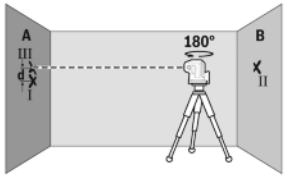


– Turn the measuring tool 180° without adjusting the height. Allow it to level in, then mark the centre point of the laser beam on wall A (point III). Ensure that point III is as vertical as possible above or below point I.
– The discrepancy **d** between the two marked points I and III on wall A reveals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

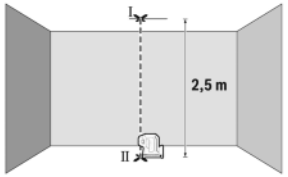
The maximum permitted deviation on the measuring distance of 2 × **5** m = **10** m is as follows:
10 m × ±**0.35** mm/m = ±**3.5** mm. The discrepancy **d** between points I and III must therefore amount to no more than **3.5** mm.

GPL 5 G: Repeat the measuring process for the two side laser beams that run along the transverse axis of the measuring tool. To do this, turn the measuring tool 90° clockwise or anticlockwise before beginning the measuring process.

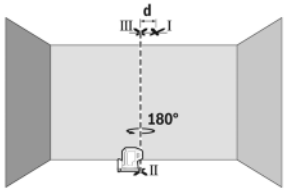
Checking Plumb Accuracy

For this check, you will need a clear measuring space on firm ground with a distance of approx. **2.5** m between the floor and the ceiling.

– Place the measuring tool on the floor. Switch the measuring tool on and rotate it on the magnetic rotating mount **(3)** in such a manner that the bottom laser point can be seen on the floor. Allow the measuring tool to level in.



– Mark the centre of the top laser point on the ceiling (point I). Also mark the centre of the bottom laser point on the floor (point II).



– Turn the measuring tool by 180°. Position it so that the centre of the bottom laser point falls onto the marked point II. Allow the measuring tool to level in. Mark the centre of the top laser point (point III).
– The discrepancy **d** between the two marked points I and III on the ceiling reveals the actual deviation of the measuring tool from the vertical plane.

You can calculate the maximum permitted deviation as follows:
Doubled distance between floor and ceiling × **0.35** mm/m
Example: At a floor-to-ceiling distance of **2.5** m, the maximum deviation amounts to 2 × **2.5** m × ±**0.35** mm/m = ±**1.75** mm. The points I and III must therefore be no further than **1.75** mm from each other.

Working Advice

► **Always use the centre of the laser point for marking.** The size of the laser point changes with 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 **(4)** on the thread of the tripod **(11)** or a conventional camera tripod. Tighten the measuring tool using the locking screw of the tripod.

Roughly align the tripod before switching on the measuring tool.

Attaching using the magnetic rotating mount (see figures A–B)

You can secure the measuring tool to magnetisable materials using the integrated magnetic rotating mount **(3)**.

► **Keep your fingers away from the rear side of the magnetic rotating mount while attaching the rotating mount to surfaces.** The strong pulling force of the magnets **(7)** may jam your fingers.

Roughly align the magnetic rotating mount **(3)** before switching on the measuring tool.

Rotate the measuring tool on the magnetic rotating mount **(3)** to make the bottom laser point visible or to project heights with the horizontal laser point. If you switch off and transport the measuring tool, click it back into place on the rotating mount (see figure **B**).

Laser Goggles (Accessory)

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

► **Do not use the laser goggles (accessory) 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 (accessory) 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–E)

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

Maintenance and Service

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 protective pouch **(12)**.

If the measuring tool needs to be repaired, send it off in the protective pouch **(12)**.

After-Sales Service and Application Service

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 spare parts at: **www.bosch-pt.com**
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 of the product.

Malaysia
Robert Bosch Sdn. Bhd.(220975-V) PT/SMY
No. 8A, Jalan 13/6
46200 Petaling Jaya
Selangor
Tel.: (03) 79663194
Toll-Free: 1800 880188
Fax: (03) 79583838
E-Mail: kiathoe.chong@my.bosch.com
www.bosch-pt.com.my

Great Britain
Robert Bosch Ltd. (B.S.C.)
P.O. Box 98
Broadwater Park
North Orbital Road
Denham Uxbridge
UB 9 5HJ
At www.bosch-pt.co.uk you can order spare parts or arrange the collection of a product in need of servicing or repair.
Tel. Service: (0344) 7360109
E-Mail: boschservicecentre@bosch.com

You can find further service addresses at:
www.bosch-pt.com/serviceaddresses

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.

