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GERMANY

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1 609 92A 2U5 (2017.03) T / 388



1 609 92A 2U5

# GCL Professional

2-50 C | 2-50 CG

 **BOSCH**

**de** Originalbetriebsanleitung  
**en** Original instructions  
**fr** Notice originale  
**es** Manual original  
**pt** Manual original  
**it** Istruzioni originali  
**nl** Oorspronkelijke gebruiksaanwijzing  
**da** Original brugsanvisning  
**sv** Bruksanvisning i original  
**no** Original driftsinstruks  
**fi** Alkuperäiset ohjeet  
**el** Πρωτότυπο οδηγίων χρήσης  
**tr** Orijinal işletme talimatı  
**pl** Instrukcja oryginalna  
**cs** Původní návod k používání  
**sk** Pôvodný návod na použitie

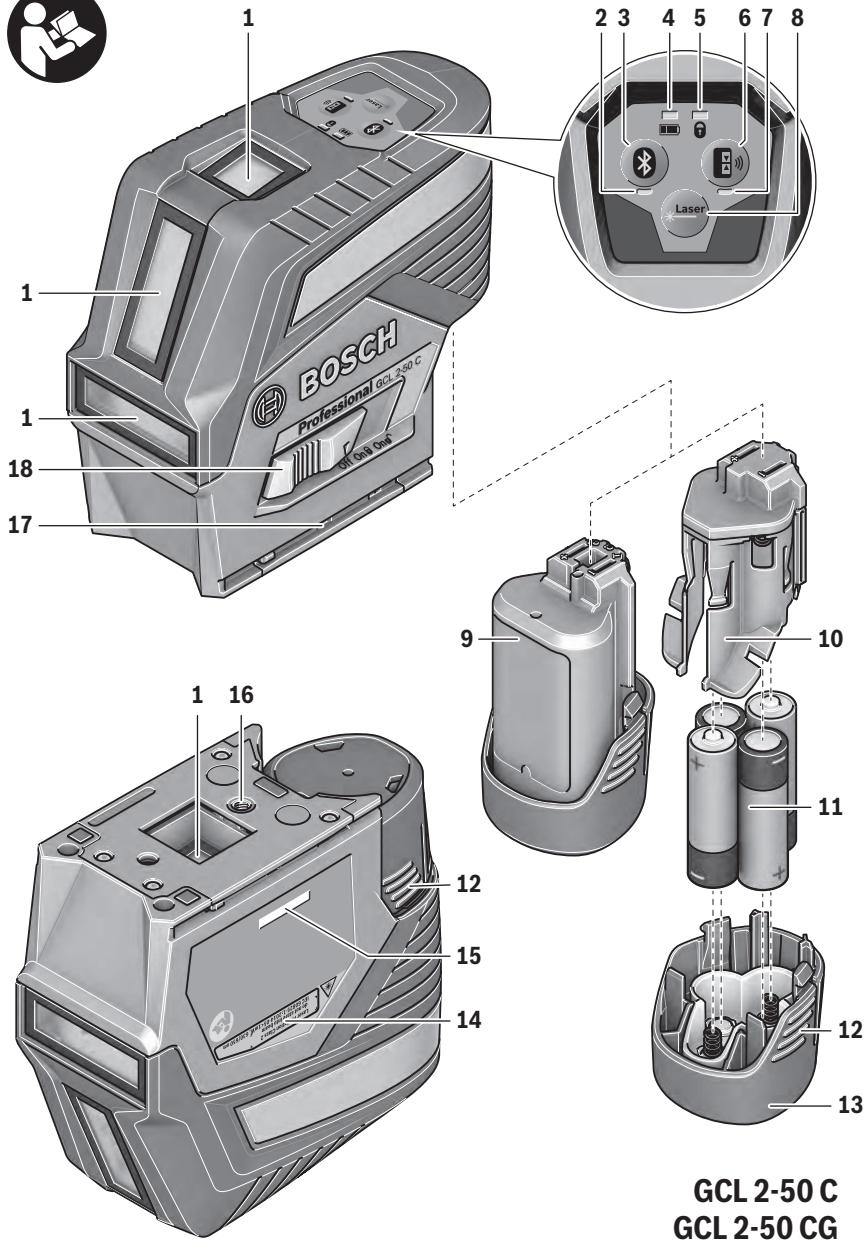
**hu** Eredeti használati utasítás  
**ru** Оригинальное руководство по эксплуатации  
**uk** Оригінальна інструкція з експлуатації  
**kk** Пайдалану нұсқаулығының түпнұсқасы  
**ro** Instrucțiuni originale  
**bg** Оригинална инструкция  
**mk** Оригинално упатство за работа  
**sr** Originalno uputstvo za rad  
**sl** Izvirna navodila  
**hr** Originalne upute za rad  
**et** Algupärane kasutusjuhend  
**lv** Instrukcijas oriģinālvalodā  
**lt** Originali instrukcija

**ja** オリジナル取扱説明書  
**cn** 正本使用说明书  
**tw** 原始使用說明書  
**ko** 사용 설명서 원본  
**th** หนังสือคู่มือการใช้งานฉบับต้นแบบ  
**id** Petunjuk-Petunjuk untuk Penggunaan Orisinal  
**vi** Bản gốc hướng dẫn sử dụng  
**ar** تعليمات التشغيل الأصلية  
**fa** دفترچه راهنمای اصلی



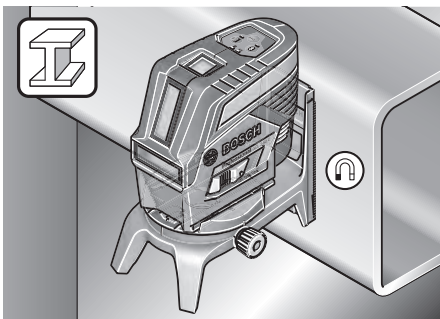
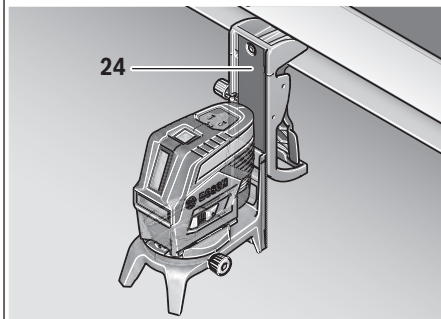
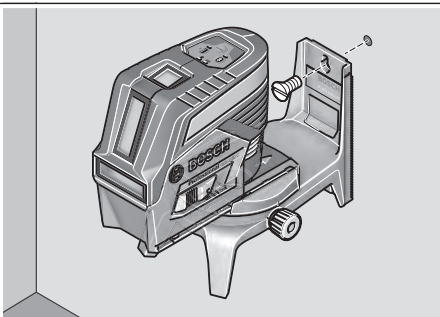
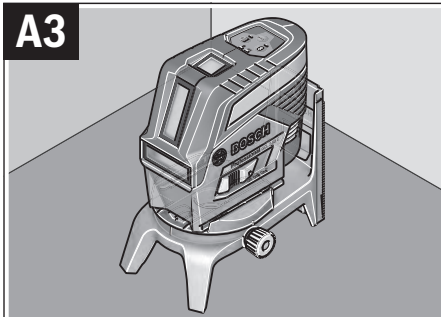
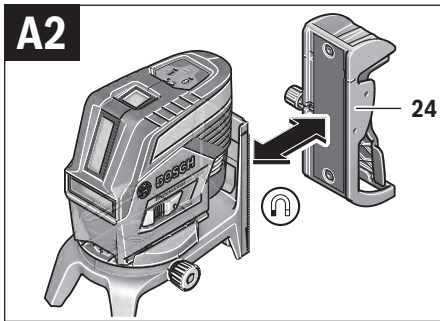
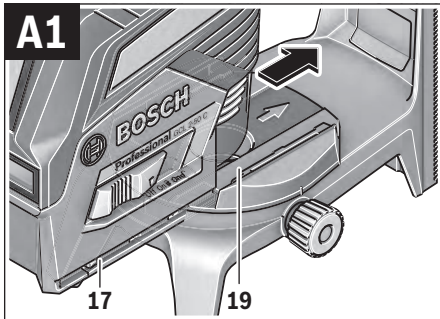
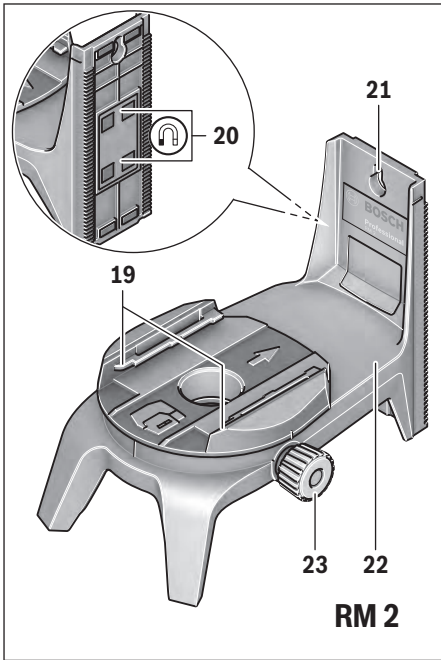
|                       |          |     |
|-----------------------|----------|-----|
| Deutsch.....          | Seite    | 9   |
| English .....         | Page     | 19  |
| Français .....        | Page     | 29  |
| Español.....          | Página   | 39  |
| Português .....       | Página   | 50  |
| Italiano .....        | Pagina   | 60  |
| Nederlands.....       | Pagina   | 70  |
| Dansk .....           | Side     | 80  |
| Svenska .....         | Sida     | 89  |
| Norsk.....            | Side     | 98  |
| Suomi .....           | Sivu     | 107 |
| Ελληνικά .....        | Σελίδα   | 116 |
| Türkçe.....           | Sayfa    | 127 |
| Polski .....          | Strona   | 137 |
| Česky .....           | Strana   | 147 |
| Slovensky .....       | Strana   | 156 |
| Magyar .....          | Oldal    | 166 |
| Русский .....         | Страница | 176 |
| Українська .....      | Сторінка | 187 |
| Қазақша .....         | Бет      | 198 |
| Română.....           | Pagina   | 208 |
| Български .....       | Страница | 218 |
| Македонски .....      | Страна   | 228 |
| Srpski .....          | Strana   | 238 |
| Slovensko .....       | Stran    | 247 |
| Hrvatski.....         | Stranica | 256 |
| Eesti .....           | Lehekülj | 266 |
| Latviešu .....        | Lappuse  | 275 |
| Lietuviškai .....     | Puslapis | 285 |
| 日本語.....              | ページ      | 294 |
| 中文.....               | 页        | 305 |
| 中文.....               | 頁        | 314 |
| 한국어 .....             | 페이지      | 323 |
| ภาษาไทย .....         | หน้า     | 333 |
| Bahasa Indonesia..... | Halaman  | 343 |
| Tiếng Việt .....      | Trang    | 353 |
| عربي .....            | صفحة     | 373 |
| فارسی .....           | صفحه     | 384 |

