GCL 25 Professional

BOSCH

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English

Safety Instructions

All instructions must be read and observed in order for the measuring tool to function safely. The safeguards integrated into the measuring tool may be compromised if the measuring tool is not used in accordance with these instructions. Never make warning signs on the measuring tool unrecognisable. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE AND INCLUDE THEM WITH THE MEASURING TOOL WHEN TRANSFERRING IT TO A THIRD PARTY.

- **Warning! If operating or adjustment devices other than those specified here are used or other procedures are carried out, this can lead to dangerous exposure to radiation.**
- **The measuring tool is delivered with a warning label (marked in the illustration of the measuring tool on the graphics page).**
- **If the text on the warning label is not in your native language, cover it with the label supplied, which is in your language, before initial commissioning.**

Do not direct the laser beam at persons or animals and do not look directly into the laser beam or at its reflection. Doing so could lead to blindless, or could cause accidents or damage to the eyes.

- **If laser radiation hits your eye, you must close your eyes and immediately turn your head away from the beam.**

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- ▶ **Do not make any modifications to the laser equipment.**
- ▶ **Do not use the laser goggles as protective goggles.** The laser goggles make the laser beam easier to see; they do not protect you against laser radiation.
- ▶ **Do not use the laser goggles as sunglasses or while driving.** The laser goggles do not provide full UV protection and impair your ability to see colours.
- ▶ **Have the measuring tool serviced only by a qualified specialist using only original replacement parts.** This will ensure that the safety of the measuring tool is maintained.
- ▶ **Do not let children use the laser measuring tool unsupervised.** They could accidentally dazzle someone.
- ▶ **Do not use the measuring tool in explosive atmospheres which contain flammable liquids, gases or dust.** Sparks may be produced inside the measuring tool, which can ignite dust or fumes.

Keep the measuring tool, the laser target plate (13) and the universal holder (15) away from pacemakers. The magnets inside the measuring tool, the laser target plate and the universal holder generate a field that can impair the function of pacemakers.

- ▶ **Keep the measuring tool, the laser target plate (13) and the universal holder (15) away from magnetic data carriers and magnetically sensitive devices.** The effect of the magnets inside the measuring tool, the laser target plate and the universal holder can lead to irreversible data loss.

Product Description and Specifications

Please observe the illustrations at the beginning of this operating manual.

Intended Use

The measuring tool is intended for determining and checking horizontal and vertical lines and plumb points.

The measuring tool is suitable for indoor and outdoor use.

Product Features

The numbering of the product features shown refers to the illustration of the measuring tool on the graphic page.

(1) Laser beam outlet aperture
(2) Button for laser operating mode
(3) Battery warning
(4) On/off switch
(5) 5/8" tripod mount
(6) 1/4" tripod mount
(7) Locking mechanism of the battery compartment cover
(8) Battery compartment cover
(9) Laser warning label
(10) Serial number
(11) Laser viewing glasses[A)]
(12) Magnet
(13) Laser target plate
(14) Measuring plate with foot[A)]
(15) Universal holder[A)]
(16) Tripod[A)]
(17) Telescopic rod[A)]
(18) Case
(19) Inlay[A)]

A) **Accessories shown or described are not included with the product as standard. You can find the complete selection of accessories in our accessories range.**

Technical Data

Point and line lasers	GCL 25
Article number	**3 601 K66 B..**
Working range[A)]	
– Laser lines	10 m
– Horizontal point beams	30 m
– Upward point beam	10 m
– Downward point beam	5 m
Levelling accuracy	
– Laser lines and horizontal point beams	±0.3 mm/m
– Vertical point beams	±0.5 mm/m
Typical self-levelling range	±4°
Typical levelling time	<4 s
Operating temperature	–10 °C...+50 °C
Storage temperature	–20 °C...+70 °C
Max. altitude	2000 m
Relative air humidity max.	90%
Pollution degree according IEC 61010-1	2[B)]
Laser class	2
Laser type	630–650 nm, <1 mW
C_6	1
Divergence	
– Laser point	0.8 mrad (full angle)
– Laser line	0.5 mrad (full angle)
Tripod mount	1/4", 5/8"
Batteries	4 × 1.5 V LR6 (AA)
Operating duration in operating mode	
– Cross-line and point mode	12 h
– Five-point mode	24 h

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Point and line lasers	GCL 25
– Line mode	30 h
Weight according to EPTA-Procedure 01:2014	0.58 kg
Dimensions (length × width × height)	155 × 56 × 118 mm
Protection rating	IP 54 (dust and splash-proof)

A) The working range may be reduced by unfavourable environmental conditions (e.g. direct sunlight).

B) Only non-conductive deposits occur, whereby occasional temporary conductivity caused by condensation is expected.

The serial number **(10)** on the type plate is used to clearly identify your measuring tool.

