Robert Bosch Power Tools GmbH
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PRO

GLM50-21



Safety instructions



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

- ▸ **Warning! If operating or adjustment devices other than those specified here are used or other procedures are carried out, this can lead to dangerous exposure to radiation.**
- ▸ **The measuring tool is delivered with a laser warning sign (marked in the illustration of the measuring tool on the graphics page).**
- ▸ **If the text of the laser warning label is not in your national language, stick the provided warning label in your national language over it before operating for the first time.**



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

- ▸ **If laser radiation hits your eye, you must close your eyes and immediately turn your head away from the beam.**
- ▸ **Do not make any modifications to the laser equipment.**
- ▸ **Have the measuring tool repaired only by a qualified specialist using only original replacement parts.** This will ensure that the safety of the measuring tool is maintained.
- ▸ **Do not let children use the laser measuring tool unsupervised.** They could unintentionally blind themselves or other persons.
- ▸ **Do not use the measuring tool in explosive atmospheres which contain flammable liquids, gases or dust.** Sparks may be produced inside the measuring tool, which can ignite dust or fumes.
- ▸ **Do not use the laser goggles (accessory) as protective goggles.** The laser goggles make the laser beam easier to see; they do not protect you against laser radiation.
- ▸ **Do not use the laser goggles (accessory) as sunglasses or while driving.** The laser goggles do not provide full UV protection and impair your ability to see colours.