CE ..... |



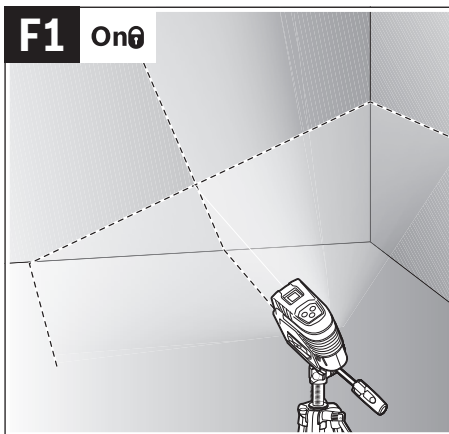
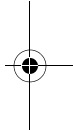
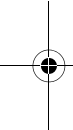
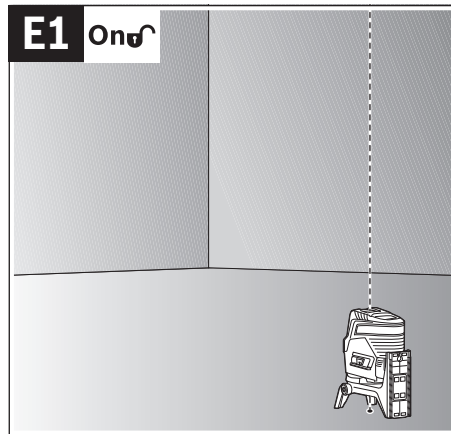
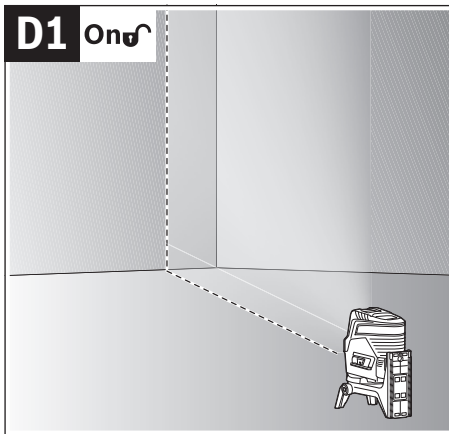
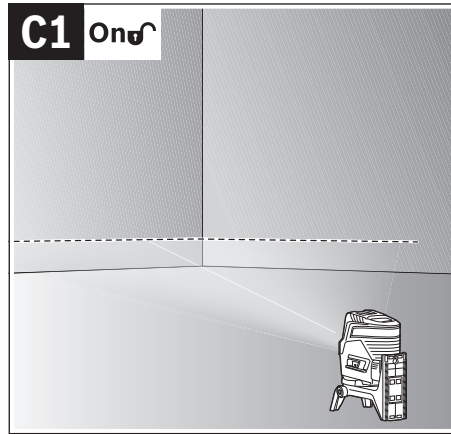
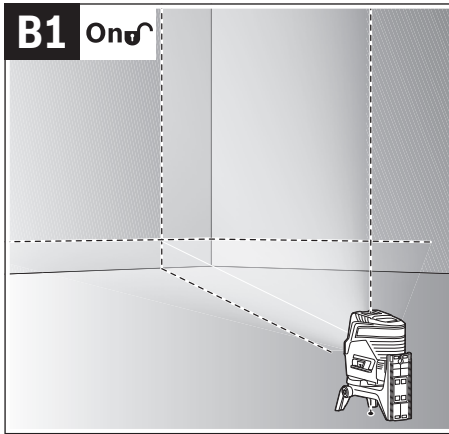


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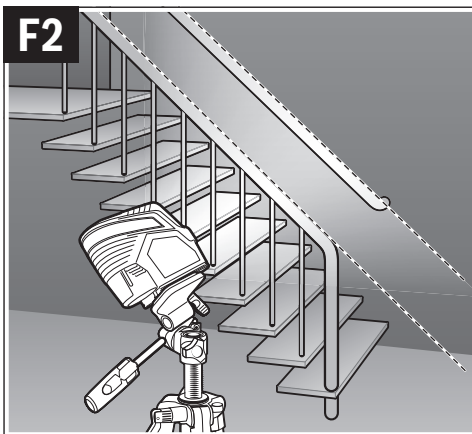
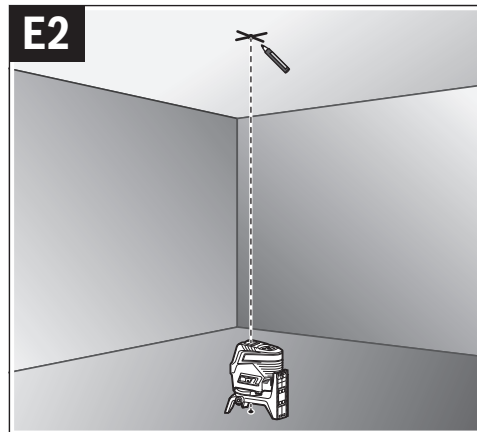
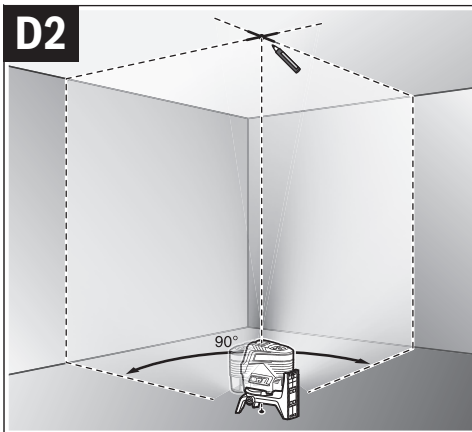
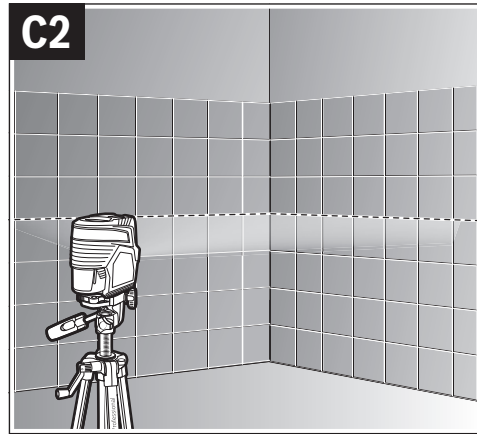
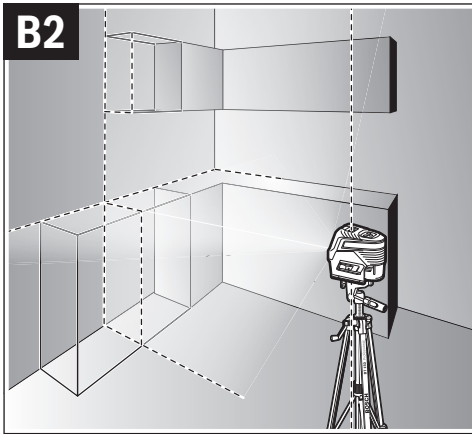