YORK Survey Supply

Prospect House, George Cayley Drive, Clifton Moor, York, England YO30 4XE

Tel: +44 (0) 1904 692723 Fax: +44 (0) 1904 690385
E-Mail: sales@yorksurvey.co.uk www.yorksurvey.co.uk

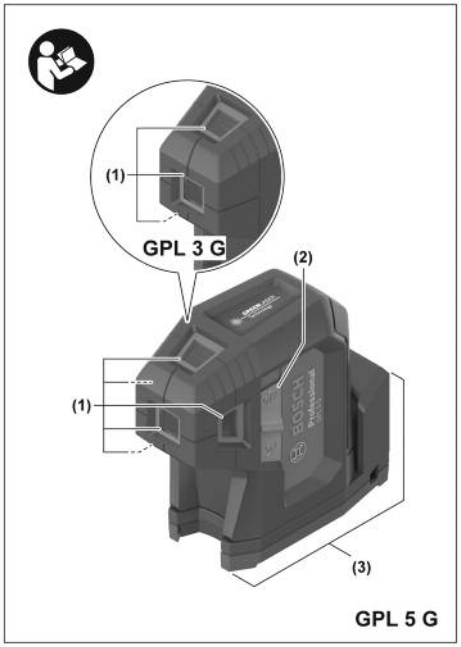
Ref:.. \operat98\instructions 21\775350.qxp 04-01-21

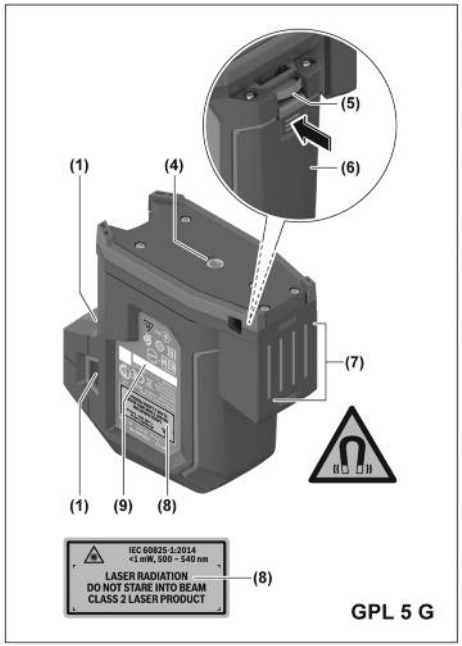
YORK Survey Supply

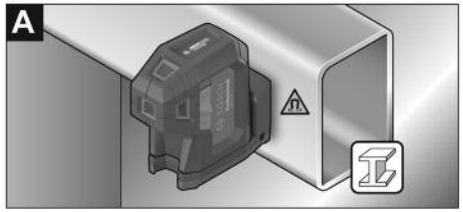
Bosch GPL 5 G Professional Laser

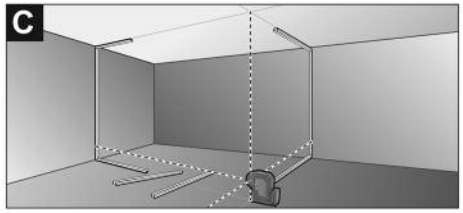
Code: 775350

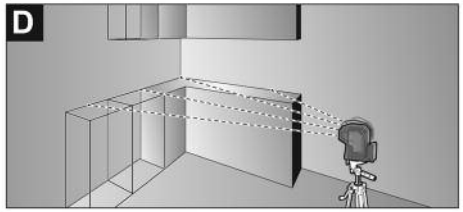
Operating Instructions

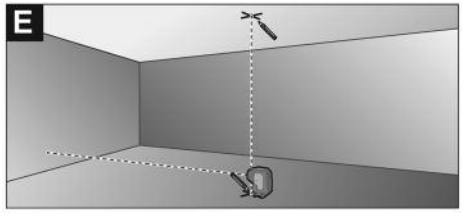












Safety Instructions

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 laser warning sign (marked in the illustration of the measuring tool on the graphics page).**
- ► **If the text of the laser warning label is not in your national language, stick the provided warning label in your national language over it before operating for the first time.**

Do not direct the laser beam at persons or animals and do not stare into the direct or reflected laser beam yourself. You could blind somebody, cause accidents or damage your eyes.

- ► **If laser radiation hits your eye, you must close your eyes and immediately turn your head away from the beam.**
- ► **Do not make any modifications to the laser equipment.**
- ► **Do not use the laser goggles (accessory) 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 (accessory) 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 unintentionally blind themselves or other persons.
- ► **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 magnet away from implants and other medical devices, e.g. pacemakers or insulin pumps. The magnet generates a field that can impair the function of implants and medical devices.

- ► **Keep the measuring tool away from magnetic storage media and magnetically-sensitive devices.** The effect of the magnets 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 alignments 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)** On/off switch
- **(3)** Magnetic rotating mount
- **(4)** 1/4" tripod mount
- **(5)** Battery compartment cover locking mechanism
- **(6)** Battery compartment cover
- **(7)** Magnet
- **(8)** Laser warning label
- **(9)** Serial number
- **(10)** Laser viewing glasses[A)]
- **(11)** Tripod[A)]
- **(12)** Protective bag[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 laser	**GPL 3 G**
Point laser	**GPL 5 G**
Article number: GPL 3 G	**3 601 K66 N..**
Article number: GPL 5 G	**3 601 K66 P..**
Working range[A)]	30 m
Levelling accuracy (except for laser point towards the floor)[B)C)]	±0.35 mm/m
Levelling accuracy (laser point towards the floor)[B)C)]	±0.7 mm/m
Self-levelling range	±4°
Levelling time	< 4 s
Operating temperature	−10 °C to +45 °C
Storage temperature	−20 °C to +70 °C
Max. altitude	2000 m
Relative air humidity max.	90 %
Pollution degree according to IEC 61010-1	2[D)]
Laser class	2
Laser type	500–540 nm, < 1 mW
C_6	1
Divergence	0.8 mrad (full angle)
Tripod mount	1/4"
Batteries	2 × 1.5 V LR6 (AA)
Operating time[B)]	8 h
Weight according to EPTA-Procedure 01:2014	0.35 kg
Dimensions (length × width × height)	115 × 50 × 113 mm
Protection rating	IP 65

