

Robert Bosch GmbH
Power Tools Division
70745 Leinfelden-Echterdingen
Germany

www.bosch-pt.com

2 609 141 026 (2013.07) 0 / 368 EURO



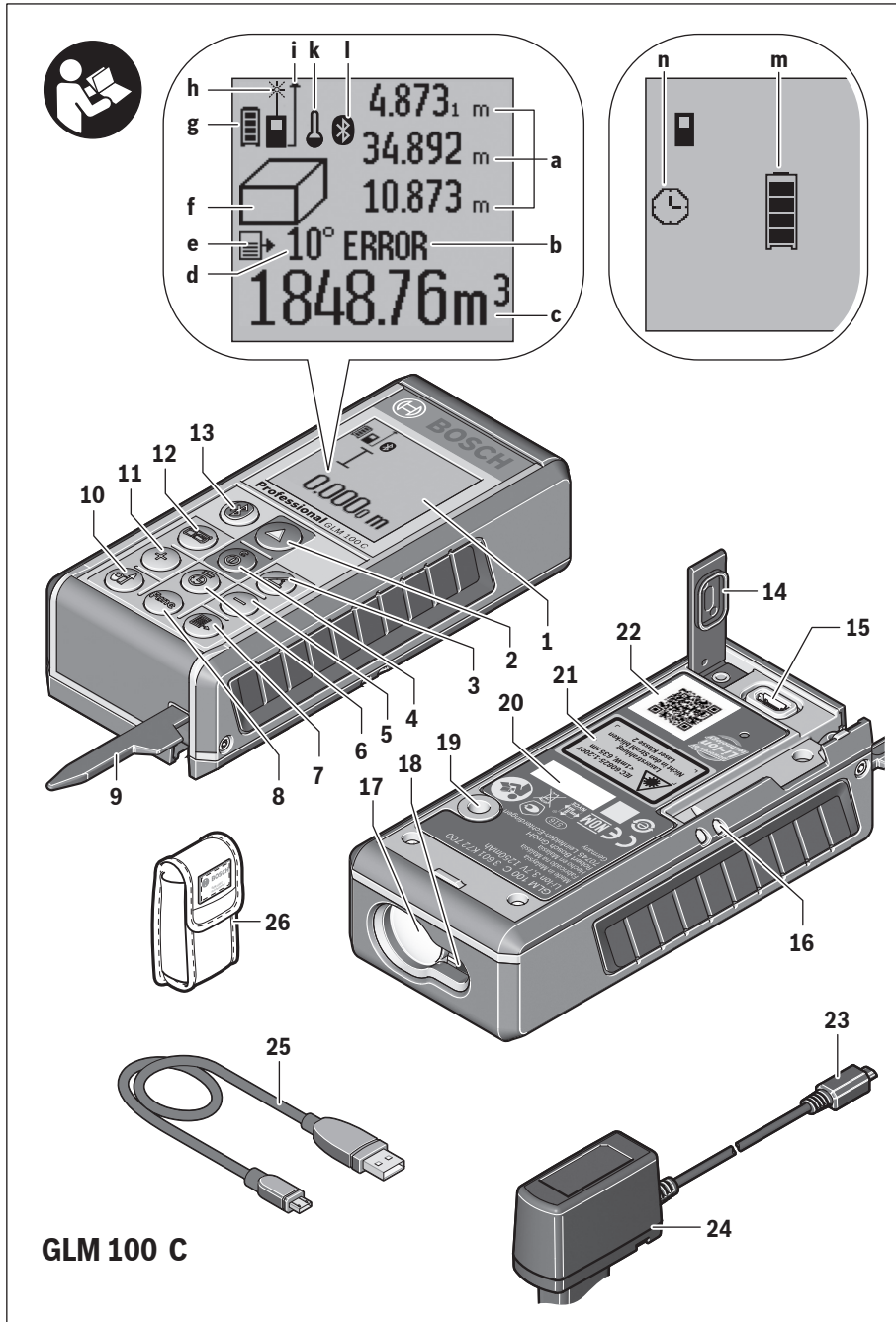
2 609 141 026

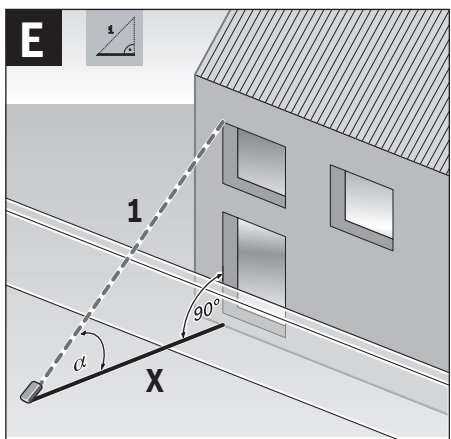
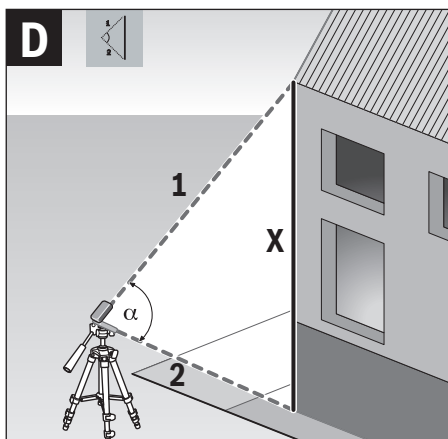
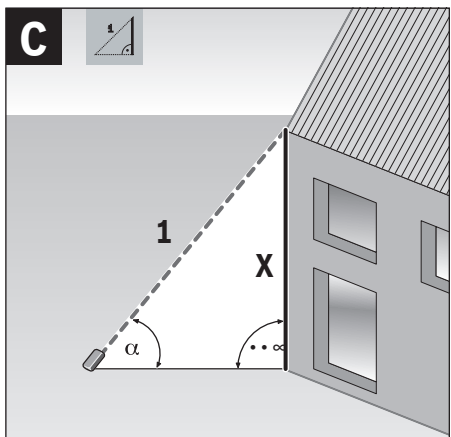
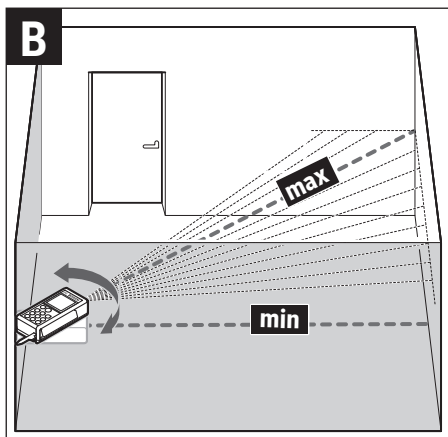
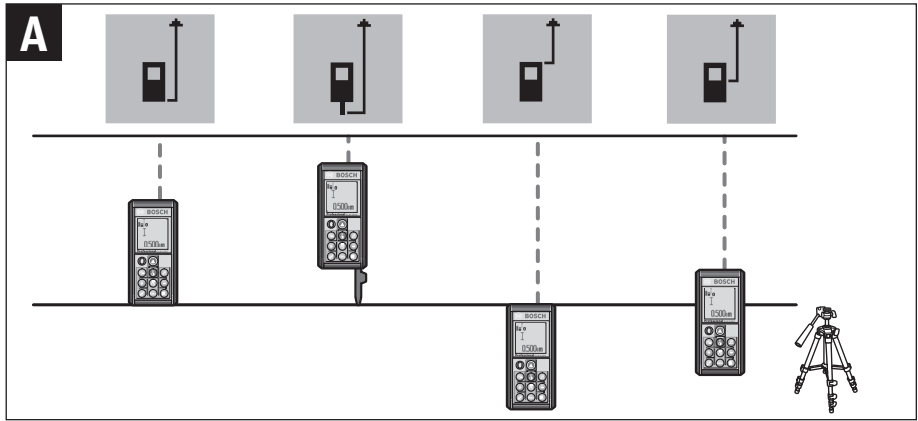
GLM 100 C Professional