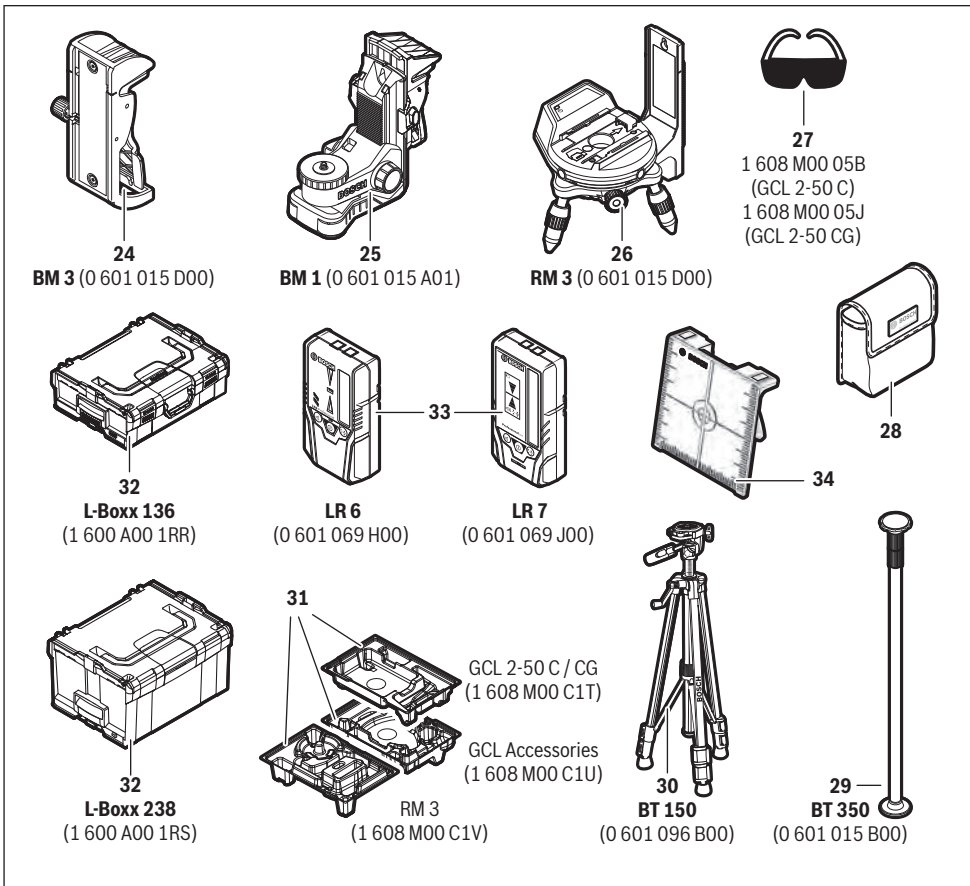
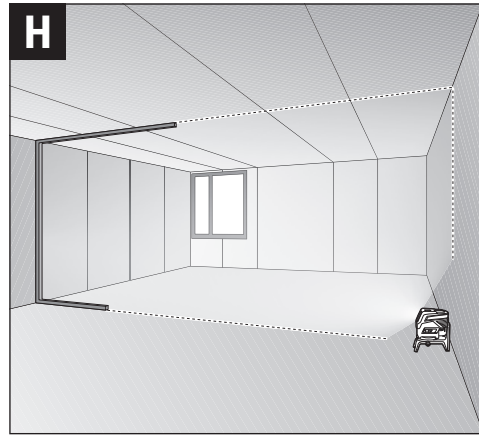
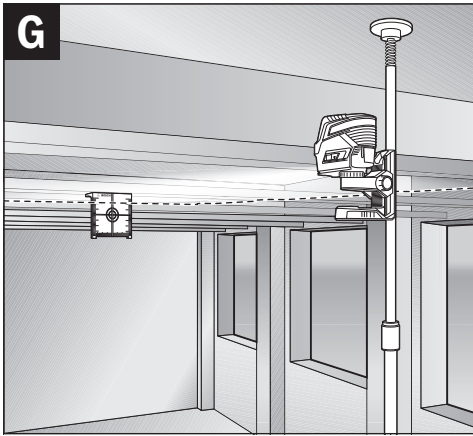


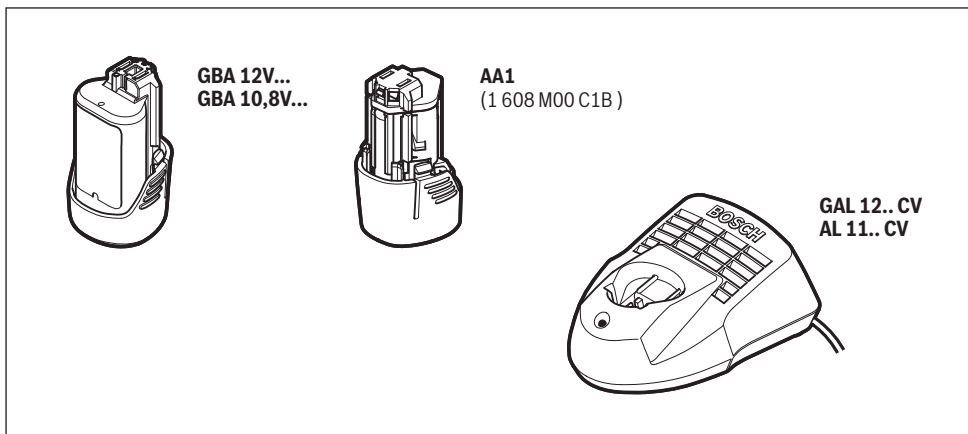
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6 |









**Akkus/Batterien:****Li-Ion:**

Bitte beachten Sie die Hinweise im Abschnitt „Transport“, Seite 18.

Änderungen vorbehalten.

**English****Safety Notes**

All instructions must be read and observed in order to work safely with the measuring tool. The integrated protections in the measuring tool may be compromised if the measuring tool is not used in accordance with the instructions provided. Never make warning signs on the measuring tool unrecognisable. **STORE THESE INSTRUCTIONS IN A SAFE PLACE AND INCLUDE THEM WITH THE MEASURING TOOL WHEN GIVING IT TO A THIRD PARTY.**

- ▶ **Caution** – The use of other operating or adjusting equipment or the application of other processing methods than those mentioned here can lead to dangerous radiation exposure.
- ▶ The measuring tool is provided with a warning label (marked with number 14 in the representation of the measuring tool on the graphics page).

**GCL 2-50 C****GCL 2-50 CG**

- ▶ If the text of the 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, not even from a distance. You could blind somebody, cause accidents or damage your eyes.

