IMPORTANT: Read Before Using	IMPORTANT : Lire avant usage	IMPORTANTE: Leer antes de usar

Operating/Safety Instructions
Consignes d'utilisation/de sécurité
Instrucciones de funcionamiento y seguridad

GLM165-40

BOSCH

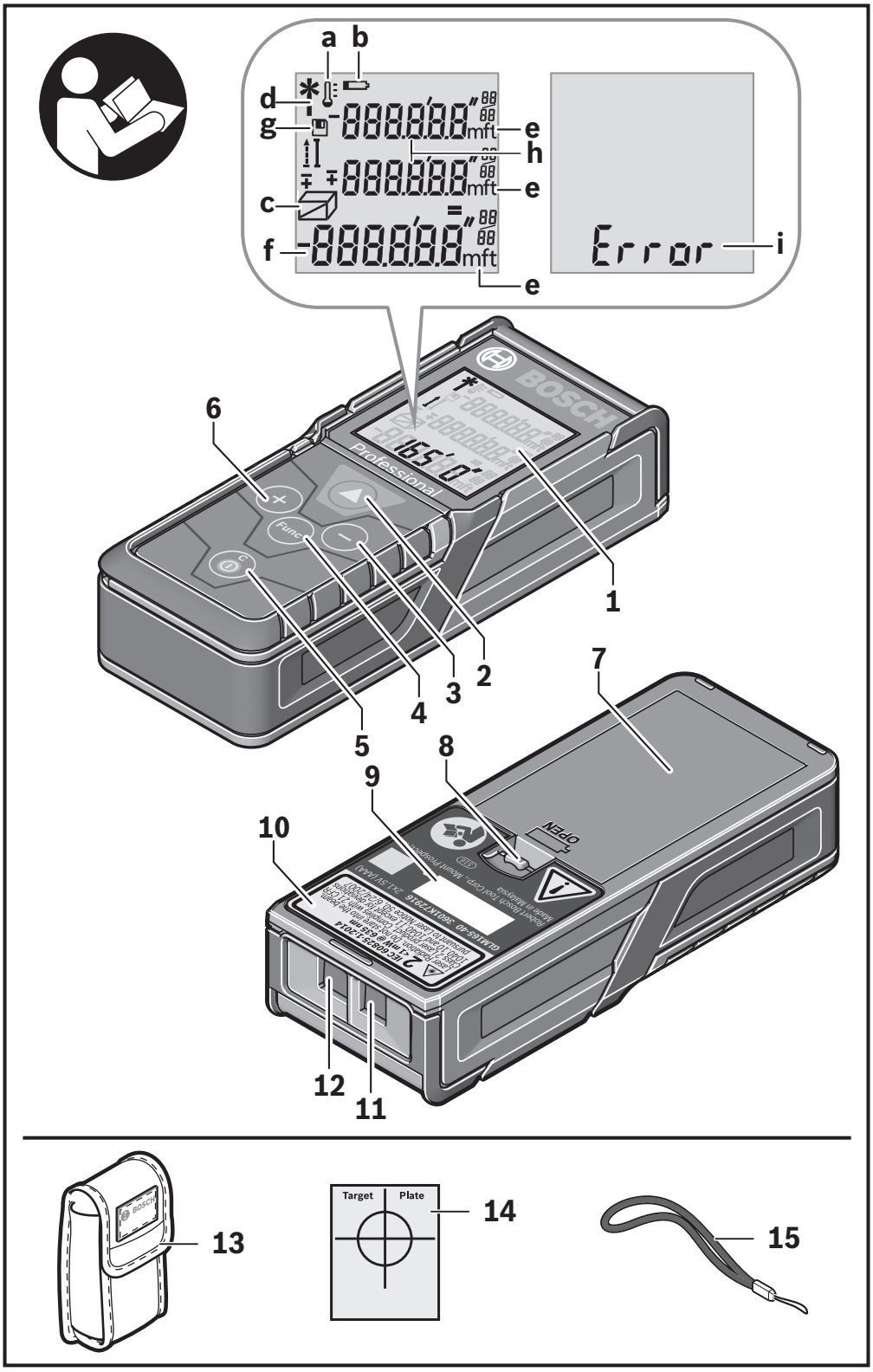
Call Toll Free for Consumer Information and Service Locations