Fitting

Inserting/changing the batteries

It is recommended that you use alkaline manganese batteries to operate the measuring tool.

To open the battery compartment cover **(8)**, push the locking mechanism **(7)** in the direction of the arrow and lift the battery compartment cover. Insert the batteries.

When inserting the batteries, ensure the polarity is correct according to the representation on the inside of the battery compartment cover **(8)**.

If the batteries become weak, the battery warning **(3)** will flash red. The laser beams will also flash every 10 mins for approx. 5 s. The measuring tool can still be operated for approx. one hour after the first flash. If the batteries drain completely, the laser beams will flash one more time just before automatic shut-off.

Always replace all the batteries at the same time. Only use batteries from the same manufacturer and which have the same capacity.

- ▶ **Take the batteries out of the measuring tool when you are not using it for a prolonged period of time.** The batteries can corrode and self-discharge during prolonged storage.

Operation

Start-up

- ▶ **Protect the measuring tool from moisture and direct sunlight.**
- ▶ **Do not expose the measuring tool to any extreme temperatures or variations in temperature.** For example, do not leave it in a car for extended periods of time. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before putting it into operation. The precision of the measuring tool may be compromised if exposed to extreme temperatures or variations in temperature.
- ▶ **Avoid substantial knocks to the measuring tool and avoid dropping it.** Always carry out an accuracy check before continuing work if the measuring tool has been subjected to severe external influences (see "Accuracy Check of the Measuring Tool", page 14).
- ▶ **Switch the measuring tool off when transporting it.** The pendulum unit is locked when the tool is switched off, as it can otherwise be damaged by big movements.

Switching On/Off

To **switch on** the measuring tool, slide the on/off switch **(4)** to the "**On**" position (for working without automatic levelling) or to the "**On**" position (for working with automatic levelling). As soon as it is switched on, the measuring tool emits laser beams from the outlet apertures **(1)**.

- ▶ **Do not direct the laser beam at persons or animals and do not stare into the laser beam yourself (even from a distance).**

To **switch off** the measuring tool, slide the on/off switch **(4)** to the "**Off**" position. The pendulum unit is locked when the tool is switched off.

- ▶ **Never leave the measuring tool unattended when switched on, and ensure the measuring tool is switched off after use.** Others may be blinded by the laser beam.

Deactivating the Automatic Shut-Off Function

If no button on the measuring tool is pressed for approx. **30** min., the measuring tool will automatically switch itself off to preserve battery life.

To switch the measuring tool back on after it has been automatically switched off, you can either slide the on/off switch **(4)** to the "**Off**" position first and then switch the measuring tool back on, or press the laser operating mode button **(2)**.

To deactivate the automatic shut-off function, hold down the laser mode button **(2)** for at least 3 s (with the measuring tool switched on). If the automatic shut-off function is deactivated, the laser beams will flash briefly as confirmation.

To activate the automatic shut-off function, switch the measuring tool off and on again.

Operating Modes

The measuring tool has several operating modes, which you can switch between at any time:

- Cross-line and point mode: The measuring tool generates one horizontal and one vertical laser line pointing forwards, two vertical point beams (one pointing upwards and one downwards), and three horizontal point beams (one pointing forwards and one to either side).
- Five-point mode: The measuring tool generates two vertical point beams (one pointing upwards and one downwards), and three horizontal point beams (one pointing forwards and one to either side).
- Horizontal line mode: The measuring tool generates a horizontal laser line pointing forwards.
- Vertical line mode: The measuring tool generates a vertical laser line pointing forwards.

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All point beams run at a 90° angle to each other and the laser lines intersect at a 90° angle.

Once switched on, the measuring tool is in the cross-line and point mode. To change the operating mode, press the laser mode button **(2)**.

All operating modes can be selected with or without automatic levelling.

Automatic Levelling

Working with automatic levelling (see figures C–E)

Position the measuring tool on a level, firm surface or attach it to the holder **(15)** or the tripod **(16)**.

For work with automatic levelling, slide the on/off switch **(4)** to the "**On**" position.

The automatic levelling function automatically levels irregularities within the self-levelling range of ±4°. The levelling is finished as soon as the laser points and/or laser lines do not move any more.

If automatic levelling is not possible, e.g. because the surface on which the measuring tool stands deviates by more than 4° from the horizontal plane, the laser beams begin to flash. This alarm is deactivated within 10 s after switching on, in order to allow the measuring tool to be adjusted.

Place the measuring tool in a horizontal position and wait for self-levelling to take place. As soon as the measuring tool is within the self-levelling range of ±4°, the laser beams will light up continuously.

In case of ground vibrations or position changes during operation, the measuring tool is automatically levelled again. After each levelling process, check the position of the horizontal and/or vertical laser beams in relation to the reference points to avoid errors arising from a change in the measuring tool's position.