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

B) At **20–25** °C

C) The values stated presuppose normal to favourable environmental conditions (e.g. no vibration, no fog, no smoke, no direct sunlight). Extreme fluctuations in temperature can cause deviations in accuracy.

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

The serial number **(9)** on the type plate is used to clearly identify your measuring tool.

Assembly

Inserting/changing the batteries

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

If required, turn the magnetic rotating mount **(3)** to the side so that the battery compartment cover **(6)** is not obstructed.

Press the locking mechanism **(5)** upwards to open the battery compartment cover **(6)** and remove the battery compartment cover. Insert the batteries.

When inserting the batteries, ensure that the polarity is correct according to the illustration on the inside of the battery compartment.

Reattach the battery compartment cover **(6)** and press it firmly into place at the marked point above the locking mechanism **(5)**.

If the batteries are running low, the laser points will gradually become dimmer.

If the batteries are almost empty, the laser points will flash 5 times every minute.

If the batteries are empty, the laser points will flash once before the measuring tool switches 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 in the measuring tool.

Operation

Starting Operation

- ► **Protect the measuring tool from moisture and direct sunlight.**
- ► **Do not expose the measuring tool to any extreme temperatures or fluctuations in temperature.** For example, do not leave it in a car for extended periods of time. If it has been subjected to significant fluctuations in temperature, first allow the measuring tool to adjust to the ambient temperature and then always carry out an accuracy check before continuing work (see "Accuracy Check of the Measuring Tool", page 24).
  The precision of the measuring tool may be compromised if exposed to extreme temperatures or fluctuations 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 24).
- ► **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 **(2)** to the **ON** position. 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 **(2)** 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.

If the maximum permitted operating temperature of **45** °C is exceeded, the tool shuts down to protect the laser diode. Once it has cooled down, the measuring tool is operational again and can be switched back on.

Automatic shut-off

The measuring tool automatically switches itself off after **60** min of operation.

If the switched on measuring tool is not within the self-levelling range (the laser points flash continuously), the automatic shut-off is reset to **60** min.

Automatic Levelling

Position the measuring tool on a level, firm support or attach it to a tripod **(11)**.

To use the bottom laser point, rotate the measuring tool on the magnetic rotating mount **(3)** in such a manner that the laser point can be seen on the floor.

After switching on, the automatic levelling function automatically compensates irregularities within the self-levelling range of ±**4°**. The levelling is finished as soon as the laser points light up continuously (i.e. no longer flashing) and 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 points will flash continuously and quickly.

If this is the case, set up the measuring tool in a level position and wait for the self-levelling to take place. As soon as the measuring tool is within the self-levelling range of ±**4°**, the laser points 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 points in relation to the reference points to avoid errors arising from a change in the measuring tool's position.

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 always mount the measuring tool on a tripod for measuring distances of 20 m or more. In addition, position the measuring tool in the centre of the work surface, wherever this is possible.

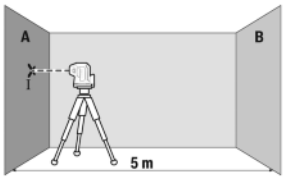
In addition to external influences, device-specific influences (e.g. falls or heavy impacts) can also lead to deviations. For this reason, check the levelling accuracy each time before beginning work.

Should the measuring tool exceed the maximum deviation during one of the tests, please have it repaired by a **Bosch** after-sales service.

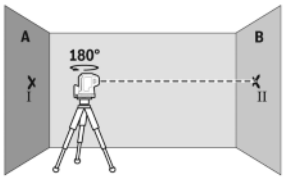
Checking the horizontal levelling accuracy

For this check, you will need a free measuring distance of **5** m on firm ground between two walls (designated A and B).

– Mount the measuring tool close to wall A on a tripod, or place it on a firm, flat surface. Switch on the measuring tool.

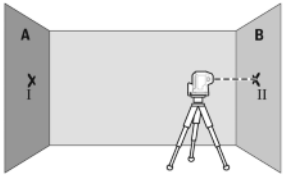


– Aim the horizontal laser beam that runs parallel to the longitudinal axis of the measuring tool at the closer wall A and allow the measuring tool to level in. Mark the centre of the laser point on the wall (point I).



– 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.



– 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.