- ▶ If laser radiation strikes your eye, you must deliberately 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 viewing glasses as safety goggles. The laser viewing glasses are used for improved visualisation of the laser beam, but they do not protect against laser radiation.

- ▶ Do not use the laser viewing glasses as sun glasses or in traffic. The laser viewing glasses do not afford complete UV protection and reduce colour perception.
- ▶ Have the measuring tool repaired only through qualified specialists using original spare parts. This ensures that the safety of the measuring tool is maintained.
- ▶ Do not allow children to use the laser measuring tool without supervision. They could unintentionally blind other persons or themselves.
- ▶ Do not operate the measuring tool in explosive environments, such as in the presence of flammable liquids, gases or dusts. Sparks can be created in the measuring tool which may ignite the dust or fumes.



Keep the measuring tool and the rotating mount RM 2 away from cardiac pacemakers. The magnets inside the measuring tool and the rotating mount generate a field that can impair the function of cardiac pacemakers.

- ▶ Keep the measuring tool and the rotating mount RM 2 away from magnetic data media and magnetically sensitive equipment. The effect of the magnets inside the measuring tool and the rotating mount can lead to irreversible data loss.
- ▶ Before any work on the measuring tool itself (e.g. assembling, maintenance, etc.) as well as when transporting and storing, remove the battery pack or the batteries from the measuring tool. Danger of injury when accidentally actuating the On/Off switch.
- ▶ Do not open the battery pack. Danger of short-circuiting.



Protect the battery pack against heat, e.g., against continuous intense sunlight, fire, water, and moisture. Danger of explosion.

- ▶ When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- ▶ Under abusive conditions, liquid may be ejected from the battery pack; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery pack may cause irritations or burns.
- ▶ In case of damage and improper use of the battery pack, vapours may be emitted. Provide for fresh air and seek medical help in case of complaints. The vapours can irritate the respiratory system.
- ▶ Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- ▶ Use the battery pack only in conjunction with your Bosch product. This measure alone protects the battery pack against dangerous overload.
- ▶ The battery pack can be damaged by pointed objects such as nails or screwdrivers or by force applied externally. An internal short circuit can occur and the battery pack can burn, smoke, explode or overheat.

## 20 | English

► **Caution! When using the measuring tool with Bluetooth®, interference with other devices and systems, airplanes and medical devices (e. g., cardiac pacemakers, hearing aids) may occur. Also, the possibility of humans and animals in direct vicinity being harmed cannot be completely excluded. Do not use the measuring tool with Bluetooth® in the vicinity of medical devices, petrol stations, chemical plants, areas where there is danger of explosion, and areas subject to blasting. Do not use the measuring tool with Bluetooth® in airplanes. Avoid operation in direct vicinity of the body over longer periods.**

The **Bluetooth®** word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Robert Bosch Power Tools GmbH is under licence.

## Product Description and Specifications

Please unfold the fold-out page with the representation of the measuring tool and leave it unfolded while reading the operating instructions.

### Intended Use

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

You can use the rotating mount RM 2 to rotate the measuring tool 360° around a central, always visible plumb point. This enables you to align the laser lines precisely, without having to change the position of the measuring tool.

### Product Features

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

- 1 Exit opening for laser beam
- 2 Indicator for Bluetooth® connection

- 3 Bluetooth® button ✽
- 4 Charging condition of battery pack/batteries
- 5 Working without automatic levelling indicator
- 6 Receiver mode button
- 7 Receiver mode indicator
- 8 Button for laser operating mode
- 9 Battery pack\*
- 10 Battery adapter cover\*
- 11 Batteries\*
- 12 Unlocking button for battery pack/battery adapter/battery lid\*
- 13 Battery adapter sealing cap\*
- 14 Laser warning label
- 15 Serial number
- 16 Tripod mount 1/4"
- 17 Guide groove
- 18 On/Off switch
- 19 Guide rail
- 20 Magnets
- 21 Fastening slot
- 22 Rotating mount (RM 2)\*
- 23 Fine adjustment knob of rotating platform
- 24 Ceiling clip (BM 3)\*
- 25 Universal holder (BM 1)\*
- 26 Rotating platform (RM 3)\*
- 27 Laser viewing glasses\*
- 28 Protective pouch\*
- 29 Telescopic rod (BT 350)\*
- 30 Tripod (BT 150)\*
- 31 Inlay\*
- 32 Case\*
- 33 Laser receiver\*
- 34 Laser target plate

\* The accessories illustrated or described are not included as standard delivery.

### Technical Data

| Point and line laser        | GCL 2-50 C    | GCL 2-50 CG   |
|-----------------------------|---------------|---------------|
| Article number              | 3 601 K66 G.. | 3 601 K66 H.. |
| Working range <sup>1)</sup> |               |               |
| – Standard laser lines      | 20 m          | 20 m          |
| – with laser receiver       | 5 – 50 m      | 5 – 50 m      |
| – Upward laser point        | 10 m          | 10 m          |
| – Downward laser point      | 10 m          | 10 m          |
| Levelling accuracy          |               |               |
| – Laser lines               | ± 0.3 mm/m    | ± 0.3 mm/m    |
| – Laser points              | ± 0.7 mm/m    | ± 0.7 mm/m    |

1) The working range can be decreased by unfavourable environmental conditions (e. g. direct sun irradiation).

2) Shorter operating times in Bluetooth® operation and/or in conjunction with RM 3.

3) For Bluetooth® low energy devices, establishing a connection may not be possible, depending on model and operating system. Bluetooth® devices must support the SPP profile.

Technical data determined with battery from delivery scope.

The measuring tool can be clearly identified with the serial number **15** on the type plate.

| Point and line laser                               | GCL 2-50 C   | GCL 2-50 CG  |
|--|--|--|
| Self-levelling range, typically                    | ± 4°   | ± 4°   |
| Levelling duration, typically                      | < 4 s  | < 4 s  |
| Operating temperature                              | -10 °C ... +50 °C  | -10 °C ... +50 °C  |
| Storage temperature                                | -20 °C ... +70 °C  | -20 °C ... +70 °C  |
| Relative air humidity, max.                        | 90 %   | 90 %   |
| Laser class  | 2  | 2  |
| Laser Line   |  |  |
| – Laser type                                       | 630–650 nm, < 10 mW                                      | 500–540 nm, < 10 mW                                      |
| – Colour of laser beam                             | red  | green  |
| – C <sub>6</sub>                                   | 10   | 10   |
| – Divergence                                       | 50 x 10 mrad (full angle)                                | 50 x 10 mrad (full angle)                                |
| Laser Point  |  |  |
| – Laser type                                       | 630–650 nm, < 1 mW                                       | 630–650 nm, < 1 mW                                       |
| – Colour of laser beam                             | red  | red  |
| – C <sub>6</sub>                                   | 1  | 1  |
| – Divergence                                       | 0.8 mrad (full angle)                                    | 0.8 mrad (full angle)                                    |
| Tripod mount                                       | 1/4"   | 1/4"   |
| Power Supply                                       |  |  |
| – Battery pack (lithium-ion)                       | 10.8 V/12 V  | 10.8 V/12 V  |
| – Batteries (alkali-manganese)                     | 4 x 1.5 V LR6 (AA) (with battery adapter)                | 4 x 1.5 V LR6 (AA) (with battery adapter)                |
| Operating duration in operating mode <sup>2)</sup> | Battery pack/Batteries                                   | Battery pack/Batteries                                   |
| – Cross-line and point operation                   | 18 h/10 h  | 10 h/4 h   |
| – Cross-line operation                             | 25 h/16 h  | 13 h/6 h   |
| – Line operation                                   | 35 h/28 h  | 15 h/12 h  |
| – Point operation                                  | 60 h/32 h  | 60 h/32 h  |
| Bluetooth® measuring tool                          |  |  |
| – Compatibility                                    | Bluetooth® 4.0<br>(Classic and Low Energy) <sup>3)</sup> | Bluetooth® 4.0<br>(Classic and Low Energy) <sup>3)</sup> |
| Bluetooth® smartphone                              |  |  |
| – Compatibility                                    | Bluetooth® 4.0<br>(Classic and Low Energy) <sup>3)</sup> | Bluetooth® 4.0<br>(Classic and Low Energy) <sup>3)</sup> |
| – Operating system                                 | Android 4.3 (and above)<br>iOS 7 (and above)             | Android 4.3 (and above)<br>iOS 7 (and above)             |
| Weight according to<br>EPTA-Procedure 01:2014      |  |  |
| – with battery pack                                | 0.62 kg  | 0.62 kg  |
| – with batteries                                   | 0.58 kg  | 0.58 kg  |
| Dimensions   |  |  |
| – without rotating mount                           | 136 x 122 x 55 mm  | 136 x 122 x 55 mm  |
| – with rotating mount                              | Ø 188 x 180 mm   | Ø 188 x 180 mm   |
| Recommended batteries                              | GBA 10,8V...<br>GBA 12V...<br>except for GBA 12V 4,0 Ah  | GBA 10,8V...<br>GBA 12V...<br>except for GBA 12V 4,0 Ah  |
| Recommended chargers                               | AL 11.. CV<br>GAL 12.. CV                                | AL 11.. CV<br>GAL 12.. CV                                |
| Compatible laser receivers                         | LR6, LR7   | LR7  |
| Degree of protection                               | IP 54 (dust and splash water protected)                  | IP 54 (dust and splash water protected)                  |