Product description and specifications

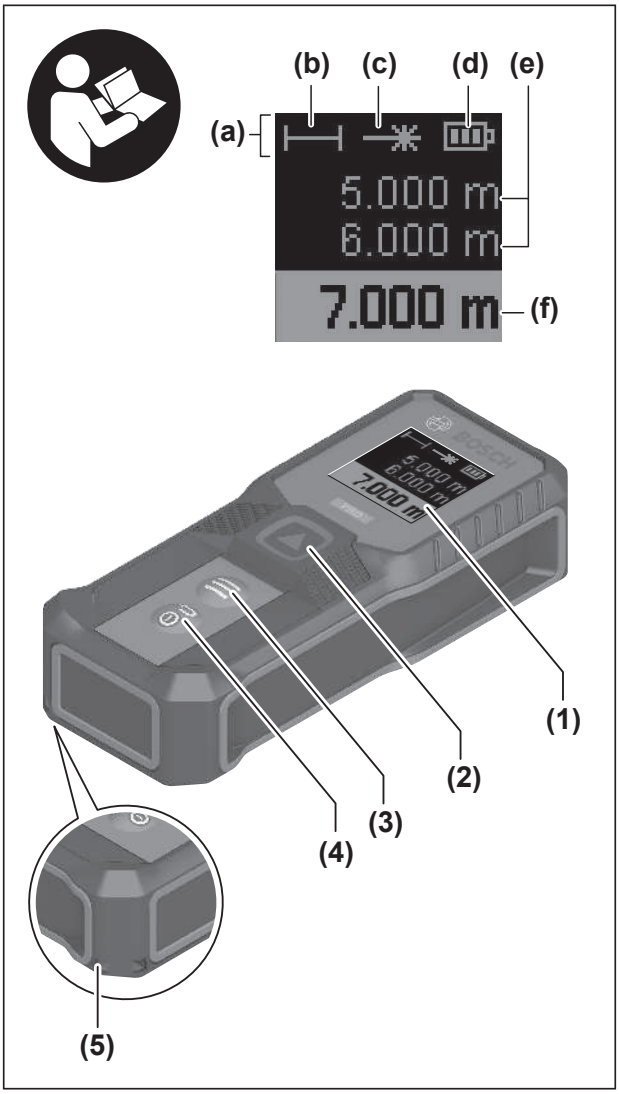
Intended use

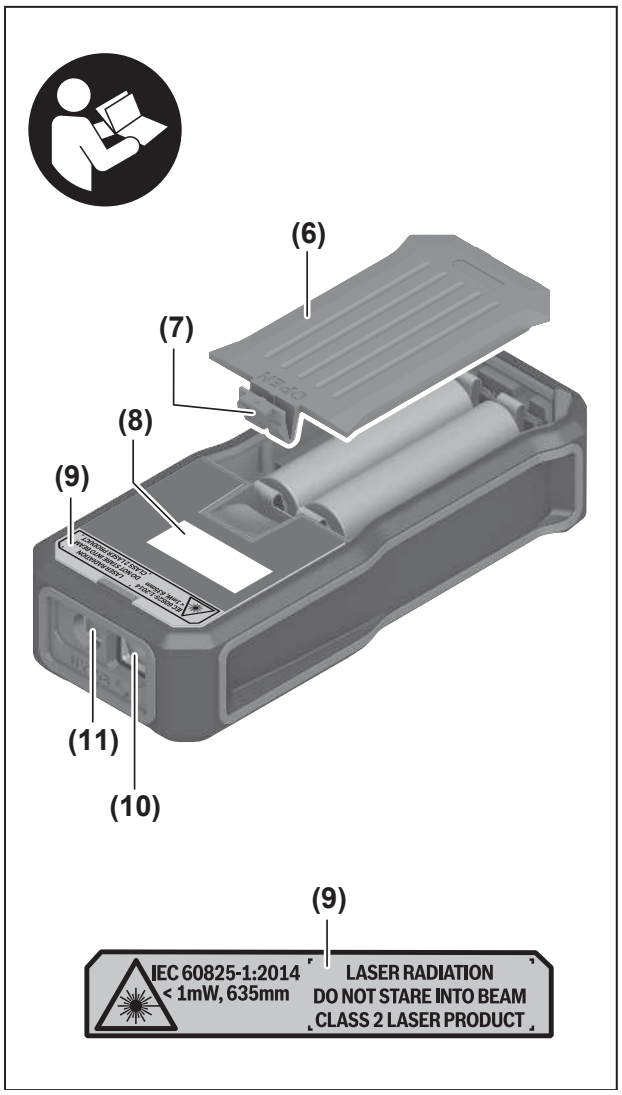
The measuring tool is intended for measuring distances, lengths, heights and clearances, and for calculating areas.

The measuring tool is suitable for indoor use.

Product Features

The numbering of the product features refers to the representation of the measuring tool in the images.





(1) Display
(2) Measuring button
(3) Menu button
(4) On/off/back button
(5) Carrying strap mount
(6) Battery compartment cover
(7) Battery compartment cover locking mechanism
(8) Serial number
(9) Laser warning label
(10) Reception lens
(11) Laser beam output
(12) Laser target plate[A)]
(13) Laser viewing glasses[A)]

A) **Accessories shown or described are not included with the product as standard.**

Display Elements

(a) Status bar
(b) Measuring function display
(c) Laser switched on
(d) Battery indicator
(e) Measured value lines

(f) Current measured value/result line

(g) Functions menu

(h) Settings menu

Technical data

Digital laser measure	GLM50-21
Article number	**3 601 K75 3..**
Measuring range[A)]	0.15–50 m
Measuring range (unfavourable conditions)[B)]	0.15–10 m
Measuring accuracy[A)]	±1.5 mm
Measuring accuracy (unfavourable conditions)[B)]	±3.0 mm
Smallest display unit	1.0 mm
Measuring time	0.5 s–4.2 s
General	
Operating temperature	−10 °C to +45 °C
Storage temperature	−20 °C to +70 °C
Relative air humidity max.	90 %
Max. altitude	2000 m
Pollution degree according to IEC 61010-1	2[C)]
Laser class	2
Laser type	635 nm, < 1 mW
Divergence of the laser beam	< 1.5 mrad (full angle)
Weight[D)]	0.06 kg
Dimensions (L × W × H)	100 × 43 × 24 mm
Unit of measurement setting	m / cm / fractional ft-inch / fractional inch / Taiwanese ft
Batteries	2 × 1.5 V LR03 (AAA)
Rechargeable batteries	2 × 1.2 V HR03 (AAA)

A) When measuring from the back edge of the measuring tool, this applies for high reflectivity of the target (e.g. a wall painted white), weak background lighting and a 20 °C operating temperature; a distance-dependent deviation of ±0.05 mm/m must additionally be factored in.

B) When measuring from the back edge of the measuring tool, this applies for high reflectivity of the target (e.g. a wall painted white), strong background lighting, 20 °C operating temperature and high elevation. In addition, a deviation of ±0.15 mm/m must be taken into account, depending on the distance.

