

SMART

SOLA [®]
PASSION FOR PRECISION

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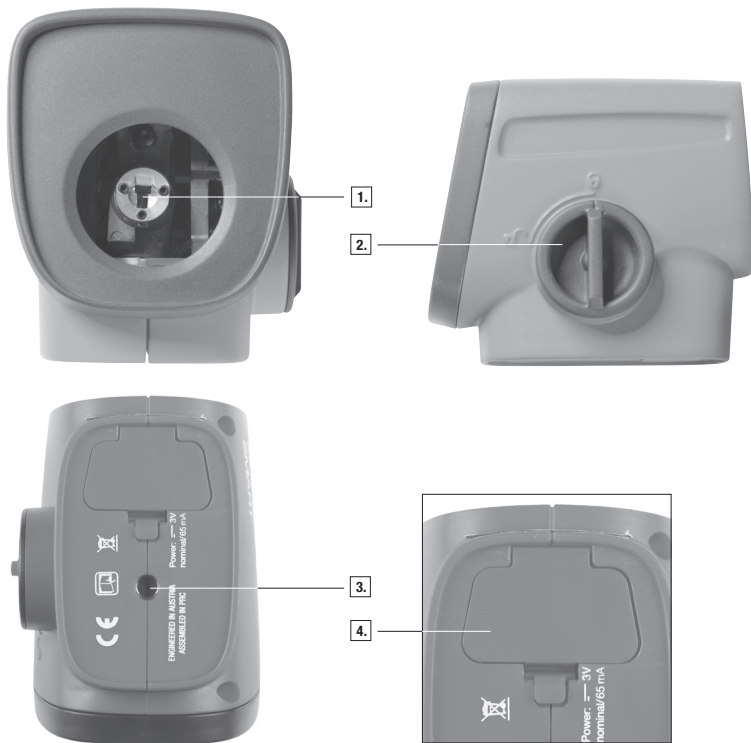
Scope of delivery for SMART

1. SMART line laser
2. AA batteries
3. Operating manual CD
4. Case



SMART

1. Laser beam output aperture
2. On/off switch, transport lock
3. Tripod adapter 1/4"
4. Battery compartment cover



SMART line laser operating manual (German original version)

About this manual

Congratulations on the purchase of your new SMART! You have acquired a SOLA measurement instrument, which can make your work easier, faster and more precise. To utilize the complete functionality range of this measurement instrument, and to ensure a safe operation, please observe the following instructions:

- Please read this operating manual before starting to use the device.
- Always keep the operating manual near the device.
- Only hand over the device to other persons together with the operating manual.
- Never render the attached warning signs unreadable.

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1. General information

1.1 Signal words and their meaning

DANGER

For an imminent danger that could lead to serious injury or death.

WARNING

For a possibly dangerous situation that could lead to serious injury or death.

CAUTION

For a possibly dangerous situation that could lead to slight injury or property damage.

NOTE

For application notes and other useful information

1.2 Pictograms and other information

1.2.1 Warning signs



Warning of dangers in general

1.2.2 Symbole



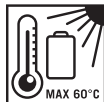
Read instructions before use



Batteries and devices must not be disposed of with household waste



Do not throw batteries into a fire



Warning signs on battery Do not heat the battery above 60 °C.



Class 2 laser device



Do not look into the laser beam!

2. Description

2.1 Device components, display and operating elements

1. Laser beam output aperture
2. On/off switch, transport lock
3. Tripod adapter 1/4"
4. Battery compartment cover

2.2 Intended use

The SMART is a line laser that enables a single person to level and align items horizontally and vertically. The device is preferably designed to be used indoors. For outdoor applications, it must be ensured that the ambient conditions are similar to those indoors.

The visibility range of the laser lines depends on the ambient conditions.

Follow the instructions contained in this manual. The device and accessory equipment may be a source of danger if they are utilised improperly or inappropriately by persons who are who are not properly instructed.