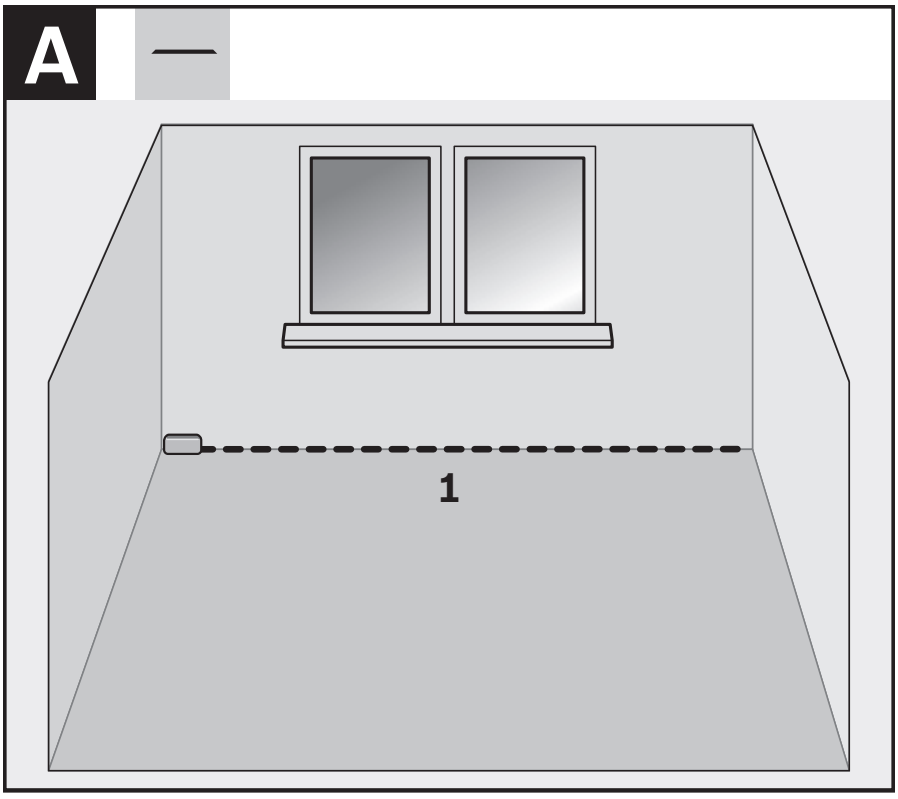
Pour obtenir des informations et les adresses de nos centers de service après-vente, appelez ce numéro gratuit

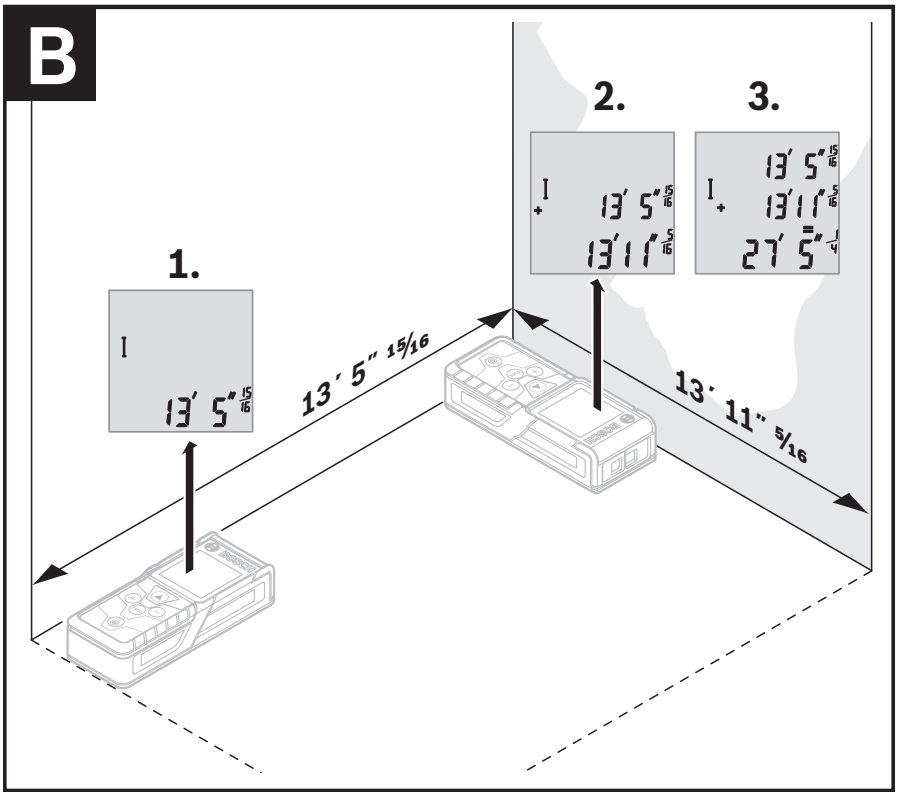
Llame gratis para obtener información para el consumidor y ubicaciones de servicio

