach of children. Never intentionally aim the device at people. This is a quality laser measuring device and is 100% factory adjusted within the stated tolerance. For reasons of product liability, we must also draw your attention to the following: Regularly check the calibration before use, after transport and after extended periods of storage. We also wish to point out that absolute calibration is only possible in a specialist workshop. Calibration by yourself is only approximate and the accuracy of the calibration will depend on the care with which you proceed.

Laser radiation!
Avoid direct exposure to the eyes. Laser class 3R
< 5 mW • 530 - 670 nm
EN60825-1:2007-10

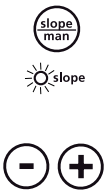
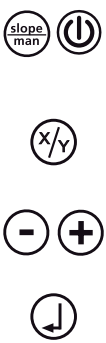
Note:

This product is a precision instrument that must be handled and treated with care. Avoid shocks and impact. Always keep and carry in the case! Switch laser off. For cleaning, use a soft cloth and glass cleaner.

Warranty

The warranty period is 2 years from the date of purchase. The warranty covers all material or manufacturing defects occurring during this time. The following are excluded from warranty: Damage due to improper use (e.g. operation with wrong type of current/voltage, connection to unsuitable power source, fall onto hard surface, etc.) or improper storage, normal wear and tear, and defects which only insignificantly impair the value or suitability for use. Any tampering by unauthorised persons will render this warranty void. In the event that you need to claim warranty, please take the complete device together with all information and the invoice to one of our dealers or send it in to Umarex-Laserliner.

Brief instructions		
	Initial switch-on	Use the ON/OFF button to switch the device on. The automatic sensor now levels the device horizontally and/or vertically; the laser remains stationary and flashes during this set-up phase. As soon as levelling is complete, the laser starts to rotate at 750 rpm.
	Hand receiver mode	For working with the laser receiver (available as an optional extra).
	Rotary mode	The following speeds can be set using the rotary button: 750, 350, 0 rpm
	Spot mode	You access spot mode by pressing the rotary button repeatedly until the laser stops rotating. The laser can then be positioned exactly at the measuring point by means of the direction buttons.
	Scan mode	The scan button can be used to activate and set a light-intensive segment in 4 different widths. You position the segment via the direction buttons.
	ADS tilt function	This function protects the rotary laser from changes in position caused by the device being disturbed by external factors, thus preventing erroneous or inaccurate measurements. Press the tilt button as soon as the rotary laser has been aligned and the automatic sensor is up and running. The tilt function becomes active after around 30 seconds and the tilt LED starts to flash every second. If the device then moves, it will switch itself off. The laser and the tilt LED start to flash rapidly.
	Anti-shake function	The device can be set up really quickly with this function, which enables the laser to be set to a required height, for example. It also means that the laser can be used on vibrating surfaces and in windy conditions, possibly in conjunction with the single slope function. The laser will continue to rotate whilst the automatic sensor is setting up the device. IMPORTANT: Precision is adversely affected during the set-up phase.

	Single slope function Commander 50	In automatic mode, an axis can be manually set to a certain slope using this function, even if the ADS tilt function is also active. This means that one axis can be re-adjusted whilst the other is aligned horizontally and/or vertically. Press the slope/man button to activate the function and select the X or Y axis. The slope LED lights up, as does the LED for the X or Y axis. The slope is re-adjusted using the plus/minus buttons. ATTENTION: This function cannot be used to perform full horizontal levelling, just to adjust one axis.
	Manual slope function Commander 50	This function deactivates the automatic sensor, which enables two axes to be re-adjusted simultaneously and steep slopes to be set. To use the function, press the slope/man button repeatedly until the man LED lights up. Use the tilt button to toggle between the X and Y axes. The plus/minus buttons are used to re-adjust the slope by means of a motor. In vertical operation, press the slope/man button 3 times to activate the manual slope function for the Z axis. IMPORTANT: Since the automatic sensor is not active, horizontal and/or vertical levelling cannot take place.
	Adjustment mode Commander 50	This mode can be used to re-adjust the device. With the device switched off, press and hold down the slope/man button. Then press the ON/OFF button briefly, keeping the slope/man button pressed down until the X, Y and Z axis LEDs light up simultaneously. Open the cover on the Commander 50 and use the X/Y button to select the required axis. Now use the plus/minus buttons on the adjustment panel to set the selected axis; see the "Adjustment mode" section for more information. In vertical operation, the device activates the Z axis automatically. Save your new setting by pressing the enter button.
	Power management	The device can be operated using the high-performance rechargeable battery or standard alkaline batteries.