 **BOSCH**

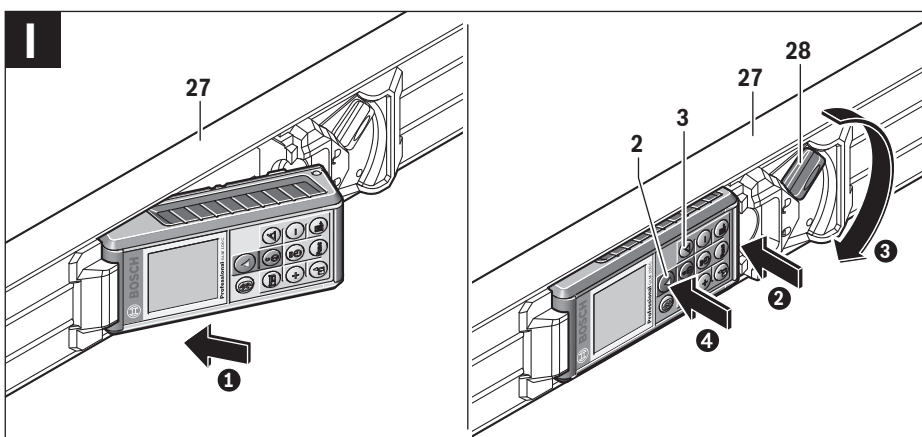
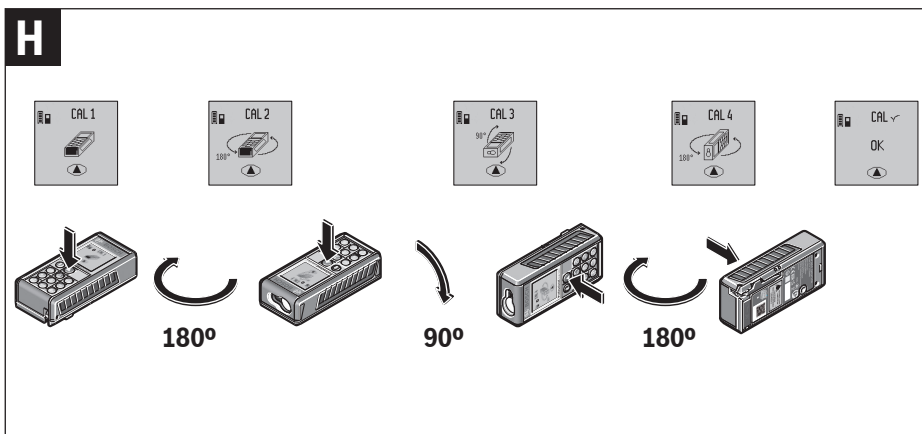
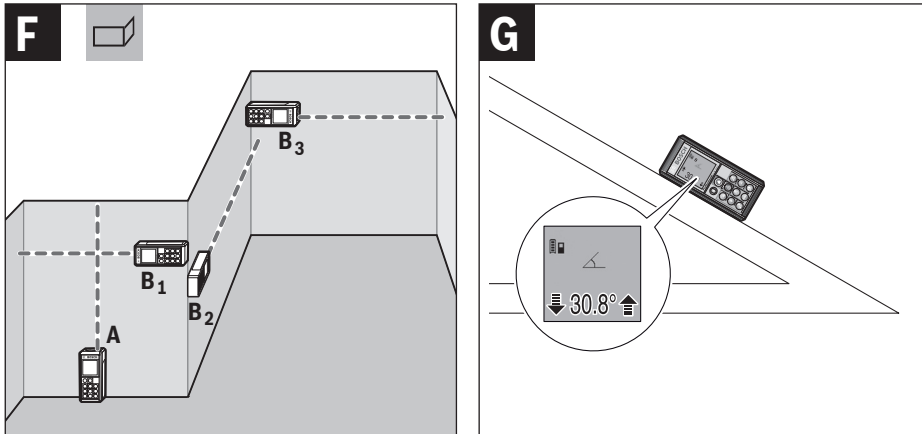
de Originalbetriebsanleitung	tr Orijinal işletme talimatı	mk Оригинално упатство за работа
en Original instructions	pl Instrukcja oryginalna	sr Originalno uputstvo za rad
fr Notice originale	cs Původní návod k používání	sl Izvirna navodila
es Manual original	sk Pôvodný návod na použitie	hr Originalne upute za rad
pt Manual original	hu Eredeti használati utasítás	et Algupärane kasutusjuhend
it Istruzioni originali	ru Оригинальное руководство по эксплуатации	lv Instrukcijas oriģinālvalodā
nl Oorspronkelijke gebruiksaanwijzing	uk Оригінальна інструкція з експлуатації	lt Originali instrukcija
da Original brugsanvisning	kk Пайдалану нұсқаулығының түпнұсқасы	ar تعليمات التشغيل الأصلية
sv Bruksanvisning i original	ro Instrucțiuni originale	fa دفترچه راهنمای اصلی
no Original driftsinstruks	bg Оригинална инструкция	
fi Alkuperäiset ohjeet		
el Πρωτότυπο οδηγιών χρήσης		





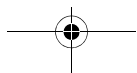
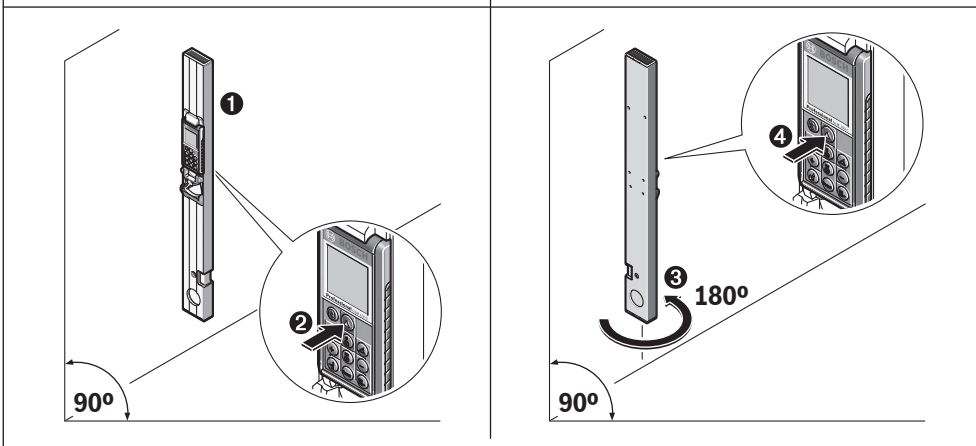
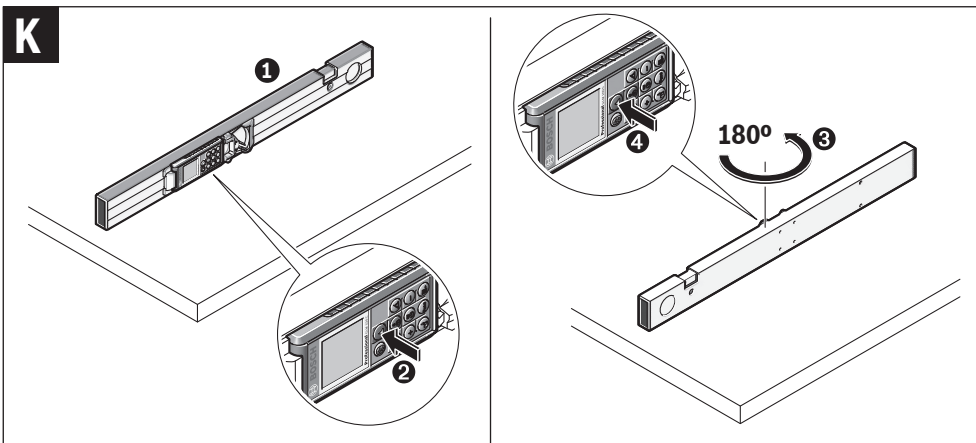
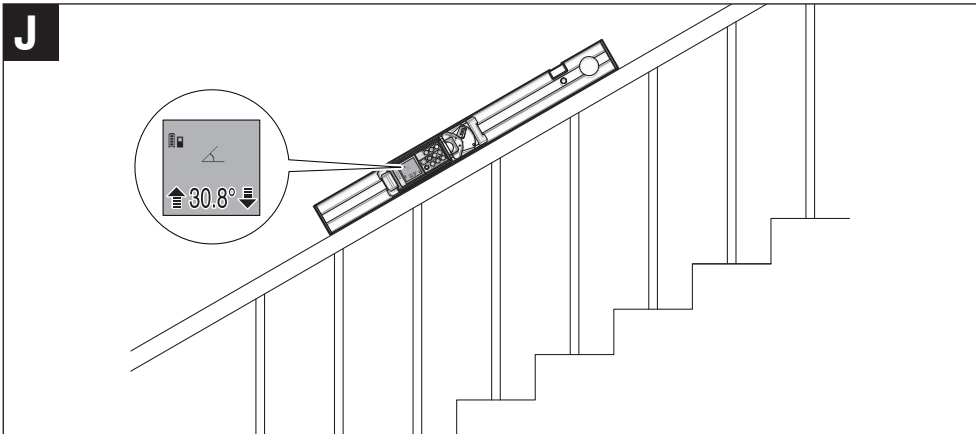