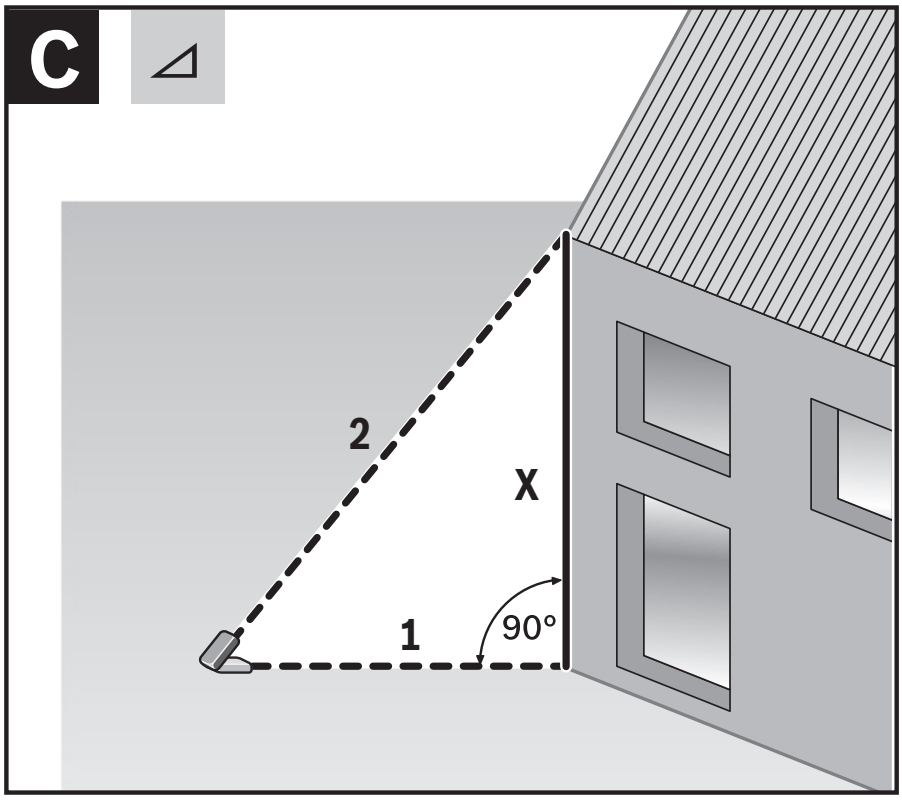
[redacted]

For English Version
See page 4




A
1


B
1.
2.
3.
13′ 5″ 15/16
13′ 11″ 5/16



Safety Symbols

The definitions below describe the level of severity for each signal word. Please read the manual and pay attention to these symbols.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Read manual symbol - Alerts user to read manual.

⚠WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

General Safety Rules

⚠WARNING **Read all instructions. Failure to follow all instructions listed below may result in hazardous radiation exposure, electric shock, fire and/or serious injury.** The term “tool” in the warnings listed below refers to your mains-operated (corded) tool or battery-operated (cordless) tool.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Work area safety

Keep work area clean and well lit. Cluttered or dark areas invite accidents.

DO NOT operate the laser tool around children or allow children to operate the laser tool. Serious eye injury could result.

DO NOT use measuring tools, attachments and accessories outdoors when lightening conditions are present.

Electrical safety

⚠WARNING Batteries can explode or leak, cause injury or fire. To reduce this risk, always follow all instructions and warnings on the battery label and package.

Do not short any battery terminals.

Do not charge alkaline batteries.

Do not mix old and new batteries. Replace all of them at the same time with new batteries of the same brand and type.

Do not mix battery chemistries.

Dispose of or recycle batteries per local code.

Do not dispose of batteries in fire.