1) The working range can be decreased by unfavourable environmental conditions (e.g. direct sun irradiation).

2) Shorter operating times in Bluetooth® operation and/or in conjunction with RM 3.

3) For Bluetooth® low energy devices, establishing a connection may not be possible, depending on model and operating system. Bluetooth® devices must support the SPP profile.

Technical data determined with battery from delivery scope.

The measuring tool can be clearly identified with the serial number **15** on the type plate.

## 22 | English

## Assembly

### Power Supply

The measuring tool can either be operated with commercially available batteries or with a Bosch lithium-ion battery pack.

#### Operation with Battery Pack

**Note:** Use of battery packs not suitable for the measuring tool can lead to malfunctions of or cause damage to the measuring tool.

**Note:** The battery pack is supplied partially charged. To ensure full capacity of the battery pack, completely charge the battery pack in the battery charger before using for the first time.

► **Use only the chargers listed in the technical data.** Only these battery chargers are matched to the lithium-ion battery of your measuring tool.

The lithium-ion battery pack can be charged at any time without reducing its service life. Interrupting the charging procedure does not damage the battery pack.

The "Electronic Cell Protection (ECP)" protects the lithium-ion battery pack against deep discharging. When the battery pack is discharged, the measuring tool is switched off by a protective circuit.

► **Do not switch the measuring tool back on after it has been switched off by the protective circuit.** The battery pack can be damaged.

To **insert** the charged battery pack **9**, slide it into the battery port until you feel it engage.

To **remove** the battery pack **9**, press the unlocking buttons **12** and pull the battery pack out of the battery port. **Do not exert any force.**

#### Operation with Batteries

The batteries are inserted into the battery adapter.

► **The non-rechargeable battery adapter is intended only for use in designated Bosch measuring tools and must not be used with power tools.**

To **insert** the batteries, slide the cover **10** of the battery adapter into the battery port. Place the batteries in the cover as shown in the illustration on the sealing cap **13**. Slide the sealing cap over the cover until you feel it click into place.



To **remove** the batteries, press the unlocking buttons **12** of the sealing cap **13** and pull off the sealing cap. Take care that the batteries do not fall out. To do so, hold the measuring tool with the battery port facing upward. Remove the batteries. To remove the inside cover **10** from the battery port, reach into the cover and pull it out of the measuring tool by applying light pressure to the side wall.

Always replace all batteries at the same time. Only use batteries from one brand and with the identical capacity.

► **Remove the batteries from the measuring tool when not using it for extended periods.** When storing for extended periods, the batteries can corrode and self-discharge.

### Battery Status Indicator

The battery status indicator **4** shows the charge condition of the battery pack or batteries:

| LED                         | Charge Condition                              |
|-----------------------------|---|
| Continuous lighting, green  | 100 – 75 %                                    |
| Continuous lighting, yellow | 75 – 35 %                                     |
| Flashing light, red         | <35 %   |
| No light                    | – Battery pack defective<br>– Batteries empty |

Immediately replace a fault battery pack or empty batteries.

### Working with the Rotating Mount RM 2 (see figures A1 – A3)

You can use the rotating mount **22** to rotate the measuring tool 360° around a central, always visible plumb point. This enables you to align the laser lines precisely, without having to change the position of the measuring tool.

You can use the fine adjustment knob **23** to align vertical laser lines precisely with reference points.

Place the measuring tool with the guide groove **17** on the guide rail **19** of the rotating mount **22** and slide the measuring tool to the stop onto the platform.

To disconnect, pull the measuring tool in the opposite direction from the rotating mount.

Positioning possibilities of the rotating mount:

- standing on a flat surface,
- screwed to a vertical surface,
- on metallic surfaces using the magnets **20**,
- on metallic ceiling strips using the ceiling clip **24**.

## Operation

### Initial Operation

► **Protect the measuring tool against moisture and direct sun light.**

► **Do not subject the measuring tool to extreme temperatures or variations in temperature.** As an example, do not leave it in vehicles for a long time. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the measuring tool can be impaired.

► **Avoid heavy impact or falling of the measuring tool.** After heavy exterior impact on the measuring tool, an accuracy check should always be carried out before continuing to work (see "Levelling Accuracy").

► **Switch the measuring tool off during transport.** When switching off, the levelling unit is locked. Else it can be damaged in case of intense movement.

### Switching On and Off

To **switch on** the measuring tool, slide the On/Off switch **18** to position "On" (for working without automatic levelling) or to position "On" (for working with automatic levelling). As soon as it is switched on, the measuring tool emits laser lines from the exit openings **1**.

- ▶ **Do not point the laser beam at persons or animals and do not look into the laser beam yourself, not even from a large distance.**

To **switch off** the measuring tool, slide the On/Off switch **18** to position “**Off**”.

The pendulum unit is locked when the tool is switched off.

- ▶ **Do not leave the switched-on measuring tool unattended and switch the measuring tool off after use.** Other persons could be blinded by the laser beam.

When exceeding the maximum permitted operating temperature of 50 °C, the measuring tool switches off to protect the laser diode. After cooling down, the measuring tool is ready for operation and can be switched on again.

#### Automatic Shut-off

When no button on the measuring tool is pressed for approx. 120 minutes, the measuring tool automatically switches off to save the batteries.

To switch the measuring tool back on after automatic shut-off, you can either slide the On/Off switch **18** to position “**Off**” first and then switch the measuring tool back on, or press button **8**.

#### Temporarily Deactivating Automatic Shut-Off

To deactivate automatic shut-off, hold down button **8** for at least 3 s with the measuring tool switched on. If automatic shut-off is deactivated, the laser lines will flash briefly as confirmation.

**Note:** If the operating temperature exceeds 45 °C, automatic shut-off can no longer be deactivated.

After the next time the measuring tool is switched off and on, the automatic shut-off will be activated again.

#### Setting the operating mode (see figures B1 – F1)

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

- **Cross-line and point operation:** The measuring tool generates a horizontal and a vertical laser line facing forward, a vertical laser point facing upward and a vertical laser point facing downward.  
The laser lines cross at a 90° angle.
- **Horizontal line operation:** The measuring tool generates a horizontal laser line facing forward.
- **Vertical line operation:** The measuring tool generates a vertical laser line facing forward.  
If the measuring tool is positioned in the room, the vertical laser line is displayed on the ceiling beyond the upper laser point.  
If the measuring tool is positioned directly against a wall, the vertical laser line generates an almost completely all-round laser line (360° line).
- **Point operation:** The measuring tool generates a vertical laser point facing upward and a vertical laser point facing downward.

Use button **8** to switch between the individual operating modes, see table on page 24.

All modes except for point operation can be selected both with and without automatic levelling.

#### Receiver mode

Receiver mode must be activated to work with the laser receiver **33**, – regardless of which operating mode is selected –.

In receiver mode the laser lines flash at very high frequency, enabling them to be detected by the laser receiver **33**.

To switch on receiver mode, press button **6**. Indicator **7** will light up green.

When receiver mode is switched on, the laser lines are less visible to the human eye. For this reason, switch receiver mode off by pressing button **6** again to work without a laser receiver. Indicator **7** will extinguish.