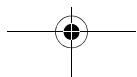
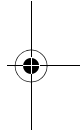
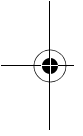
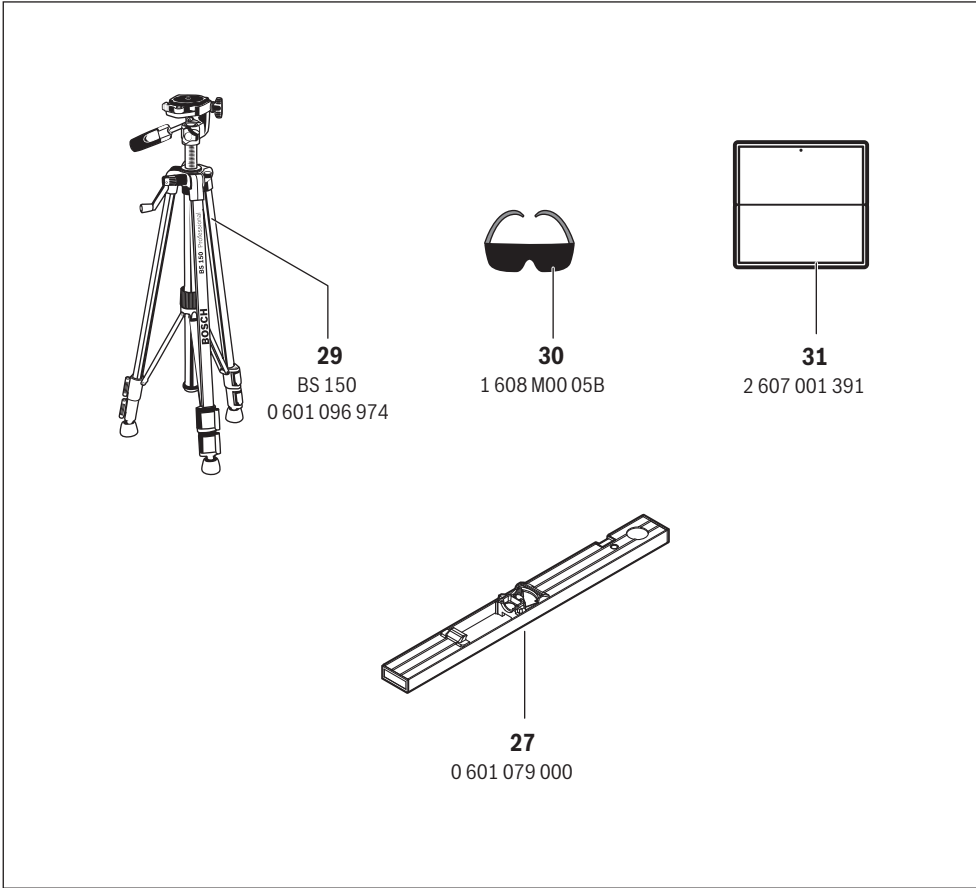
5 |





6 |





Kundendienst und Anwendungsberatung

Der Kundendienst beantwortet Ihre Fragen zu Reparatur und Wartung Ihres Produkts sowie zu Ersatzteilen. Explosionszeichnungen und Informationen zu Ersatzteilen finden Sie auch unter:

www.bosch-pt.com

Das Bosch-Anwendungsberatungs-Team hilft Ihnen gerne bei Fragen zu unseren Produkten und deren Zubehör.

www.powertool-portal.de, das Internetportal für Handwerker und Heimwerker.

Geben Sie bei allen Rückfragen und Ersatzteilbestellungen bitte unbedingt die 10-stellige Sachnummer laut Typenschild des Messwerkzeugs an.

Deutschland

Robert Bosch GmbH
Servicezentrum Elektrowerkzeuge
Zur Luhne 2
37589 Kalefeld – Willershausen
Unter www.bosch-pt.com können Sie online Ersatzteile bestellen oder Reparaturen anmelden.
Kundendienst: Tel.: (0711) 40040480
Fax: (0711) 40040481
E-Mail: Servicezentrum.Elektrowerkzeuge@de.bosch.com
Anwendungsberatung: Tel.: (0711) 40040480
Fax: (0711) 40040482
E-Mail: Anwendungsberatung.pt@de.bosch.com

Österreich

Tel.: (01) 797222010
Fax: (01) 797222011
E-Mail: service.elektrowerkzeuge@at.bosch.com

Schweiz

Tel.: (044) 8471511
Fax: (044) 8471551
E-Mail: Aftersales.Service@de.bosch.com

Luxemburg

Tel.: +32 2 588 0589
Fax: +32 2 588 0595
E-Mail: outillage.gereedschap@be.bosch.com

Entsorgung

Messwerkzeuge, Zubehör und Verpackungen sollen einer umweltgerechten Wiederverwertung zugeführt werden.

Werfen Sie Messwerkzeuge nicht in den Hausmüll!

Nur für EU-Länder:



Gemäß der europäischen Richtlinie 2012/19/EU müssen nicht mehr gebrauchsfähige Messwerkzeuge und gemäß der europäischen Richtlinie 2006/66/EG müssen defekte oder verbrauchte Akkus/Batterien getrennt gesammelt und einer umweltgerechten Wiederverwertung zugeführt werden.

Nicht mehr gebrauchsfähige Akkuzellen/Batterien können direkt abgegeben werden bei:

Deutschland

Recyclingzentrum Elektrowerkzeuge
Osteroder Landstraße 3
37589 Kalefeld

Schweiz

Batrec AG
3752 Wimmis BE

Akkus/Batterien:

- **Integrierte Akkus dürfen nur zur Entsorgung entnommen werden.** Durch das Öffnen der Gehäuseschale kann das Messwerkzeug zerstört werden.