3. Technical data

Working range	
- Laser lines	$r = 10 \text{ m}^*$
Max. measurement tolerance	
- Laser lines	$\pm 0.5 \text{ mm/m}$
Protection class	IP 42
Levelling area (typical)	$\pm 3^\circ$
Levelling time (typical)	$\leq 5 \text{ s}$
Power supply	2 x 1.5V Mignon (AA) Batterien
Battery life (at 20°C)	
- AA batteries	20 h
Permissible temperatures	
Operating temperature	-10°C to +50°C
Storage temperature	-20°C to +60°C
Laser diode lines/points	650 nm < 1 mW
Laser class	2, DIN EN 60825-1: 2014
Tripod adapter	1/4"
Weight without batteries	350 g
Dimensions H x W x L	97 x 71 x 85 mm

*... depending on the ambient conditions in the workplace. Subject to modifications (drawings, descriptions and technical data).

4. Safety instructions

4.1 AREA OF RESPONSIBILITY

4.1.1 Manufacturer

SOLA is responsible for the safe delivery condition of the product, including the operating manual and the original accessories.

4.1.2 Operator

The operator is responsible for using the product as intended, the deployment of personnel, their training and the operational safety of the product.

- The operator understands the safety information which is stated on the product and the instructions which are contained in the operating manual.
- The operator shall comply with local regulations relating to safety and accident prevention regulations as well as worker protection laws and regulations.
- The operator shall immediately notify SOLA if safety-related issues should develop on the product or during its utilization.
- The operator shall ensure that the product is not utilized any further if defects become evident, and he will have the product repaired professionally.



4.2 Improper Use

- Use of the device and the accessories without instruction.
- Use of third-party accessories or additional equipment.
- Use outside of the intended limits (see Chapter 3/Technical data).
- Use under extreme temperature fluctuations without an adequate acclimatization.
- Disabling of safety devices and removal of hazard notices and labels.
- Unauthorized opening of the device.
- Performance of modifications or alterations the device or the accessories.
- Deliberate blinding of third parties.
- Inadequate safeguarding at the installation site.

4.3 Utilization limitations

The SMART is suitable for a continuous use in an atmosphere which can be inhabited by humans.

- Do not operate the product in explosion-prone or corrosive environments.
- Inform the local safety authorities and safety experts before working in hazardous environments, in close proximity to electrical installations or similar surroundings.

4.4 Usage Hazards



WARNING

Missing or incomplete instructions may result in improper or incorrect use. This can cause accidents with serious damages to persons, property, assets and the environment.

- Follow the manufacturer's and operator's safety instructions.
- Protect equipment and accessories from access by children.



WARNING

Blinding by laser radiation can indirectly lead to serious accidents, especially for people who are driving a vehicle or operating machinery. Do not look into the laser beam.

- Do not set up the laser beam and the laser plane at eye level or aim at people.



CAUTION

A fall, longer storage, transportation or other mechanical effects can lead to erroneous measurement results. Check the unit for damage before use.
Do not use damaged equipment.

- Repairs have to be exclusively performed by SOLA
- Before use, check the accuracy of the device (see Chapter 8/Checking the accuracy)

4.5 ELECTROMAGNETIC COMPATIBILITY (EMC)

The electromagnetic compatibility is the ability of the product to function in an environment where electromagnetic radiation and electrostatic discharge are present, without causing electromagnetic interference to other devices.

4.5.1 Interference of other devices by SMART

Although the product meets the strict requirements of the relevant directives and standards, SOLA can not completely exclude the possibility of interference with other devices (for example, when using the product in combination with third-party devices, such as field computers, personal computers, wireless devices, mobile phones, certain cables or external batteries).

- When using computers and radio equipment make sure to observe the vendor-specific information about electromagnetic compatibility.
- Only use original SOLA equipment and accessories.

4.5.2 Interference of the SMART through other devices

Although the product meets the strict requirements of the relevant directives and standards, SOLA can not entirely exclude the possibility that intense electromagnetic radiation in the immediate vicinity of radio transmitters, two-way radios, diesel generators, etc. can distort the measurement results.

- When performing measurements under these conditions check the plausibility of the results.