#### Automatic Levelling

##### Working with Automatic Levelling (see figures B1 – E1)

After switching on, the levelling function automatically compensates irregularities within the self-levelling range of  $\pm 4^\circ$ . The measuring tool is levelled in as soon as the laser lines no longer flash.

If the automatic levelling function is not possible, e. g. because the surface on which the measuring tool stands deviates by more than  $4^\circ$  from the horizontal plane, the laser beams flash. In this case, bring the measuring tool to the level position and wait for the self-levelling to take place.

In case of ground vibrations or position changes during operation, the measuring tool is automatically levelled in again. To avoid errors by moving the measuring tool, check the position of the laser beams with regard to the reference points upon re-levelling.

Position the measuring tool on a level, firm support or attach it to the rotating mount **22**.

For work with automatic levelling, slide the On/Off switch **18** to position “**On**”.

If the measuring tool is outside of the self-levelling range, the laser lines and/or points will flash quickly.

If you deactivate automatic levelling (On/Off switch **18** to position “**On**”), the measuring tool will switch to cross-line operation.

##### Working without Automatic Levelling (see figure F1)

When automatic levelling is switched off, you can hold the measuring tool freely in your hand or place it on an inclined surface. The laser beams no longer necessarily run vertical to each other.

For work without automatic levelling, slide the On/Off switch **18** to position “**On**”.

The laser lines will flash slowly.

If you activate automatic levelling (On/Off switch **18** to position “**On**”), the measuring tool will switch to cross-line operation with point operation.

24 | English

**Working with Automatic Levelling**

|  | Horizontal line operation | Vertical line operation | Point operation | Indicator 5 for working without automatic levelling | Figure    |
|--|---------------------------|-------------------------|-----------------|---|-----------|
| On/Off switch <b>18</b> in position "On" | ●                         | ●                       | ●               |   | <b>B1</b> |
| Press 1 time                             | ●                         | –                       | –               |   | <b>C1</b> |
| Press 2 times                            | –                         | ●                       | –               |   | <b>D1</b> |
| Press 3 times                            | –                         | –                       | ●               |   | <b>E1</b> |
| Press 4 times                            | ●                         | ●                       | ●               |   | <b>B1</b> |
|  | Cross-line operation      |                         |                 |   |           |

**Working without Automatic Levelling**

|  | Horizontal line operation | Vertical line operation | Point operation | Indicator 5 for working without automatic levelling | Figure    |
|--|---------------------------|-------------------------|-----------------|---|-----------|
| On/Off switch <b>18</b> in position "On" | ●                         | ●                       | –               | red   | <b>F1</b> |
| Press 1 time                             | ●                         | –                       | –               | red   |           |
| Press 2 times                            | –                         | ●                       | –               | red   |           |
| Press 3 times                            | ●                         | ●                       | –               | red   | <b>F1</b> |
|  | Cross-line operation      |                         |                 |   |           |

**Remote Control via Bluetooth®**

The measuring tool is equipped with a *Bluetooth®* module which uses radio technology to enable remote control via a smartphone with a *Bluetooth®* interface.

For information on the necessary system requirements for a *Bluetooth®* connection, please refer to the Bosch website at [www.bosch-pt.com](http://www.bosch-pt.com)

When remote controlling by means of *Bluetooth®*, time lags may occur between mobile terminal/device and measuring tool as a result of poor reception conditions.

Bosch applications (apps) are available for remote controlling. They can be downloaded in the respective stores, depending on the terminal/device:



**Switching On Bluetooth®**

To switch on *Bluetooth®*, press the *Bluetooth®* button **3**. Ensure that the *Bluetooth®* interface is activated on your mobile terminal/device.

After starting the Bosch application, the connection between the mobile terminal/device and the measuring tool is established. When several active measuring tools are found, select the appropriate measuring tool. When only one active measuring tool is found, the connection is automatically established.

The connection is established as soon as the *Bluetooth®* indicator **2** lights up.

The *Bluetooth®* connection may be interrupted if there is too much distance or there are obstacles between measuring tool and mobile terminal/device and if there are any electromagnetic interference sources. In this case, the *Bluetooth®* indicator flashes.

**Switching Off Bluetooth®**

To switch off *Bluetooth®*, press the *Bluetooth®* button **3** or switch off the measuring tool.

## Levelling Accuracy

### Influences on Accuracy

The ambient temperature has the greatest influence. Especially temperature differences occurring from the ground upward can divert the laser beam.

Because the largest difference in temperature layers is close to the ground, the measuring tool should always be mounted on a tripod when measuring distances exceeding 20 m. If possible, also set up the measuring tool in the centre of the work area.

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.

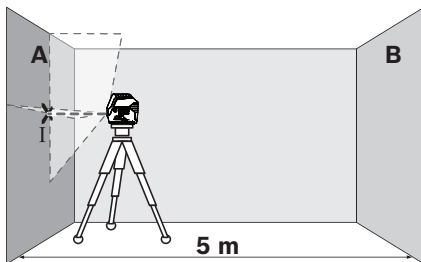
First, check both the height as well as the levelling accuracy of the horizontal laser line, then the levelling accuracy of the vertical laser line.

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

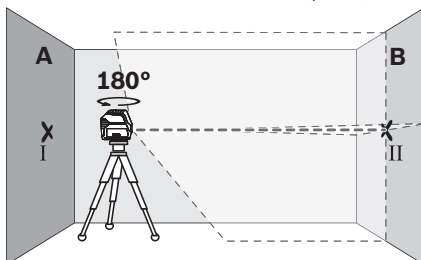
### Checking the Height Accuracy of the Horizontal Line

For this check, a free measuring distance of 5 m on a firm surface between two walls A and B is required.

- Mount the measuring tool onto a tripod or place it on a firm and level surface close to wall A. Switch on the measuring tool. Select cross-line operation with automatic levelling.

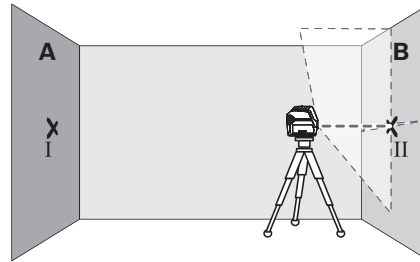


- Direct the laser against the close wall A and allow the measuring tool to level in. Mark the centre of the point where the laser lines cross each other on the wall (point I).

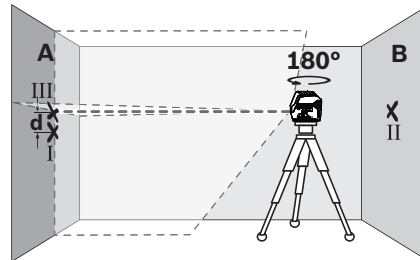


- Turn the measuring tool by 180°, allow it to level in and mark the cross point of the laser lines on the opposite wall B (point II).

- Without turning the measuring tool, position it close to wall B. Switch the measuring tool on and allow it to level in.



- Align the height of the measuring tool (using a tripod or by underlaying, if required) in such a manner that the cross point of the laser lines is projected against the previously marked point II on the wall B.



- Without changing the height, turn around the measuring tool by 180°. Direct it against the wall A in such a manner that the vertical laser line runs through the already marked point I. Allow the measuring tool to level in and mark the cross point of the laser lines on the wall A (point III).
- The difference  $d$  of both marked points I and III on wall A indicates the actual height deviation of the measuring tool.

The maximum permitted deviation  $d_{\max}$  can be calculated as follows:

$d_{\max} = \text{double the distance between the walls} \times 0.3 \text{ mm/m}$

Example: If the distance between the walls is 5 m, the maximum deviation is

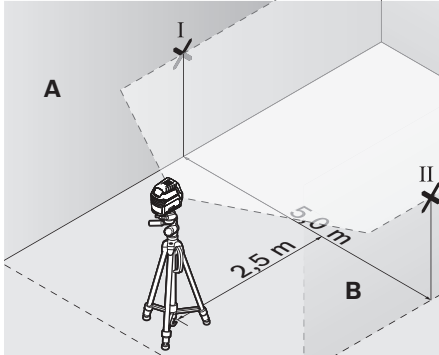
$d_{\max} = 2 \times 5 \text{ m} \times 0.3 \text{ mm/m} = 3 \text{ mm}$ . The marks must therefore be maximum 3 mm apart.