Entladen Sie den Akku komplett. Drehen Sie alle Schrauben am Gehäuse heraus und öffnen Sie die Gehäuseschale. Trennen Sie die Anschlüsse am Akku und nehmen Sie den Akku heraus.



Werfen Sie Akkus/Batterien nicht in den Hausmüll, ins Feuer oder ins Wasser. Akkus/Batterien sollen, wenn möglich entladen, gesammelt, recycelt oder auf umweltfreundliche Weise entsorgt werden.

Änderungen vorbehalten.

English

Safety Notes



Working safely with the measuring tool is possible only when the operating and safety information are read completely and the instructions contained therein are strictly followed. Never make

warning labels on the measuring tool unrecognisable. SAVE THESE INSTRUCTIONS.

- **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.**



20 | English

- ▶ **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 laser beam yourself.** This measuring tool produces laser class 2 laser radiation according to IEC 60825-1. This can lead to persons being blinded.
- ▶ **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.



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

- ▶ **In case of damage and improper use of the battery, vapours may be emitted. Ventilate the area and seek medical help in case of complaints.** The vapours can irritate the respiratory system.
- ▶ **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 exempt. 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 Ltd. is under license.

Safety Warnings for Battery Chargers



Keep the battery charger away from rain or moisture. Penetration of water in the battery charger increases the risk of an electric shock.

- ▶ **Only charge Bosch lithium ion batteries or lithium ion batteries installed in Bosch products. The battery voltage must match the battery charging voltage of the charger.** Otherwise there is danger of fire and explosion.
- ▶ **Keep the battery charger clean.** Contamination can lead to danger of an electric shock.
- ▶ **Before each use, check the battery charger, cable and plug. If damage is detected, do not use the battery charger. Never open the battery charger yourself. Have repairs performed only by a qualified technician and only using original spare parts.** Damaged battery chargers, cables and plugs increase the risk of an electric shock.
- ▶ **This battery charger can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the battery charger in a safe way and understand the hazards involved.** Otherwise, there is danger of operating errors and injuries.
- ▶ **Supervise children.** This will ensure that children do not play with the charger.
- ▶ **Cleaning and user maintenance of the battery charger shall not be made by children without supervision.**

Products sold in GB only: Your product is fitted with a BS 1363/A approved electric plug with internal fuse (ASTA approved to BS 1362).

If the plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place by an authorised customer service agent. The replacement plug should have the same fuse rating as the original plug.

The severed plug must be disposed of to avoid a possible shock hazard and should never be inserted into a mains socket elsewhere.

Product Description and Specifications

Intended Use

The measuring tool is intended for measuring distances, lengths, heights, clearances, grades and for the calculation of areas and volumes. The measuring tool is suitable for measuring indoors and outdoors.

The measuring results can be transmitted to other devices via *Bluetooth*[®] and USB data port (not when operating the measuring tool in the R60 Professional measuring rail).

Technical Data

Digital Laser Rangefinder	GLM 100 C
Article number	3 601 K72 7..
Distance measurement	
Measuring range (max.)	100 m ^{A)}
Measuring range (typical)	0.05 – 80 m ^{B)}
Measuring range (typical under unfavourable conditions)	45 m ^{C)}
Measuring accuracy (typical)	± 1.5 mm ^{B)}
Measuring accuracy (typical under unfavourable conditions)	± 2.5 mm ^{C)}
Lowest indication unit	0.1 mm
Indirect Distance Measurement and Vial	
Measuring range	– 60° – +60° ^{D)}
Grade measurement	
Measuring range	0° – 360° (4x90°) ^{D)}
Measuring accuracy (typical)	± 0.2° ^{E)/G)}
Lowest indication unit	0.1°
General	
Operating temperature	– 10 °C... + 50 °C ^{F)}
Storage temperature	– 20 °C... + 50 °C
Allowable charging temperature range	+ 5 °C... + 40 °C
Relative air humidity, max.	90 %
Laser class	2
Laser type	635 nm, < 1 mW
Laser beam diameter (at 25 °C) approx.	
– at 10 m distance	6 mm
– at 80 m distance	48 mm
Setting accuracy of the laser to the housing, approx.	
– Vertical	± 2 mm/m ^{G)}
– Horizontal	± 10 mm/m ^{G)}
Automatic switch-off after approx.	
– Laser	20 s
– Measuring tool (without measurement)	5 min
Weight according to EPTA-Procedure 01/2003	0.14 kg
Dimensions	51 x 111 x 30 mm
Degree of protection	IP 54 (dust and splash water protected)
Data transmission	
Bluetooth®	Bluetooth® 4.0 (Classic and Low Energy) ^{I)}
Micro USB cable	USB 2.0
– Charging voltage	5.0 V [–]
– Charging current	500 mA
Battery	
	Li-Ion
Rated voltage	3.7 V
Capacity	1.25 Ah
Number of battery cells	1
Single measurements per battery charge, approx.	25 000 ^{H)}

22 | English

Digital Laser Rangefinder	GLM 100 C
Battery Charger	
Article number	2 609 120 4..
Charging time	approx. 3 h
Output voltage	5.0 V ^{DC}
Charging current	500 mA
Protection class	□/II

A) For measurements from the rear measuring-tool edge, the operating range increases the better the laser light is reflected from the surface of the target (dispersive, not reflective) and the brighter the laser point is with respect to the ambient brightness (indoors, twilight). For distances greater than 80 m, we recommend using a retroreflective target plate (accessory). For distances below 20 m, a retroreflective target plate should not be used, as it can lead to measuring errors.

B) For measurements from the rear measuring-tool edge, 100 % reflectance of the target (e.g., a white-painted wall), weak backlight and 25 °C operating temperature. Additionally, a deviation influence of ± 0.05 mm/m must be taken into account.

C) For measurements from the rear measuring-tool edge, 10 – 100 % reflectance of the target, strong backlight and – 10 °C to + 50 °C operating temperature. Additionally, a deviation influence of ± 0.29 mm/m must be taken into account.

D) For measurements with the rear side of the unit as reference, the max. measuring range is $\pm 60^\circ$

E) After calibration at 0° and 90° with an additional grade error of $\pm 0.01^\circ$ /degree to 45° (max.).

F) In the continuous measurement function, the maximum operating temperature is + 40 °C.

G) At 25 °C operating temperature

H) For a new and charged battery without display illumination, *Bluetooth*® and tone signal.

I) 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.

Please observe the article number on the type plate of your battery charger. The trade names of individual battery chargers may vary.

Please observe the article number on the type plate of your measuring tool. The trade names of the individual measuring tools may vary.

The measuring tool can be clearly identified with the serial number **20** on the type plate.

Product Features

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

- 1 Display
- 2 Measuring button
- 3 Button for grade measurement / calibration **
- 4 Button for clearing the internal memory / On/Off **
- 5 Minus button
- 6 Button for result / timer function **
- 7 Button for measured-value list / storage of constant **
- 8 Button for function mode / basic settings **
- 9 Positioning pin
- 10 Button for selection of the reference level
- 11 Plus button
- 12 Button for length, area and volume measurement
- 13 *Bluetooth*® button
- 14 Cover, micro USB port
- 15 Micro USB port
- 16 Fixture for carrying strap
- 17 Reception lens
- 18 Laser beam outlet
- 19 1/4" thread
- 20 Serial number
- 21 Laser warning label
- 22 QR-Code (product information)
- 23 Charge connector

- 24 Battery charger
- 25 Micro USB cable
- 26 Protective pouch
- 27 Measuring rail*^{***}
- 28 Locking lever for measuring rail
- 29 Tripod*
- 30 Laser viewing glasses*
- 31 Laser target plate*






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



** Keep button pressed to call up the extended functions.

***When operating the measuring tool in the measuring rail 27, data transmission is not possible.

Display Elements

- a Measured-value lines
- b "ERROR" indication
- c Result line
- d Digital vial / position of measured-value list entry
- e Measured-value list indicator
- f Measuring functions
 - I Length measurement
 - Area/surface measurement
 - ☐ Volume measurement
 - ⋮ Continuous measurement
 - ∇ Indirect height measurement

-  Double indirect height measurement
-  Indirect length measurement
-  Timer Function
-  Wall-surface measurement
-  Grade Measurement

- g** Battery charge-control indicator
- h** Laser, switched on
- i** Measurement reference level
- k** Temperature warning
- l** Bluetooth® switched on
-  Bluetooth® activated, connection established
-  Bluetooth® activated, no connection established
- m** Charging procedure
- n** Slow charging procedure

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Robert Bosch Ltd. is under license.