5. LASER SAFETY/CLASSIFICATION

The SMART emits three visible laser lines and one laser point.
The product corresponds to Laser Class 2 according to DIN EN 60825-1:2014.

Laser Class 2:

With class 2 laser devices, eyes are protected by the blink reflex and/or the aversion responses in the event that a person accidentally looks at the laser for a short time.



WARNING

Looking directly into the laser beam with optical aids (such as binoculars, telescopes) can be dangerous.



WARNING

Looking directly into the laser beam can damage the eyes.

- Do not look into the laser beam.
- Do not aim the laser beam at other people.

Labeling on the device:



See cover page for the position of the label.

- Do not remove the label!

6. Start-up

6.1 Operation with batteries

1. Open the battery compartment cover.
2. Insert batteries making sure that the polarity of the batteries is correct
3. Close the battery compartment cover (audible click of the cover).

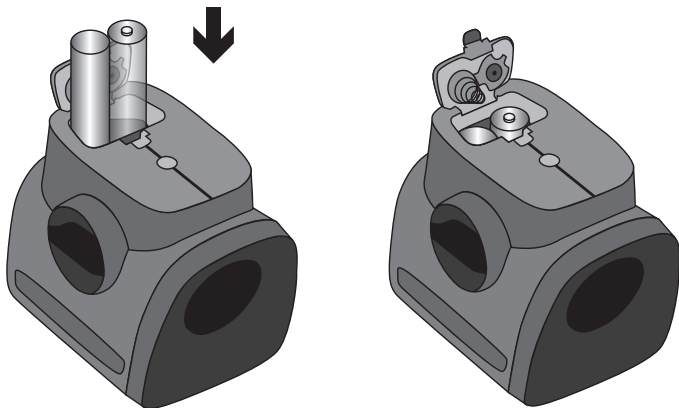
Only use type 1.5 V AA batteries!

If the device is not used for a long period of time, remove the batteries.



NOTE

The intensity of the laser lines can vary depending on the battery quality.



7. Operation

7.1 SMART

On:

- Turn the on/off switch to the left (ON position) and the pendulum unit will be released. The instrument will level itself automatically within the specified inclination range (see Chapter 3 / Technical data).

Off:

Turn the on/off switch to the right (OFF position) and the pendulum unit will be locked.

**NOTE**

Magnets can affect the measurement instrument and lead to false results.

If the vertical laser line is not projected vertically to the wall or to the target surface, uneven surfaces can lead to erroneous measurement results.

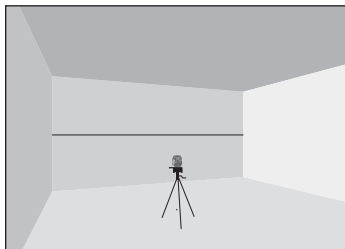
- Make sure that the vertical laser line is projected vertically to the wall or to the target surface.

Severe temperature fluctuations can lead to incorrect measurement results.

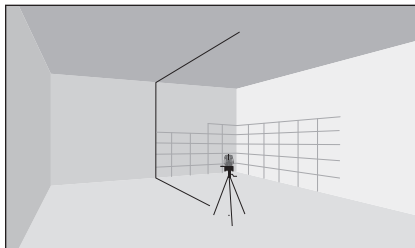
- Before start-up, allow the device to acclimatise to the environmental conditions.

7.3 Applications

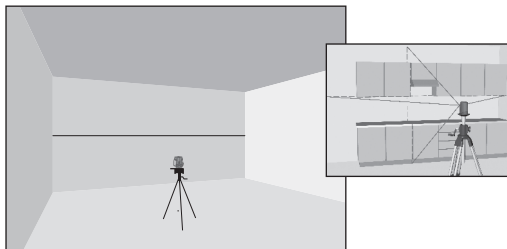
7.3.1 Horizontal levelling



7.3.2 Vertical levelling



7.3.3 90° angle



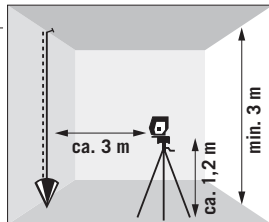
8. Checking the accuracy

Check the accuracy of the SOLA SMART before each measurement.