## 26 | English

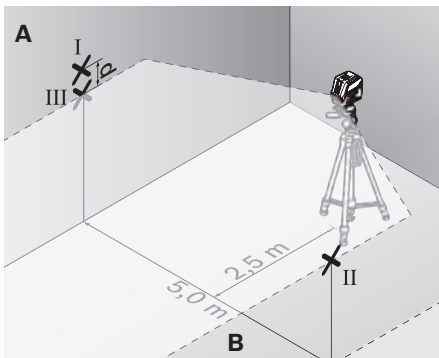
**Checking the Levelling Accuracy of the Horizontal Line**

For the check, a free surface of approx. 5 x 5 metres is required.

- Set up the measuring tool on a firm, level surface between both walls A and B. Allow the measuring tool to level in while in horizontal operation.



- At a distance of 2.5 metres from the measuring tool, mark the centre of the laser line (point I on wall A and point II on wall B) on both walls.



- Set up the measuring tool 5 metres away turned by 180° and allow it to level in.
- Align the height of the measuring tool (using a tripod or by underlaying, if required) in such a manner that the centre of the laser line is projected exactly against the previously marked point II on wall B.
- Mark the centre of the laser line as point III (vertically above or below point I) on the wall A.
- The difference **d** of both marked points I and III on wall A indicates the actual deviation of the measuring tool from the level plane.

The maximum permitted deviation  $d_{\max}$  can be calculated as follows:

$d_{\max} = \text{double the distance between the walls} \times 0.3 \text{ mm/m}$

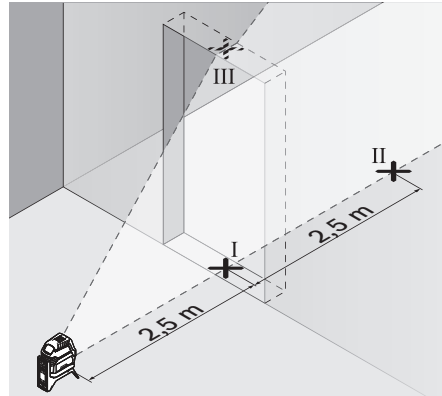
Example: If the distance between the walls is 5 m, the maximum deviation is

$d_{\max} = 2 \times 5 \text{ m} \times 0.3 \text{ mm/m} = 3 \text{ mm}$ . The marks must therefore be maximum 3 mm apart.

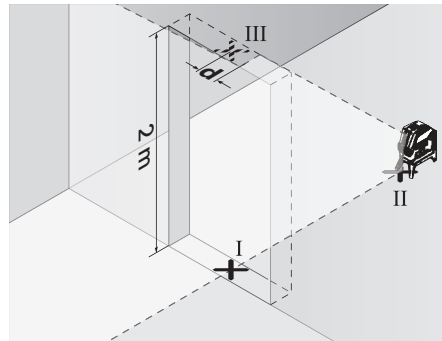
**Checking the Levelling Accuracy of the Vertical Line**

For this check, a door opening is required with at least 2.5 m of space (on a firm surface) to each side of the door.

- Position the measuring tool on a firm, level surface (not on a tripod) 2.5 m away from the door opening. Allow the measuring tool to level in while in cross-line operation mode, and direct the laser beams at the door opening.



- Mark the centre of the vertical laser line at the floor of the door opening (point I), at a distance of 5 m beyond the other side of the door opening (point III) and at the upper edge of the door opening (point III).



- Position the measuring tool on the other side of the door opening directly behind point II. Allow the measuring tool to level in and align the vertical laser line in such a manner that its centre runs exactly through points I and II.
- The difference **d** between point III and the centre of the laser line at the upper edge of the door opening results in the actual deviation of the measuring tool from the vertical plane.
- Measure the height of the door opening.

The maximum permitted deviation  $d_{\max}$  is calculated as follows:

$d_{\max} = \text{double height of the door opening} \times 0.3 \text{ mm/m}$

Example: With a door opening height of 2 metres, the maximum permitted deviation is

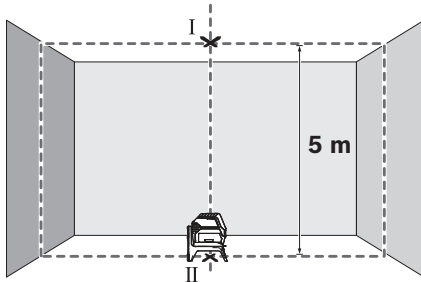
$d_{\max} = 2 \times 2 \text{ m} \times 0.3 \text{ mm/m} = 1.2 \text{ mm}$ . Thus, the marks must not be more than 1.2 mm apart.



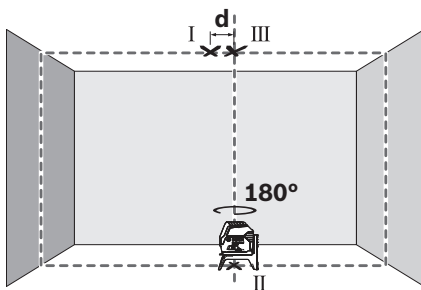
### Checking plumb accuracy

For this check, a free measuring distance of approx. 5 m between floor and ceiling on a firm surface is required.

- Mount the measuring tool onto the rotating mount and place it on the floor.
- Switch the measuring tool on and allow it to level.



- Mark the centre of the upper crossing point on the ceiling (point I). Also mark the centre of the bottom laser point on the floor (point II).



- Rotate the measuring tool 180°. Position it so that the centre of the lower laser point is on the point II which has already been marked. Allow the measuring tool to level. Mark the centre of the upper laser point (point III).
- The difference  $d$  of both marked points I and III on the ceiling results in the actual deviation of the measuring tool to the plumb line.

The maximum permitted deviation  $d_{\max}$  can be calculated as follows:

$$d_{\max} = \text{double the distance between floor and ceiling} \times 0.7 \text{ mm/m}$$

Example: If the distance from the floor to the ceiling is 5 m, the maximum deviation is

$$d_{\max} = 2 \times 5 \text{ m} \times 0.7 \text{ mm/m} = 7 \text{ mm. The marks must therefore be maximum 7 mm apart.}$$

### Working Advice

- ▶ **For marking, always use only the centre of the laser point or the laser line.** The size of the laser point as well as the width of the laser line change with distance.
- ▶ **The measuring tool is equipped with a radio interface. Local operating restrictions, e.g. in airplanes or hospitals, are to be observed.**

### 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 **16** on the thread of the tripod **30** or a conventional camera tripod. Tighten the measuring tool using the locking screw of the tripod.

Adjust the tripod roughly before switching on the measuring tool.

### Fastening with the Universal Holder (Accessory) (see figure G)

With the universal holder **25**, you can fasten the measuring tool, e.g., to vertical surfaces, pipes or magnetisable materials. The universal holder is also suitable for use as a ground tripod and makes the height adjustment of the measuring tool easier.

Adjust the universal holder roughly before **25** switching on the measuring tool.

### Working with the Laser Target Plate (see figure G)

The laser target plate **34** increases the visibility of the laser beam under unfavourable conditions and at large distances.

The reflective part of the laser target plate **34** improves the visibility of the laser line. Thanks to the transparent part, the laser line is also visible from the back side of the laser target plate.

### Laser Viewing Glasses (Accessory)

The laser viewing glasses filter out ambient light. This enhances the laser visibility for the eye.

### Work Examples (see figures B2 – F2, G and H)

Applicational examples for the measuring tool can be found on the graphics pages.

Always position the measuring tool close to the surface or edge you want to check, and allow it to level in prior to each measurement.

## Maintenance and Service

### Maintenance and Cleaning

Keep the measuring tool clean at all times.

Do not immerse the measuring tool in water or other fluids.

Wipe off debris using a moist and soft cloth. Do not use any cleaning agents or solvents.

Regularly clean the surfaces at the exit opening of the laser in particular, and pay attention to any fluff or fibres.

### 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. Exploded views and information on spare parts can also be found under:

**www.bosch-pt.com**

Bosch's application service team will gladly answer questions concerning 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.