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

D) Weight without non-rechargeable batteries/rechargeable batteries

The serial number **(8)** on the type plate is used to clearly identify your measuring tool.

Inserting/changing the battery

Using alkali-manganese or nickel metal hydride rechargeable batteries (especially at low operating temperatures) is recommended for operation of the measuring tool.

With 1.2 V rechargeable batteries, more measurements may be possible than with 1.5 V non-rechargeable batteries, depending on the capacity.

» Open the battery compartment cover.

» Insert the batteries.

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

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

When the empty battery symbol first appears on the display and flashes, only a limited number of measurements is still possible. Replace the batteries.

▸ **Take the batteries out of the measuring tool if you are not using it for a prolonged period of time**. The batteries can corrode during prolonged storage in the measuring tool.

Operation

Start-up

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

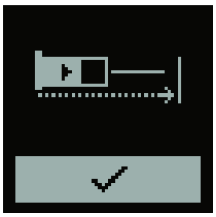
▸ **Protect the measuring tool from moisture and direct sunlight.**

▸ **Do not expose the measuring tool to any extreme temperatures or variations in temperature.** For example, do not leave it in a car for extended periods of time. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before putting it into operation. The precision of the measuring tool may be compromised if exposed to extreme temperatures or variations in temperature.

▸ **Avoid substantial knocks to the measuring tool and avoid dropping it.** Always carry out an accuracy check (see "Accuracy Check", page 7) before continuing work if the measuring tool has been subjected to severe external influences.

Switching on/off

» Press the button to switch on the measuring tool. You can also switch on the measuring tool by pressing the button.
→ Upon switching on the measuring tool, the laser beam is not yet switched on.



When switching on for the first time (and when switching on after a reset), the adjacent start screen is displayed.

» Press and hold the button to switch off the measuring tool.

If no button on the measuring tool is pressed for approx. 5 min, the measuring tool will switch off automatically to preserve the non-rechargeable batteries.

Measuring process

After switching on, the measuring tool will be in the measuring function that was last used.

The rear edge of the measuring tool is always the reference level for the measurement.

» Apply the measuring tool to the point at which you want to start the measurement (e.g. wall).

» Press the button briefly to switch on the laser beam.

» Target the target surface with the laser beam.

» Press the button again briefly to start the measurement.

The duration of the measurement depends on the distance, the lighting conditions and the reflective properties of the target surface. Upon completion of the measurement, the laser beam will automatically switch off.

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

ⓘ During a measurement, the reception lens **(10)** and the laser beam output **(11)** must not be covered.

Influences on the Measuring Range

The measuring range depends on the lighting conditions and the reflective properties of the target surface.

For better visibility of the laser beam in bright ambient light, use the laser viewing glasses **(13)** (accessory) and the laser target plate **(12)** (accessory), or shade the target surface.

Influences on the measurement result

Due to physical effects, incorrect measurements are possible when measuring on various surfaces. These include:

– Transparent surfaces (e.g. glass, water)
– Reflective 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 **(12)** (accessory) on these surfaces.

Incorrect measurements are also possible on slanted target surfaces.

Likewise, layers of air with different temperatures or indirectly received reflections can influence the measured value.

Navigation in the Menus

You can scroll to the right in the menus using the button.

To confirm a selection, press the button.

Press the button to exit the menu.

Settings Menu

You can find the following settings in the menu:
– **Audio signals**
– **Measurement unit**
– **Manual**
– **Tool information**
– **Factory reset**

» Press the button to open the **Functions** menu.

» Use the button to select the setting and confirm with the button.

» Use the button to select the required setting and confirm with the button.

Audio signals

The sound is switched on by default.

» Select the setting in the menu.

» Press the button to change the selection.

» To confirm the selection, press the button.
→ The selected setting remains saved after you switch off the measuring tool.

Measurement unit

The default unit of measurement is "**m**" (metres). Different units of measurement are available. Set the appropriate unit of measurement for your purposes.

» Select the setting in the menu.

» Press the button to change the selection.

» To confirm the selection, press the button.

→ The selected setting remains saved after you switch off the measuring tool.

Manual

» Select the setting in the menu.

» A QR code will appear on the display. Scanning it will take you to the online operating instructions.

Tool information

Here you will find information about the measuring tool, such as the serial number and software version.

» Select the setting in the menu.

Factory reset

This function is used to reset the measuring tool to factory settings.