Sensor Automatic

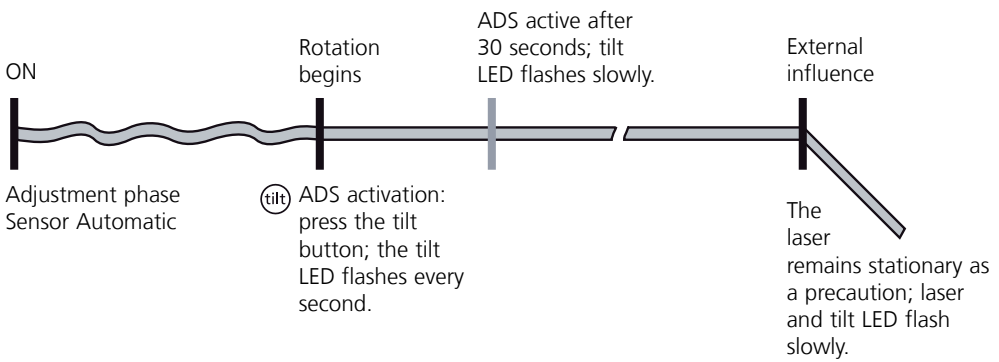
The rotary laser aligns itself automatically. It is set to the required initial position (to within an operating angle of ± 4°) and the automatic system then performs the necessary fine adjustment, with three electronic measurement sensors detecting the X, Y and Z axes.

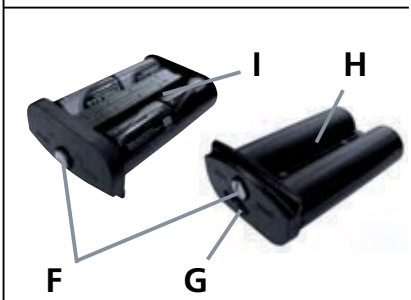
Anti-Drift-System (ADS) (tilt)

The anti-drift system (ADS) prevents erroneous or inaccurate measurements. How it works: continuous monitoring of the alignment of the laser is activated 30 seconds after the ADS is switched on. If the device moves due to the influence of external factors or the laser loses its height reference, the laser will come to a standstill. The laser and the tilt LED also start to flash rapidly. The device has to be switched off and on again in order to continue using it. Erroneous and inaccurate measurements are thus prevented simply and reliably. IMPORTANT: The ADS is not active following switch-on. Once the device has been set up, press the tilt button to activate the ADS, enabling you to protect the laser from changes in position caused by the device being disturbed by external factors. The tilt LED flashes to indicate that the ADS function is active; see the diagram below.

Attention:
The ADS does not activate the monitoring function until 30 seconds after the laser levelling procedure has been completed (set-up phase). The tilt LED flashes every second during the set-up phase and flashes more slowly when the ADS is active.

Operating mode ADS:





A Reference / plumb laser outlet

B Prism head / laser beam outlet

C Receiver diodes for remote control (4 x)

D Control panel

E 5/8" thread for horizontal operation

F Fastening screw for battery compartment/high-performance rechargeable battery

G Charging socket

H High-performance rechargeable battery

I Battery compartment

J Centring tip (retractable)

K 5/8" thread for vertical operation

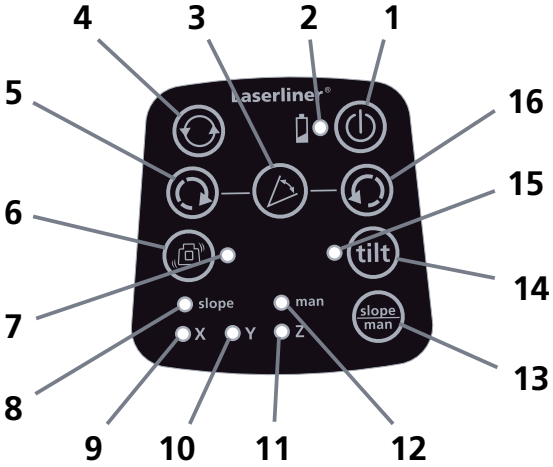
L Slot for inserting high-performance rechargeable battery/battery compartment