➤ Before starting the check let the device acclimatise to the environmental conditions.

8.1 Checking the accuracy of the vertical line

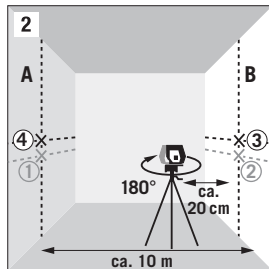
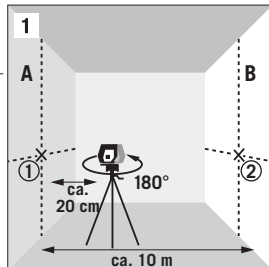
- Attach a plumb line as close as possible to a (at least) 3 m high wall.
- Mount the SMART onto a tripod at a height of approx. 1.2 m.
- Position the device approx. 3 m in front of the plumb line.
- Switch on the SMART and project the vertical laser line onto the plumb line.



If the deviation is greater than 4 mm, the device must be readjusted. In this case, consult your dealer.

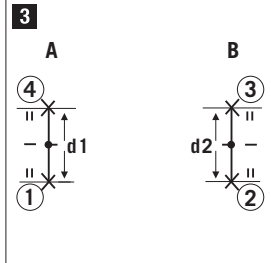
8.2 Checking the leveling accuracy of the horizontal line

1. Select two horizontal, flat walls (A & B), which are approx. 10 meters apart.
 - Mount the SMART onto a tripod and position it at a distance of approx. 20 cm from wall A.
 - Mark the intersecting point ① of the vertical and horizontal lines on wall A.
 2. Rotate the SMART by 180° and mark point ② on wall B.
 - Position the laser at the same height approx. 20 cm away from wall B and mark point ③ on wall B.
 3. Rotate the SMART by 180° and mark point ④ on wall A.
 - Measure the vertical distance (d1) of the marked points ①-④ and the vertical spacing (d2) of the points ②-③.
- Mark the center point of ① and ②.



- If the reference points ① and ③ are on different sides of the center point, (d2) must be subtracted from (d1).
- If the reference points ① and ③ are on the same side of the center point, (d2) must be added to (d1).
- Divide the results with twice the value of the room length.

If the result is greater than 4 mm, the device must be readjusted. For this, please consult your dealer.



9. Maintenance, storage and transportation

9.1 Cleaning

- Wipe off any dirt with a soft damp cloth.
- Check the outlet openings of the laser regularly, and thoroughly clean them if necessary. Do not touch the glass with your fingers.
- Do not use aggressive cleaning agents or solvents.
- Do not immerse the device into water!
- Clean and dry wet equipment, accessories and transport containers prior to packaging them. Only pack equipment again when it is completely dry.
- Keep plug connections clean and protected from moisture.

9.2 Storage

9.2.1 General

- The equipment may only be stored within the specified temperature limits (see Chapter 3/Technical data).
- After a prolonged storage check the accuracy of the measuring device before using it.

9.2.2 Batteries

- For storage, remove the batteries from the device or from the charging station.
- The storage should preferably be performed in a dry environment at room temperature (see Chapter 3/Technical data).
- Protect from moisture and humidity. Dry wet or damp batteries before storage or before use.

9.3 Transport

9.3.1 General

The device may be damaged by strong vibrations or by dropping.

Never transport the product loose. Always use the original packaging or an equivalent transport container.

- Switch off the measuring device before transporting it. During the shutdown the pendulum unit is locked in position and protected against damage.
- Check the unit for damage before use.
- Regularly check the accuracy of the device (see Chapter 8/Checking the accuracy).

9.3.2 Batteries

When transporting or shipping batteries, the operator is responsible for complying with the applicable national and international laws and regulations.

- Before shipping, remove the batteries from the device.