**28 | English****Great Britain**

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UB 9 5HJ

At [www.bosch-pt.co.uk](http://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](mailto:boschservicecentre@bosch.com)

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Magna Business Park  
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Phone: +61 3 95415555

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E-Mail: [rbsa-hq.pts@za.bosch.com](mailto:rbsa-hq.pts@za.bosch.com)

**Transport**

The usable lithium-ion battery packs are subject to the Dangerous Goods Legislation requirements. The user can transport the battery packs by road without further requirements. When being transported by third parties (e.g. via air transport or forwarding agency), special requirements on packaging and labelling must be observed. For preparation of the item being shipped, consulting an expert for hazardous material is required.

Dispatch battery packs only when the housing is undamaged. Tape or mask off open contacts and pack up the battery pack in such a manner that it cannot move around in the packaging. Please also observe possibly more detailed national regulations.

**Disposal**

Measuring tools, battery packs/batteries, accessories and packaging should be sorted for environmental-friendly recycling.



Do not dispose of measuring tools and batteries/rechargeable batteries into household waste!

**Only for EC countries:**

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

Batteries no longer suitable for use can be directly returned at:

**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](http://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



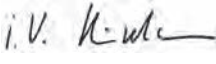
E-Mail: [boschservicecentre@bosch.com](mailto:boschservicecentre@bosch.com)

**Battery packs/batteries:****Li-ion:**

Please observe the instructions in section "Transport", page 28.

**Subject to change without notice.**

| CE        |  | I   |
|-----------|--|---|
| <b>de</b> | <b>EU-Konformitätserklärung</b><br><b>Punkt- und Linienlaser</b> Sachnummer                | Wir erklären in alleiniger Verantwortung, dass die genannten Produkte allen einschlägigen Bestimmungen der nachfolgend aufgeführten Richtlinien und Verordnungen entsprechen und mit folgenden Normen übereinstimmen.<br>Technische Unterlagen bei: *                             |
| <b>en</b> | <b>EU Declaration of Conformity</b><br><b>Point and line laser</b> Article number          | We declare under our sole responsibility that the stated products comply with all applicable provisions of the directives and regulations listed below and are in conformity with the following standards.<br>Technical file at: *  |
| <b>fr</b> | <b>Déclaration de conformité UE</b><br><b>Laser points et lignes</b> N° d'article          | Nous déclarons sous notre propre responsabilité que les produits décrits sont en conformité avec les directives, règlements normatifs et normes énumérés ci-dessous.<br>Dossier technique auprès de: *  |
| <b>es</b> | <b>Declaración de conformidad UE</b><br><b>Láser de puntos y líneas</b> N° de artículo     | Declaramos bajo nuestra exclusiva responsabilidad, que los productos nombrados cumplen con todas las disposiciones correspondientes de las Directivas y los Reglamentos mencionados a continuación y están en conformidad con las siguientes normas.<br>Documentos técnicos de: * |
| <b>pt</b> | <b>Declaração de Conformidade UE</b><br><b>Laser por pontos e linear</b> N.º do produto    | Declaramos sob nossa exclusiva responsabilidade que os produtos mencionados cumprem todas as disposições e os regulamentos indicados e estão em conformidade com as seguintes normas.<br>Documentação técnica pertencente à: *  |
| <b>it</b> | <b>Dichiarazione di conformità UE</b><br><b>Laser puntiforme e lineare</b> Codice prodotto | Dichiariamo sotto la nostra piena responsabilità che i prodotti indicati sono conformi a tutte le disposizioni pertinenti delle Direttive e dei Regolamenti elencati di seguito, nonché alle seguenti Normative.<br>Documentazione Tecnica presso: *                              |
| <b>nl</b> | <b>EU-conformiteitsverklaring</b><br><b>Punt- en lijnlaser</b> Productnummer               | Wij verklaren op eigen verantwoordelijkheid dat de genoemde producten voldoen aan alle desbetreffende bepalingen van de hierna genoemde richtlijnen en verordeningen en overeenstemmen met de volgende normen.<br>Technisch dossier bij: *  |
| <b>da</b> | <b>EU-overensstemmelseserklæring</b><br><b>Punkt- og linjelaser</b> Typenummer             | Vi erklærer som eneansvarlige, at det beskrevne produkt er i overensstemmelse med alle gældende bestemmelser i følgende direktiver og forordninger og opfylder følgende standarder.<br>Tekniske bilag ved: *  |
| <b>sv</b> | <b>EU-konformitetsförklaring</b><br><b>Punkt- och linjelaser</b> Produktnummer             | Vi förklarar under eget ansvar att de nämnda produkterna uppfyller kraven i alla gällande bestämmelser i de nedan angivna direktiven och förordningarna och att de stämmer överens med följande normer.<br>Teknisk dokumentation: *   |
| <b>no</b> | <b>EU-samsvarserklæring</b><br><b>Punkt- og linjelaser</b> Produktnummer                   | Vi erklærer under eneansvar at de nevnte produktene er i overensstemmelse med alle relevante bestemmelser i direktivene og forordningene nedenfor og med følgende standarder.<br>Teknisk dokumentasjon hos: *   |
| <b>fi</b> | <b>EU-vaatimustenmukaisuusvakuutus</b><br><b>Piste- ja linjalaser</b> Tuotenumero          | Vakuutamme täten, että mainitut tuotteet vastaavat kaikkia seuraavien direktiivien ja asetusten asiaankuuluvia vaatimuksia ja ovat seuraavien standardien vaatimusten mukaisia.<br>Tekniset asiakirjat saatavana: *   |
| <b>el</b> | <b>Δήλωση πιστότητας ΕΕ</b><br><b>Λέιζερ σημείων και γραμμών</b> Αριθμός ευρετηρίου        | Δηλώνουμε με αποκλειστική μας ευθύνη, ότι τα αναφερόμενα προϊόντα αντιστοιχούν σε όλες τις σχετικές διατάξεις των πιο κάτω αναφερόμενων οδηγιών και κανονισμών και ταυτίζονται με τα ακόλουθα πρότυπα.<br>Τεχνικά έγγραφα στη: *  |
| <b>tr</b> | <b>AB Uygunluk beyanı</b><br><b>Noktasal/çizgisel distomat</b> Ürün kodu                   | Tek sorumlu olarak, tanımlanan ürünün aşağıdaki yönetmelik ve direktiflerin geçerli bütün hükümlerine ve aşağıdaki standartlara uygun olduğunu beyan ederiz.<br>Teknik belgelerin bulunduğu yer: *  |

| CE  |                     | III   |  |
|---|---------------------|---|--|
| <b>iv Deklarācija par atbilstību ES standartiem</b> |                     | Mēs ar pilnu atbildību paziņojam, ka šeit aplūkotie izstrādājumi atbilst visiem tālāk minētajās direktīvās un rīkojumos ietvertajām saistošajām nostādnēm, kā arī sekojošiem standartiem.<br>Tehniskā dokumentācija no: * |  |
| <b>Punkta un līnijas lāzers</b>                     | Izstrādājuma numurs |   |  |
| <b>It ES atbilstības deklarācija</b>                | Gaminio numeris     | Atsakingai pareiškiamo, kad išvardyti gaminiai atitinka visus privalomus žemiau nurodytų direktyvų ir reglamentų reikalavimus ir šiuos standartus.<br>Techninė dokumentacija saugoma: *                                   |  |
| <b>GCL 2-50 C</b>                                   | 3 601 K66 G..       | 1995/5/EC<br>2011/65/EU<br>EN 61010-1:2010  | EN 60825-1:2014<br>EN 300 328 V1.9.1<br>EN 301 489-17 V2.2.1<br>EN 62479:2010<br>EN 50581:2012 |
| <b>GCL 2-50 CG</b>                                  | 3 601 K66 H..       |   |  |
|   |                     |  <b>BOSCH</b>  | * Robert Bosch Power Tools GmbH (PT/ECS)<br>70538 Stuttgart<br>GERMANY                         |
|   |                     | Henk Becker<br>Executive Vice President<br>Engineering and Manufacturing  | Helmut Heinzelmann<br>Head of Product Certification  |
|   |                     |    |              |
|   |                     | Robert Bosch Power Tools GmbH, 70538 Stuttgart, GERMANY<br>Stuttgart, 01.01.2017  |  |