M Adjustable feet for pre-adjustment

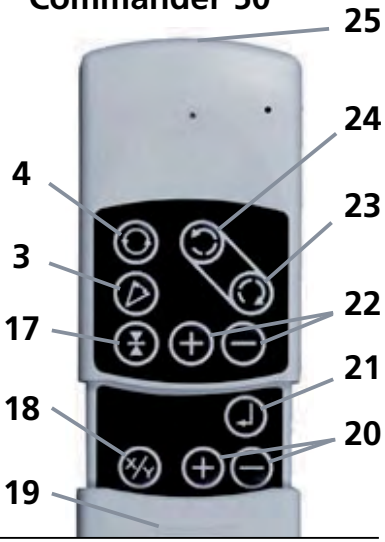
N Adjustment wheel for pre-adjustment

O Vertical vial for pre-adjustment

Control panel Revolution



Optional accessory: Commander 50



1 ON/OFF button

2 Operation/battery indicator

3 Scan mode

4 Rotary speed for selection, 750 / 350 / 0 rpm

5 Positioning button (rotate to the right)

6 Anti-shake function

7 LED AntiShake-Funktion

8 Single slope function LED

9 X axis LED

10 Y axis LED

11 Z axis LED

12 Manual slope function LED

13 Single slope function / manual slope function

14 Tilt function

15 Tilt function LED

16 Positioning button (rotate to the left)

17 Hand receiver mode

18 Adjustment mode: toggle between X and Y axes

19 Cover for adjustment mode buttons / battery compartment

20 Adjustment mode: axis adjustment

21 Adjustment mode enter button: save new setting

22 Plus/minus buttons for setting the inclination with the single slope function and the manual slope function

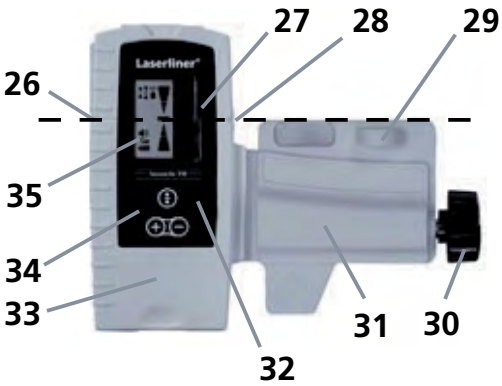
23 Positioning button (rotate to the right)/ calibration mode: axis switch-over

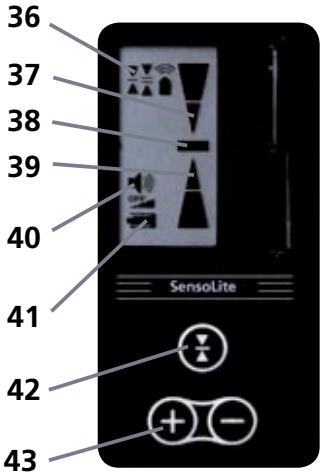
24 Positioning button (rotate to the left)/ calibration mode: save

25 Infrared signal emitter

Optional accessory: SensoLite 310

Protection class IP 66





26 All-round marking groove

27 Receiver field for laser beam

28 SpotLite Marking LED

29 Vial

30 Fastening screw for levelling staffs

31 Universal mount

32 Binding screw / loudspeaker (rear side)

33 Battery compartment (rear side)

34 Control panel

35 LC-Displays (front and rear side)

36 Display Precision range ⧗ /
Free-hand range ⧗

37 Hand receiver above laser level

38 Precisely on laser level

39 Hand receiver below laser level

40 Volume indicator

41 Low battery indicator

42 Switch on /

Hand receiver mode /

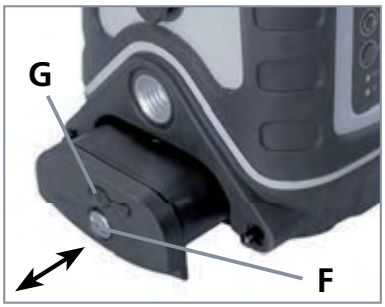
Switch: Precision range /
Free-hand range

Switch off:
press button 3 seconds

43 Volume adjustment

Note: The laser receiver has two tolerance settings: Precision and free-hand setting.