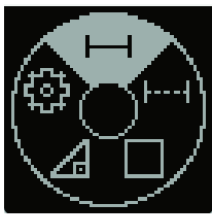
» Select the setting in the menu.

» Press the button to change the selection.

» To reset the measuring tool, select and confirm with the button.

Measuring functions

Selecting/Changing Measuring Function



The measuring tool offers the following measuring functions:

- **Length**
- **Continuous meas.**
- **Area**
- **Indirect height**

» Press the button to open the **Functions** menu.

» Select the required measuring function with the button.

» To confirm the selection, press the button.

Length

» Press the button to open the **Functions** menu.

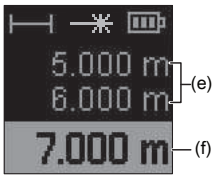
» Select the length measurement and confirm the selection with the button.

» Briefly press the button to switch on the laser.

» Press the button to start the measurement.

→ The measured value is displayed in the result line **(f)** at the bottom of the display.

» Repeat the above-mentioned steps for each subsequent measurement.



When several length measurements are performed in succession, the results of the last measurements are shown in the measured value lines **(e)**. The last measured value is at the bottom of the display, the penultimate measured value is above it, and so on.

Continuous meas.

During continuous measurement, the measured value is continually updated. You can, for example, move a desired distance away from a wall while reading off the current distance at all times.

» Press the button to open the **Functions** menu.

» Select continuous measurement and confirm the selection with the button.

» Briefly press the button to switch on the laser.

» Move the measuring tool until the required distance is shown on the display.

» You can interrupt the continuous measurement by briefly pressing the button.

» Press the button again to continue the continuous measurement.



The current measured value is displayed in large figures for better readability.

The continuous measurement automatically switches off after **4**minutes.

Area

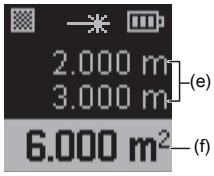
» Press the button to open the **Functions** menu.

» Select area measurement and confirm the selection with the button.

» Briefly press the button to switch on the laser.

» Press the button to start the first measurement, e.g. the length of a room.

» Press the button to start the second measurement, e.g. the width of a room.



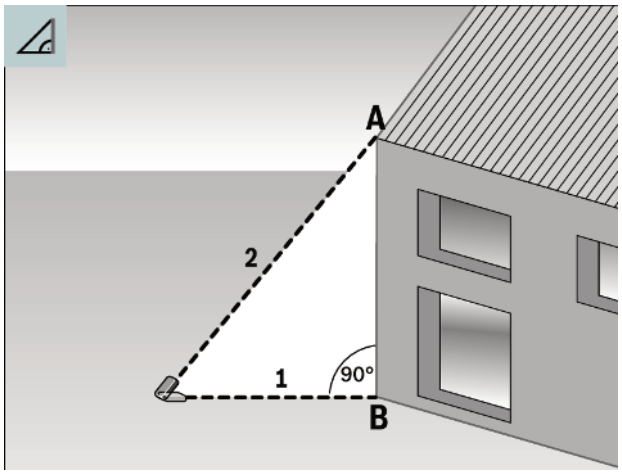
After the second measurement has been completed, the area will be automatically calculated and displayed. The result is shown in the result line **(f)**. The individual measured values are shown in the measured value lines **(e)**.

Indirect height

The **Indirect height** measuring function 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.

Indirect height measurement is always less accurate than direct height measurement. For application-related reasons, measuring errors can be greater than with direct distance measurement.

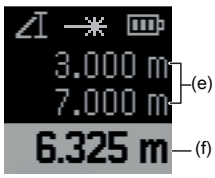
The laser beam remains switched on between the individual measurements.



With the **Indirect height** measuring function, you can determine the section **AB** by measuring the section **1** and **2**. The measuring tool calculates the sought-after height **AB** from the section **1** and **2**.

Correct results are achieved only when the right angles required for the respective measurement are exactly adhered to (Pythagorean Theorem). Ensure that there is a right angle between the sought-after section **AB** and the horizontal section **1**.