Keep batteries out of reach of children.

Remove batteries if the device will not be used for several months.

Personal safety

Stay alert, watch what you are doing and use common sense when operating a measuring, detection and layout tool. Do not use a measuring, detection and layout tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating measuring, detection and layout tools may result in serious personal injury or incorrect measurement results.

Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

DO NOT use any optical tools such as, but not limited to, telescopes or transits to view the laser beam. Serious eye injury could result.

DO NOT stare directly at the laser beam or project the laser beam directly into the eyes of others. Serious eye injury could result.

Use caution when using measuring tools in the vicinity of electrical hazards.

Measuring, detection and layout tool use and care

Use the correct measuring, detection and layout tool for your application. The correct measuring, detection and layout tool will do the job better and safer at the rate for which it was designed.

Do not use the measuring, detection and layout tool if the switch does not turn it on and off. Any measuring, detection and layout tool that cannot be controlled with the switch is dangerous and must be repaired.

Store idle measuring, detection and layout tools out of the reach of children and do not allow persons unfamiliar with the measuring, detection and layout tool or these instructions to operate the measuring, detection and layout tool. Measuring, detection and layout tools may be dangerous in the hands of untrained users.

Maintain measuring, detection and layout tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the measuring, detection and layout tools operation. If damaged, have the measuring, detection and layout tool repaired before use. Many accidents are caused by poorly maintained measuring, detection and layout tools.

Use the measuring, detection and layout tool, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of measuring, detection and layout tool, taking into account the working conditions and the work to be performed. Use of the measuring, detection and layout tool for operations different from those intended could result in a hazardous situation.

Service

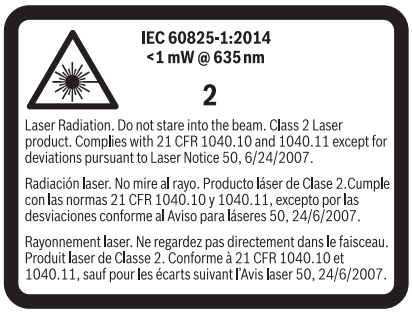
Have your measuring, detection and layout tool serviced by a qualified repair person using only approved replacement parts. This will ensure that the safety of the measuring, detection and layout tool is maintained.

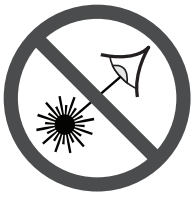
Develop a periodic maintenance schedule for your measuring, detection and layout tool. Follow checking and recalibration procedures outlined in the instruction manual.

When cleaning a tool be careful not to disassemble any portion of the tool since internal wires may be misplaced or pinched or may be improperly mounted. Certain cleaning agents such as gasoline, carbon tetrachloride, ammonia, etc. may damage plastic parts.

Safety Rules for Laser Tools

The following label is on your laser tool for your safety. ALWAYS BE AWARE of its location when using the tool.





DO NOT direct the laser beam at persons or animals and do not stare into the laser beam yourself. This tool produces class 2 laser radiation and complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. This can lead to persons being blinded.

DO NOT place the measuring tool in a position that may cause anyone to stare into the laser beam intentionally or unintentionally. Serious eye injury could result.

Never aim the beam at a workpiece with a reflective surface. Bright shiny reflective sheet steel or similar reflective surfaces are not recommended for laser use. Reflective surfaces could direct the beam back towards the operator.

DO NOT operate the measuring tool around children or allow children to operate the measuring tool. Serious eye injury could result.

ALWAYS: Make sure that any bystanders in the vicinity of use are made aware of the dangers of looking directly into the measuring tool.

DO NOT remove or deface any warning or caution labels.

Removing labels increases the risk of exposure to laser radiation.

DO NOT operate the measuring tool in combustible areas such as in the presence of flammable liquids, gases or dust.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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 color perception.

DO NOT leave measuring tool "ON" unattended in any operation mode.

ALWAYS turn the measuring tool "OFF" when not in use. Leaving the measuring tool "ON" increases the risk of someone inadvertently staring into the laser beam.

ALWAYS position the measuring tool securely. Damage to the measuring tool and/or serious injury to the user could result if the measuring tool falls.

Take care to recognize the accuracy and range of the device. Measurement may not be accurate if used beyond the rated range of the device.

ALWAYS use only the accessories that are recommended by the manufacturer of your measuring tool. Use of accessories that have been designed for use with other measuring tools could result in serious injury.