Battery (NiMH) charging



- Charge rechargeable batteries fully before using the device.
- Connect the charger to the mains power supply and the charging socket (G) on the high-performance rechargeable battery (H). Please only use the charger supplied; using a different charger will invalidate the warranty. The rechargeable battery can also be charged when it is not inserted in the device.
- When the rechargeable battery is being charged, the LED on the charger lights up red. When the LED changes to green, charging is complete.
- Alkaline batteries (4 x type C) can be used as an alternative. Insert them in the battery compartment (I) as per the installation symbols.
- Insert the high-performance rechargeable battery (H) or the battery compartment (I) into the slot (L) and tighten with the fastening screw (F)
- With the rechargeable battery inserted, the device is ready to run even during charging.
- If the operation/battery indicator flashes continuously, the batteries need to be replaced or the rechargeable battery re-charged.

Inserting batteries into the SensoLite laser receiver

- Open the battery compartment (33) and insert the battery as per the installation symbols, observing the correct polarity. Close the cover again.
- In order to preserve the battery life, the receiver switches off automatically if it is not used for around 5 minutes.

Inserting batteries into the Commander 50

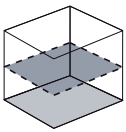
- To insert the battery, open the cover fully (see figure). Correct polarity must be observed. Close the cover again fully.

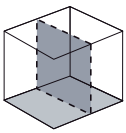
Note:

Do not expose batteries to excessive heat such as sunshine, fire, etc. Only rechargeable batteries must be charged. Used batteries must not be disposed of as household waste. Please take them to a collection point for used batteries or for special waste. Ask your local authority for further details. Batteries with the recycling symbol can also be returned to our dealerships or to our Technical Service.

Horizontal and vertical use

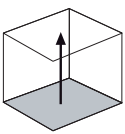
Setting up





- Horizontal: Position the device on a level surface or on a tripod.
- Vertical: unfold centric point (J) and position unit in vertical mode. Pre-adjust unit with vertical vial (O) and adjusting screws (N). The sensor then adjusts the unit automatically. The device can be mounted on a construction tripod by means of the 5/8" thread (K).

Note: If the vertical vial is precisely aligned, the laser is lined up exactly with the centric point.



- A perpendicular can easily be raised with the reference/plumb beam. Tip: When installing dividing walls align the reference beam parallel to the wall (please refer to picture B on page 2).
- PRESS THE "ON/OFF" SWITCH
- The device levels itself automatically to within a range of ± 4°. During the set-up phase, the laser flashes and the prism head remains stationary. The operation/battery indicator is lit up continuously. When levelling is complete, the laser lights up continuously and rotates at maximum speed.

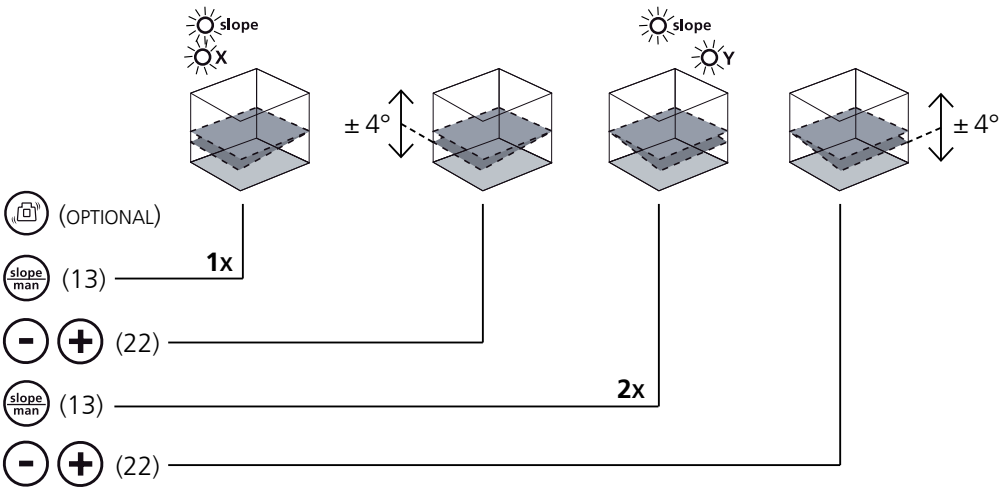
Attention: If the device has been placed on a surface with too much of a slope (more than 4°), there is a warning sound, the prism head remains stationary and the laser starts to flash. The device must then be placed on a more even surface.