- » Press the ☰ button to open the **Functions** menu.
- » Select indirect height measurement and confirm the selection with the ▲ button.
- » Briefly press the ▲ button to switch on the laser.
- » Place the measuring tool at the height of the lower measuring point **B**.
- » Press the ▲ button to start the first measurement.
- » Tilt the measuring tool so that the laser is pointed at the upper measuring point **A**.
- » Press the ▲ button to start the second measurement.



After the measurement has been completed, the height will be calculated automatically and shown in the result line **(f)**. The measured values for the section **1** and **2** are shown in the measured value lines **(e)**.

Accuracy Check

Regularly check the accuracy of the measuring tool.

Accuracy Check of the Distance Measurement

For the accuracy check, the measurement should be taken under favourable conditions, i.e. the measuring section should be indoors and the target surface for the measurement should be smooth and reflect well (e.g. a white-painted wall).

- » Select a measuring section of approx. **1** to **10** m long, the length of which you know exactly (e.g. room width, doorway).
- » Measure the section 10 times in succession.
  - → The deviation of individual measurements from the exact known value may be maximum ±**2** mm throughout the entire measuring section under favourable conditions. Log the measurements, so that you can compare their accuracy at a later point of time.

Error message

If a measurement cannot be performed correctly, the **ERROR** error message will appear in the display.

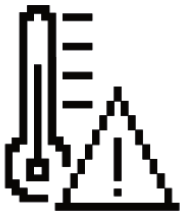
- » Try to perform the measuring process again.
- » If the error message appears again, switch the measuring tool off and back on, and start the measurement again.



The measuring tool monitors for correct operation in every measurement. If a defect is detected, the display will indicate only the symbol shown opposite and the measuring tool switches itself off. In this case, have the measuring tool checked by an after-sales service agent for Bosch power tools.

Troubleshooting

Temperature warning



Symbol for temperature warning is shown in the display, operation not possible

Cause: Measuring tool is outside the operating temperature of −10 °C to +45 °C

Corrective measure: Wait until the measuring tool reaches the operating temperature

Battery indicator



Symbol for battery warning appears
Cause: Battery voltage too low
Corrective measure: Change the batteries

"Error" in the Display

"Error" indicator in the display

Cause: Target surface is too reflective (e.g. mirror) or not reflective enough (e.g. black material), or ambient light is too bright.
Corrective measure: Use a laser target plate (accessory).

Cause: The laser beam output **(11)** or reception lens **(10)** has fogged up (e.g. due to a rapid change in temperature).
Corrective measure: Rub the laser beam output **(11)** or reception lens **(10)** dry with a soft cloth.

Cause: The measuring tool was moved too quickly.
Corrective measure: Move the measuring tool more slowly.

Cause: The measuring object is outside of the range of the laser beam.
Corrective measure: Go closer to the measuring object.

Measurement Result

Measurement result unreliable

Cause: Target surface reflection not distinct (e.g. water, glass).
Corrective measure: Cover the target surface.

Cause: The laser beam output **(11)** or reception lens **(10)** is covered.
Corrective measure: Keep the laser beam output **(11)** and the reception lens **(10)** free at all times.

Measurement result implausible

Cause: Obstruction in the path of the laser beam.
Corrective measure: Ensure that the laser point is fully on the target surface.

Display Unchanged

The display remains unchanged or the measuring tool reacts unexpectedly to pressing the measuring button/buttons
Cause: Software error
Corrective measure: Remove the batteries, reinsert them and restart the measuring tool

Licence Texts and Legal Notes

Here you will find information about the licences and legal notes.

» When starting the measuring tool, press and hold the ☰ and ▲ buttons together until further information is displayed.
» It scrolls automatically from beginning to end.
» You can only quit this menu by switching the measuring tool on and off.

Maintenance and service

Maintenance and cleaning

Keep the measuring tool clean at all times.

Never immerse the measuring tool in water or other liquids.

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

Take particular care of the reception lens **(10)**, which must be handled with the same level of care you would give to a pair of glasses or a camera lens.

Send in the measuring tool if it requires repair.

After-Sales Service and Application Service

https://www.bosch-pt.com/serviceaddresses

Malaysia

Tel.: (03) 79663194

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

Disposal

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



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

Manufacturer's warranty

https://www.bosch-pt.com/guarantee/202601

Accessories

You can find the accessory on the Bosch website via the link provided.



Laser target plate **(12)**

2 607 001 391



Laser goggles (red) **(13)**

1 608 M00 05B