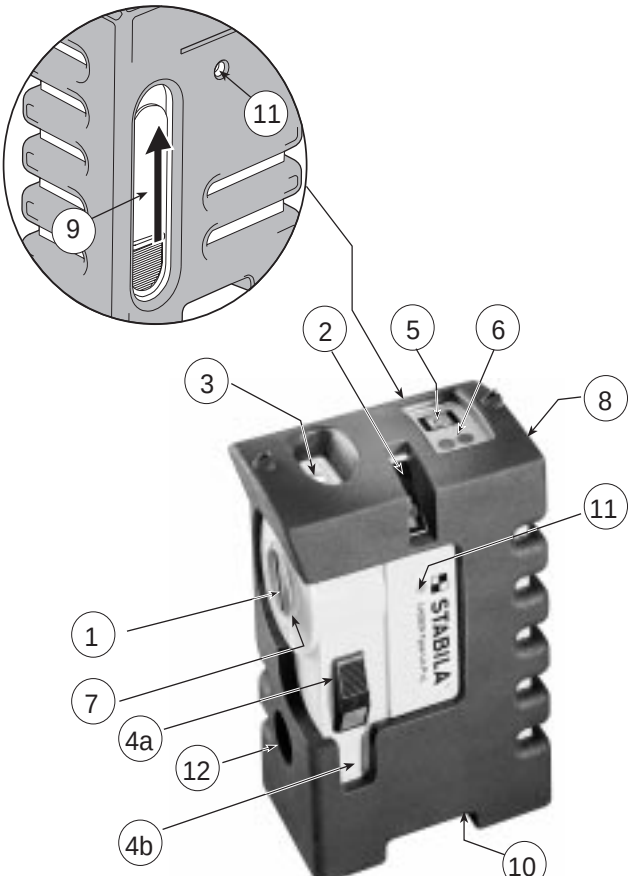
STABILA®

Laser LA-P+L

GB Please read these instructions before use!

LA-P+L-A 05/99 32 14097


11
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STABILA

GB

Operating instructions

The STABILA levelling and line laser LA-P+L is an easy-to-use laser unit which self-adjusts in the range of ±5°. It permits both levelling and fast, precise vertical alignment.

We have tried to explain the handling and functioning of the unit in an easy-to-understand and logical way. If, however, you still have any questions, please do not hesitate to contact us for further advice on the following phone numbers:

GB 01-21-7057987 IRL 01-8362828 USA 847-4880050

E.mail: sales@stabila.de

Elements of the unit

(1) Exit aperture for spot
(2) Exit aperture for vertical laser line
(3) Vial for transverse inclination control
(4) a) On switch
b) Off switch (Transport lock)
(5) Selection switch (Spot/Line)
(6) LEDs for measuring range indication (red), status on/off (green)
(7) Prism holder
(8) Protective cover
(9) Battery compartment cover
(10) Tripod connecting thread
(11) Suspension eyelets
(12) Cover plugs

N.B.

When using Class 2 laser instruments, the lid-closing reflex protects the eye against accidental short term eye contact with the laser beam. These units can therefore be used without additional protective measures. Nevertheless, you should not look directly into the laser beam.

EN 60825-1:97-03

Keep out of the reach of children!

The laser spectacles available with our laser instruments are not goggles (i.e. for protection). They serve for a better visibility of the laser light!

Main applications:

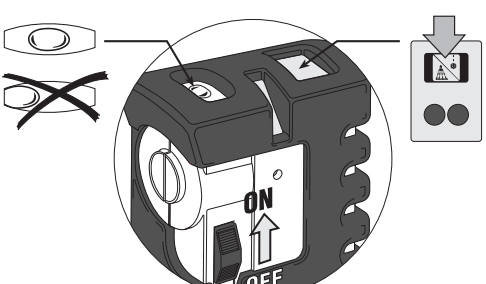
a) Levelling

Place the unit on a firm base so that the bubble of the transverse vial (3) does not touch the edge of the vial. To ensure that the self-levelling range is not exceeded during all-round measurement, rotate the unit by 90° and check that the transverse vial does not touch the edge. This vial is solely used to check that the transverse inclination does not exceed 5°. If the admissible longitudinal inclination is exceeded, the laser starts to flash.

Set the On/Off switch to position (4a). Switch over to spot mode by pressing the selection switch (5).

The laser aligns itself automatically and can be set to the desired direction simply by rotating it on the base surface.