DO NOT use this measuring tool for any purpose other than those outlined in this manual. This could result in serious injury.

ALWAYS remove the batteries when cleaning the laser light aperture and laser lens.

DO NOT disassemble the measuring tool. There are no user serviceable parts inside. Disassembling the laser will void all warranties on the product. Do not modify the product in any way. Modifying the measuring tool may result in hazardous laser radiation exposure.

Repair and servicing must always be performed by a qualified repair facility. Repairs performed by unqualified personnel could result in serious injury.

Intended Use

The measuring tool is intended for measuring distances, lengths, heights and clearances. The measuring tool is suitable for measuring only indoors.

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 Minus button
4 Function button
5 Clear/ On/Off button
6 Plus button
7 Battery lid
8 Latch of battery lid
9 Serial number
10 Laser warning label
11 Reception lens
12 Laser beam outlet
13 Protective pouch
14 Target cards
15 Hand strap

Display Elements

a Temperature warning
b Low battery indicator
c Measuring functions
- Real time measurement
- Length measurement
- Area/Surface measurement
- Volume measurement
- Indirect measurement

d Laser activation indicator
e Unit of measure
f Current measuring value
g Memory value display
h Previous measuring value(s)
i Error message “Error”

Technical Data

Digital Laser Measure GLM165-40

Measuring range (typical)	6 in - 165 ft (0.15 –50 m[A])
Measuring accuracy (typical)	±1/16 in (±1.5 mm[B])
Lowest indication unit	±1/32 in (1 mm)
Automatic switch-off after approx.	
- Laser	20 s
- Measuring Tool	5 min
Operating temperature	+14° F to 113° F (-10° C to +45° C)
Storage temperature	-4° F to 158° F (-20° C to +70° C)
Relative air humidity, max.	90 %
Laser class	2
Laser type	635 nm, <1mW
Laser beam diameter at 77° F (25 °C)	
- at 30 ft (10 m) distance, approx.	3/8 in (9 mm)
- at 165 ft (50 m) distance, approx.	1-3/4 in (45 mm)
Batteries	2 x 1.5V (AAA)
Battery service life in measuring operation, approx.	4 h
Degree of Protection	IP54 (dust and splash water protected)[C]
Weight	0.2 lb (0.09 kg)
Dimensions	4.1 x 1.6 x 0.9 in (105 x 41 x 24 mm)

A) The working range increases depending on how well the laser light is reflected from the surface of the target (scattered, not reflective) and with increased brightness of the laser point to the ambient light intensity (interior spaces, twilight). In unfavorable conditions, e.g., with extreme interior illumination or a badly reflecting surface, the measuring range may be limited.

B) In favorable conditions, a deviation influence of ±0.05 mm/m must be taken into account. In unfavorable conditions, e.g., with extreme illumination, badly reflecting surface or the room temperature deviating heavily from 77 °F (25 °C), the maximum deviation can be up to ±3.0mm. Additionally, a deviation influence of 0.15mm/m must be taken into account.

C) Does not apply to battery compartment.

The measuring tool can be clearly identified with the serial number **9** on the type plate.

Assembly

Inserting/Replacing the Batteries

AAA Alkaline batteries are recommended for the measuring tool.

To open the battery lid **7**, press the latch **8** in the direction of the arrow and remove the battery lid. Insert the batteries. When inserting, pay attention to the correct polarity according to the representation on the inside of the battery compartment.

When the battery symbol appears for the first time on the display, measurements are still possible for approx. 15 minutes. When the battery symbol flashes, the batteries must be replaced; measurements are no longer possible.

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

Remove the batteries from the tool when not using it for extended periods. When storing for extended periods, the batteries can corrode and discharge themselves.

Operation

⚠WARNING **Protect the tool against moisture and direct sun irradiation.**

Do not subject the tool to extreme temperatures or variations in temperature. As an example, do not leave it in vehicles for longer periods. In case of large variations in temperature, allow the 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 tool can be impaired.

Avoid heavy impact or falling of the tool. After heavy exterior impact on the tool, an accuracy check should always be carried out before continuing to work (see “Accuracy Check of the Distance Measurement”, page 19).

⚠WARNING **DO NOT stare directly at the laser beam or project the laser beam directly into the eyes of others.** Serious eye injury could result.