Anti-shake function

This function enables you to use the device when it is still in the set-up phase. The laser will continue to rotate whilst it is being aligned by the automatic sensor. This makes device set-up easier, as it enables the laser to be set to a required height by means of a crank tripod or a wall bracket, for example. It also means that the laser can be used on vibrating surfaces and in windy conditions. This function can be used in combination with the single slope function and all laser modes except adjustment mode, and for both horizontal and vertical operation. The function is activated via the anti-shake button: when it is pressed, the anti-shake LED lights up. IMPORTANT: Precision is adversely affected during the set-up phase.

Single slope function

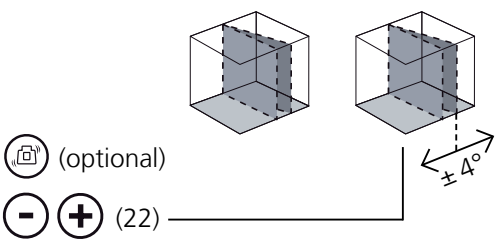
In automatic mode, an axis can be manually set to a certain slope using this function, even if the ADS tilt function is also active. This means that one axis can be re-adjusted whilst the other is aligned horizontally and/or vertically. Press the slope/man button to activate the function and select the X or Y axis. The slope LED lights up, as does the LED for the X or Y axis. The slope is re-adjusted using the plus/minus buttons. ATTENTION: This function cannot be used to perform full horizontal levelling, just to adjust one axis.



Application example: A gradient is to be laid out at the entrance to a garage. For this, one axis must be re-adjusted and the other aligned horizontally with the garage floor.

IMPORTANT: If a horizontal line is to be moved simultaneously on one wall, the X or Y axis of the rotary laser must be aligned at right angles to the wall. If this is not done, a slope will be projected onto the wall. Use the reference beam to set the right angle.