10. Scope of delivery and accessories

10.1 Scope of delivery for SMART

- 1 SMART line laser
- 2 AA batteries
- 1 case
- 1 operating manual CD

10.2 Scope of delivery SMART PROFESSIONAL

- Compact tripod **FST**
- Universal holder **UH**
- Thread adapter set **GA-SET**
- Motor vehicle adapter **CC**
- Laser goggles, red **LB RED**
- Magnetic target **ZS RED**

Further information regarding the accessories can be found at www.sola.at

11. Troubleshooting

Error	Possible cause	Troubleshooting
The device is switched on but no laser beam is visible	<ul style="list-style-type: none">➤ Battery exhausted➤ Battery incorrectly inserted➤ Device or switch defect	<ul style="list-style-type: none">➤ Change the batteries➤ Insert the batteries correctly➤ Contact your dealer and arrange for the device to be repaired
The device turns itself off immediately after start-up	<ul style="list-style-type: none">➤ Battery exhausted	<ul style="list-style-type: none">➤ Change the batteries
Laser lines flash at one second intervals	<ul style="list-style-type: none">➤ Device not within the self-levelling range	<ul style="list-style-type: none">➤ Align device horizontally

12. Disposal

If disposed of improperly third parties can possibly be seriously injured and the environment polluted.

The burning of plastic components generates toxic fumes which may impair the health of people.

Batteries/rechargeable batteries may explode if they are damaged or heated excessively, and thereby cause poisoning, burning, corrosion or environmental contamination.

If disposed of negligently unauthorized persons may be able to use the product improperly.

Measuring tools, accessories and packaging must be recycled in an environmentally-friendly manner.



The product as well as the accessories - especially the batteries and rechargeable batteries - must not be disposed of with household waste.

- Dispose of the device and the accessories properly of the device and the accessories.
- Only dispose of batteries in a discharged state.
- Observe the country-specific disposal requirements.

Your SOLA dealership will take back batteries as well as old equipment, and will ensure proper disposal.

Only for EU countries



Electric tools must not be disposed of with household waste! According to the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in national law, no longer usable electrical and electronic equipment must be collected separately and recycled in an environmentally friendly manner.

12. Manufacturer's Guarantee

The manufacturer warrants to the original purchaser stated on the guarantee card, freedom from defects of the device for a period of two years, with the exception of batteries, as of the point in time the device is handed over. The guarantee is limited to repairs and/or replacements at the manufacturer's discretion. Defects which are caused through improper handling by the purchaser or third parties, natural wear and optical flaws that do not affect the usability of the equipment, are not covered by this guarantee. Claims under this guarantee can only be invoked if the device is submitted along with the guarantee card, completely filled out by the dealer, dated and provided with the company stamp. If the guarantee claim is justified, the manufacturer shall bear the transport costs. The duration of the guarantee will not be extended through repair or spare parts work which is carried out within the scope of the guarantee. Further claims are excluded, unless these are stipulated by the respective by the respective national legislation. In particular the manufacturer shall not be liable for any direct, indirect, incidental or consequential damages, losses or expenses in connection with the use or because of the inability to use the tool for any purpose whatsoever. Implied warranties for the usage or suitability for a particular purpose are expressly excluded.

14. EC conformity declaration



Konformitätserklärung Declaration of Conformity Déclaration de Conformité



Wir/We/Nous **SOLA-Messwerkzeuge GmbH, A-6840 Götzis, Austria**
erklären in alleiniger Verantwortung, dass das Produkt(e)
declare under our sole responsibility that the Product(s)
déclarons sous notre seule responsabilité que le(s) produit(s)

SMART

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt.
to which this declarations relates is in conformity with the following standards.
auquel(s) se réfère cette déclaration est conforme aux normes.

SMART:

- EN 61010-1:2010
- EN 61326-1:2013
- IEC 60825-1

Gemäss den Bestimmungen der Richtlinie(n)
Following the provisions of Directive(s)
Conformément aux dispositions de(s) Directive(s)

Electromagnetic compatibility 2004/108/EC Low Voltage Directive 2006/95/EC

SOLA-Messwerkzeuge GmbH

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