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

Switching On and Off

To switch on the measuring tool and the laser, press the measuring button **2** or the Clear/ On/Off button **5**.

To switch off the measuring tool, press and hold the Clear/ On/Off button **5**.

For Real Time Measurement mode: the laser will automatically turn off after 5 minutes. The measuring tool will turn off 5 minutes after laser cut off.

For all other measurement modes: the laser will automatically turn off after 20 seconds. The measuring tool will turn off after 5 minutes (including laser cut off time).

Measuring Procedure (See Figure **A**)

Once switched on, the measuring tool is in the real time measurement function. Laser is automatically activated and tool is measuring. You can set other measuring functions by repeatedly pressing button **4** (see “Measuring Functions”).

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

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

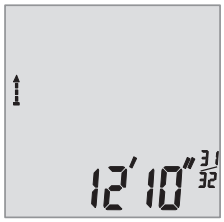
Note: The measured value typically appears within 0.5 seconds and no later than 4 seconds. The duration of the measurement depends on the distance, the lighting conditions and the reflective properties of the target surface. Upon completion of the measurement the laser beam is automatically switched off.

Measuring Functions

Real Time Measurement

For real time 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 for example, the distance displayed on the screen will change in real time as you move further or closer to the measured target.

For real time measurements, repeatedly press button **4** until the indicator for real time measurement appears on the display **1**. Press Measure button **2** to activate laser. The laser will be switched on and measuring will begin immediately.



Move the measuring tool until the required distance value is indicated in the bottom of the display.

Press the measuring button **2** to hold the measurement. The held measurement will display at the bottom of the display.

Press the measuring button **2** to reactivate real time measuring on the bottom line and the held measurement will move to the middle line.

Press the measuring button **2** to hold the measurement on the bottom line. The held measurement on the middle line will continue to hold.

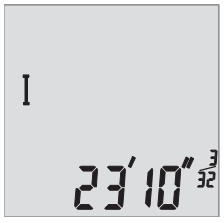
Press the measuring button **2** to reactivate real time measuring on the bottom line and the previous held measurements will move to the middle and top lines.

Press the measuring button **2** to hold the measurement on the bottom line. The last three measurements will now be held and displayed on the bottom, middle, and top lines.

Real time measurement automatically switches off after 5 minutes. The last measured value remains indicated at the bottom on the display.

Length Measurement

For length measurements, repeatedly press the button **4** until the indicator for length measurement — appears on the display **1**.



To measure, press the measuring button **2**. The measurement will be shown on the bottom of the display.

Press the measuring button **2** and the previous measurement will move to the middle line.

Press the measuring button **2** for a new measurement on the bottom line.

Press the measuring button **2** and the measurement from the middle line will move to the top line and the measurement from

the bottom line will move to the middle line.

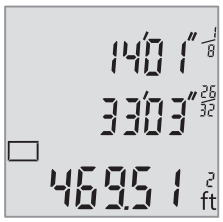
Press the measuring button **2** for a new measurement on the bottom line. The last three measurements will display on the bottom, middle, and top lines.

Area Measurement

For area measurements, repeatedly press button **4** until the indicator for area measurement ▭ appears on the display **1**.

Then measure the width and length one after the other as with a length measurement.

The first measured value will be shown at the top of the display. The laser beam remains switched on between the two measurements.



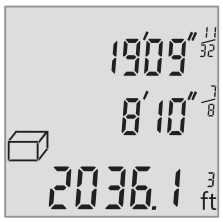
After the second measurement has been completed, the area will be automatically calculated and displayed. The end result will be shown at the bottom of the display, while the current measured value will be shown above it.

Volume Measurement

For volume measurements, repeatedly press button **4** until the indicator for volume measurement ⬚ appears on the display **1**.

Then measure the width, length and depth one after the other as with a length measurement.

The first measured value will be shown at the top of the display. The laser beam remains switched on between the three measurements.



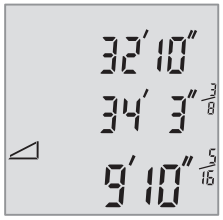
After the third measurement has been completed, the volume will be automatically calculated and displayed. The end result will be shown at the bottom of the display, while the current measured value will be shown above it.

Indirect Measurement (see figure C)

For Indirect measurements, repeatedly press button **4** until the indicator for Indirect measurement ◿ appears on the display **1**.