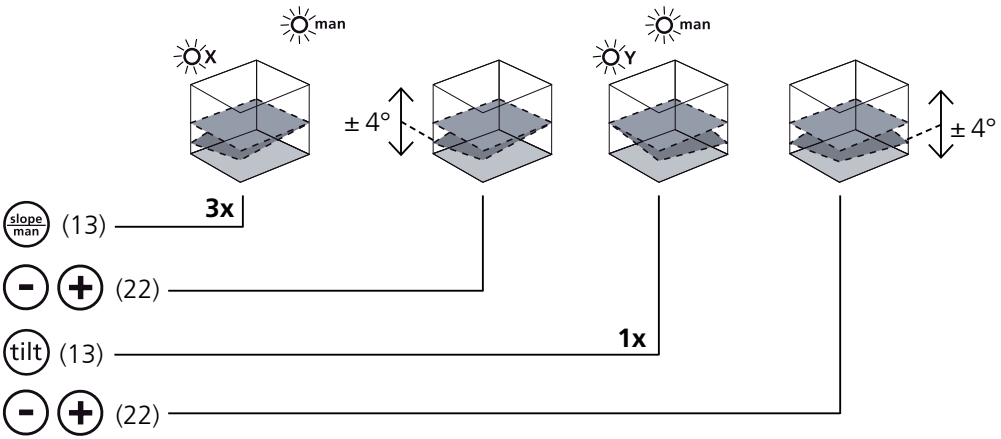
Turn the vertical plane



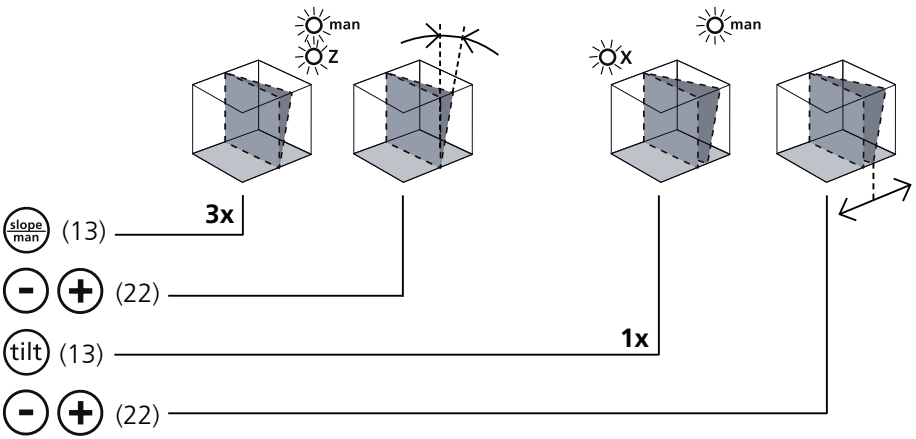
Manual slope function

This function deactivates the automatic sensor, which enables two axes to be re-adjusted simultaneously and steep slopes to be set. To use the function, press the slope/man button repeatedly until the man LED lights up. Use the tilt button to toggle between the X and Y axes. The plus/minus buttons are used to re-adjust the slope by means of a motor. In vertical operation, press the slope/man button 3 times to activate the manual slope function for the Z axis. IMPORTANT: Since the automatic sensor is not active, horizontal and/or vertical levelling cannot take place.

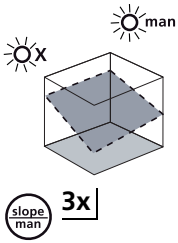
Horizontal motorised re-adjustment:



Vertical motorised re-adjustment:



Manual slope function



(13)

Manual re-adjustment:

Steeper slopes can be set using the angle plate, which is available as an optional extra (product ref. 080.75). To this end you need to use a crank tripod, such as the 300 cm professional crank tripod, product ref. 080.34.
TIP: Allow the device to align itself automatically and set the angle plate to the zero position. Then press the slope/man button three times to switch the automatic sensor off. Finally, incline the device to the angle you require.

Laser modes

The following modes can be controlled with the Commander 50 up to a maximum distance of 50 m. The rotating laser can also be controlled with the SensoCommander.

Hand receiver mode

Working with the laser receiver (available as an optional extra): set the rotary laser to maximum speed. To do this, press the hand receiver mode button on the Commander 50 and switch the laser receiver on.

It is able to detect the laser beam at a great distance now. Move the SensoLite up and down through the laser beam until the middle indicator (38) appears. Mark the measured height at the perimeter marking groove.

SpotLite Marking: The projected light beam at the height of the laser beam simplifies precise marking and prevents parallax error.

Universal mount (optional):

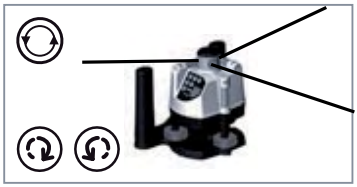
The laser receiver can be installed on levelling staffs with the aid of the universal mount. The Flexi measuring staff (Art. No. 080.50) is always recommended when measuring from floor heights. It also allows you to determine heights directly without any need for calculation.

Rotary mode

The following speeds can be set using the rotary button: 750, 350, 0 rpm

Spot mode

You access spot mode by pressing the rotary button repeatedly until the laser stops rotating. The laser can then be positioned exactly at the measuring point by means of the direction buttons.



Scan mode

The scan button can be used to activate and set a light-intensive segment in 4 different widths. You position the segment via the direction buttons.

Revolution Green

The distance at which a laser is visible to the naked eye depends on its colour i.e. wavelength. This is because of the human eye's physiology – green appears brighter to us than red. Depending on ambient light, green lasers are therefore many times more visible than red lasers; in indoor areas this is as much as 12 times brighter. This permits applications on dark surfaces, over longer distances and work in very bright ambient light. A red laser with a 635 nm wavelength is used as a reference value for brightness differentiation.

In contrast to red lasers, green laser light can only be produced indirectly. This is a source of potential characteristic fluctuations:

• The optimal operating temperature is 20°C. Outside of the operating temperature range of 0 ... 45°C green lasers become darker. IMPORTANT: Allow the unit enough time to adapt to the ambient temperature before switching the unit on.