Declaration of Conformity



We declare under our sole responsibility that the product described under "Technical Data" is in conformity with the following standards or standardization documents:

EN 61010-1:2010, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+AC:2011, EN 60825-1:2007, EN 61326-1:2006-05, EN 300 328:2012-06, EN 301 489-1:2008-04, EN 301 489-1:2011-09, EN 301 489-17:2012-09, EN 62479:2010-09 and EN 60335 (battery chargers) according to the provisions of the directives 2011/65/EU, 2004/108/EC, 1999/5/EC.

Technical documents at:
Robert Bosch GmbH, PT/ETM9,
D-70745 Leinfelden-Echterdingen

 13

Henk Becker Executive Vice President Engineering	Helmut Heinzelmann Head of Product Certification PT/ETM9
--	--

PPA
 

Robert Bosch GmbH, Power Tools Division
D-70745 Leinfelden-Echterdingen
19.04.2013

Assembly

Battery Charging

- ▶ **Do not use a different battery charger.** The battery charger provided is matched to the lithium ion battery installed in your measuring tool.

- ▶ **Observe the mains voltage!** The voltage of the power source must correspond with the data on the type plate of the battery charger.

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

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

When the bottom segment of the battery charge-control indicator **g** flashes, only a few more measurements can be carried out. Charge the battery.

When the frame around the segments of the battery charge-control indicator **g** flashes, measurements are no longer possible. Continued use of the measuring tool is only possible for a short period (e. g., for checking entries in the measured-value list, performing a calculation, etc.). Recharge the battery.

The charge procedure begins as soon as the mains plug of the battery charger is plugged into the socket outlet and the charge connector **23** is plugged into socket **15**.

The battery charge-control indicator **g** indicates the charging progress. During the charging procedure, the segments flash one after the other. When all segments of battery charge-control indicator **g** are displayed, the battery is completely charged.

Disconnect the battery charger from the mains supply when not using it for longer periods.

Additionally, the battery can also be recharged via a USB port. For this, connect the measuring tool to a USB port using the micro USB cable. In USB operation (recharging, data transmission), the charging duration **n** can be significantly prolonged.

The measuring tool cannot be used independently during the charging procedure. Usage is possible only in combination with a USB connection and the available software.

The Bluetooth® function switches off during the charging procedure. Existing connections to other devices are interrupted. This can lead to data loss.

- ▶ **Protect the battery charger against moisture!**

Notes for Optimum Handling of the Battery in the Measuring Tool

Store the measuring tool only within the allowable temperature range, see "Technical Data". As an example, do not leave the measuring tool in a vehicle in summer.

A significantly reduced working period after charging indicates that the battery is used and must be replaced.

Observe the notes for disposal.

Operation

Initial Operation

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

24 | English

- ▶ **Do not subject the measuring tool to extreme temperatures or variations in temperature.** As an example, do not leave it in vehicles for 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 to or falling down of the measuring tool.** After severe exterior effects to the measuring tool, it is recommended to carry out an accuracy check (see "Accuracy Check and Calibration of the Grade Measurement" and "Accuracy Check of the Distance Measurement" on page 29) each time before continuing to work).

Switching On and Off

For **switching on** the measuring tool, the following possibilities are given:

- Press the On/Off button **4**: The measuring tool is switched on and is in length measurement mode. The laser is not activated.
- Pressing the measuring button **2**: Measuring tool and laser are switched on. The measuring tool is in length measurement mode. When the measuring tool is inserted in the measuring rail **27**, the grade measurement function is activated.
- ▶ **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, press the On/Off button **4** for a few seconds.

When no button on the measuring tool is pressed for approx. 5 minutes, the measuring tool automatically switches off to save the batteries/rechargeable batteries.

When the angle is not changed for approx. 5 minutes when in the "Grade measurement" operating mode, the measuring tool automatically switches off to save the batteries/rechargeable batteries.

When switching off automatically, all stored values are retained.

Measuring Procedure

When the measuring tool is inserted in the measuring rail **27**, it is always in the length measurement or grade measurement function after switching on by pressing the measuring button **2**. Other measuring modes can be switched to by pressing the respective function/mode button (see "Measuring Functions", page 25).

After switching on, the rear edge of the measuring tool is preset as the reference level for the measurement. By pressing the reference level button **10**, the reference level can be changed (see "Measuring Functions", page 25).

Place the measuring tool with the selected reference plane against the desired starting point of the measurement (e.g. a wall).

Briefly press the measuring button **2** to switch on the laser beam.

- ▶ **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.**

Aim the laser beam at the target surface. Briefly press the measuring button **2** again to initiate the measurement.

When the laser beam is switched on permanently, the measurement already starts after the first actuation of the measuring button **2**. In continuous measurement mode, the measurement starts immediately upon switching on.

Typically, the measured value appears after 0.5 and latest after 4 seconds. The duration of the measurement depends on the distance, the light conditions and the reflection properties of the target surface. The end of the measurement is indicated by a signal tone. The laser beam is switched off automatically upon completion of the measurement.

When no measurement takes place approx. 20 seconds after collimating, the measuring tool automatically switches off to save the battery.

Selecting the Reference Level (see figure A)

For the measurement, you can select between four reference planes:

- The rear edge of the measuring tool or the front edge of the 90° folded-out positioning pin **9** (e.g. when measuring on-ward from outer corners),
- The tip of the 180° folded-out positioning pin **9** (e.g. when measuring from a corner),
- The front measuring-tool edge (e.g. when measuring on-ward from a table edge),
- The centre of thread **19** (e.g. for tripod measurements).

To select the reference level, press button **10** until the requested reference level is indicated on the display. Each time after switching on the measuring tool, the rear end of the measuring tool is preset as the reference level.

Subsequent changing of the reference level for measurements that have already been carried out (e.g. when indicating measuring values in the measured-value list) is not possible.

"Basic Settings"


To access the "Basic settings" menu, press and hold the basic settings button **8**.

Briefly press the basic settings button **8** to select the individual menu items.

Press the minus button **5** or the plus button **11** to select the setting within the menu items.

To exit the "Basic settings" menu, press the measurement button **2**.

Basic Settings

Tone Signals		On
		Off

Basic Settings

Display Illumination		On
		Off
		Auto on/off
Digital vial		On
		Off
Display rotation		On
		Off
Permanent laser beam		On
		Off
Unit of measure, distance (depending on country version)		m, ft, inch, ...
Unit of measure, angle		°, %, mm/m

With exception of the "Permanent laser beam" setting, all basic settings are retained when switching off.

Continuous Laser Beam


► **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.**

In this setting, the laser beam also remains switched on between measurements; for measuring, it is only required to press the measuring button **2** once.

Measuring Functions

Simple Length Measurement

For length measurements, press button **12** until the "length measurement" indication appears on the display.



To switch the laser on and for measuring, briefly press the measuring button **2** once each time.


The measured value is displayed in the result line **c**.