Always rotate the unit as close to the centre as possible to ensure that no incorrect measurements are caused by parallel offset on sloping surfaces.



b) Marking vertical lines

Set On/Off switch (4) to position (4a). Simply place the unit on the floor in front of the desired point on the wall (check transverse inclination on the vial); the unit projects a vertical line onto the wall. If the inclination in the longitudinal direction of the unit is excessive, the laser starts to flash.

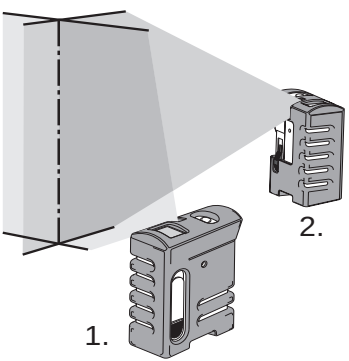
c) Finding plumb points

(points on a vertical plumb line between floor and ceiling or vice-versa)

Set up the laser so that the first 50 cm of the laser line on the floor, for example, meet the point which is to be transferred to the ceiling. Accordingly, mark the last visible 50 cm of the laser line on the ceiling.

Move the unit so that the first 50 cm of the laser line on the floor meet the point again, but (for example) offset by 90° relative to the first position.

The point at which the laser line intersects the marked line is the sought plumb point.

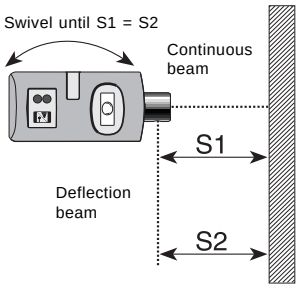


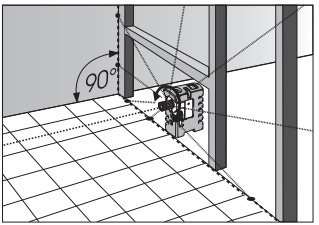
d) Marking of Vertical Planes (vertical levelling)

(using beam separator penta prism = optional extra)

Creating reference planes at a right angle to the horizontal reference plane. There are many applications, and these can be divided into two basic methods. To this end, attach the prism and set up the unit so that the direction of the vertical laser plane defined by the prism is aligned roughly parallel to or at a right angle to the wall.

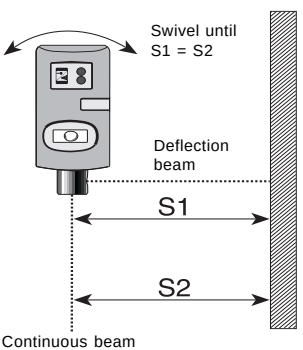
Parallel to the wall:

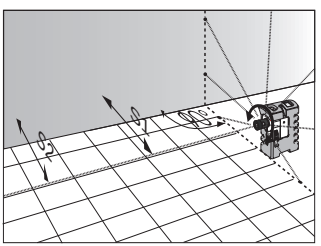




Creating vertical reference planes; e.g. for positioning of partitions

At a right angle to wall:





Positioning of tiles, panels,parquet (floor, ceiling, wall), marking of right angles simply by swivelling

e) Alignment

(Setting screw connections, plugged boreholes etc. to the same height)

For rapid marking of points at the same height, the unit can be hung on the wall via the suspension eyelets (11) on a nail or screw (for example) at the desired height. By inserting the following screws or the drill directly in the laser beam, the user can ensure fast screw connections at the identical height without the need to mark the position.

Checking calibration

The automatic spot and line laser LA-P+L is designed for on-site use and left our company in perfectly adjusted condition. As with any precision instrument, however, it is necessary to check calibration at regular intervals. Each time before starting work, particularly if the unit has been exposed to vibrations, you should check the calibration.
If the unit has been subjected to impacts, you should check the calibration over the entire self-levelling range.

a) Checking spot calibration

The accuracy of the system is 3 mm over 10 metres or 0.3 mm/metre in the self-levelling range of ±5°.

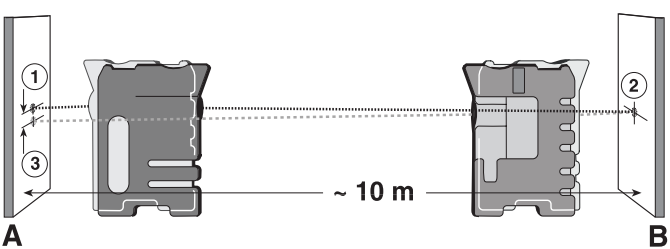
Set up the unit in a room directly in front of a wall with the spot exit aperture pointing towards wall A. (Ensure that the bubble of the transverse vial does not contact the edge.) Mark the centre of the laser spot on wall A (point (1)).