Working without automatic levelling (see figure F)

For work without automatic levelling, slide the on/off switch **(4)** to the "**On**" position. When automatic levelling is switched off, the laser beams flash continuously.

Switching off the automatic levelling function allows you to hold the measuring tool freely in your hand or place it on a sloping surface. This means that the laser beams no longer necessarily run perpendicular to one another.

Accuracy Check of the Measuring Tool

Influences on Accuracy

The largest influence is exerted by the ambient temperature. In particular, temperature differences that occur from the ground upwards can refract the laser beam.

Since the temperature stratification is greatest at ground level, you should mount the measuring tool on a tripod and position it in the centre of the work surface, wherever this is possible.

In addition to external influences, device-specific influences (e.g. falls or heavy impacts) can also lead to deviations. For this reason, check the levelling accuracy each time before beginning work.

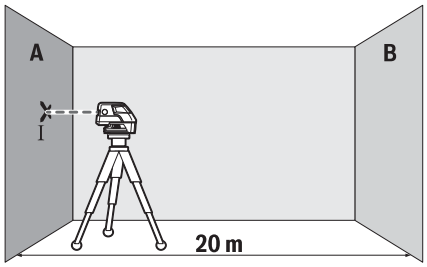
If the accuracy of the horizontal point beams is within the maximum permitted deviation, this means the accuracy of the vertical point beams and the laser lines has also been verified.

If the measuring tool exceeds the maximum deviation in one of the checks, it should be sent to the Bosch after-sales service for repair.

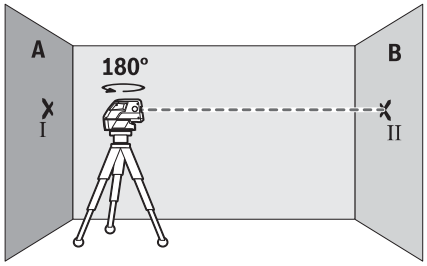
Checking the horizontal levelling accuracy of the longitudinal axis

For this check, you will need a free measuring distance of **20** m on firm ground between two walls (designated A and B).

– Mount the measuring tool close to wall A on the holder **(15)** or a tripod, or place it on a firm, level surface. Switch on the measuring tool and select five-point mode with automatic levelling.



– Aim the horizontal laser beam that runs parallel to the longitudinal axis of the measuring tool at the closer wall A and allow the measuring tool to level in. Mark the centre of the laser point on the wall (point I).



– Turn the measuring tool 180°, allow it to level in and mark the centre point of the laser beam on the opposite wall B (point II).

– Position the measuring tool – without rotating it – close to wall B, switch it on and allow it to level in.

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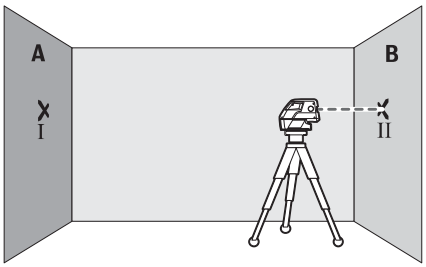
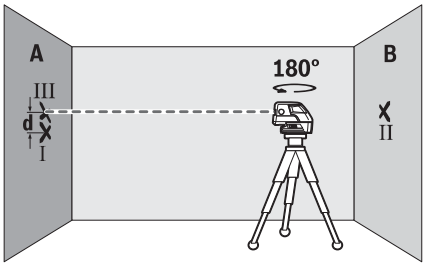


– Align the height of the measuring tool (using the tripod or by placing objects underneath as required) so that the centre point of the laser beam exactly hits the previously marked point II on wall B.



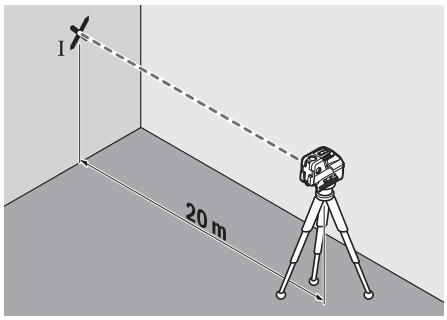
– Turn the measuring tool 180° without adjusting the height. Allow it to level in, then mark the centre point of the laser beam on wall A (point III). Ensure that point III is as vertical as possible above or below point I.
– The discrepancy **d** between the two marked points I and III on wall A reveals the actual height deviation of the measuring tool along the longitudinal axis.

The maximum permitted deviation on the measuring distance of 2 × **20** m = **40** m is as follows:
40 m × ±**0.3** mm/m = ±**12** mm. The discrepancy **d** between points I and III must therefore amount to no more than **12** mm.