For several subsequent length measurements, the last measured results are displayed in the measured-value lines **a**.

Area Measurement

For area/surface measurements, press button **12** until the indicator for area measurement appears on the display.

Afterwards, measure the length and the width, one after another, in the same manner as a length measurement. The laser beam remains switched on between both measurements.

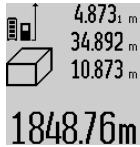


Upon completion of the second measurement, the surface is automatically calculated and displayed in the result line **c**. The individual measured values are displayed in the measured-value lines **a**.

Volume Measurement

For volume measurements, press button **12** until the indicator for volume measurement appears on the display.

Afterwards, measure the length, width and the height, one after another, in the same manner as for a length measurement. The laser beam remains switched on between all three measurements.



Upon completion of the third measurement, the volume is automatically calculated and displayed in the result line **c**. The individual measured values are displayed in the measured-value lines **a**.

Values above 1000 000 m³ cannot be indicated; "ERROR" appears on the display. Divide the volume to be measured into individual measurements; their values can then be calculated separately and then summarized.


Continuous Measurement (Tracking) / Minimum/Maximum Measurement (see figure B)

For continuous measurements, the measuring tool can be moved relative to the target, whereby the measuring value is updated approx. every 0.5 seconds. In this manner, as an example, you can move a certain distance away from a wall, while the actual distance can always be read.

For continuous measurements, press function mode button **8** until the indicator for continuous measurement appears on the display. To start the continuous measurement, press the measuring button **2**.

The minimum measurement is used to determine the shortest distance from a fixed reference point. It is used, as an example, for determining plumb lines or horizontal partitions.

The maximum measurement is used to determine the greatest distance from a fixed reference point. It is used, as an example, for determining diagonals.



The current measuring value is displayed in the result line **c**. The maximal ("max") and the minimal ("min") measuring value are displayed in the measured-value lines **a**. It is always overwritten, when the current length measurement value is less than the present minimal or larger than the present maximal value.

The previous minimal and maximal values are deleted by pressing the button for clearing the internal memory **4**.

Pressing the measuring button **2** ends the continuous measurement. The last measured value is displayed in the result line **c**. Pressing the measuring button **2** again restarts a continuous measuring run.

26 | English

Continuous measurement automatically switches off after 5 min. The last measured value remains indicated in the result line **c**.

Indirect Distance Measurement

Note: Indirect distance measurement is always less accurate than direct distance measurement. Depending on application, greater measuring errors are possible than with direct distance measurement. To improve the measuring accuracy, we recommend using a tripod (accessory).

The indirect distance measurement is used to measure distances that cannot be measured directly because an obstacle would obstruct the laser beam or no target surface is available as a reflector. This measuring procedure can only be used in vertical direction. Any deviation in horizontal direction leads to measuring errors.

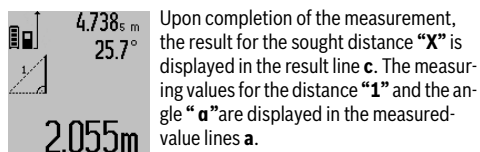
The laser beam remains switched on between the individual measurements.


For indirect length measurements, three measuring modes are available. Each measuring mode can be used for determining different distances.

a) Indirect height measurement (see figure C)

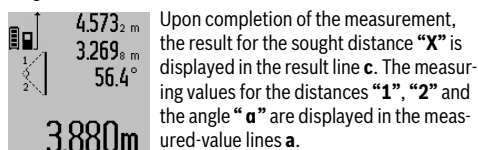
Press the function-mode button **8** until the indication for indirect height measurement  appears on the display.

Pay attention that the measuring tool is positioned at the same height as the bottom measuring point. Now, tilt the measuring tool around the reference plane and measure distance "1" as for a length measurement.

**b) Double indirect height measurement (see figure D)**

Press the function-mode button **8** until the indication for double indirect height measurement  appears on the display.

Measure distances "1" and "2" in this sequence as for a length measurement.



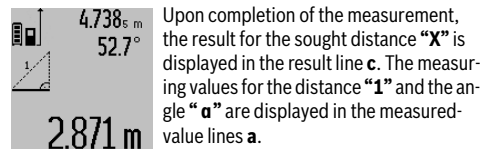
Pay attention that the reference plane of the measurement (e.g. the rear edge of the measuring tool) remains exactly at the same location for all individual measurements within a measuring sequence.

c) Indirect length measurement (see figure E)

Press the function-mode button **8** until the indication for indirect length measurement  appears on the display.


Pay attention that the measuring tool is positioned at the same height as the sought measuring point. Now, tilt the

measuring tool around the reference plane and measure distance "1" as for a length measurement.

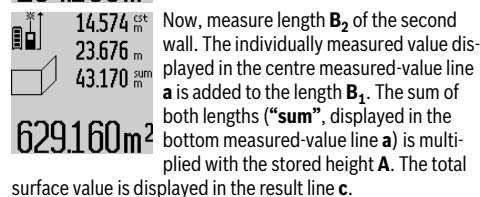
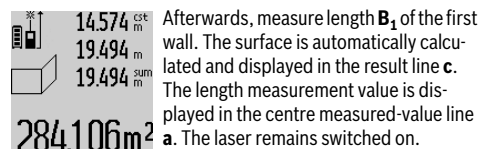
**Wall Surface Measurement (see figure F)**

The wall surface measurement is used to determine the sum of several individual surfaces with a common height.

In the example shown, the total surface of several walls that have the same room height **A**, but different lengths **B**, are to be determined.

For wall surface measurements, press the function-mode button **8** until the indicator for wall surface measurement  appears on the display.


Measure the room height **A** as for a length measurement. The measured value ("cst") is displayed in the top measured-value line **a**. The laser remains switched on.



In this manner, you can measure any number of further lengths **B**_x, which are automatically added and multiplied with height **A**.

The condition for a correct area/surface calculation is that the first measured length (in the example the room height **A**) is identical for all partial surfaces.

Grade Measurement (see figure G)

After pressing the grade measurement button **3**, the indication for grade measurement appears on the display . The backside of the measuring tool is used as the reference plane. By pressing the grade measurement button **3** again, the side surfaces of the measuring tool are used as reference plane and the display view is shown turned by 90°.

Press the measuring button **2** to lock the measuring value and accept it in the measured values memory. Pressing the measuring button **2** again continues the measurement.

When the indication flashes during the measuring procedure, then the measuring tool was tilted too much in lateral direction.

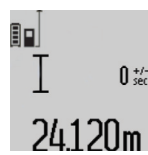
If the “digital vial” function is activated in the basic settings, the grade value is also displayed in the other measuring functions in line **d** of display **1**.

Timer Function

The timer function is helpful, when, for example, movements of the measuring tool during measuring are to be prevented.

To activate the timer function, press and hold button **6** until the $\frac{1}{\text{SEC}}$ indicator appears in the display.

The time period from the actuation until the measurement takes place is displayed in the measured-value line **a**. The time period can be adjusted between 1 s and 60 s by pressing the plus button **11** or the minus button **5**.

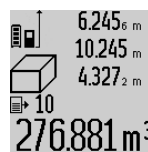


The measurement takes place automatically after the set time period has elapsed.

The timer function can also be used for distance measurements within other measuring modes (e.g. area/surface measurement). Adding and subtracting measuring results as well as continuous measurements are not possible.

List of the last Measuring Values

The measuring tool stores the last 50 measuring values and their calculations, and displays them in reverse order (last measured value first).



To recall the stored measurements, press button **7**. The result of the last measurement is indicated on the display, along with the indicator for the measured-value list **e** and the memory location of the displayed measurements.

When no further measurements are stored after pressing button **7** again, the measuring tool switches back to the last measuring function. To exit the measured-value list, press one of the measuring-mode buttons.