Make sure that there is a right angle between the sought distance (height) and the horizontal distance (depth). Then measure the depth and diagonal one after the other as with a length measurement. The first measured value will be shown

at the top of the display. The laser beam remains switched on between the two measurements.



After the second measurement has been completed, the height will be automatically calculated and displayed. The end result will be shown at the bottom of the display, while the current measured value will be shown above it.

Clearing Measured Values

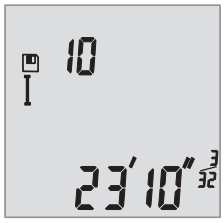
Pressing the On/Off button **5** will delete the last measured value in all measuring functions. Repeatedly pressing the On/ Off button **5** will delete the measured values in reverse order.

Memory Functions

Memory value display

The memory value display is only available when a length measurement has been performed. Maximum 10 measured values can be retrieved.

To display memory values, repeatedly press button **4** until the image shown below appears on the display **1.**



The number of the measured value is displayed after 💾, and the respective measured value is displayed underneath.

Press button **6** to browse forward through the saved measured values.

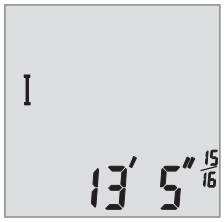
Press button **3** to browse backwards through the saved measured values.

If no measured value is available in the memory, 0 is shown next to 💾 .

Deleting the Memory

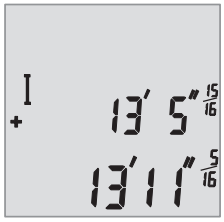
To delete contents of the memory, first press button **4** until the disk icon 💾 appears on the display. Then press the Clear/ On/ Off button **5** to delete the displayed measured value.

Adding/subtracting measured values in real time and length measurement modes (see figure B)

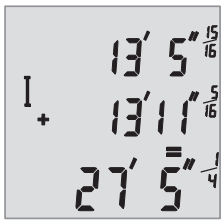


To measure, press the measuring button **2**.

The measured value will be shown at the bottom of the display.



Press button **6** to add measured values or press button **3** to subtract measured values. "**+**" or "**–**" will appear in the middle of the display. Take another measurement. The current measured value will be shown at the bottom of the display, and the previous measured value will be shown above it.



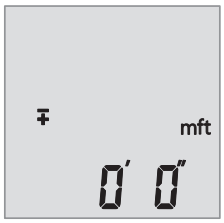
Press button **6** to add measured values or press button **3** to subtract measured values. The result will be shown at the bottom of the display after "**=**", and the current measured value will be shown above it.

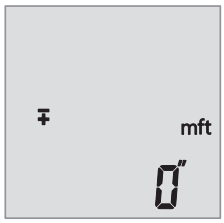
Press button **4** to exit addition/subtraction.

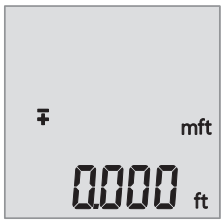
In Area and Volume Measurement Modes, calculate first area/volume measurement and then press button **3** or **6**. Calculate the second area/volume measurement and press button **3** or **6** again to get the sum.

Changing the Unit of Measure

Press and hold the function button **4** until one of the images shown below is displayed. Use button **3** and button **6** to cycle through the units of measurement. Once the desired unit of measurement is displayed, press the measurement button **2** to return to measuring.







Switching the Sound On and Off

The sound is switched on by default.

Press and hold the function button until you see the Changing the Unit of Measure display. Press function button **4** again to see the image displayed to the left. Use button **3** and **6** to adjust the sound preference. **Sound OFF** will display when the sounds has been turned off.

To switch the sound back on, use button **3** and **6** to adjust the sound preference. **Sound On** will display when the sound has been turned on.

Display Illumination

The display illumination is continuously switched on. When no button is pressed, the display illumination is dimmed after approx. 10 seconds to preserve the batteries. When no button is pressed for approx. 30 seconds, the display illumination goes out.

Working Advice

General Information

The reception lens **11** and the laser beam outlet **12** must not be covered when taking a measurement.

Measurement takes place at the center of the laser beam, even when target surfaces are at a slope.

Influence Effects on the Measuring Range

The measuring range depends on the light conditions and the reflection properties of 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).