Rotate the unit by 180° and mark the centre of the laser spot on wall B (point (2)).

Set up the unit in front of the opposite wall B with the spot exit aperture pointing towards wall B. Align the laser so that the centre of the laser spot exactly coincides with point (2).

Rotate the unit on the base surface by 180° and mark the new point (3) on wall A.

If the two walls A and B are 10 metres apart, the distance between points (1) and (3) must not exceed 6 mm □ 2 x 3 mm / 10 metres. If the distance is greater than this, the unit can be adjusted as described below.



Adjustment

As described in the section “Checking spot calibration”, mark the deviation of the laser using the points (1) and (3) on a wall. If no alterations have been made to the laser beam, the corresponding target point is exactly between the two points.

- Remove the cover plug (12). Secure the pendulum (4) using the transport lock (position 4b).
- Use a screwdriver to adjust the adjusting screws through the opening. Turning the adjusting screw in a clockwise direction moves the beam upwards, while turning anticlockwise moves it downwards.
- Loosen the transport lock (4) and check the adjustment. If the centre-point of the beam is exactly between the two points (1) and (3), the laser is accurately adjusted.
- Check the calibration once again as described in the section “Checking spot calibration”.

b) Checking line calibration

To perform this check, you must first generate a reference - for example, by fixing a plumb line near to a wall or by marking several points vertically below one another using the beam separator prism (optional extra) after checking spot calibration.

Set up the unit in front of the reference mark (plumb line or points) and compare the beam with the reference. The deviation between the centre of the line and the reference mark should not exceed 1 mm over a line length of 2 metres.

N.B.

If the deviation is excessive (e.g. following the effect of impact on the unit) despite the fact that the spot calibration is inside the tolerance, the unit should be taken to the dealer in the original case for repair.

Battery changing

Push the battery compartment cover in an upward direction and remove. Slightly pull out the battery holder. Pull off the clip-on contacts and remove the battery holder. Insert new batteries in accordance with the instructions in the battery holder. Only use 1.5 V mignon (size AA) batteries.

Care and maintenance

- Soiled windows on the laser beam aperture have a negative influence on the quality of the beam; clean using a soft cloth (use glass cleaning detergent if necessary).
- Clean the unit using a moist cloth. Never spray or immerse in liquid! Do not use solvents or thinners!

Handle the spot and line laser LA-P+L with extreme care - as you would any precision optical instrument.

Technical data

Laser type: output	red diode laser, wavelength 635 nm, < 1 mW, laser class 2
	in line with EN 60825 -1 : 97 - 03
Self-levelling range:	approx. ±5° in longitudinal direction with a
	transverse inclination < 5°
Levelling accuracy:	±0.3 mm/metre
Batteries Operating life:	3 x 1.5 V size AA mignon batteries approx. 30 hours
Operating temperature range:	0°C to +40°C
	The unit starts to turn itself off automatically at temperatures > 40°C
Storage temperature range:	-20°C to +60°C

Subject to technical modification.

Warranty terms

STABILA extends a warranty for defects and the absence of assured properties of the unit resulting from material or production faults for a period of 12 months from date of purchase. Remedy of defects is effected at STABILA's own discretion by repair or replacement of the unit. STABILA is not liable for any claims extending beyond the above.

Liability is excluded by defects caused by incorrect handling (e.g. damage due to dropping, operating using incorrect voltage/current, use of unsuitable power sources) as well as by modifications to the unit effected by the user or third parties.

Moreover, no liability is assumed for natural wear and tear or for minor defects which do not impair functioning of the unit to any great degree.

Please initiate warranty claims by taking the unit to your dealer together with the completed warranty certificate (see last page).

(D) **Garantieschein für STABILA-Laser LA-P+L**

(GB) **Warranty Certificate for STABILA Laser LA-P+L**

(F) **Bon de garantie du Laser LA-P+L STABILA**

(I) **Cartolina di garanzia per laser LA-P+L STABILA**

(E) **Certificado de garantía para el STABILA laser LA-P+L**

(NL) **Garantiebewijs voor STABILA laser LA-P+L**

Kunde:
Customer:
Client:
Cliente:
Cliente:
Klant:

Kaufdatum:
Date of purchase:
Date d'achat:
Data d'acquisto:
Fecha de compra:
Aankoopdatum:

Adresse:
Address:
Adresse:
Indirizzo:
Endereço:
Adres:

Händler (Stempel, Unterschrift)
Dealer (stamp, signature)
Revendeur (cachet, signature)
Timbro e firma del rivenditore
Comerciante (selo, assinatura)
Handelaar (stempel, handtekening)

CE

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