To continuously save the currently displayed length measurement value as a constant, press and hold the measured-value list button **7** until “**CST**” is indicated on the display. A measured-value list entry cannot be subsequently saved as a constant.

To use a length measurement value in a measuring mode (e.g. area/surface measurement), press the measured-value list button **7**, select the desired entry and confirm by pressing the result button **6**.

Deleting Measured Values

Briefly pressing button **4** deletes the last individual measuring value determined in any measuring function. Briefly pressing the button repeatedly deletes the individual measuring values in reverse order.

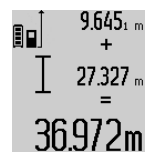
To delete the currently displayed measured-value list entry, briefly press button **4**. To delete the complete measured-value list and the constant “**CST**”, press and hold the measured-value list button **7** and at the same time briefly press button **4**.

In wall surface measurement mode, briefly pressing button **4** the first time deletes the last individually measured value;

pressing the button a second time deletes all lengths **B_x**, and pressing the button a third time deletes the room height **A**.

Adding Measured Values

To add measured values, firstly carry out any measurement or select an entry from the measured-value list. Then press the plus button **11**. For confirmation, “+” appears on the display. Then carry out a second measurement or select another entry from the measured-value list.



To call up the sum of both measurements, press the result button **6**. The calculation is indicated in the measured-value lines **a**, and the sum in the result line **c**.

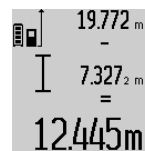
After calculation of the sum, further measured values or measured-value list entries can be added to this result when

pressing the plus button **11** prior to each measurement. Pressing the result button **6** ends the addition.

Notes on the addition:

- Mixed length, area and volume values cannot be added together. For example, when a length and area value are added, “**ERROR**” briefly appears on the display after pressing the result button **6**. Afterwards, the measuring tool switches back to the last active measuring mode.
- For each calculation, the result of one measurement is added (e.g. the volume value); for continuous measurements, this would be the displayed measured value in result line **c**. The addition of individual measured values from the measured-value lines **a** is not possible.

Subtracting Measured Values



To subtract measuring values, press minus button **5**; For confirmation, “-” is indicated on the display. The further procedure is analog to “Adding Measured Values”.

Data Transmission to other Devices

The measuring tool is equipped with a *Bluetooth*[®] module, which enables data transmission via radio technology to certain mobile terminals/devices with a *Bluetooth*[®] interface (e.g., smartphones, tablets).

For information on the necessary system requirements for a *Bluetooth*[®] connection, please refer to the Bosch website at www.bosch-pt.de.

For data transmission via *Bluetooth*[®], time delays between mobile terminal/device and measuring tool may occur. This can be possible due to the distance between both devices or the object being measured.

Data transmission to certain other devices with USB interface is possible via the measuring tool’s micro USB port (e.g. to computers, notebooks). In USB operation, the charging duration **n** can be significantly prolonged during data transmission.

28 | English

Activating the Bluetooth® Interface for Data Transmission to a Mobile Terminal/Device

To activate the *Bluetooth*® interface, press the measuring tool's *Bluetooth*® button **13**. Make sure that the *Bluetooth*® interface on your mobile terminal/device is activated.

Special Bosch applications (apps) are available to extend the functional range of the mobile terminal/device and for simplification of the data processing. Depending on terminal/device, these can be downloaded at the respective app stores:



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.

Note: When establishing the connection between the measuring tool and the mobile terminal/device (e.g., smartphone, tablet) the first time (pairing), the measuring tool's PIN code may be requested. In this case, enter "0000".

The connection status and the active connection are indicated on the display **1** (I).

When a connection cannot be established within 5 minutes after pressing the *Bluetooth*® button **13**, the *Bluetooth*® feature automatically switches off to save the batteries/rechargeable batteries.

When operating the measuring tool in the measuring rail **27**, data transmission is not possible.

Deactivating the Bluetooth® Interface

To activate the *Bluetooth*® interface, press the *Bluetooth*® button **13** or switch the measuring tool off.

When the *Bluetooth*® interface is deactivated or when the *Bluetooth*® connection is interrupted (e.g., because of too large distance or obstructions between the measuring tool and the mobile terminal/device as well as electromagnetic disturbances), *Bluetooth*® (I) is no longer indicated on the display.

Data Transmission via USB Interface

Connect the measuring tool to your computer or notebook with the micro USB cable. After starting the software on your computer or notebook, a connection is established to the measuring tool.

To download the current software and for further information, please refer to the Bosch website at www.bosch-pt.de.

Note: As soon as the measuring tool is connected to a computer or notebook via the micro USB cable, the lithium ion battery is charged. The charge duration varies depending on the charging current.

To recharge the measuring tool as quickly as possible, use the provided charger, see "Battery Charging".

Working Advice

► **The measuring tool is equipped with a radio interface. Local operating restrictions, e.g. in airplanes or hospitals, are to be observed.**

General Information

The reception lens **17** and the laser beam outlet **18** must not be covered when taking a measurement.

The measuring tool must not be moved while taking a measurement (with the exception of the continuous measurement and grade measurement functions). Therefore, place the measuring tool, as far as this is possible, against or on a firm stop or supporting surface.

Influence Effects on the Measuring Range

The measuring range depends upon the light conditions and the reflection properties of the target surface. For improved visibility of the laser beam when working outdoors and when the sunlight is intense, use the laser viewing glasses **30** (accessory) and the laser target plate **31** (accessory), or shade off the target surface.

Influence Effects on the Measuring Result

Due to physical effects, faulty measurements cannot be excluded when measuring on different surfaces. Included here are:

- Transparent surfaces (e.g., glass, water),
- Reflecting surfaces (e.g., polished metal, glass),
- Porous surfaces (e.g. insulation materials),
- Structured surfaces (e.g., roughcast, natural stone).

If required, use the laser target plate **31** (accessory) on these surfaces.

Furthermore, faulty measurements are also possible when sighting inclined target surfaces.

Also, air layers with varying temperatures or indirectly received reflections can affect the measured value.

Accuracy Check and Calibration of the Grade Measurement (see figure H)

Regularly check the accuracy of the grade measurement. This is done by carrying out a reversal measurement. For this, place the measuring tool on a table and measure the grade. Turn the measuring tool by 180° and measure the grade again. The difference of the indicated reading may not exceed by more than 0.3° (max.).

In case of greater deviation, the measuring tool must be recalibrated. For this, press and hold the grade measurement button **3**. Follow the directions on the display.

After severe temperature changes and impact, we recommend an accuracy check and, if required, to recalibrate the measuring tool. After a temperature change, the measuring tool must acclimate for a while before calibrating.

Accuracy Check of the Distance Measurement

The accuracy of the distance measurement can be checked as follows:

- Select a permanently unchangeable measuring section with a length of approx. 1 to 10 metres; its length must be precisely known (e.g. the width of a room or a door opening). The measuring distance must be indoors; the target surface for the measurement must be smooth and reflect well.
- Measure the distance 10 times after another.

The deviation of the individual measurements from the mean value must not exceed ± 2 mm (max.). Log the measurements, so that you can compare their accuracy at a later point of time.

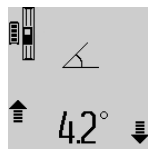
Working with the Tripod (Accessory)

The use of a tripod is particularly necessary for larger distances. Position the measuring tool with the 1/4" thread **19** onto the quick-change plate of the tripod **29** or a commercially available camera tripod. Tighten the measuring tool with the locking screw of the quick-change plate.

Set the corresponding reference level for measurement with a tripod by pushing button **10** (the reference level is the thread).