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

Accuracy Check of the Distance Measurement

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

– Select a permanent measuring section with a length of approx. 3 ft to 33 ft (1 m to 10 m); 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 ±1/16” (±1.5mm). Log the measurements, so that you can compare their accuracy at a later point of time.

Troubleshooting

Cause	Corrective Measure
Temperature warning indicator (a) flashing; measurement not possible	
Measuring tool not within the temperature range between +14°F and 113°F (–10°C and +45°C)	Wait until the measuring tool has reached the operating temperature
Battery low indicator (b) appears	
Battery voltage decreasing (measurement still possible)	Replace batteries
Battery low indicator (b) flashing; measurement not possible	
Battery voltage too low	Replace batteries
All indicators on the display flashing	
The measuring tool is defective	Contact the Customer Service

Maintenance and Service

⚠WARNING **Keep the measuring tool clean at all times.**

Do not immerse the measuring tool into 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 11 in particular, with the same care as required for eye glasses or the lens of a camera.

If the measuring tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorized after-sales service center for Bosch power tools. Do not open the measuring tool yourself.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the type plate of the measuring tool.

ENVIRONMENT PROTECTION

Recycle raw materials and batteries instead of disposing of waste. The unit, accessories, packaging and used batteries should be sorted for environmentally friendly recycling in accordance with the latest regulations.

LIMITED WARRANTY OF BOSCH LASER AND MEASURING TOOL PRODUCTS

Robert Bosch Tool Corporation ("Seller") warrants to the original purchaser only, that all Bosch lasers and measuring tools will be free from defects in material or workmanship for a period of one (1) year from date of purchase. Bosch will extend warranty coverage to two (2) years when you register your product within eight (8) weeks after date of purchase. Product registration card must be complete and mailed to Bosch (postmarked within eight weeks after date of purchase), or you may register on-line at. If you choose not to register your product, a one (1) year limited warranty will apply to your product.

30 Day Money Back Refund or Replacement -

If you are not completely satisfied with the performance of your laser and measuring tools, for any reason, you can return it to your Bosch dealer within 30 days of the date of purchase for a full refund or replacement. To obtain this 30-Day Refund or Replacement, your return must be accompanied by the original receipt for purchase of the laser or optical instrument product. A maximum of 2 returns per customer will be permitted.

SELLER'S SOLE OBLIGATION AND YOUR EXCLUSIVE REMEDY under this Limited Warranty and, to the extent permitted by law, any warranty or condition implied by law, shall be the repair or replacement of parts, without charge, which are defective in material or workmanship and which have not been misused, carelessly handled, or misrepaired by persons other than Seller or Authorized Service Center. To make a claim under this Limited Warranty, you must return the complete Bosch laser or measuring tool, transportation prepaid, to any BOSCH Factory Service Center or Authorized Service Center. Please include a dated proof of purchase with your tool. For locations of nearby service centers, please use our on-line service locator or call.

THIS WARRANTY PROGRAM DOES NOT APPLY TO TRIPODS AND RODS. Robert Bosch Tool Corporation ("Seller") warrants tripods and leveling rods for a period of one (1) year from date of purchase.

THIS LIMITED WARRANTY DOES NOT APPLY TO OTHER ACCESSORY ITEMS AND RELATED ITEMS. THESE ITEMS RECEIVE A 90 DAY LIMITED WARRANTY.

To make a claim under this Limited Warranty, you must return the complete product, transportation prepaid. For details to make a claim under this Limited Warranty please visit.

ANY IMPLIED WARRANTIES SHALL BE LIMITED IN DURATION TO ONE YEAR FROM DATE OF PURCHASE. SOME STATES IN THE U.S., AND SOME CANADIAN PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING BUT NOT LIMITED TO LIABILITY FOR LOSS OF PROFITS) ARISING FROM THE SALE OR USE OF THIS PRODUCT. SOME STATES IN THE U.S., AND SOME CANADIAN PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE IN THE U.S., OR PROVINCE TO PROVINCE IN CANADA AND FROM COUNTRY TO COUNTRY.

THIS LIMITED WARRANTY APPLIES ONLY TO PRODUCTS SOLD WITHIN THE UNITED STATES OF AMERICA, CANADA AND THE COMMONWEALTH OF PUERTO RICO. FOR WARRANTY COVERAGE WITHIN OTHER COUNTRIES, CONTACT YOUR LOCAL BOSCH DEALER OR IMPORTER.