• Laser brightness may vary somewhat from one unit to another. This is a natural phenomena and excluded from warranty claims.

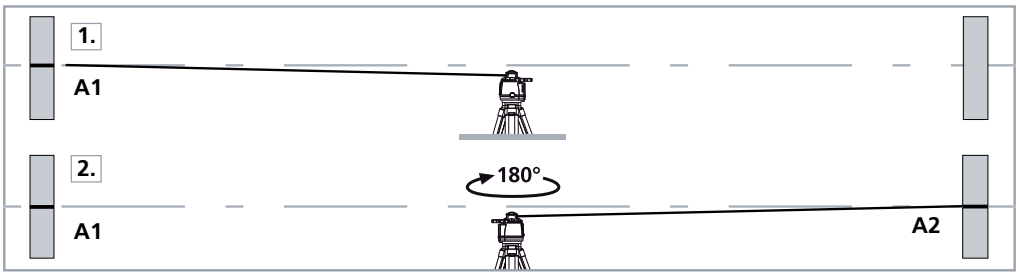
• Green Laser will only work with certain Receivers. The maximum range of the Receiver is shorter, please refer to technical details.

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. 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.

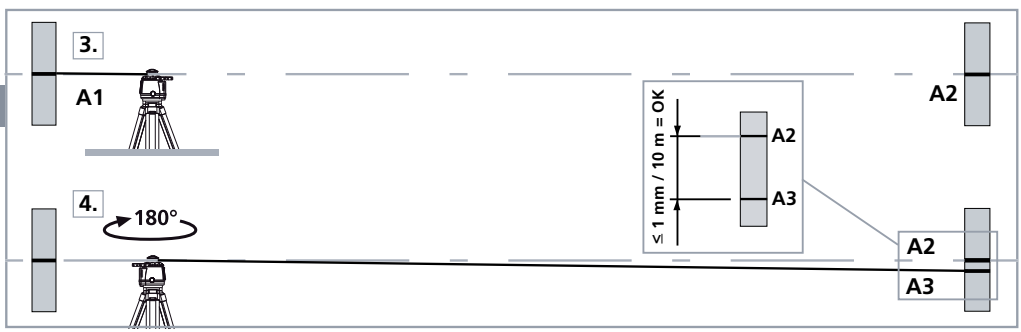


Performing the calibration check

3. Position the device as near as possible to the wall at the height of point A1. Now adjust the device in the X axis.

4. Turn the device through 180° and mark point A3. The difference between points A2 and A3 is the tolerance for the X axis.

5. To check the Y and Z axis, repeat steps 3 and 4.



Note:

If points A2 and A3 are more than 1 mm / 10 m apart on either the X or Y axis, the device is in need of adjustment. Contact your authorised dealer or else the UMAREX-LASERLINER Service Department.

Adjustment mode

1. Take the alignment of the rotary laser into account when performing adjustment work. Always adjust all the axes.

2. Switch the device to adjustment mode:

Switch off the Revolution and then switch it on again (press the ON/OFF button briefly), whilst holding down the slope/man button. Keep the slope/man button pressed down until the X, Y and Z axis LEDs light up simultaneously. Then you can release the slope/man button.

(13) (1)

Use the X/Y button on the Commander 50 to toggle between the X and Y axes.

(18)

Alternatively, you can toggle between the X and Y axes using the positioning button (rotate to the right on Commander 50 or SensoCommander).

(23)

In vertical operation, the device activates the Z axis automatically.

3. Correcting the adjustment:

With the plus/minus buttons on the adjustment panel of the Commander 50, you can move the laser away from its current position at the level of reference point A2.

(20) (20)

NOTE: In spot mode, the laser can only be rotated to the required position by means of the positioning buttons on the device.

(5) (16)

4. Completing the adjustment:

Cancel: Switch the Revolution off (via the ON/OFF button) to reject all the adjustment settings and restore the previous status.

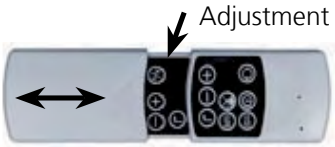
(1)

Save: The new adjustment settings are saved by pressing the enter button on the Commander 50.