Working with the Measuring Rail (see figures I – K)

The measuring rail **27** can be used for a more accurate grade measurement result. Distance measurements are not possible with the measuring rail.



Place the measuring tool into the measuring rail **27** as shown and lock the measuring tool with locking lever **28**. Press the measuring button **2** to activate the "Measuring rail" operating mode.

Regularly check the accuracy of the grade measurement by carrying out a reversal measurement or with the spirit levels of the measuring rail.

In case of greater deviation, the measuring tool must be recalibrated. For this, press and hold the grade measurement button **3**. Follow the directions on the display.

When operating the measuring tool in the measuring rail **27**, data transmission is not possible.

To end the "Measuring rail" operating mode, switch the measuring tool off and remove it from the measuring rail.

Troubleshooting – Causes and Corrective Measures

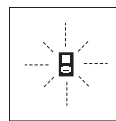
Cause	Corrective Measure
Temperature warning indicator (k) flashing; measurement not possible	
The measuring tool is outside the operating temperature range from -10 °C to $+50$ °C (in the function continuous measurement up to $+40$ °C).	Wait until the measuring tool has reached the operating temperature

Cause	Corrective Measure
"ERROR" indication in the display	
Addition/Subtraction of measured values with different units of measure	Only add/subtract measured values with the same units of measure
The angle between the laser beam and the target is too acute.	Enlarge the angle between the laser beam and the target
The target surface reflects too intensely (e.g. a mirror) or insufficiently (e.g. black fabric), or the ambient light is too bright.	Work with the laser target plate 31 (accessory)
The laser beam outlet 18 or the reception lens 17 are misted up (e.g. due to a rapid temperature change).	Wipe the laser beam outlet 18 and/or the reception lens 17 dry using a soft cloth
Calculated value is greater than 1 999 999 or smaller than $-999\,999\text{ m/m}^2/\text{m}^3$.	Divide calculation into intermediate steps
Indication ">60°" or "<-60°" on the display	
The inclination measuring range for the measuring mode and/or the reference plane has been exceeded.	Carry out the measurement within the specified angle range.
"CAL" and "ERROR" indication in the display	
The calibration of the grade measurement was not carried out in the correct sequence or in the correct positions.	Repeat the calibration according to the instructions on the display and in the operating instructions.
The surfaces used for the calibration were not accurately aligned (horizontal or vertical).	Repeat the calibration on a horizontal or vertical surface; if required, check the surface first with a level.
The measuring tool was moved or tilted while pressing the button.	Repeat the calibration and hold the measuring tool in place while pressing the button.
Battery charge-control indicator (g), temperature warning (k) and "ERROR" indication in the display	
Temperature of the measuring tool not within the allowable charge-temperature range	Wait until the charge-temperature range is reached.

30 | English

Cause	Corrective Measure
Battery charge-control indicator (g) and "ERROR" indication in the display	
Battery charging voltage not correct	Check if the plug-in connection has been established correctly and if the battery charger is operating properly. When the unit symbol is flashing, the battery is defective and must be replaced by a Bosch after-sales service.
Bluetooth® cannot be activated	
The battery is too low.	Charge the measuring tool's battery.
No Bluetooth® connection	
Failure of the Bluetooth® connection	<p>Check the application on your mobile terminal/device.</p> <p>Check if Bluetooth® is activated on your measuring tool and mobile terminal/device.</p> <p>Check your mobile terminal/device for overload.</p> <p>Reduce the distance between measuring tool and your mobile terminal/device.</p> <p>Avoid obstructions (e.g., reinforced concrete, metal doors) between measuring tool and your mobile terminal/device. Observe clearance to electromagnetic disturbances (e.g., WLAN transmitters).</p>
Data transmission via USB interface not possible	
Software error	Make sure that the software runs correctly on your computer or notebook. For further information, please refer to the Bosch website at www.bosch-pt.de
Micro USB cable	<p>Check the proper and tight seating of the micro USB cable.</p> <p>Check the micro USB cable for damage.</p>

Cause	Corrective Measure
Battery charge-control indicator (g) or prolonged charge duration indication n on the display	
Charge duration clearly too long, as charging current too low.	Only use the original Bosch charger.
Measuring result not plausible	
The target surface does not reflect correctly (e.g. water, glass).	Cover off the target surface
The laser beam outlet 18 or the reception lens 17 are covered.	Make sure that the laser beam outlet 18 or the reception lens 17 are unobstructed
Wrong reference level set	Select reference level that corresponds to measurement
Obstruction in path of laser beam	Laser point must be completely on target surface.
The indication remains unchanged or the measuring tool reacts unexpected after pressing a button	
Software error	Press the measuring button 2 and the button for clearing the internal memory / On/Off 4 to reset the software.



The measuring tool monitors the correct function for each measurement. When a defect is determined, only the symbol shown aside flashes in the display. In this case, or when the above mentioned corrective measures cannot correct an error, have the

measuring tool checked by an after-sales service agent for Bosch power tools.

Maintenance and Service

Maintenance and Cleaning

Store and transport the measuring tool only in the supplied protective pouch.

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.

Maintain the reception lens **17** in particular, with the same care as required for eye glasses or the lens of a camera.

In case of repairs, send in the measuring tool packed in its protective pouch **26**.

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 type plate of the measuring tool.

Great Britain

Robert Bosch Ltd. (B.S.C.)
P.O. Box 98
Broadwater Park
North Orbital Road
Denham
Uxbridge
UB 9 5HJ
Tel. Service: (0844) 7360109
Fax: (0844) 7360146
E-Mail: boschservicecentre@bosch.com

Ireland

Origo Ltd.
Unit 23 Magna Drive
Magna Business Park
City West
Dublin 24
Tel. Service: (01) 4666700
Fax: (01) 4666888

Australia, New Zealand and Pacific Islands

Robert Bosch Australia Pty. Ltd.
Power Tools
Locked Bag 66
Clayton South VIC 3169
Customer Contact Center
Inside Australia:
Phone: (01300) 307044
Fax: (01300) 307045
Inside New Zealand:
Phone: (0800) 543353
Fax: (0800) 428570
Outside AU and NZ:
Phone: +61 3 95415555
www.bosch.com.au
Supplier code ERAC000385

Republic of South Africa

Customer service
Hotline: (011) 6519600

Gauteng – BSC Service Centre

35 Roper Street, New Centre
Johannesburg
Tel.: (011) 4939375
Fax: (011) 4930126
E-Mail: bsctools@icon.co.za

KZN – BSC Service Centre

Unit E, Almar Centre
143 Crompton Street
Pinetown
Tel.: (031) 7012120
Fax: (031) 7012446
E-Mail: bsc.dur@za.bosch.com

Western Cape – BSC Service Centre

Democracy Way, Prosperity Park
Milnerton
Tel.: (021) 5512577
Fax: (021) 5513223
E-Mail: bsc@zsd.co.za

Bosch Headquarters

Midrand, Gauteng
Tel.: (011) 6519600
Fax: (011) 6519880
E-Mail: rbsa-hq.pts@za.bosch.com

Disposal

Measuring tools, accessories and packaging should be sorted for environmental-friendly recycling.

Do not dispose of measuring tools 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.

Battery packs/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
Tel. Service: (0844) 7360109
Fax: (0844) 7360146
E-Mail: boschservicecentre@bosch.com

Battery packs/batteries:

► Integrated batteries may only be removed for disposal.

Opening the housing shell can damage or destroy the measuring tool.

Completely discharge the battery. Unscrew all screws from the housing and open the housing shell. Disconnect the battery connections and remove the battery.



Do not dispose of battery packs/batteries into household waste, fire or water. Battery packs/batteries should, if possible, be discharged, collected, recycled or disposed of in an environmental-friendly manner.

Subject to change without notice.