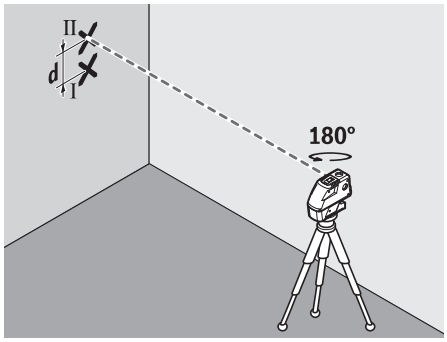
Checking the Horizontal Levelling Accuracy of the Transverse Axis

For this check, you will need a free measuring distance of **20** m on firm ground in front of a wall.

– Mount the measuring tool **20** m from the wall on the holder **(15)** or a tripod, or place it on a firm, level surface. Switch on the measuring tool and select five-point mode with automatic levelling.



– Aim one of the two side laser beams that run along the transverse axis of the measuring tool at the wall. Allow the measuring tool to level in. Mark the centre of the laser point on the wall (point I).



– Turn the measuring tool 180° without adjusting the height. Allow it to level in, then mark the centre point of the other side laser beam on the wall (point II). Ensure that point II is as vertical as possible above or below point I.
– The discrepancy **d** between the two marked points I and II on the wall reveals the actual height deviation of the measuring tool along the transverse axis.

The maximum permitted deviation on the measuring distance of 2 × **20** m = **40** m is as follows:
40 m × ±**0.3** mm/m = ±**12** mm. The discrepancy **d** between points I and II must therefore amount to no more than **12** mm.

Practical Advice

► **Only the centre of the laser point or laser line must be used for marking.** The size of the laser point/the width of the laser line changes depending on the distance.

Working with the Tripod (Accessory)

A tripod offers a stable, height-adjustable support surface for measuring. Place the measuring tool with the 1/4" tripod mount **(6)** on the thread of the tripod **(16)** or a conventional camera tripod. Use the 5/8" tripod mount **(5)** to secure the measuring tool on a conventional building tripod. Tighten the measuring tool using the locking screw of the tripod.

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Roughly align the tripod before switching on the measuring tool.

Securing with the universal holder (accessory)

Using the universal holder **(15)**, you can secure the measuring tool on vertical surfaces, pipes or magnetizable materials, for example. The universal holder is also suitable for use as a building tripod and facilitates height adjustment of the measuring tool.

Roughly align the universal holder **(15)** before switching on the measuring tool.

Working with the measuring plate (accessory) (see figures A–B)

The measuring plate **(14)** can be used to project the laser mark onto the ground and/or the laser height onto a wall.

The offset to the desired height can be measured using the zero field and the scale, and can be projected at another point. This means that you do not need to precisely adjust the measuring tool for the height you want to project.

The measuring plate **(14)** has a reflective coating that enhances the visibility of the laser beam at greater distances and in intense sunlight. The brightness intensification can only be seen if you view the measuring plate with your line of sight parallel to the laser beam.

Working with the Laser Target Plate

The laser target plate **(13)** improves visibility of the laser beam in unfavourable conditions and at greater distances.

The reflective half of the laser target plate **(13)** improves visibility of the laser line. The transparent half enables the laser line to be seen from behind the laser target plate.

Laser Viewing Glasses (Accessory)

The laser viewing glasses filter out ambient light. This makes the light of the laser appear brighter to the eye.

- ▶ **Do not use the laser goggles as protective goggles.** The laser goggles make the laser beam easier to see; they do not protect you against laser radiation.
- ▶ **Do not use the laser goggles as sunglasses or while driving.** The laser goggles do not provide full UV protection and impair your ability to see colours.

Example applications (see figures C–F)

Examples of possible applications for the measuring tool can be found on the graphics pages.

Always place the measuring tool close to the surface or edge that needs to be checked, and allow it to level in before the beginning of any measurement.

Always measure the distances between the laser beam and a surface or edge at two points that are as far from each other as possible.

Maintenance and Servicing

Maintenance and Cleaning

Keep the measuring tool clean at all times.

Never immerse the measuring tool in water or other liquids.

Wipe off any dirt using a damp, soft cloth. Do not use any detergents or solvents.

The areas around the outlet aperture of the laser in particular should be cleaned on a regular basis. Make sure to check for lint when doing this.

Only store and transport the measuring tool in the case **(18)**.

If the measuring tool needs to be repaired, send it off in the case **(18)**.

After-sales service and advice on using products

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. You can find explosion drawings and information on

The Bosch product use advice team will be happy to help you with any questions about our products and their accessories.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the nameplate

Disposal

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

Do not dispose of measuring tools or batteries with household waste.

Only for EU countries:

According to the Directive 2012/19/EU, measuring tools that are no longer usable, and according to the Directive 2006/66/EC, defective or used battery packs/batteries, must be collected separately and disposed of in an environmentally correct manner.

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