(21)

Alternatively, you can save the new adjustment settings using the positioning button (rotate to the left on Commander 50 or SensoCommander).

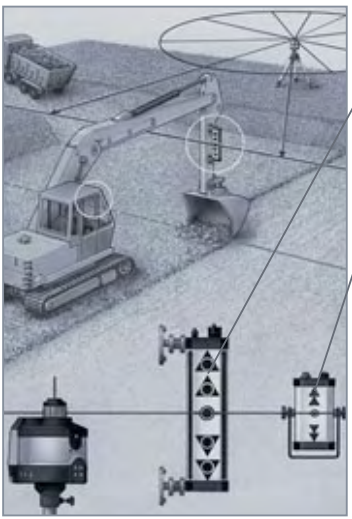
(24)



Note: Regularly check the adjustment before use, after transport and after extended periods of storage. Always make sure to control all axes.

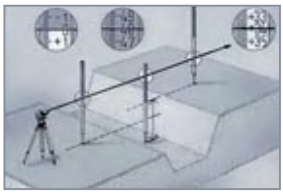
Revolution red / green	
Self-levelling range	± 4°
Precision	± 1 mm / 10 m
Horizontal / vertical levelling	Automatic with electronic sensors and servo motors
Self-levelling alignment time	approx. 30 sec. over complete operating angle
Self-levelling alignment time	90° to rotation plane
Rotation speed	750, 350, 0 RPM
Remote control	Infrared IR
Laser wavelengths green / red	635 nm / 532 nm
Laser class red / green	3R (EN60825-1:2007-10)
Laser output rating red / green	< 5 mW
Current supply	heavy duty rechargeable battery (batteries 4 x type C)
Rechargeable battery life red / green	approx. 27 h / approx. 12 h
Non-rechargeable battery life red / green	approx. 58 h / approx. 24 h
Battery recharging time	approx. 5 h
Operating temperature red / green	-10°C ... + 50°C / 0°C ... + 45°C
Storage temperature	-10°C ... + 70°C
Protection class	IP 66
Size / Weight (incl. batteries)	178 x 146 x 188 mm (B x H x T) / 2,25 kg
Remote control, laser receiver (optional)	
Batteries: SensoLite 310 / Commander 50	1 x 9V Block / 1 x 9V Block
Remote control range Commander 50	max. 50 m (IR-Control)
Laser reception range SensoLite 310	max. 300 m / Revolution red max. 200 m / Revolution green
Temperature range, operating / storage	-10°C ... + 50°C / -10°C ... + 70°C
Weight (incl. battery)	SensoLite 310: 0,29 kg / Commander 50: 0,18 kg

(DE) Zubehör (optional)
(GB) Accessories (optional)
(NL) Accessoires (optioneel)
(FR) Accessoires (en option)



Art.-Nr: 035.00A
→ Revolution Red
~~(Revolution Green)~~

Art.-Nr: 035.01
→ Revolution Red
~~(Revolution Green)~~

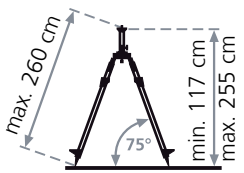


Art.-Nr: 080.50
→ Revolution Red

Art.-Nr: 080.51
→ Revolution Green

Art.-Nr: 075.105 (5m)

Art.-Nr: 080.33



Revolution

Laserstrahlung! Direkte Bestrahlung der Augen vermeiden. Laserklasse 3R
< 5 mW · 635 nm
EN60825-1:2007-10

Laser radiation!
Avoid direct exposure to the eyes. Laser class 3R
< 5 mW · 635 nm
EN60825-1:2007-10

CE

DE Service- und Versand-Anschrift

GB Service- and Shipping Address

NL Service- en verzendadres

FR Livraison et expédition

UMAREX GmbH & Co. KG
– Laserliner –
Möhnestraße 149,
59755 Arnsberg, Germany
Tel.: +49 2932 638-300, Fax: -333
laserliner@umarex.com

UMAREX GmbH & Co. KG
– Laserliner –
Donnerfeld 2
59757 Arnsberg, Germany
Tel.: +49 2932 638-300, Fax: -333
www.laserliner.com

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